Human Papillomavirus and Related Diseases Report

WORLD

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ICO
Institut Català d'Oncologia

Abbreviations

Table 1: Abbreviations

Abbreviation	Full term
HPV	Human papillomavirus
HPV Information Centre	ICO/IARC Information Centre on HPV and Cancer
GW	Genital warts
RRP	Recurrent respiratory papillomatosis
SIL	Squamous intraepithelial lesions
LSIL	Low-grade cervical lesions
HSIL	High-grade cervical lesions
ICC	Invasive cervical cancer
CIS	Carcinoma in situ
CIN	Cervical intraepithelial neoplasia
AIN2/3	Anal intraepithelial neoplasia of grade 2 and/or 3
VIN 2/3	Vulvar intraepithelial neoplasia of grade 2 and/or 3
VaIN 2/3	Vaginal intraepithelial neoplasia of grade 2 and/or 3
PeIN 2/3	Penile intraepithelial neoplasia of grade 2 and/or 3
95% CI	95% confidence interval
N	Number of cases tested
HPV Prev	HPV prevalence
ASR	Age-standardised rate
MSM	Men who have sex with men
Non MSM	Heterosexual men
SCC	Squamous cell carcinomas
STI	Sexually transmitted infections
HIV/AIDS	Human immunodeficiency virus/acquired immunodeficiency syndrome
TS	Type specific
EIA	Enzyme immunoassay
RLBM	Reverse line blotting method
RFLP	Restriction fragment length polymorphism
RHA	Reverse hybridisation assay
RLH	Reverse line hybridisation
LiPA	Line probe assay
SBH	Southern blot hybridisation
ISH	In situ hybridisation
MABA	Micro array-based assay
LBA	Line blot assay
HC2	Hybrid Capture 2
SAT	Suspension array technology
PCR	Polymerase chain reaction
SPF	Short primer fragment
q-PCR	Quantitative polymerase chain reaction
RLBH	Reverse line blot hybridisation
RT-PCR	Real-time polymerase chain reaction
DBH	Dot blot hybridisation
HR	High risk
DSA	Direct sequence analysis
MAA	Microchip array assay

Executive summary

Human papillomavirus (HPV) infection is now a well-established cause of cervical cancer and there is growing evidence of HPV being a relevant factor in other anogenital cancers (anus, vulva, vagina and penis) as well as head and neck cancers. HPV types 16 and 18 are responsible for about 70% of all cervical cancer cases worldwide. HPV vaccines that prevent HPV 16 and 18 infections are now available and have the potential to reduce the incidence of cervical and other anogenital cancers.

This report provides key information for the World on: cervical cancer; other anogenital cancers and head and neck cancers; HPV-related statistics; factors contributing to cervical cancer; cervical cancer screening practises; HPV vaccine introduction; and other relevant immunization indicators. The report is intended to strengthen the guidance for health policy implementation of primary and secondary cervical cancer prevention strategies in the region.

The World has a population of 2972.8 million women aged 15 years and older who are at risk of developing cervical cancer. Current estimates indicate that every year 604,127 women are diagnosed with cervical cancer and 341,831 die from the disease in 2020. Cervical cancer ranks* as the 4th most frequent cancer among women in the World.

* Ranking of cervical cancer incidence to other cancers among all women according to highest incidence rates (ranking 1st) excluding non-melanoma skin cancer. Ranking is based on crude incidence rates (actual number of cervical cancer cases). Ranking using age-standardized rate (ASR) may differ.

Table 2: Key statistics

Population	World	High income	Low and middle income	Upper middle income	Lower middle income	Low income
Women at risk for cervical cancer (Female population aged >=15 yrs) in millions	2,972.8	528.4	2,433.8	1,020.3	1,199.7	213.8
Burden of cervical cancer and other HPV-related cancers						
Annual number of new cervical cancer cases	604,127	71,624	532,239	247,840	236,828	47,571
Annual number of cervical cancer deaths	341,831	29,307	312,373	133,105	146,198	33,070
Standardized incidence rates per 100,000 population:						
Cervical cancer	13.3	8.40	14.8	12.8	16.9	23.8
Anal cancer						
Men	0.49	0.74	0.41	0.30	0.54	0.60
Women	0.58	1.24	0.38	0.35	0.41	0.46
Vulva cancer	0.85	1.56	0.60	0.56	0.62	0.88
Vaginal cancer	0.36	0.33	0.36	0.23	0.57	0.45
Penile cancer	0.80	0.66	0.83	0.65	1.15	0.64
Oropharyngeal cancer						
Men	1.79	3.28	1.36	0.97	2.07	0.58
Women	0.40	0.80	0.28	0.22	0.40	0.17
Oral cavity cancer						
Men	5.96	6.28	5.80	2.73	10.5	2.24
Women	2.28	2.51	2.19	1.30	3.61	1.44
Laryngeal cancer						
Men	3.59	3.70	3.55	3.20	4.25	1.99
Women	0.49	0.63	0.46	0.38	0.59	0.32
Burden of cervical HPV infection						
Prevalence (%) of HPV 16 and/or HPV 18 among women with:						
Normal cytology	3.9	-	-	-	-	-
Low-grade cervical lesions (LSIL/CIN-1)	25.8	-	-	-	-	-
High-grade cervical lesions (HSIL/ CIN-2 / CIN-3 / CIS)	51.9	-	-	-	-	-
Cervical cancer	69.4	-	-	-	-	-

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1 Introduction

Figure 1: World geographical regions

The HPV Information Centre aims to compile and centralize updated data and statistics on HPV and HPV-related cancers. This report aims to summarize the data available to fully evaluate the burden of disease in the World and to facilitate stakeholders and relevant bodies of decision makers to formulate recommendations on the prevention of cervical cancer and other HPV-related cancers. Data include relevant cancer statistic estimates, epidemiological determinants of cervical cancer such as demographics, socioeconomic factors, risk factors, burden of HPV infection in women and men, and cervical screening and immunization practices. The report is structured into the following sections:

Section 2, Demographic and socioeconomic factors. This section summarizes the sociodemographic profile of the World. For analytical purposes, the World is divided into five regions: Africa, the Americas, Asia, Europe and Oceania (Figure 1).

Section 3, Burden of HPV related cancers. This section describes the current burden of invasive cervical cancer and other HPV-related cancers in the World with estimates of prevalence, incidence and mortality rates. Information in other HPV-related cancers includes other anogenital cancers (anus, vulva, vagina, and penis) and head and neck cancers (oral cavity, oropharyngeal, and larynx).

Section 4, HPV related statistics. This section reports on prevalence of HPV and HPV type-specific distribution in the World, in women with normal cytology, precancerous lesions and invasive cervical cancer. In addition, the burden of HPV in other anogenital cancers (anus, vulva, vagina, and penis), head and neck cancers (oral cavity, oropharynx, and larynx) and men are presented.

Section 5, Factors contributing to cervical cancer. This section describes factors that can modify the natural history of HPV and cervical carcinogenesis such as smoking, parity, oral contraceptive use and co-infection with HIV.

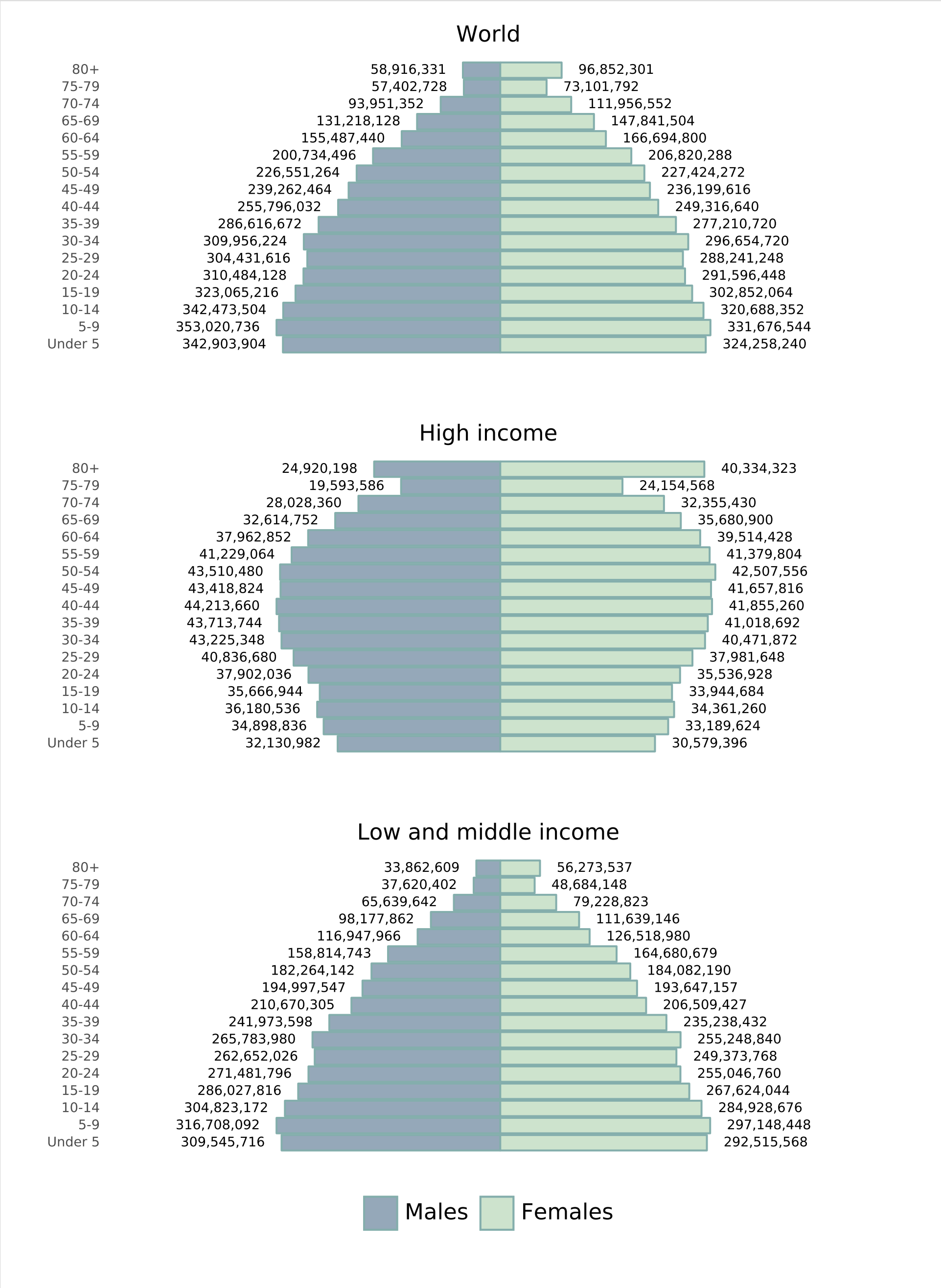
Section 6, Sexual behaviour and reproductive health indicators. This section presents sexual and reproductive behaviour indicators that may be used as proxy measures of risk for HPV infection and anogenital cancers, such as age at first sexual intercourse, average number of sexual partners, and anal intercourse among others.

Section 7, HPV preventive strategies. This section presents preventive strategies that include basic characteristics and performance of cervical cancer screening status, status of HPV vaccine licensure introduction, and recommendations for national immunization programmes.

Section 8, Protective factors for cervical cancer. This section presents the prevalence of male circumcision and condom use.

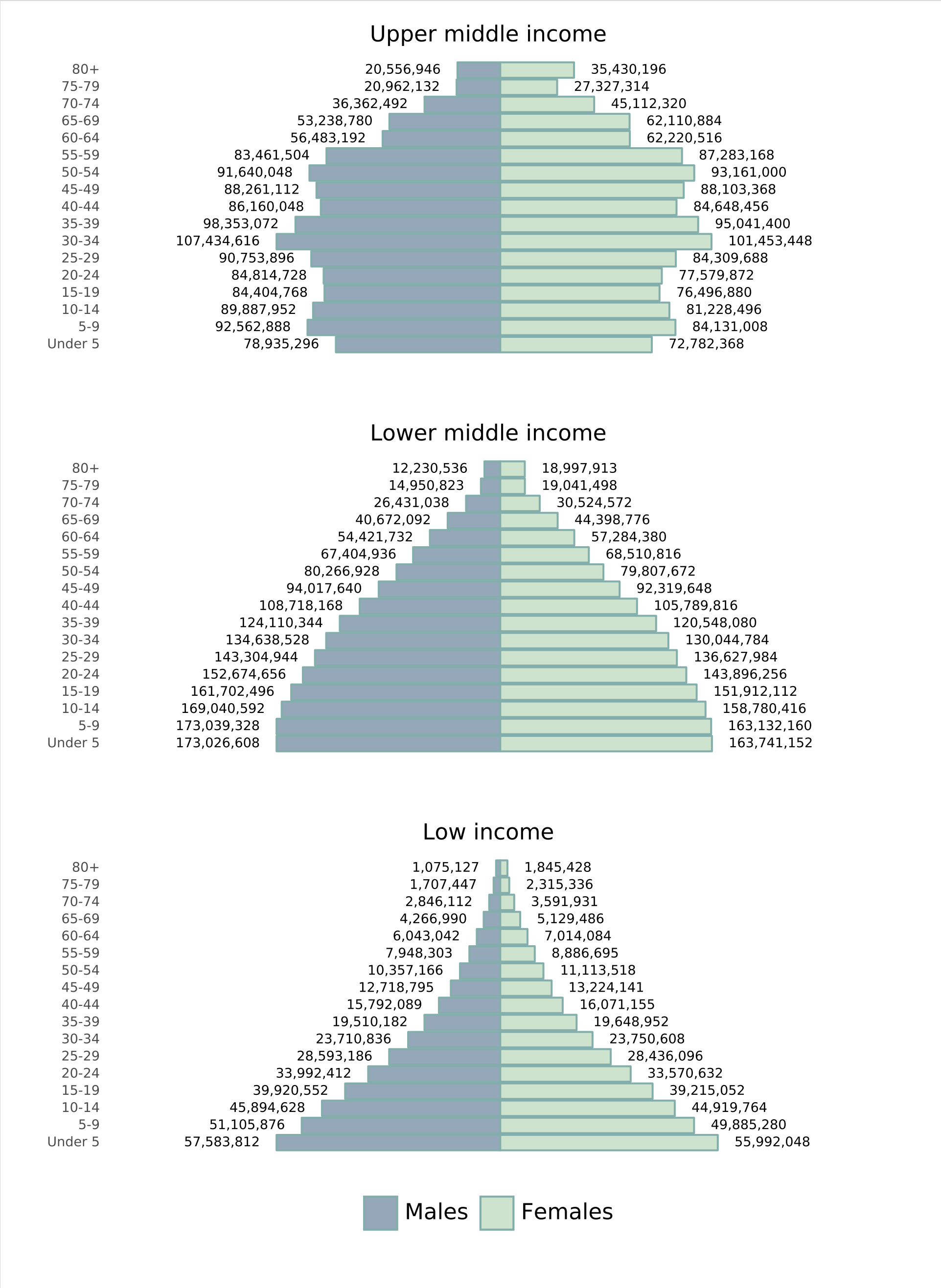
2 Demographic and socioeconomic factors

Figure 2: Population pyramid in the World for 2022



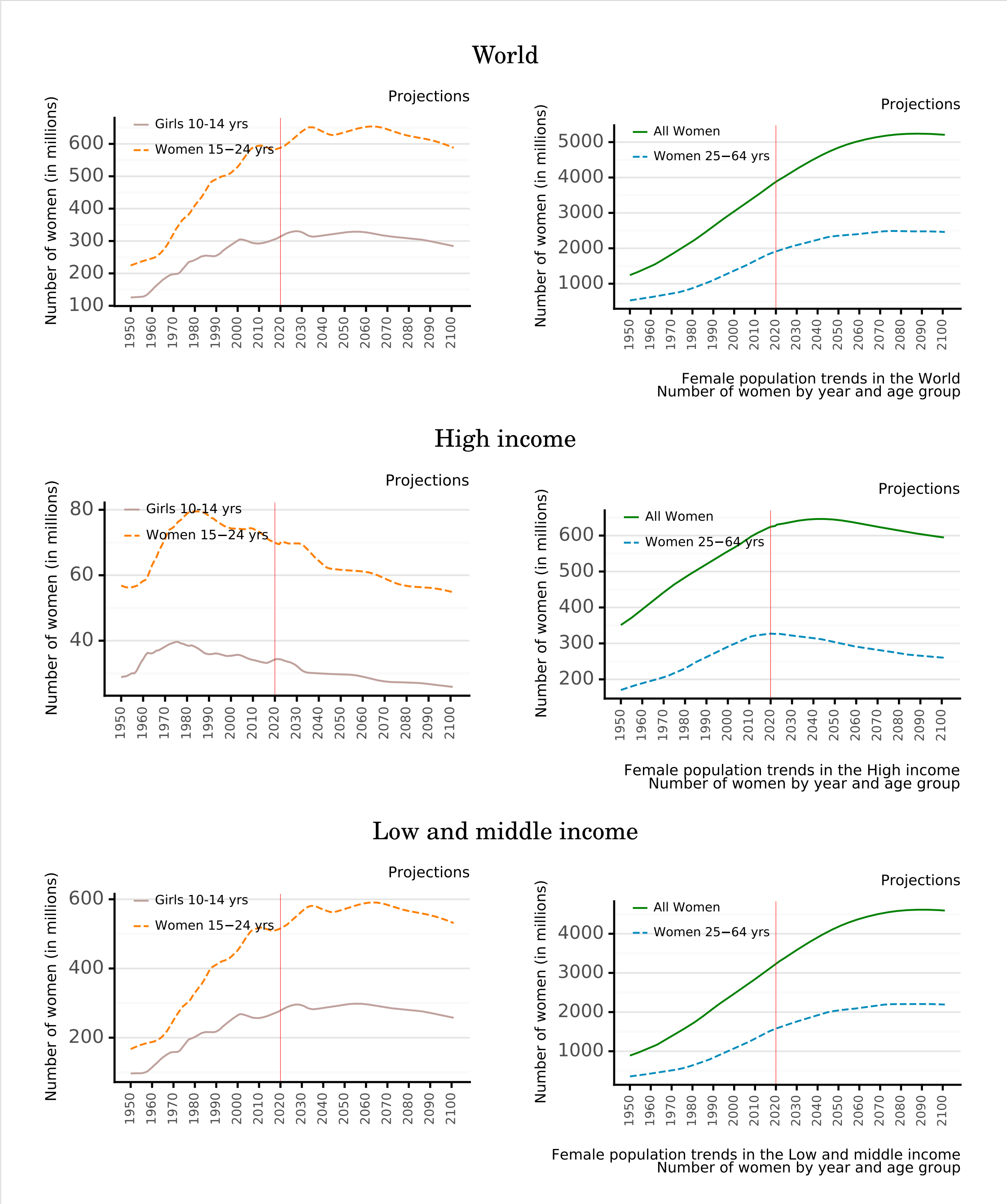
Data accessed on 30 Jul 2022
Please refer to original source for methods of estimation.
Year of estimate: 2022
<u>Data Sources</u>:
United Nations, Department of Economic and Social Affairs, Population Division (2022). World Population Prospects 2022, Online Edition. [Accessed on July 30, 2022].

Figure 3: Population pyramid in the World for 2022 (continued)



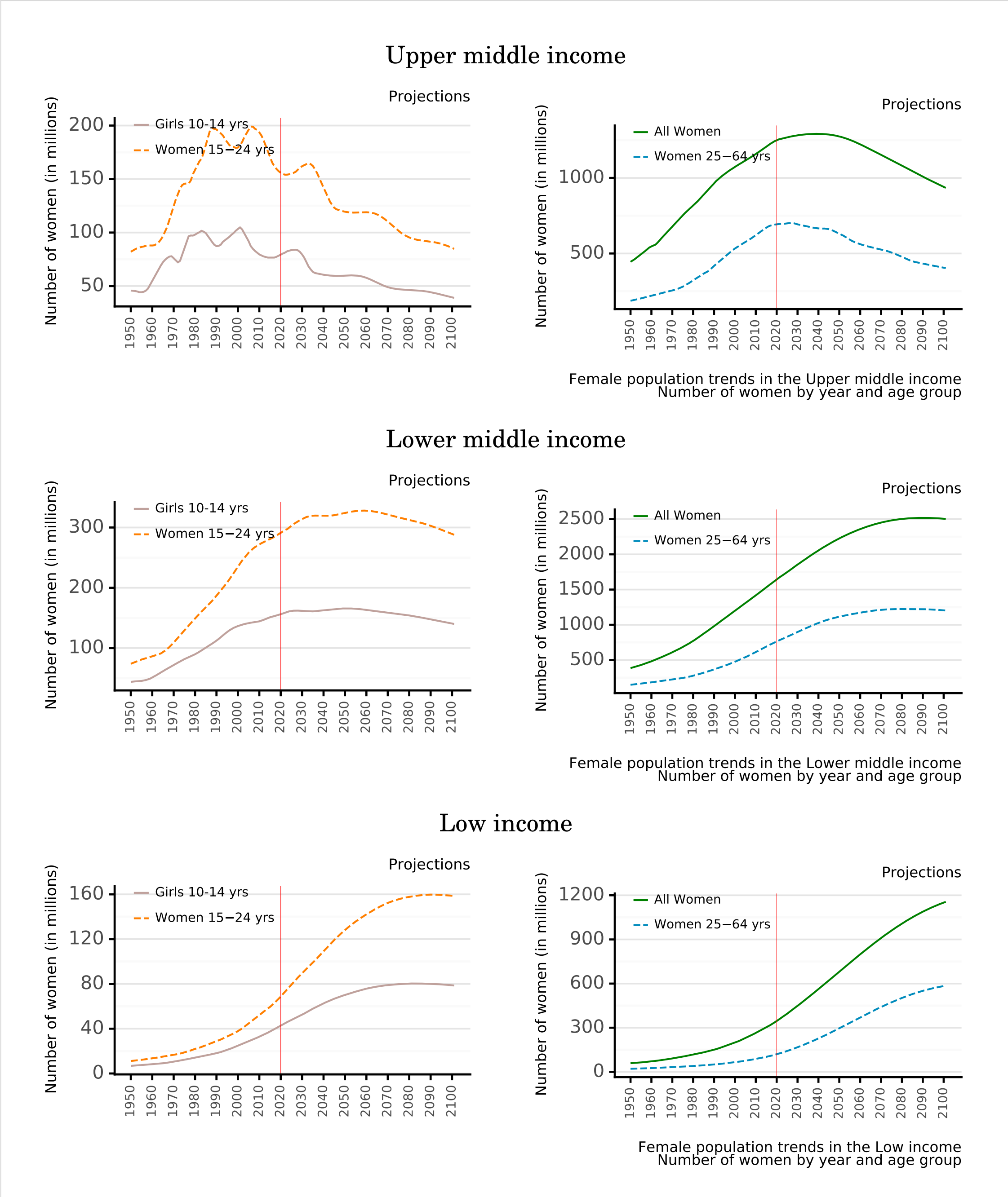
Data accessed on 30 Jul 2022
Please refer to original source for methods of estimation.
Year of estimate: 2022
Data Sources:
United Nations, Department of Economic and Social Affairs, Population Division (2022). World Population Prospects 2022, Online Edition. [Accessed on July 30, 2022].

Figure 4: Population trends in four selected age groups in the World



Data accessed on 30 Jul 2022
Please refer to original source for methods of estimation.
Year of estimate: 2022
Data Sources:
United Nations, Department of Economic and Social Affairs, Population Division (2022). World Population Prospects 2022, Online Edition. [Accessed on July 30, 2022].

Figure 4: Population trends in four selected age groups in the World (continued)



Data accessed on 30 Jul 2022
Please refer to original source for methods of estimation.
Year of estimate: 2022
Data Sources:
United Nations, Department of Economic and Social Affairs, Population Division (2022). World Population Prospects 2022, Online Edition. [Accessed on July 30, 2022].

Table 3: World population estimates (in millions), 2022

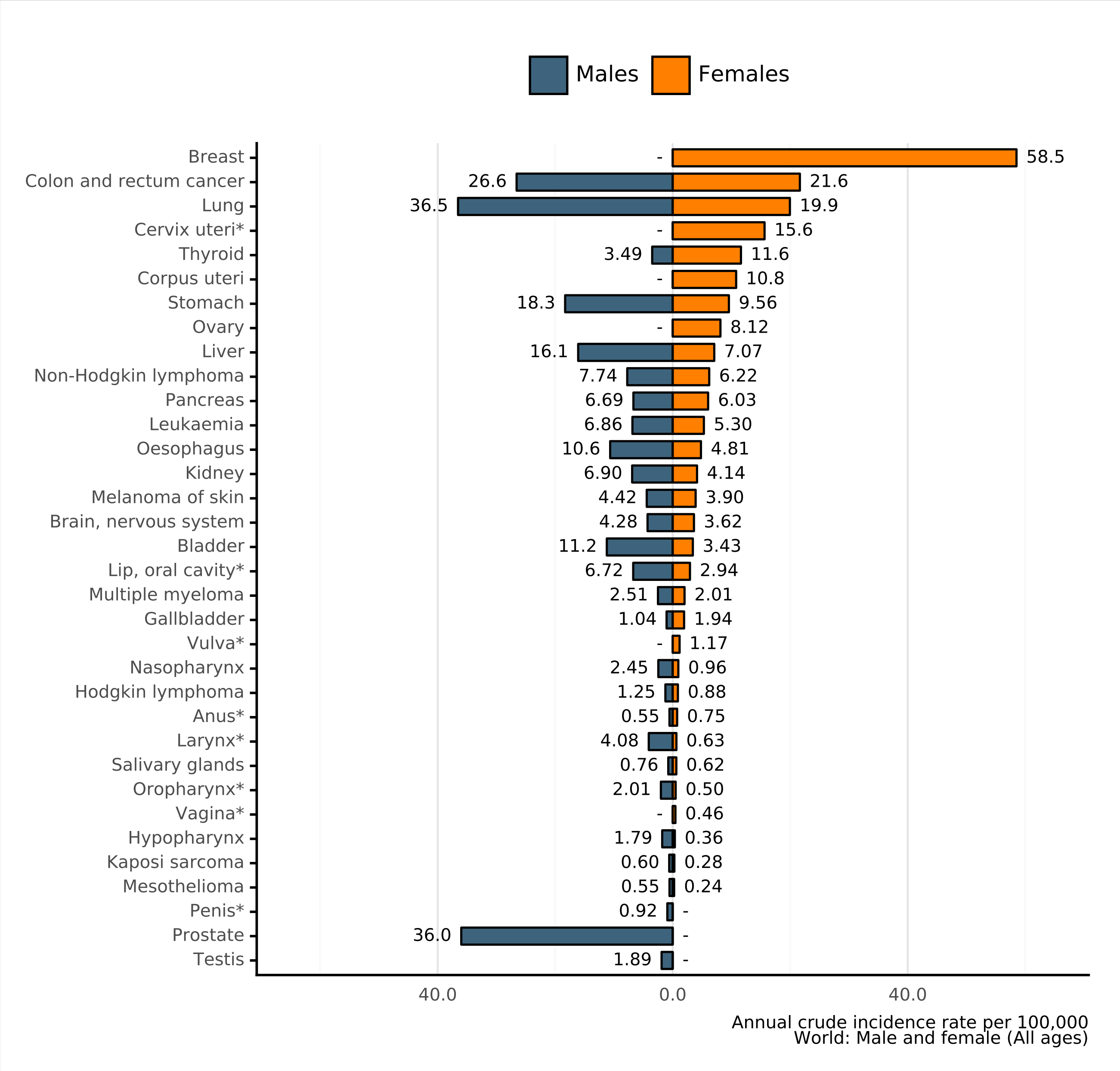
	Males			Females		
Region Country	**10-14 years**	**15+ years**	**Total**	**10-14 years**	**15+ years**	**Total**
World	342.47	2953.87	3992.27	320.69	2972.76	3949.39
High income	36.18	516.84	620.05	34.36	528.39	626.52
Low and middle income	304.82	2426.91	3357.99	284.93	2433.8	3308.39
Upper middle income	89.89	1002.89	1264.27	81.23	1020.28	1258.42
Lower middle income	169.04	1215.54	1730.65	158.78	1199.7	1685.36
Low income	45.89	208.48	363.07	44.92	213.81	364.61
Africa	85.56	416.83	704.08	83.65	425.68	705.98
Eastern Africa	29.71	133.57	231.58	29.3	139.42	235.48
Middle Africa	12.35	51.92	96.04	12.29	53.4	97.08
Northern Africa	13.11	87.13	130.07	12.55	86.65	127.79
Southern Africa	3.29	23.09	33.28	3.19	25.15	35.02
Western Africa	27.11	121.11	213.12	26.32	121.07	210.63
Americas	38.96	397.48	510.32	37.38	415.36	523.65
Caribbean	1.77	16.64	21.89	1.71	17.31	22.38
Central America	8.09	63.79	87.36	7.83	68.11	90.92
Northern America	12.13	151.89	186.23	11.56	156.9	189.68
South America	16.98	165.16	214.84	16.29	173.04	220.67
Asia	195.2	1823.42	2396.07	178.08	1786.49	2312.3
Central Asia	3.69	25.5	37.82	3.5	27.04	38.65
Eastern Asia	52.56	695.2	844.27	45.44	688.56	819.21
South-Eastern Asia	28.94	253.44	339.78	27.2	257.61	338.61
Southern Asia	95.86	740.28	1021.95	88.53	714.94	976.51
Western Asia	14.15	109.01	152.24	13.42	98.33	139.32
Europe	21.01	299.0	359.36	19.93	327.91	385.14
Eastern Europe	8.45	111.87	136.69	8.03	130.41	153.93
Northern Europe	3.32	43.13	52.6	3.16	44.79	53.77
Southern Europe	3.96	63.52	74.15	3.73	67.79	77.82
Western Europe	5.27	80.47	95.91	5.01	84.92	99.61
Oceania	1.75	17.14	22.45	1.64	17.33	22.32
Australia & New Zealand	1.0	12.55	15.49	0.95	12.93	15.72
Melanesia	0.69	4.15	6.32	0.63	3.96	5.98
Micronesia	0.03	0.19	0.27	0.03	0.19	0.27
Polynesia	0.04	0.23	0.34	0.03	0.23	0.33

Data accessed on 30 Jul 2022
Please refer to original source for methods of estimation.
Year of estimate: 2022
Data Sources:
United Nations, Department of Economic and Social Affairs, Population Division (2022). World Population Prospects 2022, Online Edition. [Accessed on July 30, 2022].

3 Burden of HPV related cancers

3.1 HPV related cancers incidence

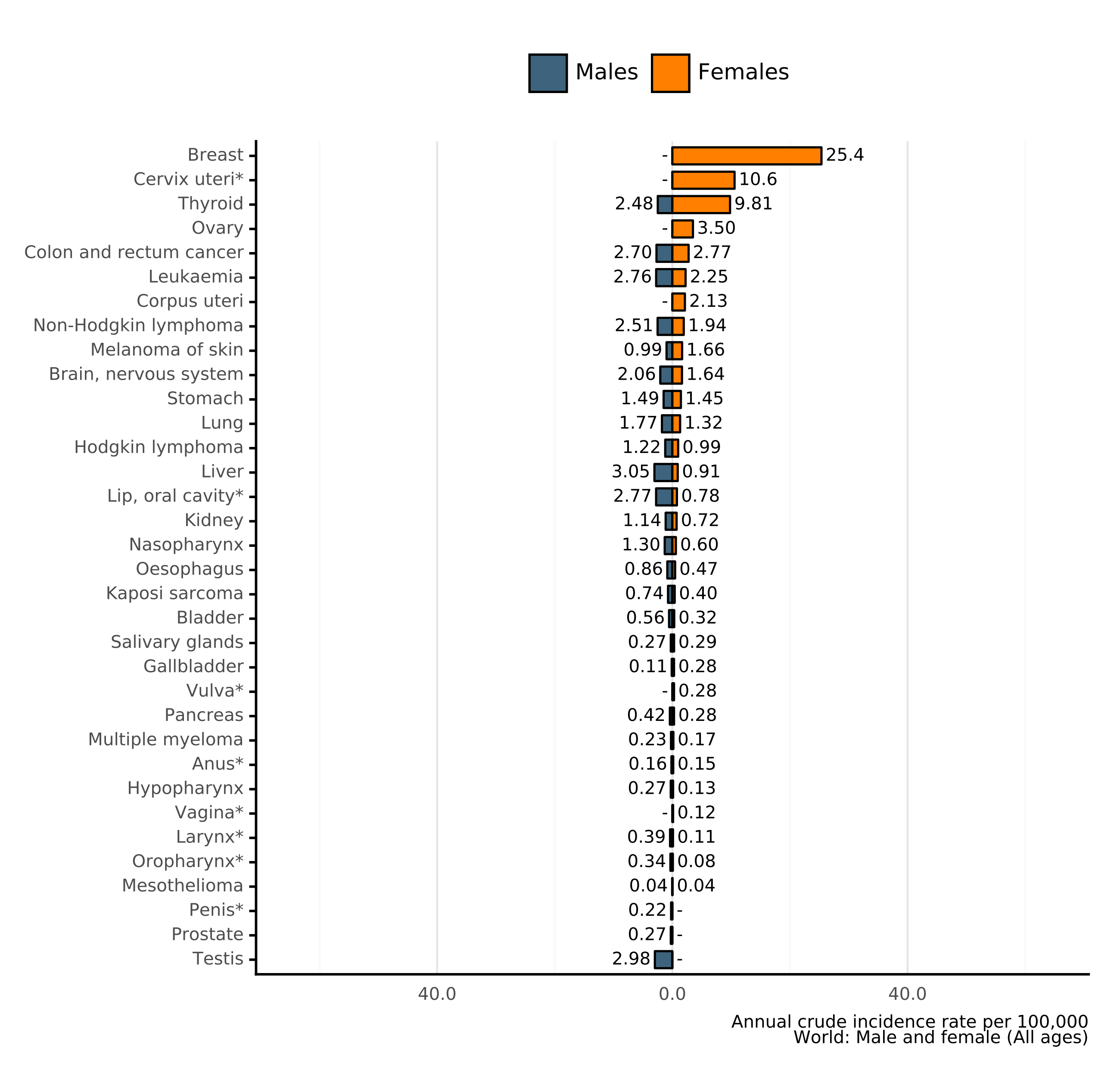
Figure 5: Comparison of HPV related cancers incidence to other cancers in men and women of all ages in the World (estimates for 2020)



Data accessed on 27 Jan 2021

For more detailed methods of estimation please refer to http://gco.iarc.fr/today/data-sources-methods
Non-melanoma skin cancer is not included
Rates per 100,000 men per year.
Rates per 100,000 women per year.
Data Sources:
Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2020). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [27 January 2021].

Figure 6: Comparison of HPV related cancers incidence to other cancers among men and women 15-44 years of age in the World (estimates for 2020)



Data accessed on 27 Jan 2021

For more detailed methods of estimation please refer to http://gco.iarc.fr/today/data-sources-methods

Non-melanoma skin cancer is not included

Rates per 100,000 men per year.

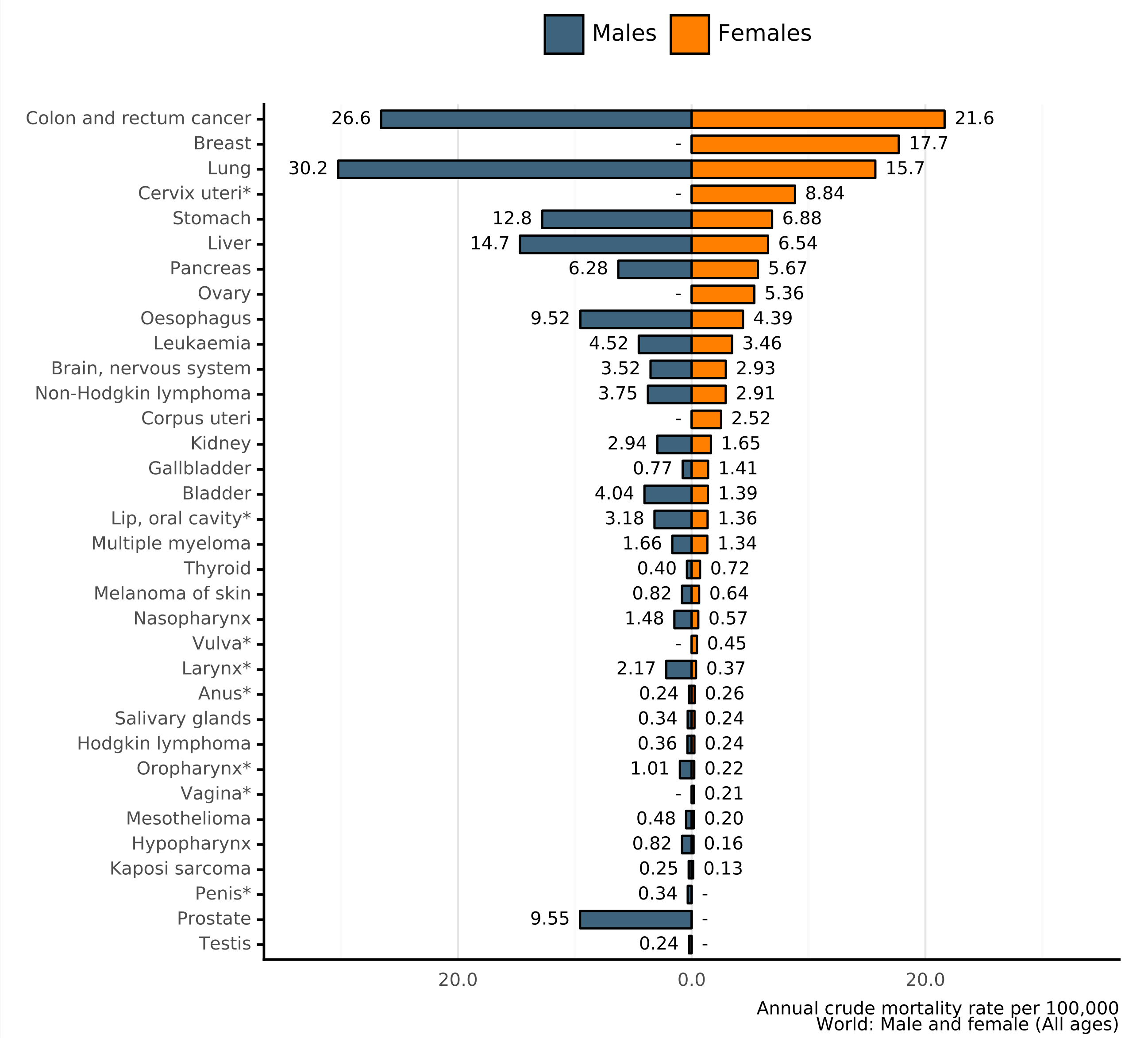
Rates per 100,000 women per year.

Data Sources:

Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2020). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [27 January 2021].

3.2 HPV related cancers mortality

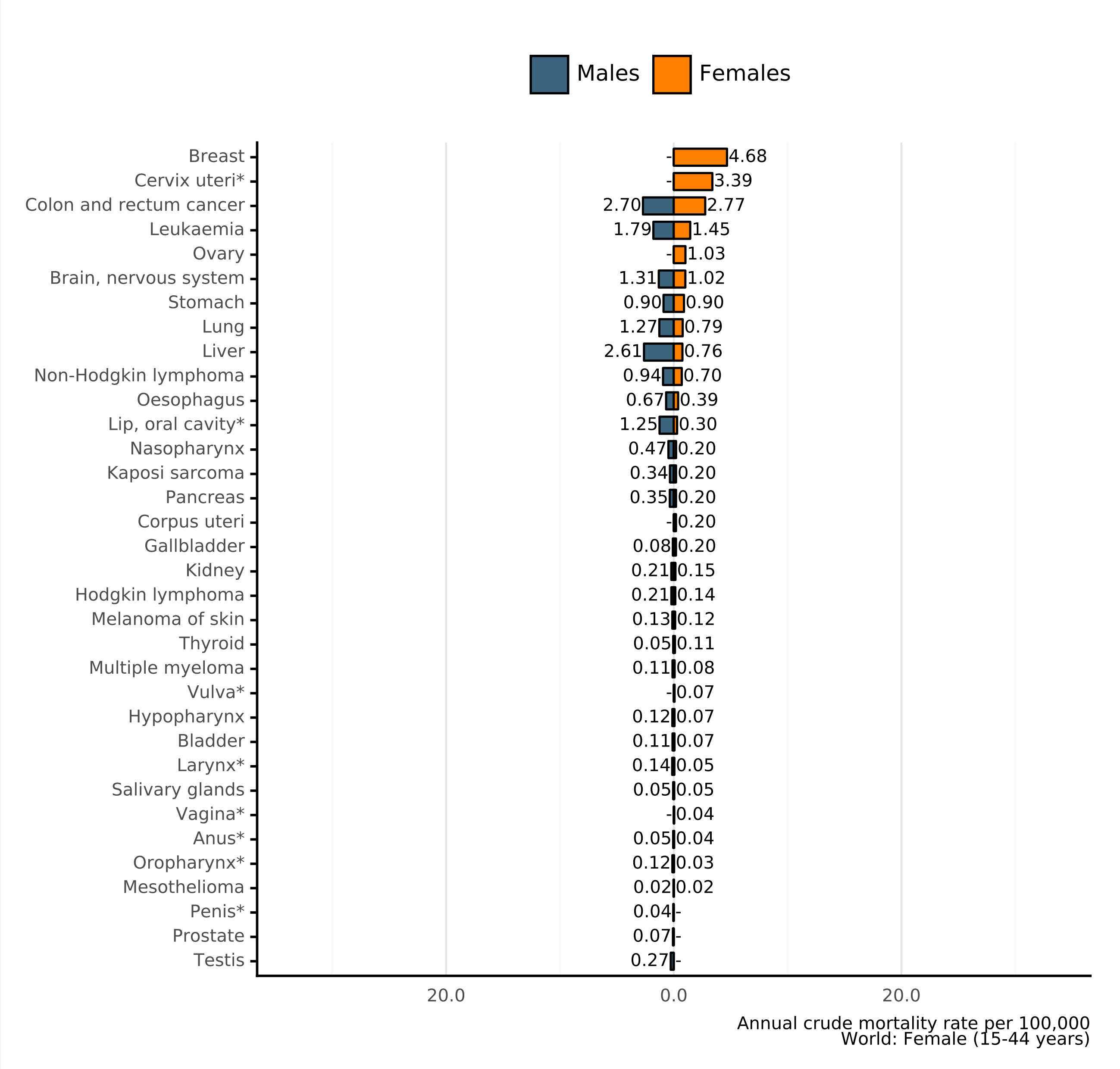
Figure 7: Comparison of HPV related cancers mortality to other cancers in men and women of all ages in the World (estimates for 2020)



Data accessed on 27 Jan 2021

For more detailed methods of estimation please refer to http://gco.iarc.fr/today/data-sources-methods
Non-melanoma skin cancer is not included
Rates per 100,000 men per year.
Rates per 100,000 women per year.
Data Sources:
Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2020). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [27 January 2021].

Figure 8: Comparison of HPV related cancers mortality to other cancers among men and women 15-44 years of age in the World (estimates for 2020)



Data accessed on 27 Jan 2021

For more detailed methods of estimation please refer to http://gco.iarc.fr/today/data-sources-methods
Non-melanoma skin cancer is not included
Rates per 100,000 men per year.
Rates per 100,000 women per year.
Data Sources:
Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2020). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [27 January 2021].

3.3 Cervical cancer

Cancer of the cervix uteri is the 4^{th} most common cancer among women worldwide, with an estimated 604,127 new cases and 341,831 deaths in 2020. Worldwide, mortality rates of cervical cancer are substantially lower than incidence with a ratio of mortality to incidence to 57% (GLOBOCAN 2020). The majority of cases are squamous cell carcinoma followed by adenocarcinomas. *(Vaccine 2006, Vol. 24, Suppl 3; Vaccine 2008, Vol. 26, Suppl 10; Vaccine 2012, Vol. 30, Suppl 5; IARC Monographs 2007, Vol. 90)*

This section describes the current burden of invasive cervical cancer in the World and in comparison to geographic region, including estimates of the annual number of new cases, deaths, incidence, and mortality rates.

3.3.1 Cervical cancer incidence

Key Stats.

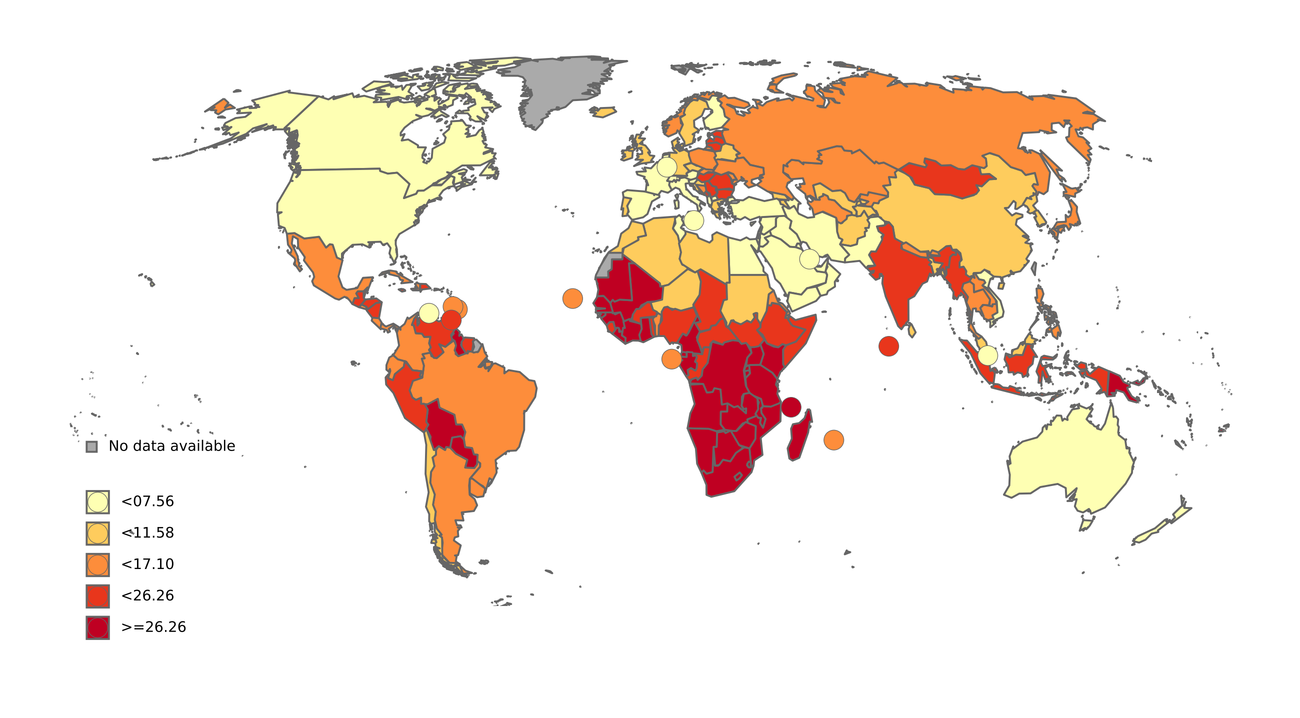
About **604,127 new cervical cancer cases** are diagnosed **annually** in the **World** (estimations for 2020).

Cervical cancer **ranks* as the 4th leading cause** of female cancer in the **World**.

Cervical cancer is the **2nd most common** female cancer in **women aged 15 to 44 years in the World**.

* Ranking of cervical cancer incidence to other cancers among all women according to highest incidence rates (ranking 1st) excluding non-melanoma skin cancer. Ranking is based on crude incidence rates (actual number of cervical cancer cases). Ranking using age-standardized rate (ASR) may differ.

Figure 9: Age-standardised incidence rates of cervical cancer in the World (estimates for 2020)



Data accessed on 27 Jan 2021

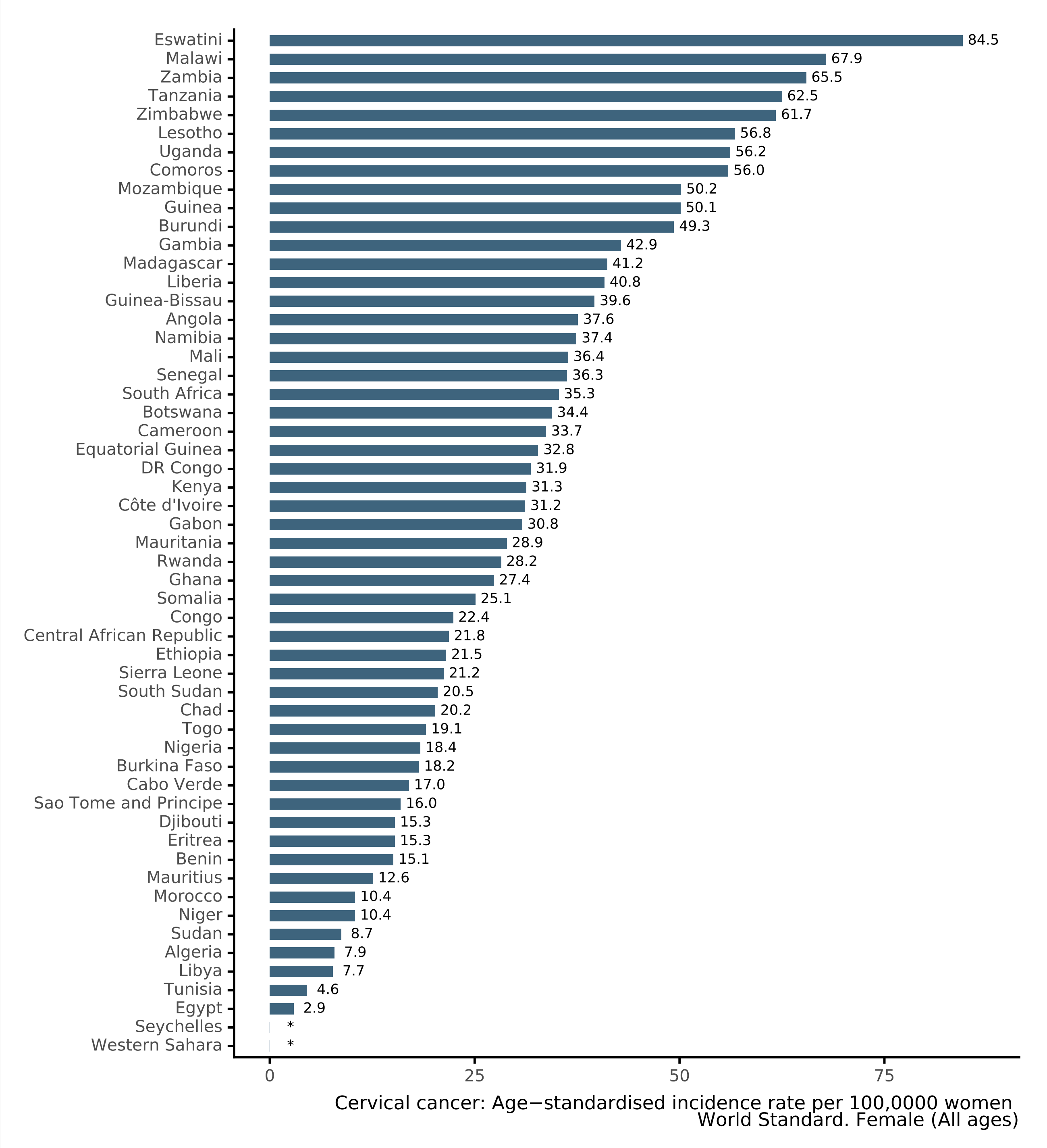
For more detailed methods of estimation please refer to http://gco.iarc.fr/today/data-sources-methods

[a] Rates per 100,000 women per year.

Data Sources:

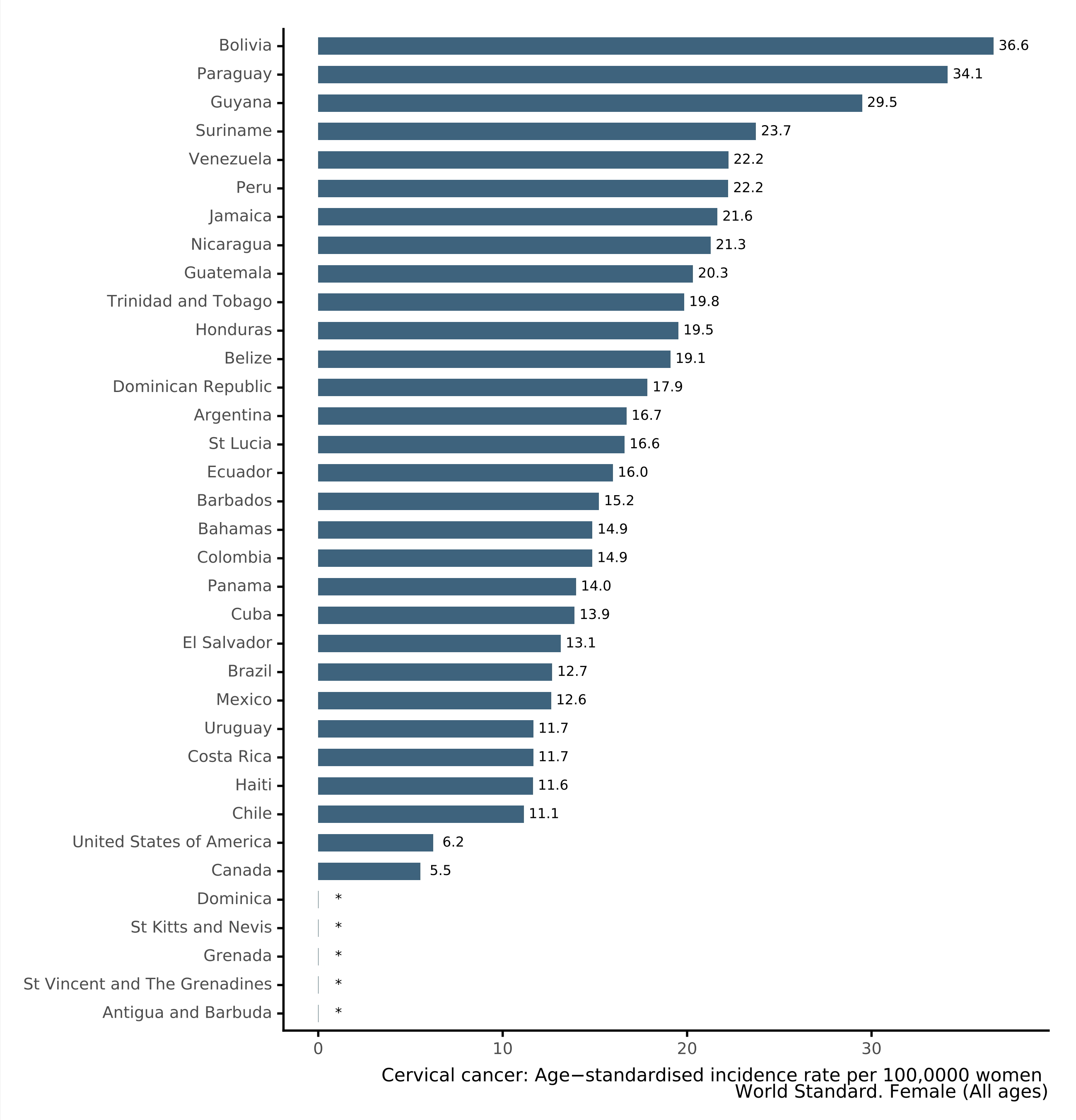
Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2020). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [27 January 2021].

Figure 10: Age-standardised incidence rate of cervical cancer cases attributable to HPV by country in **Africa** (estimates for 2020)



Data accessed on 27 Jan 2021
For more detailed methods of estimation please refer to http://gco.iarc.fr/today/data-sources-methods
[a] Rates per 100,000 women per year.
* No rates are available
Data Sources:
Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2020). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [27 January 2021].

Figure 11: Age-standardised incidence rate of cervical cancer cases attributable to HPV by country in the **Americas** (estimates for 2020)



Data accessed on 27 Jan 2021

For more detailed methods of estimation please refer to http://gco.iarc.fr/today/data-sources-methods

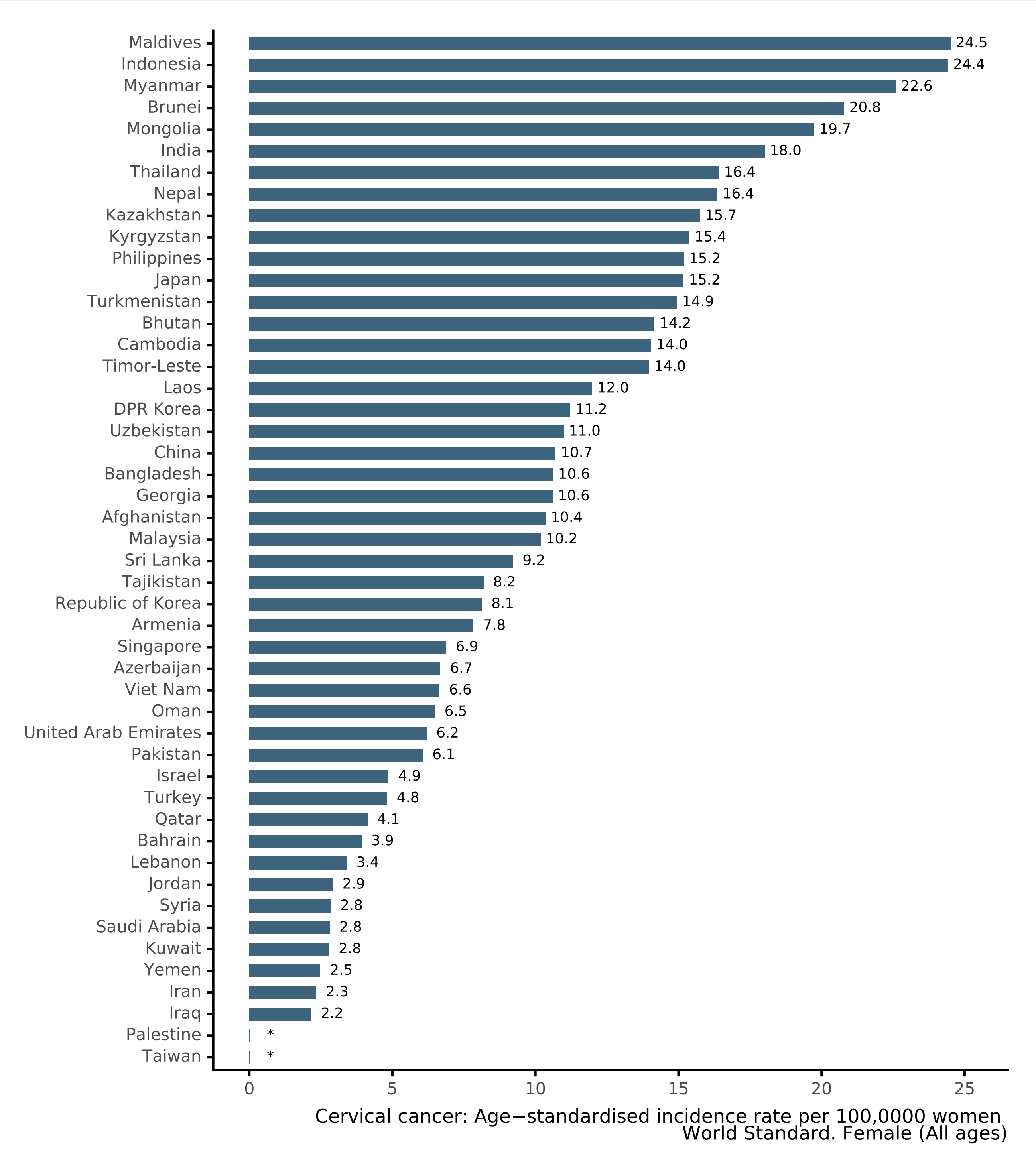
[a] Rates per 100,000 women per year.

* No rates are available

Data Sources:

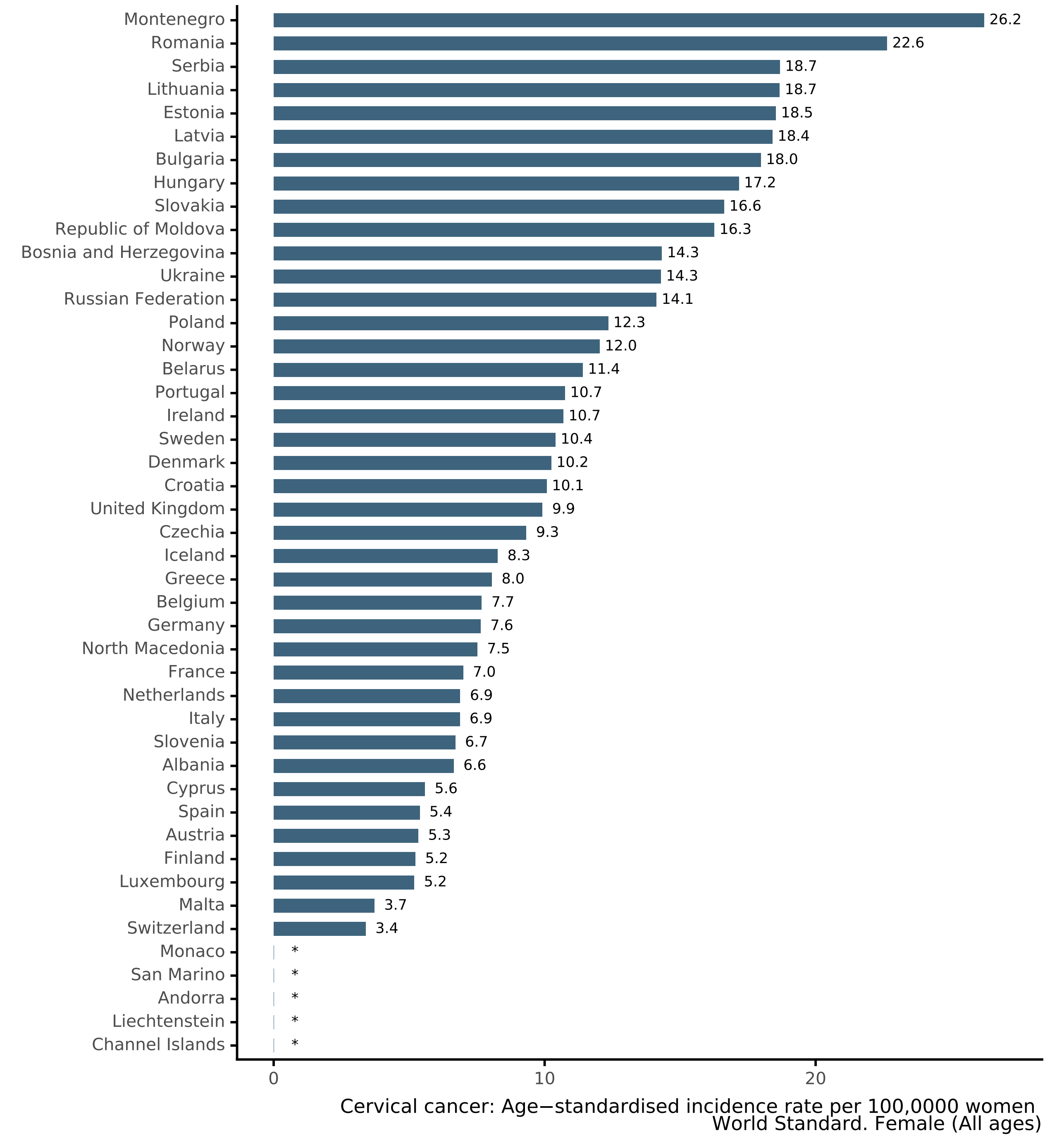
Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2020). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [27 January 2021].

Figure 12: Age-standardised incidence rate of cervical cancer cases attributable to HPV by country in **Asia** (estimates for 2020)



Data accessed on 27 Jan 2021
For more detailed methods of estimation please refer to http://gco.iarc.fr/today/data-sources-methods
[a] Rates per 100,000 women per year.
* No rates are available
Data Sources:
Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2020). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [27 January 2021].

Figure 13: Age-standardised incidence rate of cervical cancer cases attributable to HPV by country in **Europe** (estimates for 2020)



Data accessed on 27 Jan 2021

For more detailed methods of estimation please refer to http://gco.iarc.fr/today/data-sources-methods

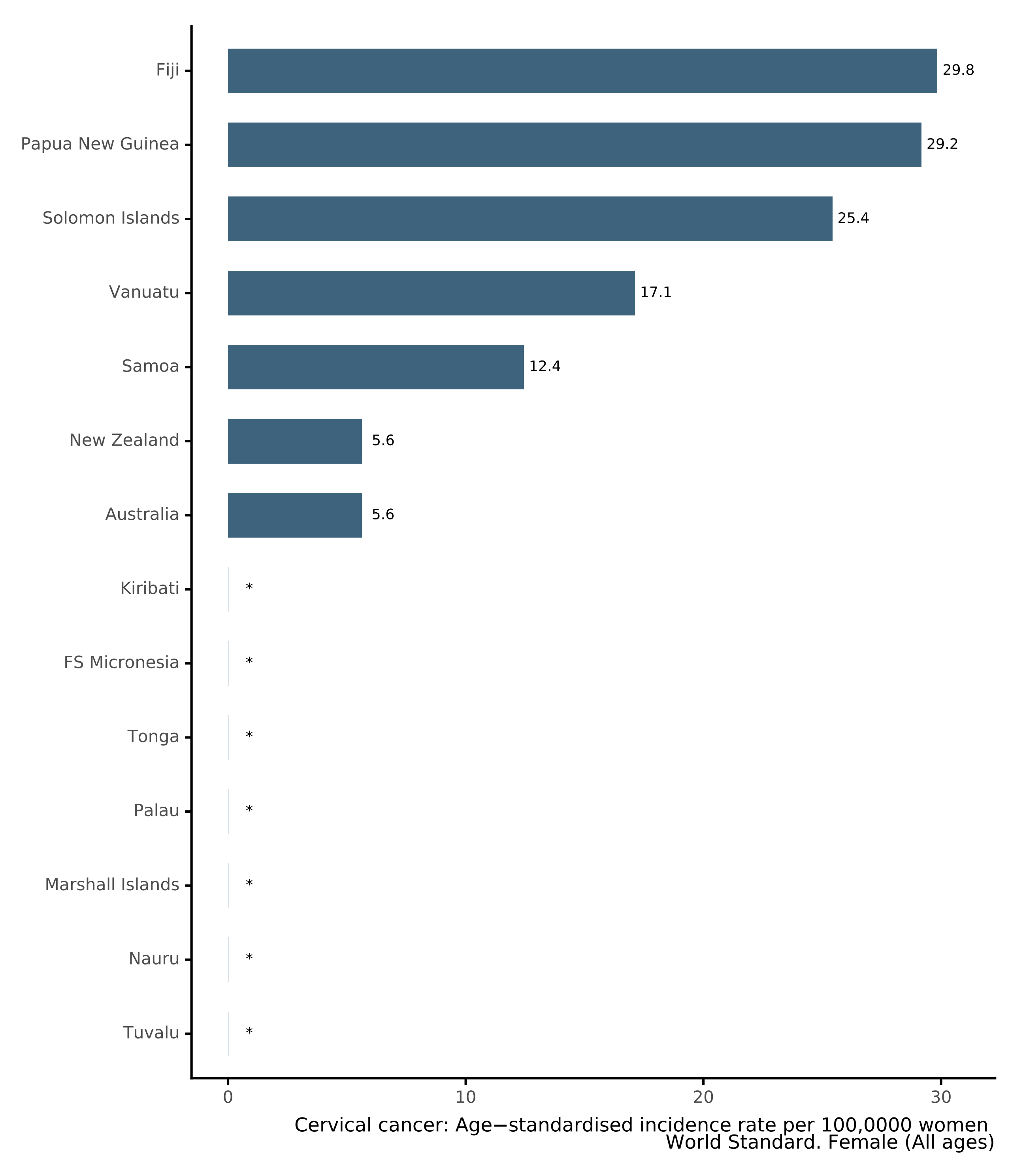
[a] Rates per 100,000 women per year.

* No rates are available

Data Sources:

Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2020). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [27 January 2021].

Figure 14: Age-standardised incidence rate of cervical cancer cases attributable to HPV by country in **Oceania** (estimates for 2020)



Data accessed on 27 Jan 2021
For more detailed methods of estimation please refer to http://gco.iarc.fr/today/data-sources-methods
[a] Rates per 100,000 women per year.
* No rates are available
Data Sources:
Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2020). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [27 January 2021].

Table 4: Incidence of cervical cancer by World region and sub regions (estimates for 2020)

Area	N Cases	Uncertainty intervals of new cancer cases [95% UI]	Crude rate[b]	ASR[b]	Cumulative risk (%) ages 0-74 years[a]	Ranking	
						All women	Women 15-44 years
World	604,127	[582,030.8-627,062.1]	15.6	13.3	1.39	4	2
High income	71,624	[69,708.5-73,592.1]	11.6	8.40	0.80	14	3
Low and middle income	532,239	[240,358.8-255,554.1]	16.4	14.8	1.57	2	2
Upper middle income	247,840	[240,358.8-255,554.1]	17.1	12.8	1.31	5	3
Lower middle income	236,828	[224,446-249,893]	15.9	16.9	1.87	2	2
Low income	47,571	[42,451.1-53,308.4]	15.8	23.8	2.59	2	2
Africa	117,316	[105,998.6-129,841.8]	17.5	25.6	2.82	2	2
Eastern Africa	54,560	[48,276.6-61,661.3]	24.3	40.1	4.46	1	1
Middle Africa	15,646	[13,437.4-18,217.6]	17.4	31.6	3.56	2	2
Northern Africa	6,971	[6,061.2-8,017.3]	5.69	6.25	0.72	4	5
Southern Africa	12,333	[11,952-12,726.2]	36.0	36.4	3.70	2	1
Western Africa	27,806	[23,307.1-33,173.3]	13.9	22.9	2.48	2	2
Americas	74,410	[56,232-62,828.9]	14.3	11.3	1.13	6	3
Caribbean	3,857	[3,427-4,341]	17.5	13.7	1.37	5	2
Central America	13,848	[13,283.5-14,436.5]	15.1	13.8	1.39	2	2
Northern America	14,971	[14,703.2-15,243.7]	8.04	6.15	0.59	14	4
South America	41,734	[38,925.2-44,745.5]	19.1	15.4	1.59	3	3
Asia	351,720	[339,675-364,192.1]	15.5	12.7	1.35	4	3
Central Asia	4,945	[1,677-1,882.9]	13.2	12.7	1.32	2	2
Eastern Asia	129,567	[126,381.1-132,833.1]	15.8	10.8	1.08	7	3
South-Eastern Asia	68,623	[64,656.6-72,832.8]	20.5	17.8	1.91	2	2
Southern Asia	143,183	[883-1,630.8]	15.2	15.4	1.72	2	2
Western Asia	5,402	[4,559-6,400.8]	4.07	4.14	0.45	12	6
Europe	58,169	[56,344.7-60,052.4]	15.0	10.7	1.03	9	3
Eastern Europe	32,348	[31,583.5-33,131]	20.8	14.5	1.42	5	2
Northern Europe	6,666	[6,414.5-6,927.3]	12.4	10.4	0.90	12	2
Southern Europe	9,053	[8,181.3-10,017.5]	11.5	7.72	0.76	14	4
Western Europe	10,102	[9,650.9-10,574.2]	10.1	7.03	0.67	14	4
Oceania	2,512	[2,299.4-2,744.2]	11.8	10.1	0.94	8	3
Australia & New Zealand	1,094	[1,021.2-1,172]	7.17	5.63	0.52	13	5
Melanesia	1,330	[975.5-1,813.4]	24.4	28.3	2.64	2	2
Micronesia	53	[33.3-84.4]	19.5	18.7	1.97	3	2
Polynesia	35	[20.2-60.7]	10.4	9.70	1.06	6	3

Data accessed on 27 Jan 2021

For more detailed methods of estimation please refer to http://gco.iarc.fr/today/data-sources-methods

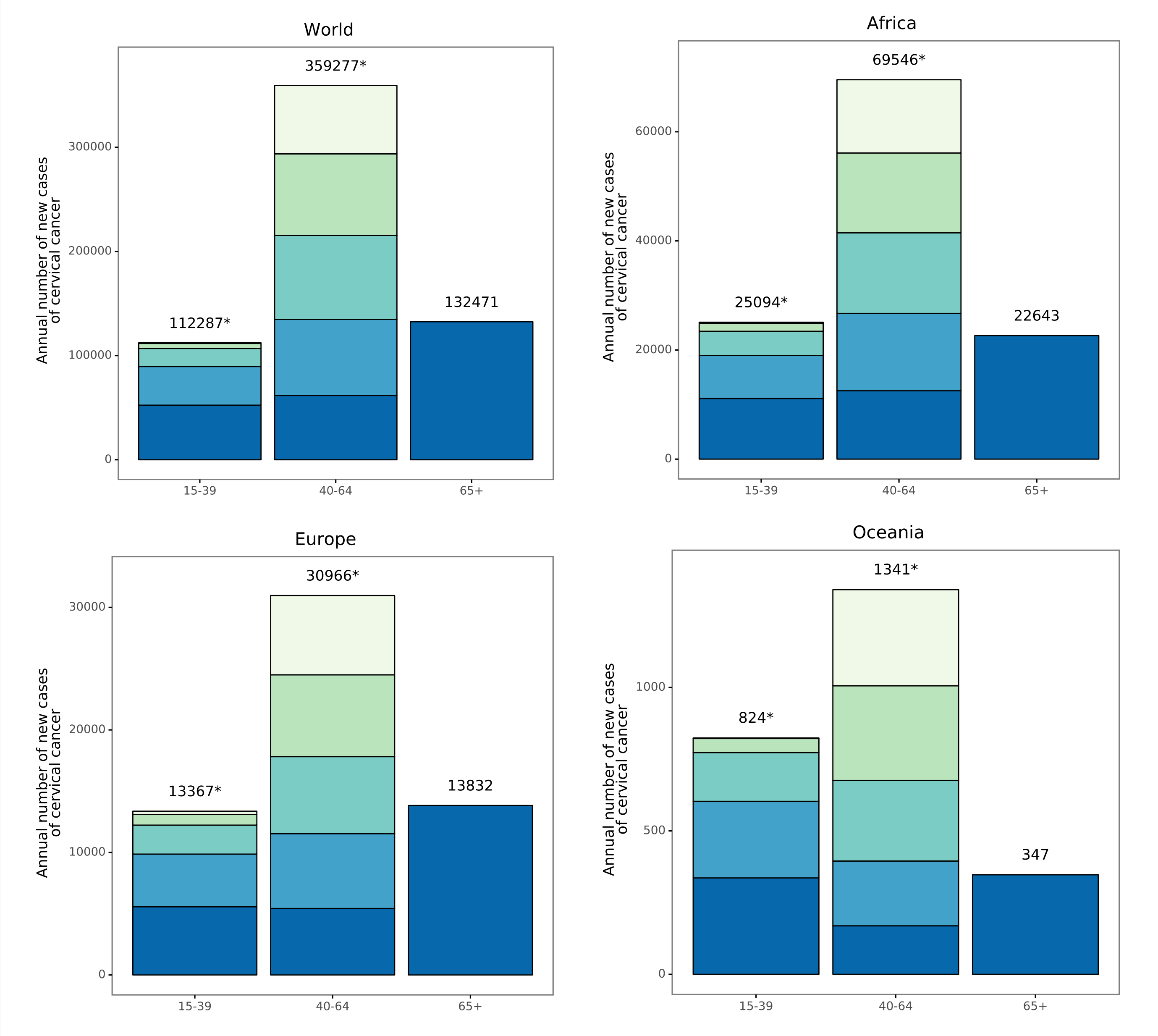
[a] Cumulative risk (incidence) is the probability or risk of individuals getting from the disease during ages 0-74 years. For cancer, it is expressed as the % of new born children who would be expected to develop from a particular cancer before the age of 75 if they had the rates of cancer observed in the period in the absence of competing causes.

[b] Rates per 100,000 women per year.

Data Sources:

Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2020). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [27 January 2021].

Figure 15: Annual number of new cases of cervical cancer in the World and its regions (estimates for 2020)



Data accessed on 27 Jan 2021

For more detailed methods of estimation please refer to http://gco.iarc.fr/today/data-sources-methods

* World: 15-19 yrs: 616 cases. 20-24 yrs: 4819 cases. 25-29 yrs: 17357 cases. 30-34 yrs: 37106 cases. 35-39 yrs: 52389 cases. 40-44 yrs: 65657 cases. 45-49 yrs: 78299 cases. 50-54 yrs: 80544 cases. 55-59 yrs: 73053 cases. 60-64 yrs: 61724 cases.

* Africa: 15-19 yrs: 180 cases. 20-24 yrs: 1483 cases. 25-29 yrs: 4444 cases. 30-34 yrs: 7873 cases. 35-39 yrs: 11114 cases. 40-44 yrs: 13428 cases. 45-49 yrs: 14640 cases. 50-54 yrs: 14771 cases. 55-59 yrs: 14178 cases. 60-64 yrs: 12529 cases.

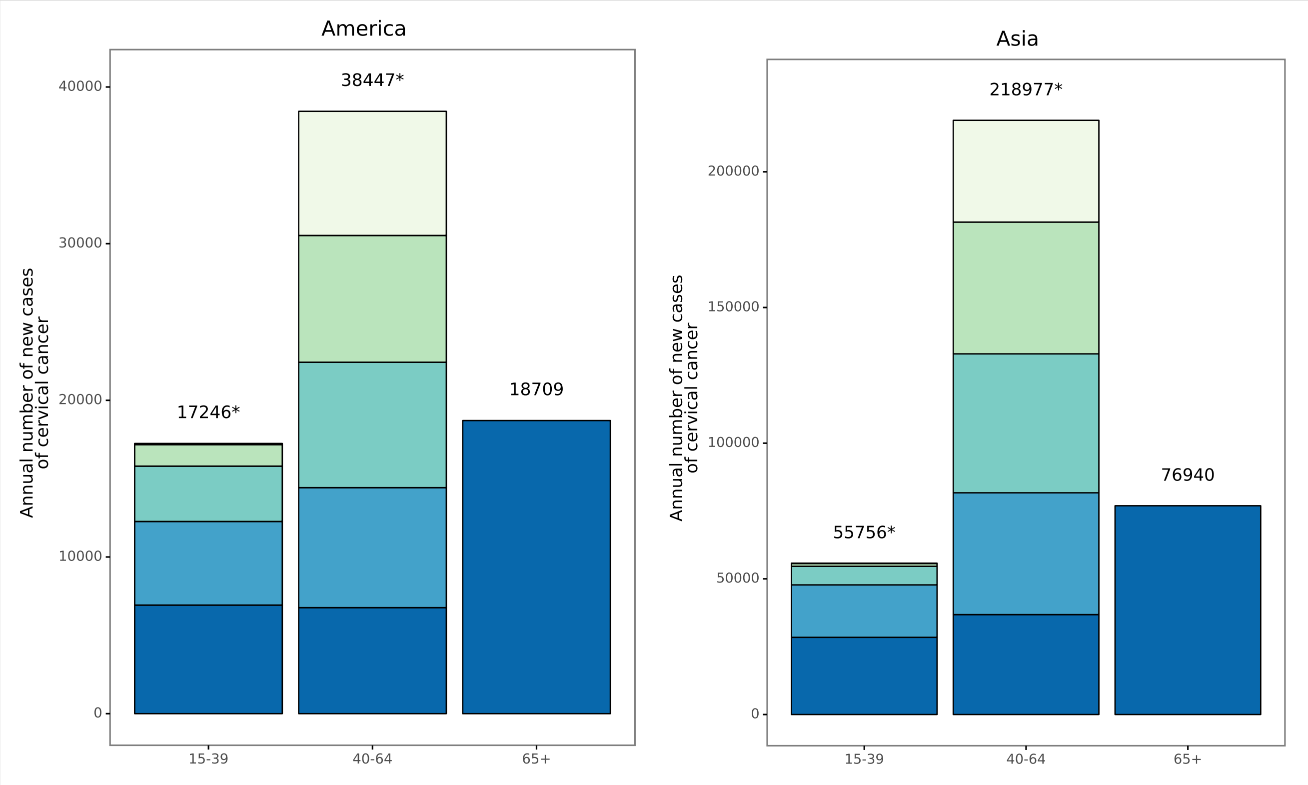
* Europe: 15-19 yrs: 265 cases. 20-24 yrs: 873 cases. 25-29 yrs: 2365 cases. 30-34 yrs: 4295 cases. 35-39 yrs: 5569 cases. 40-44 yrs: 6469 cases. 45-49 yrs: 6677 cases. 50-54 yrs: 6287 cases. 55-59 yrs: 6105 cases. 60-64 yrs: 5428 cases.

* Oceania: 15-19 yrs: 2 cases. 20-24 yrs: 49 cases. 25-29 yrs: 170 cases. 30-34 yrs: 267 cases. 35-39 yrs: 336 cases. 40-44 yrs: 335 cases. 45-49 yrs: 330 cases. 50-54 yrs: 281 cases. 55-59 yrs: 226 cases. 60-64 yrs: 169 cases.

Data Sources:

Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2020). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [27 January 2021].

Figure 15: Annual number of new cases of cervical cancer in the World and its regions (estimates for 2020) (Continued)



Data accessed on 27 Jan 2021

For more detailed methods of estimation please refer to http://gco.iarc.fr/today/data-sources-methods

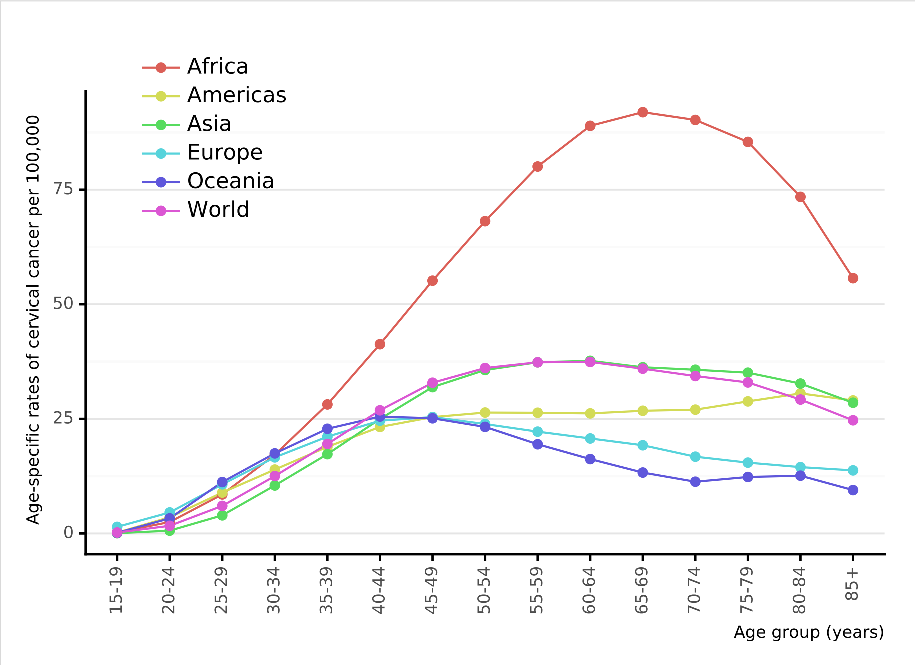
* America: 15-19 yrs: 73 cases. 20-24 yrs: 1374 cases. 25-29 yrs: 3532 cases. 30-34 yrs: 5337 cases. 35-39 yrs: 6930 cases. 40-44 yrs: 7924 cases. 45-49 yrs: 8092 cases. 50-54 yrs: 8004 cases. 55-59 yrs: 7659 cases. 60-64 yrs: 6768 cases.

* Asia: 15-19 yrs: 96 cases. 20-24 yrs: 1040 cases. 25-29 yrs: 6846 cases. 30-34 yrs: 19334 cases. 35-39 yrs: 28440 cases. 40-44 yrs: 37501 cases. 45-49 yrs: 48560 cases. 50-54 yrs: 51201 cases. 55-59 yrs: 44885 cases. 60-64 yrs: 36830 cases.

Data Sources:

Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2020). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [27 January 2021].

Figure 16: Age-specific incidence rates of cervical cancer in the World and continents (estimates for 2020)



Data accessed on 27 Jan 2021

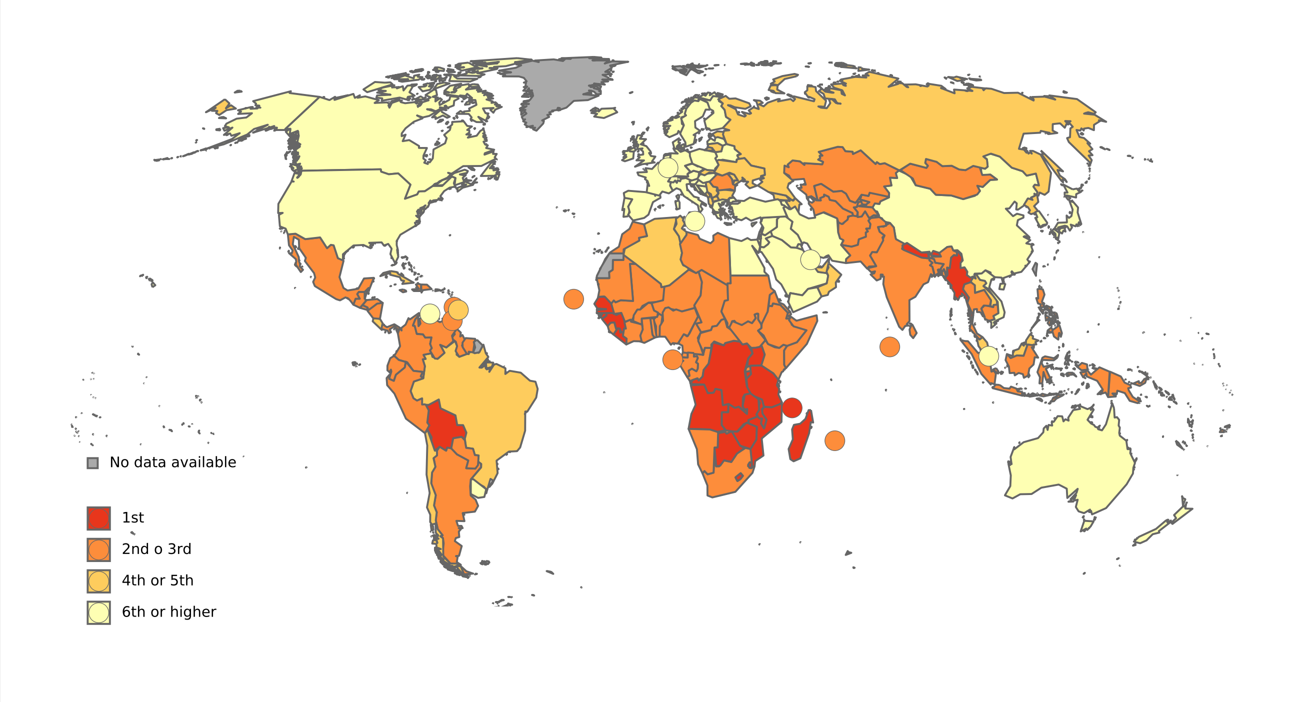
For more detailed methods of estimation please refer to http://gco.iarc.fr/today/data-sources-methods

[a] Rates per 100,000 women per year.

Data Sources:

Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2020). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [27 January 2021].

Figure 17: Ranking of cervical cancer versus other cancers among all women, according to incidence rates in the World (estimates for 2020)



Data accessed on 27 Jan 2021

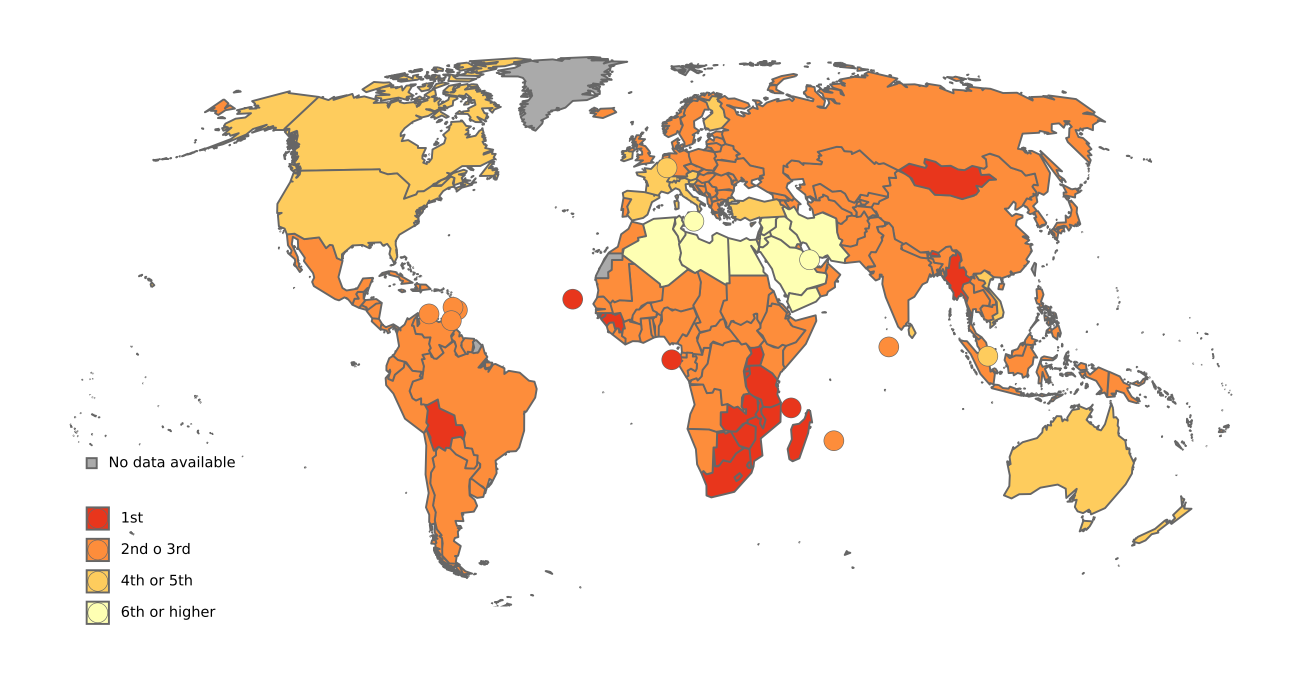
For more detailed methods of estimation please refer to http://gco.iarc.fr/today/data-sources-methods

[a] Non-melanoma skin cancer is not included

Data Sources:

Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2020). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [27 January 2021].

Figure 18: Ranking of cervical cancer versus other cancers among women aged 15-44 years, according to incidence rates in the World (estimates for 2020)



Data accessed on 27 Jan 2021
For more detailed methods of estimation please refer to http://gco.iarc.fr/today/data-sources-methods
[a] Non-melanoma skin cancer is not included
Data Sources:
Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2020). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [27 January 2021].

3.3.2 Cervical cancer mortality

Key Stats.

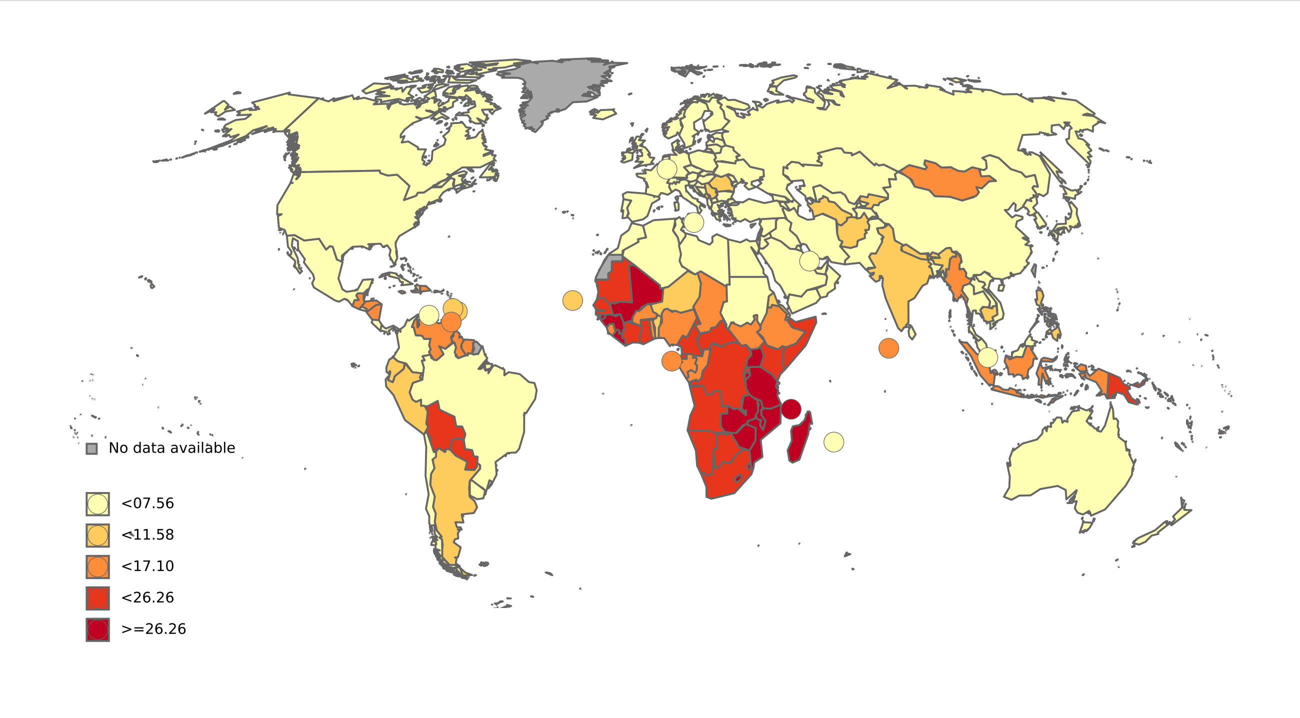
About **341,831 new cervical cancer cases** are diagnosed **annually** in the **World** (estimations for 2020).

Cervical cancer **ranks* as the 4th leading cause** of female cancer in the **World**.

Cervical cancer is the **2nd most common** female cancer in **women aged 15 to 44 years in the World**.

* Ranking of cervical cancer incidence to other cancers among all women according to highest incidence rates (ranking 1st) excluding non-melanoma skin cancer. Ranking is based on crude incidence rates (actual number of cervical cancer cases). Ranking using age-standardized rate (ASR) may differ.

Figure 19: Age-standardised mortality rates of cervical cancer in the World (estimates for 2020)



Data accessed on 27 Jan 2021

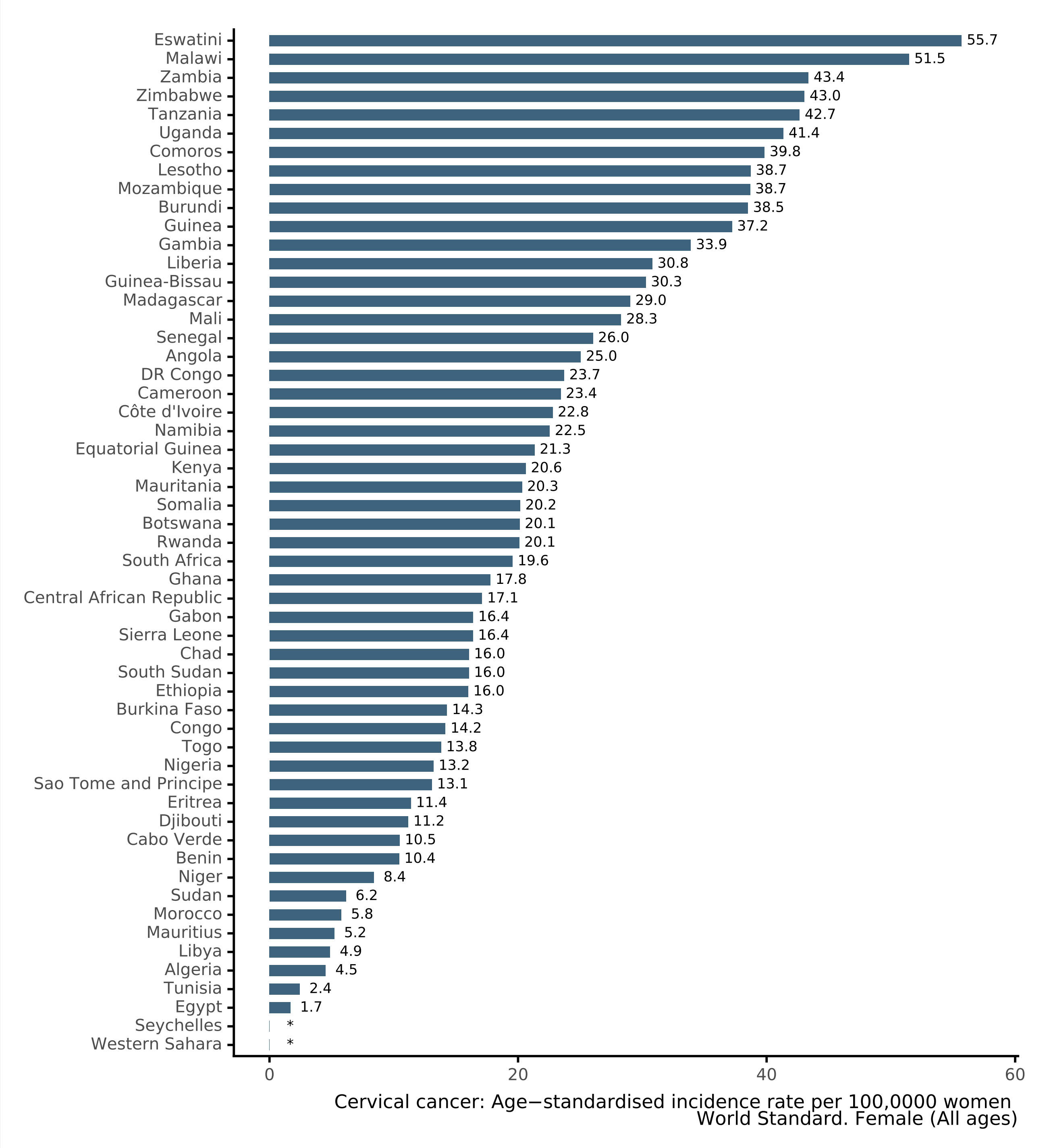
For more detailed methods of estimation please refer to http://gco.iarc.fr/today/data-sources-methods

[a] Rates per 100,000 women per year.

Data Sources:

Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2020). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [27 January 2021].

Figure 20: Age-standardised mortality rate of cervical cancer cases attributable to HPV by country in **Africa** (estimates for 2020)



Data accessed on 27 Jan 2021

For more detailed methods of estimation please refer to http://gco.iarc.fr/today/data-sources-methods

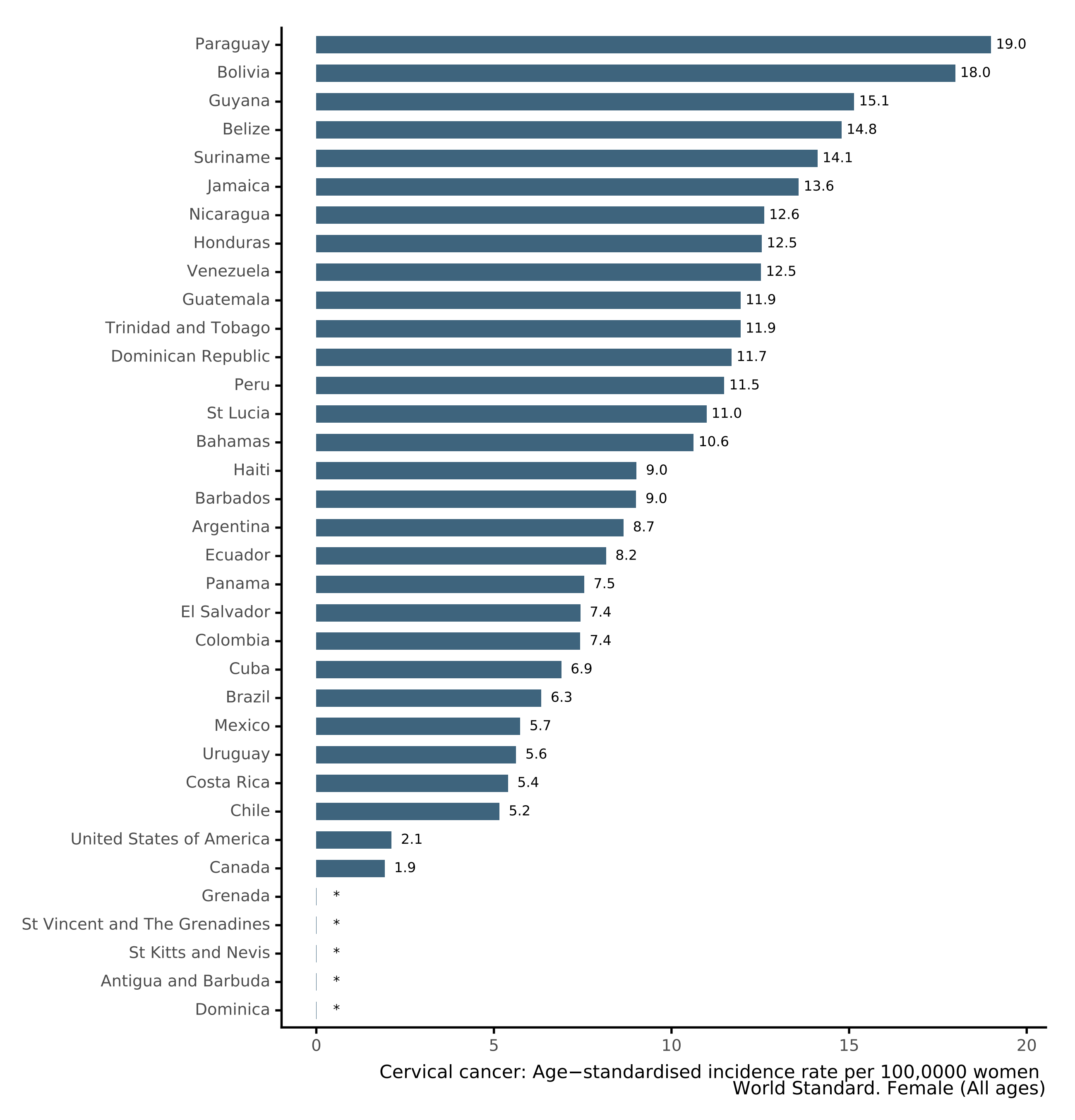
[a] Rates per 100,000 women per year.

* No rates are available

Data Sources:

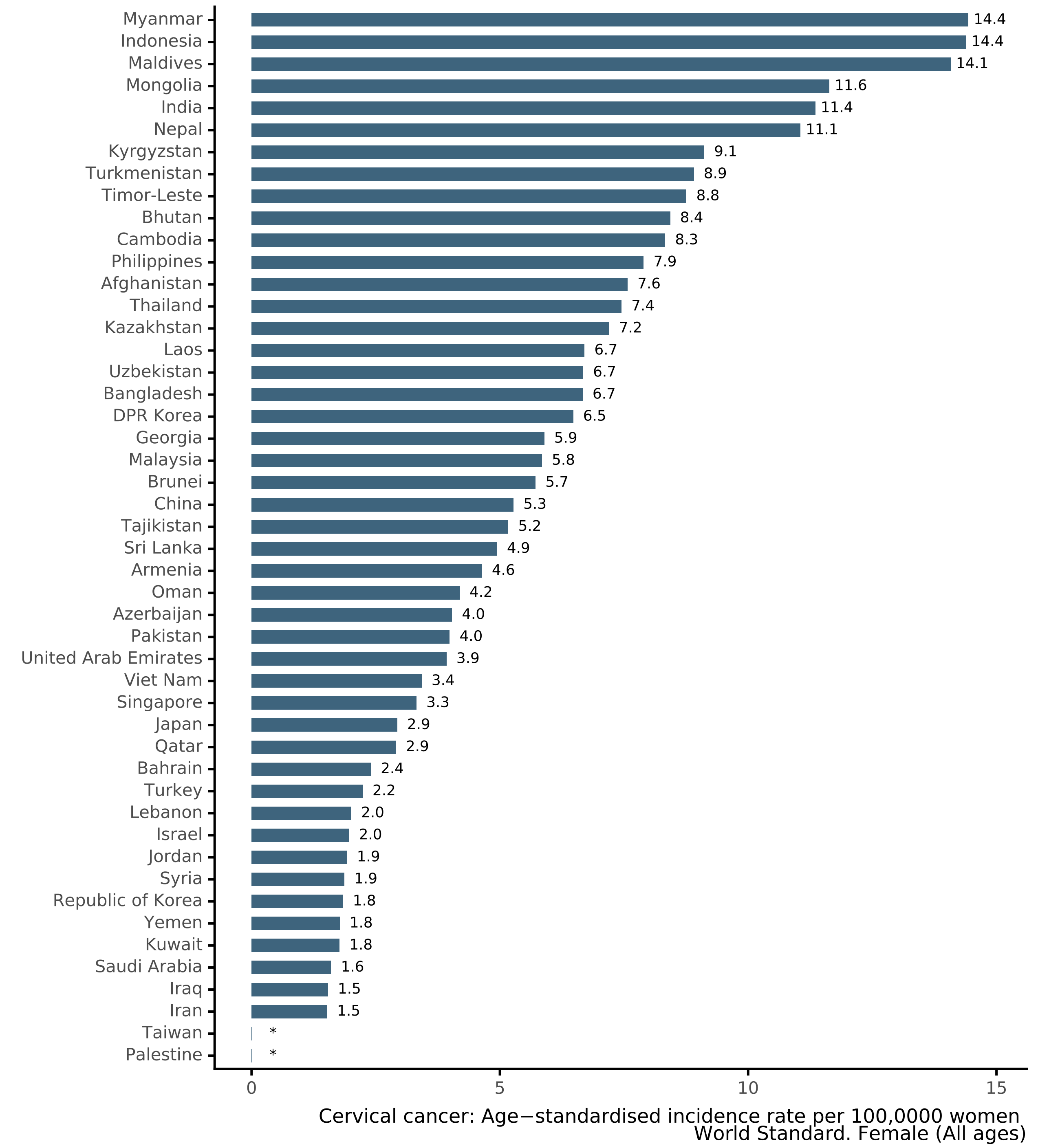
Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2020). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [27 January 2021].

Figure 21: Age-standardised mortality rate of cervical cancer cases attributable to HPV by country in the **Americas** (estimates for 2020)



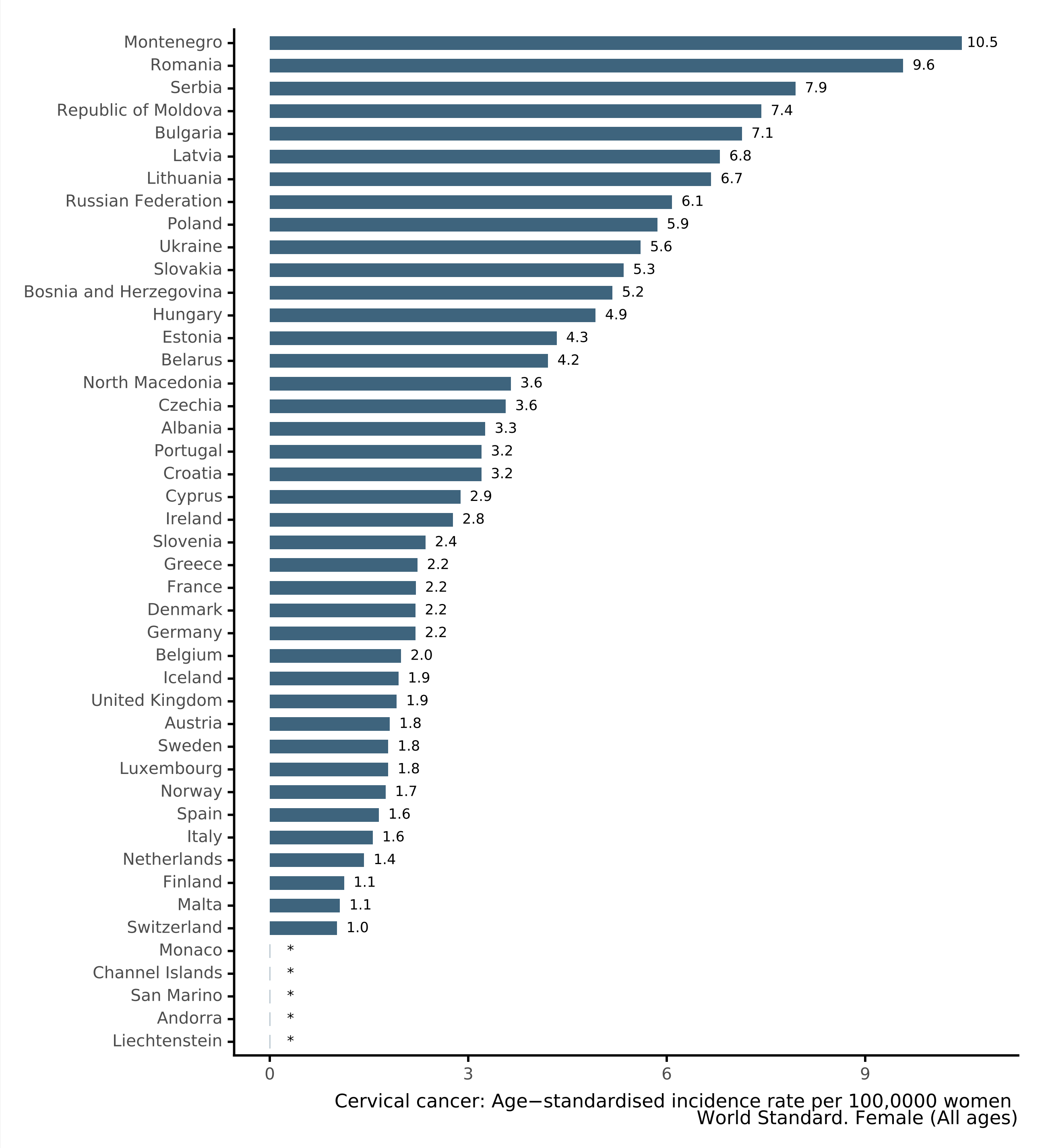
Data accessed on 27 Jan 2021
For more detailed methods of estimation please refer to http://gco.iarc.fr/today/data-sources-methods
[a] Rates per 100,000 women per year.
* No rates are available
Data Sources:
Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2020). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [27 January 2021].

Figure 22: Age-standardised mortality rate of cervical cancer cases attributable to HPV by country in **Asia** (estimates for 2020)



Data accessed on 27 Jan 2021
For more detailed methods of estimation please refer to http://gco.iarc.fr/today/data-sources-methods
[a] Rates per 100,000 women per year.
* No rates are available
Data Sources:
Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2020). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [27 January 2021].

Figure 23: Age-standardised mortality rate of cervical cancer cases attributable to HPV by country in **Europe** (estimates for 2020)



Data accessed on 27 Jan 2021

For more detailed methods of estimation please refer to http://gco.iarc.fr/today/data-sources-methods

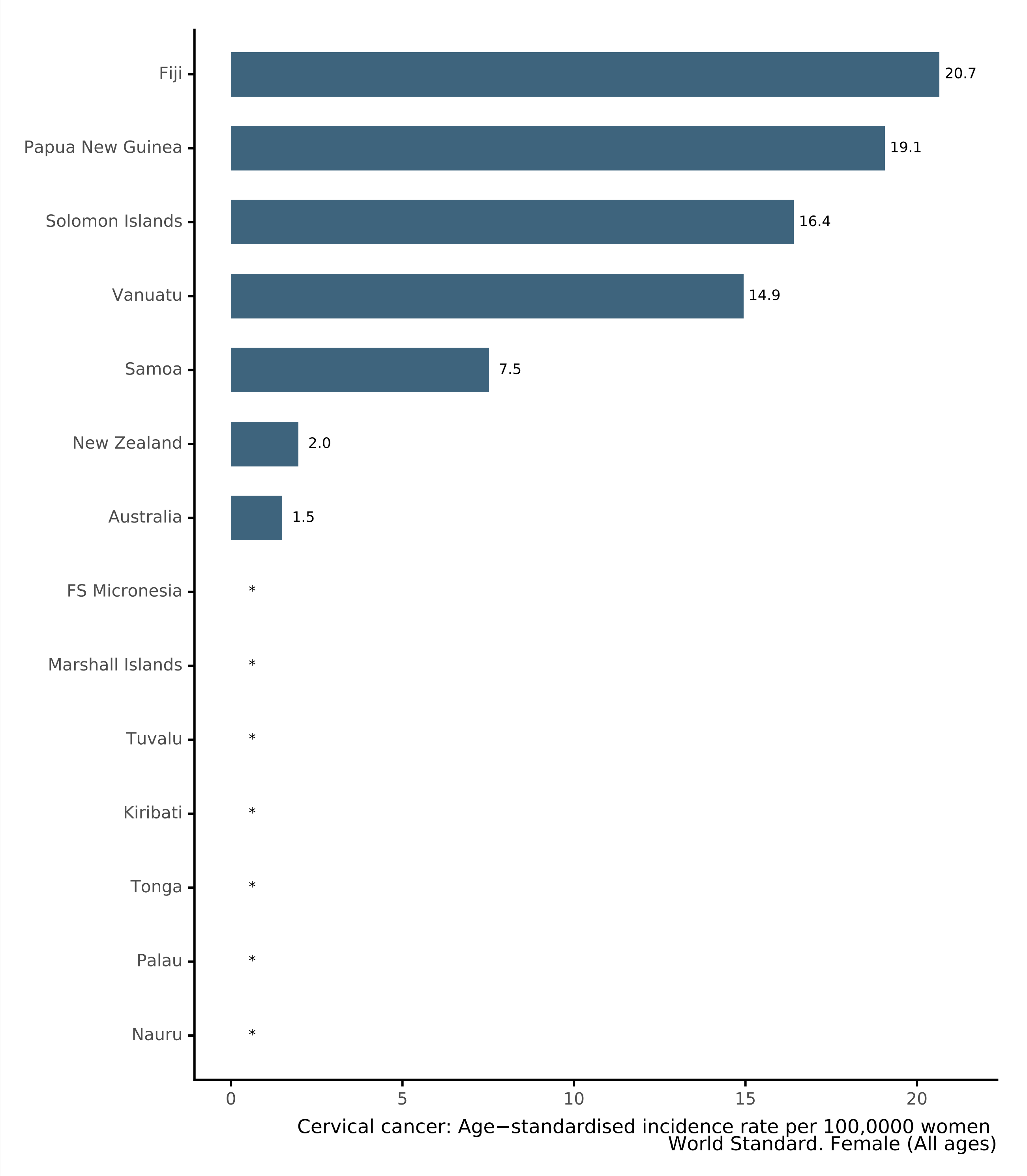
[a] Rates per 100,000 women per year.

* No rates are available

Data Sources:

Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2020). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [27 January 2021].

Figure 24: Age-standardised mortality rate of cervical cancer cases attributable to HPV by country in **Oceania** (estimates for 2020)



Data accessed on 27 Jan 2021
For more detailed methods of estimation please refer to http://gco.iarc.fr/today/data-sources-methods
[a] Rates per 100,000 women per year.
* No rates are available
Data Sources:
Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2020). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [27 January 2021].

Table 5: Mortality of cervical cancer by World region and sub regions (estimates for 2020)

Area	N Cases	Uncertainty intervals of new cancer cases [95% UI]	Crude rate[b]	ASR[b]	Cumulative risk (%) ages 0-74 years[a]	Ranking	
						All women	Women 15-44 years
World	341,831	[324,231.2-360,386.2]	8.84	7.25	0.82	4	2
High income	29,307	[28,102.9-30,562.6]	4.75	2.53	0.27	12	3
Low and middle income	312,373	[127,424.7-139,038.5]	9.62	8.62	0.98	4	2
Upper middle income	133,105	[127,424.7-139,038.5]	9.16	6.49	0.73	6	3
Lower middle income	146,198	[136,048.9-157,104.2]	9.81	10.6	1.22	2	2
Low income	33,070	[29,116.6-37,560.2]	11.0	17.4	2.00	2	2
Africa	76,745	[68,380.2-86,133.1]	11.4	17.7	2.05	2	2
Eastern Africa	36,497	[31,705.6-42,012.5]	16.3	28.6	3.36	1	1
Middle Africa	10,572	[9,081-12,307.8]	11.8	22.7	2.66	1	2
Northern Africa	4,033	[3,453-4,710.4]	3.29	3.71	0.46	5	8
Southern Africa	6,867	[6,638.4-7,103.5]	20.0	20.6	2.21	1	1
Western Africa	18,776	[15,429-22,849.1]	9.41	16.6	1.88	2	2
Americas	37,925	[30,601.2-32,594.3]	7.31	5.27	0.55	5	3
Caribbean	2,495	[2,237.7-2,781.9]	11.3	8.22	0.89	4	2
Central America	6,866	[6,620.6-7,120.5]	7.49	6.80	0.74	3	2
Northern America	6,343	[6,162.8-6,528.4]	3.40	2.10	0.22	12	3
South America	22,221	[21,594.3-22,865.9]	10.2	7.81	0.82	4	2
Asia	199,902	[188,272.7-212,249.6]	8.82	7.05	0.81	4	2
Central Asia	2,678	[769-904.4]	7.14	7.00	0.77	3	2
Eastern Asia	66,436	[63,239.9-69,793.7]	8.08	4.95	0.57	8	3
South-Eastern Asia	38,530	[36,257.7-40,944.7]	11.5	9.98	1.16	3	2
Southern Asia	89,307	[618.6-1,094.9]	9.50	9.75	1.12	2	2
Western Asia	2,951	[2,640.3-3,298.3]	2.23	2.30	0.27	12	8
Europe	25,989	[24,919.5-27,104.4]	6.71	3.76	0.40	10	3
Eastern Europe	15,854	[15,372.7-16,350.4]	10.2	6.06	0.65	7	2
Northern Europe	2,134	[1,983.5-2,295.9]	3.97	2.18	0.22	16	3
Southern Europe	3,705	[3,430.7-4,001.2]	4.72	2.31	0.25	14	3
Western Europe	4,296	[4,063.9-4,541.4]	4.31	2.05	0.22	15	4
Oceania	1,270	[1,088.5-1,481.8]	5.96	4.62	0.46	6	3
Australia & New Zealand	409	[362.2-461.9]	2.68	1.57	0.16	16	4
Melanesia	818	[601.5-1,112.5]	15.0	18.6	1.84	2	1
Micronesia	24	[8.90-64.8]	8.83	8.16	0.97	4	20
Polynesia	19	[5.10-71.2]	5.64	5.32	0.58	6	2

Data accessed on 27 Jan 2021

For more detailed methods of estimation please refer to http://gco.iarc.fr/today/data-sources-methods

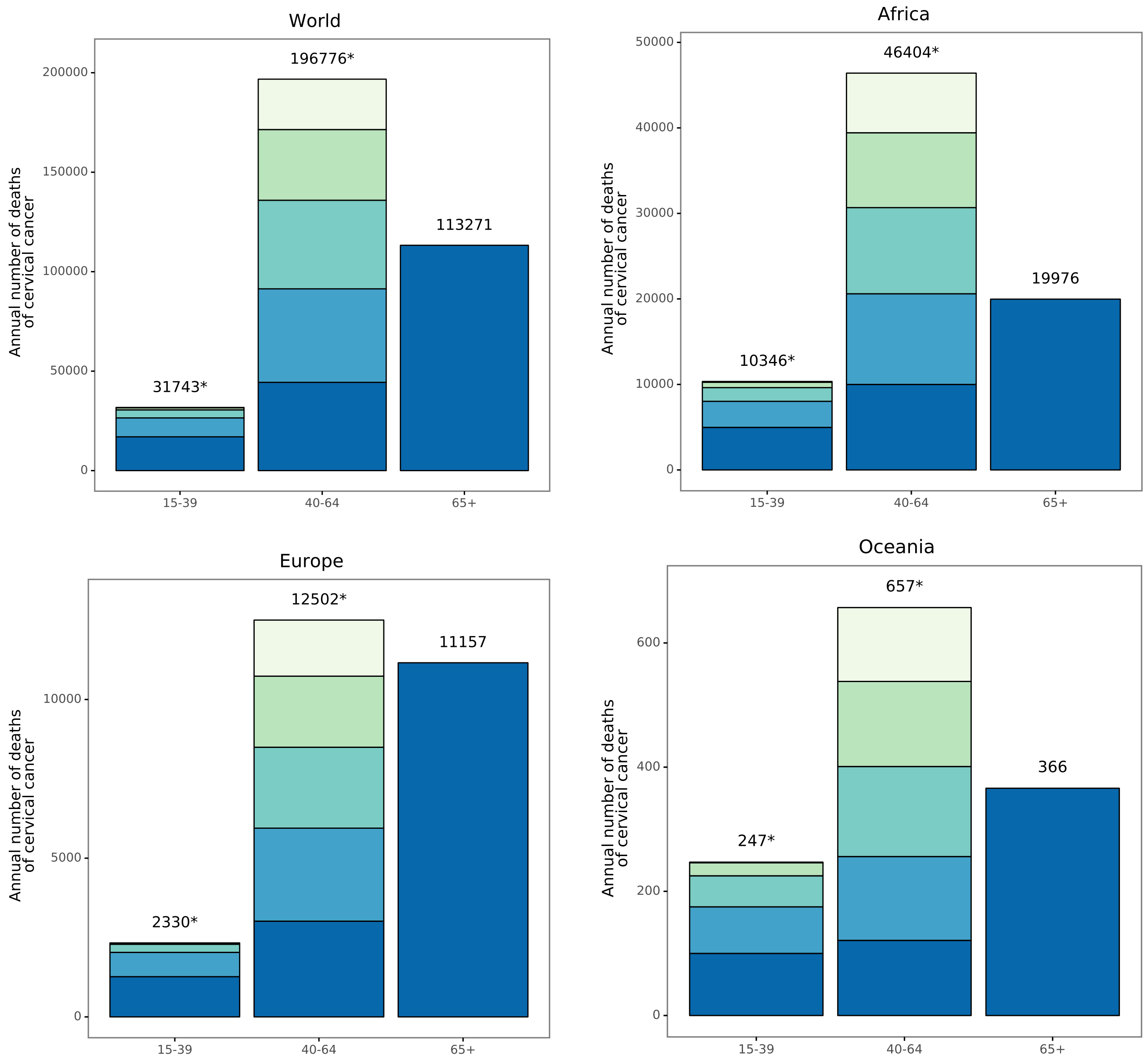
[a] Cumulative risk (mortality) is the probability or risk of individuals dying from the disease during ages 0-74 years. For cancer, it is expressed as the % of new born children who would be expected to die from a particular cancer before the age of 75 if they had the rates of cancer observed in the period in the absence of competing causes.

[b] Rates per 100,000 women per year.

Data Sources:

Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2020). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [27 January 2021].

Figure 25: Annual number of deaths of cervical cancer in the World and its regions (estimates for 2020)



Data accessed on 27 Jan 2021

For more detailed methods of estimation please refer to http://gco.iarc.fr/today/data-sources-methods

* World: 15-19 yrs: 144 cases. 20-24 yrs: 1055 cases. 25-29 yrs: 4057 cases. 30-34 yrs: 9506 cases. 35-39 yrs: 16981 cases. 40-44 yrs: 25334 cases. 45-49 yrs: 35535 cases. 50-54 yrs: 44540 cases. 55-59 yrs: 46997 cases. 60-64 yrs: 44370 cases.

* Africa: 15-19 yrs: 86 cases. 20-24 yrs: 636 cases. 25-29 yrs: 1599 cases. 30-34 yrs: 3049 cases. 35-39 yrs: 4976 cases. 40-44 yrs: 6975 cases. 45-49 yrs: 8752 cases. 50-54 yrs: 10074 cases. 55-59 yrs: 10603 cases. 60-64 yrs: 10000 cases.

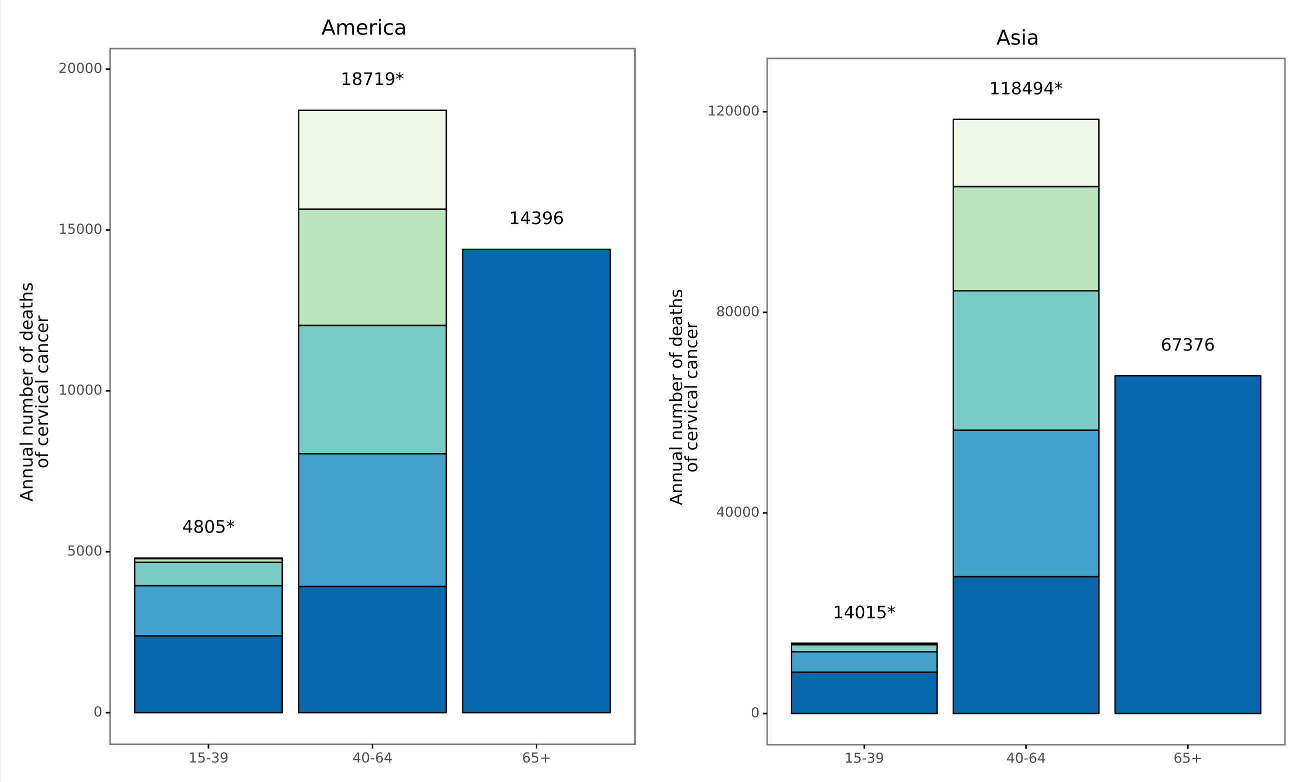
* Europe: 15-19 yrs: 6 cases. 20-24 yrs: 35 cases. 25-29 yrs: 256 cases. 30-34 yrs: 766 cases. 35-39 yrs: 1267 cases. 40-44 yrs: 1767 cases. 45-49 yrs: 2239 cases. 50-54 yrs: 2550 cases. 55-59 yrs: 2930 cases. 60-64 yrs: 3016 cases.

* Oceania: 15-19 yrs: 1 cases. 20-24 yrs: 21 cases. 25-29 yrs: 50 cases. 30-34 yrs: 75 cases. 35-39 yrs: 100 cases. 40-44 yrs: 119 cases. 45-49 yrs: 137 cases. 50-54 yrs: 145 cases. 55-59 yrs: 135 cases. 60-64 yrs: 121 cases.

Data Sources:

Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2020). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [27 January 2021].

Figure 25: Annual number of deaths of cervical cancer in the World and its regions (estimates for 2020) (Continued)



Data accessed on 27 Jan 2021

For more detailed methods of estimation please refer to http://gco.iarc.fr/today/data-sources-methods

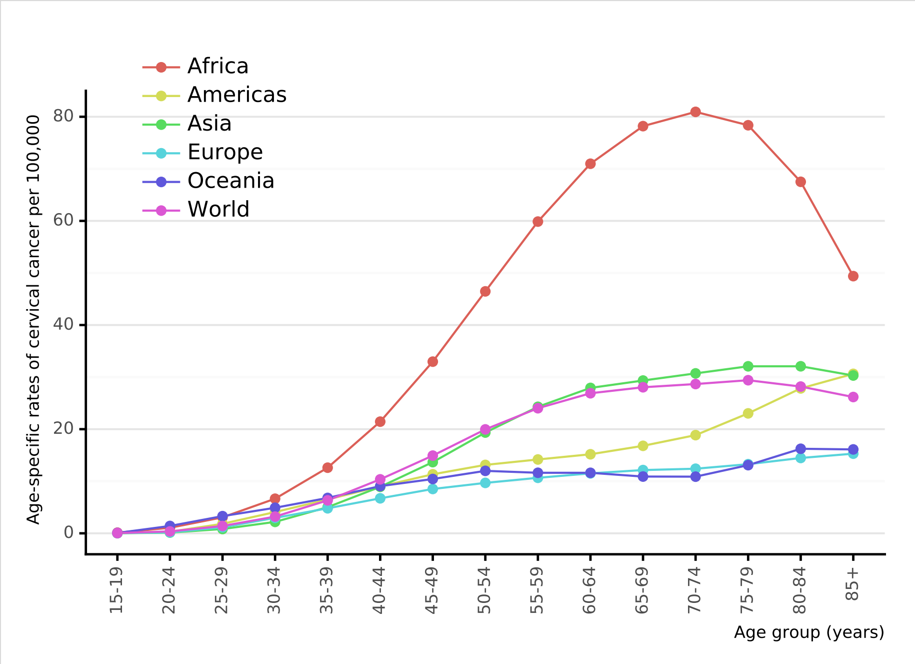
* America: 15-19 yrs: 15 cases. 20-24 yrs: 118 cases. 25-29 yrs: 723 cases. 30-34 yrs: 1563 cases. 35-39 yrs: 2386 cases. 40-44 yrs: 3070 cases. 45-49 yrs: 3614 cases. 50-54 yrs: 3987 cases. 55-59 yrs: 4125 cases. 60-64 yrs: 3923 cases.

* Asia: 15-19 yrs: 36 cases. 20-24 yrs: 245 cases. 25-29 yrs: 1429 cases. 30-34 yrs: 4053 cases. 35-39 yrs: 8252 cases. 40-44 yrs: 13403 cases. 45-49 yrs: 20793 cases. 50-54 yrs: 27784 cases. 55-59 yrs: 29204 cases. 60-64 yrs: 27310 cases.

Data Sources:

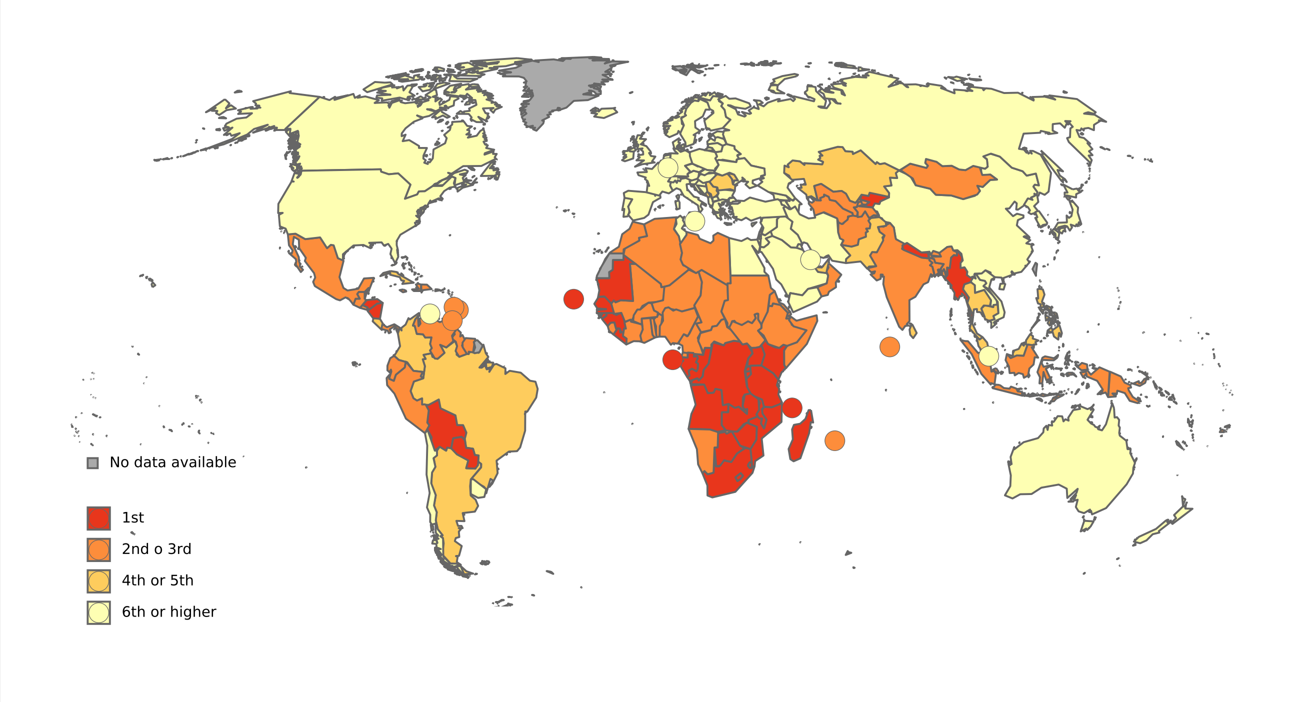
Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2020). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [27 January 2021].

Figure 26: Age-specific mortality rates of cervical cancer in the World (estimates for 2020)



Data accessed on 27 Jan 2021
For more detailed methods of estimation please refer to http://gco.iarc.fr/today/data-sources-methods
[a] Rates per 100,000 women per year.
Data Sources:
Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2020). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [27 January 2021].

Figure 27: Ranking of cervical cancer versus other cancers among all women, according to mortality rates in the World (estimates for 2020)



Data accessed on 27 Jan 2021

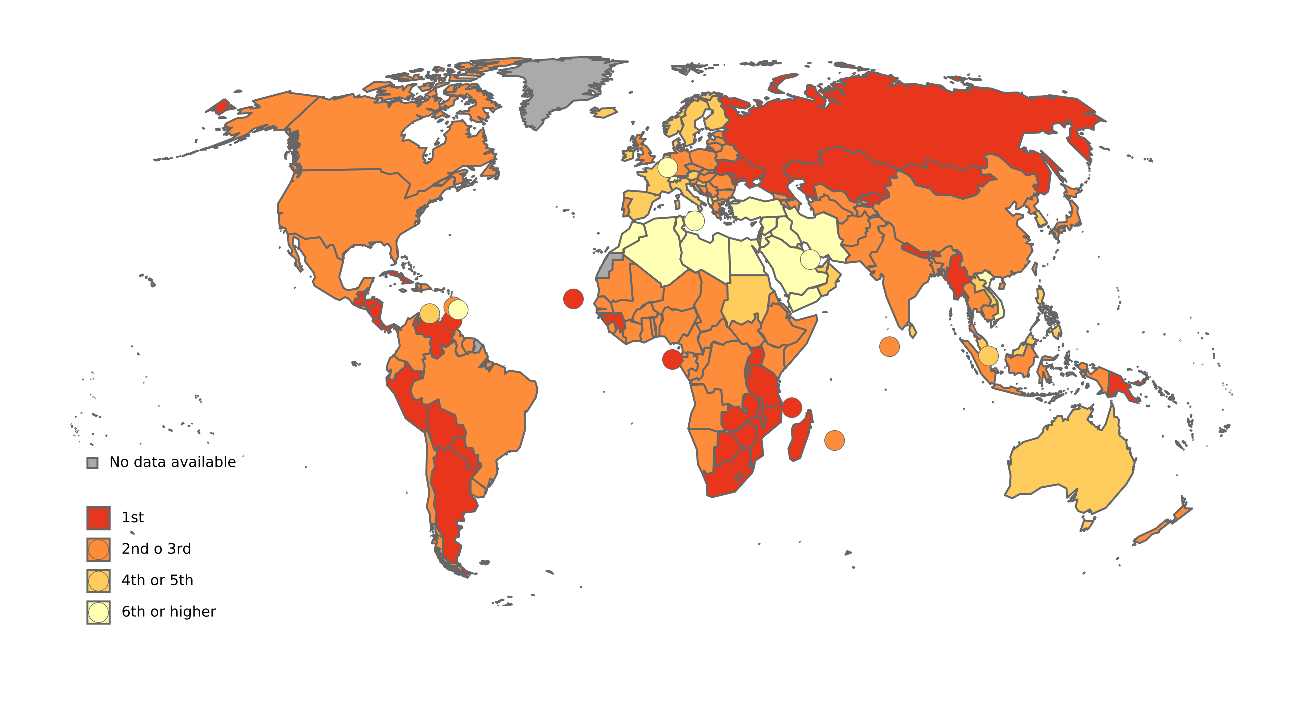
For more detailed methods of estimation please refer to http://gco.iarc.fr/today/data-sources-methods

[a] Non-melanoma skin cancer is not included

Data Sources:

Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2020). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [27 January 2021].

Figure 28: Ranking of cervical cancer versus other cancers among women aged 15-44 years, according to mortality rates in the World (estimates for 2020)



Data accessed on 27 Jan 2021

For more detailed methods of estimation please refer to http://gco.iarc.fr/today/data-sources-methods

[a] Non-melanoma skin cancer is not included

Data Sources:

Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2020). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [27 January 2021].

3.4 Anogenital cancers other than the cervix

3.4.1 Anal cancer

3.4.1.1 Anal cancer incidence

Table 6: Incidence of anal cancer in women by World region and sub regions (estimates for 2020)

Area	N Cases	Uncertainty intervals of new cancer cases [95% UI]	Crude rate[b]	ASR[b]	Cumulative risk (%) ages 0-74 years[a]	Ranking	
						All women	Women 15-44 years
World	29,159	[25,656.5-33,139.6]	0.75	0.58	0.07	24	26
High income	15,133	[14,378.1-15,927.5]	2.45	1.24	0.15	22	22
Low and middle income	14,015	[6,144.7-9,212.9]	0.43	0.38	0.04	26	27
Upper middle income	7,524	[6,144.7-9,212.9]	0.52	0.35	0.04	26	26
Lower middle income	5,592	[3,922.2-7,972.7]	0.38	0.41	0.05	28	29
Low income	899	[486.9-1,659.9]	0.30	0.46	0.05	26	22
Africa	2,959	[1,554.6-5,632.2]	0.44	0.68	0.08	25	22
Eastern Africa	1,162	[503.5-2,681.4]	0.52	0.91	0.10	22	21
Middle Africa	440	[150.6-1,285.4]	0.49	1.01	0.13	21	26
Northern Africa	367	[197.2-683.1]	0.30	0.33	0.04	26	27
Southern Africa	294	[237-364.7]	0.86	0.85	0.09	23	13
Western Africa	696	[244.3-1,982.9]	0.35	0.60	0.07	23	20
Americas	9,664	[2,906.3-4,292.4]	1.86	1.25	0.15	21	22
Caribbean	214	[104.1-439.7]	0.97	0.69	0.08	22	27
Central America	280	[179.1-437.7]	0.31	0.27	0.03	25	24
Northern America	6,132	[5,963.5-6,305.2]	3.29	1.83	0.22	20	22
South America	3,038	[2,372.4-3,890.3]	1.39	1.01	0.12	21	21
Asia	7,601	[5,951.7-9,707.3]	0.34	0.26	0.03	28	28
Central Asia	221	[29.5-74.8]	0.59	0.60	0.07	22	20
Eastern Asia	3,241	[2,727-3,851.9]	0.39	0.22	0.02	25	25
South-Eastern Asia	1,054	[486.4-2,284.1]	0.31	0.26	0.03	26	25
Southern Asia	2,801	[8.40-209.2]	0.30	0.31	0.04	27	29
Western Asia	284	[126.2-639.1]	0.21	0.22	0.03	28	30
Europe	8,449	[7,571.8-9,427.8]	2.18	1.05	0.12	23	21
Eastern Europe	1,558	[1,227.7-1,977.1]	1.00	0.50	0.06	24	26
Northern Europe	1,557	[1,449.8-1,672.1]	2.90	1.57	0.19	21	19
Southern Europe	1,385	[1,081.9-1,773.1]	1.77	0.70	0.08	23	25
Western Europe	3,949	[3,658.6-4,262.4]	3.96	1.95	0.22	21	18
Oceania	486	[420.6-561.6]	2.28	1.55	0.19	21	21
Australia & New Zealand	421	[376.2-471.1]	2.76	1.60	0.19	21	21
Melanesia	65	[19.3-218.7]	1.19	1.72	0.21	15	19
Micronesia	0	[0-15.6]	0	0	0	29	9
Polynesia	0	[0-12.8]	0	0	0	25	21

Data accessed on 27 Jan 2021

For more detailed methods of estimation please refer to http://gco.iarc.fr/today/data-sources-methods

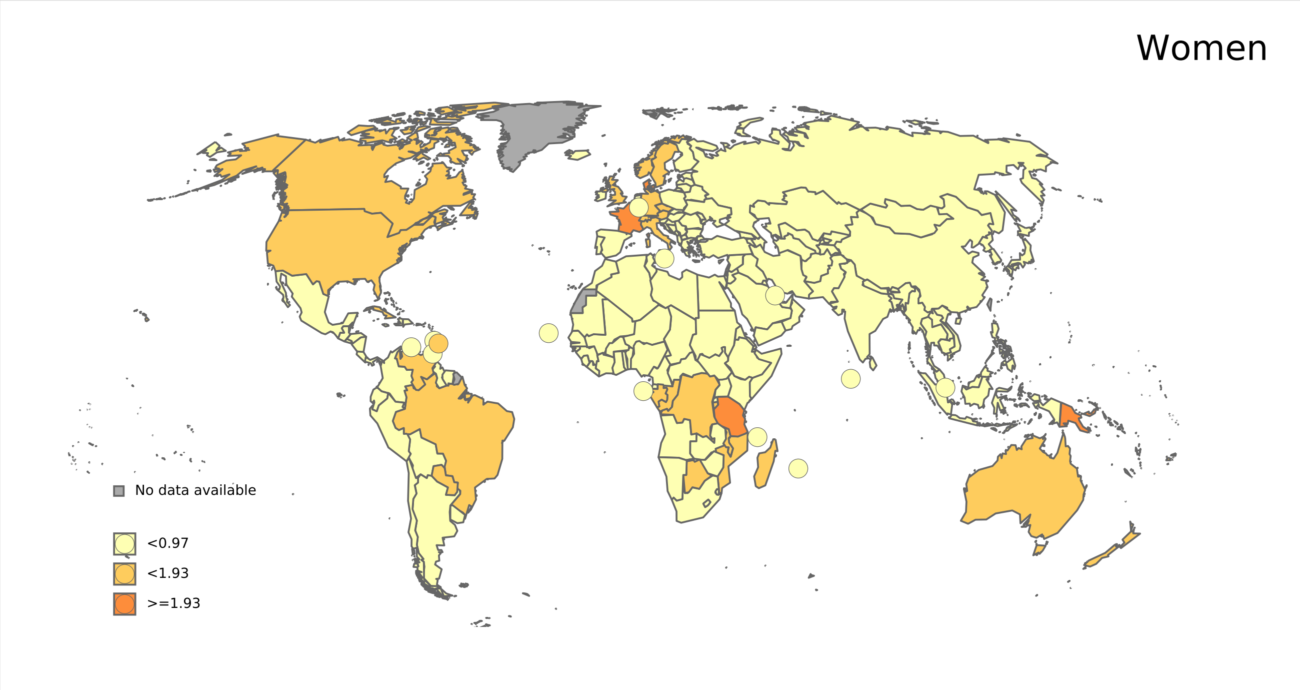
[a] Cumulative risk (incidence) is the probability or risk of individuals getting from the disease during ages 0-74 years. For cancer, it is expressed as the % of new born children who would be expected to develop from a particular cancer before the age of 75 if they had the rates of cancer observed in the period in the absence of competing causes.

[b] Rates per 100,000 women per year.

Data Sources:

Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2020). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [27 January 2021].

Figure 29: Age-standardised incidence rates of anal cancer among women in the World (estimates for 2020)



Data accessed on 27 Jan 2021

For more detailed methods of estimation please refer to http://gco.iarc.fr/today/data-sources-methods

[a] Rates per 100,000 women per year.

Data Sources:

Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2020). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [27 January 2021].

Table 7: Incidence of anal cancer in men by World region and sub regions (estimates for 2020)

Area	N Cases	Uncertainty intervals of new cancer cases [95% UI]	Crude rate[b]	ASR[b]	Cumulative risk (%) ages 0-74 years[a]	Ranking	
						All men	Men 15-44 years
World	21,706	[18,432.1-25,561.4]	0.55	0.49	0.06	27	26
High income	8,026	[7,461.8-8,632.9]	1.31	0.74	0.09	26	25
Low and middle income	13,675	[4,728.3-7,077.8]	0.41	0.41	0.05	27	26
Upper middle income	5,785	[4,728.3-7,077.8]	0.39	0.30	0.03	27	25
Lower middle income	6,958	[5,161.7-9,379.5]	0.45	0.54	0.06	25	24
Low income	932	[476.9-1,821.2]	0.31	0.60	0.07	24	23
Africa	3,161	[1,598.8-6,249.5]	0.47	0.84	0.10	21	20
Eastern Africa	907	[321.2-2,561.5]	0.41	0.93	0.11	21	23
Middle Africa	490	[153.9-1,560.3]	0.55	1.23	0.15	18	20
Northern Africa	476	[261.5-866.4]	0.38	0.46	0.05	23	22
Southern Africa	208	[163.5-264.6]	0.63	0.78	0.09	23	21
Western Africa	1,080	[443.4-2,630.6]	0.53	0.98	0.11	19	12
Americas	4,860	[1,372.9-2,399.5]	0.96	0.74	0.09	23	24
Caribbean	174	[80.3-377.3]	0.81	0.58	0.06	25	25
Central America	157	[91.7-268.7]	0.18	0.18	0.02	27	25
Northern America	3,045	[2,928.5-3,166.1]	1.67	1.04	0.12	23	23
South America	1,484	[1,014.6-2,170.7]	0.70	0.61	0.07	26	24
Asia	9,044	[7,266.5-11,256.4]	0.38	0.33	0.04	26	26
Central Asia	241	[12.6-49.7]	0.65	0.78	0.09	19	15
Eastern Asia	3,151	[2,680.5-3,704]	0.37	0.24	0.03	27	26
South-Eastern Asia	1,227	[592.1-2,542.8]	0.37	0.37	0.04	26	24
Southern Asia	4,068	[12.3-398.8]	0.41	0.45	0.05	25	24
Western Asia	357	[167.4-761.5]	0.24	0.29	0.03	25	26
Europe	4,327	[3,714.5-5,040.4]	1.20	0.66	0.08	25	26
Eastern Europe	900	[648-1,250.1]	0.65	0.41	0.05	27	27
Northern Europe	750	[675.8-832.3]	1.43	0.79	0.09	25	25
Southern Europe	966	[704.1-1,325.3]	1.29	0.62	0.07	28	26
Western Europe	1,711	[1,532.8-1,909.9]	1.78	0.96	0.11	24	22
Oceania	314	[261.4-377.2]	1.47	1.01	0.12	22	25
Australia & New Zealand	266	[230.9-306.4]	1.77	1.03	0.13	22	24
Melanesia	48	[13.2-175]	0.85	1.72	0.18	20	25
Micronesia	0	[0-15.6]	0	0	0	19	18
Polynesia	0	[0-12.8]	0	0	0	24	18

Data accessed on 27 Jan 2021

For more detailed methods of estimation please refer to http://gco.iarc.fr/today/data-sources-methods

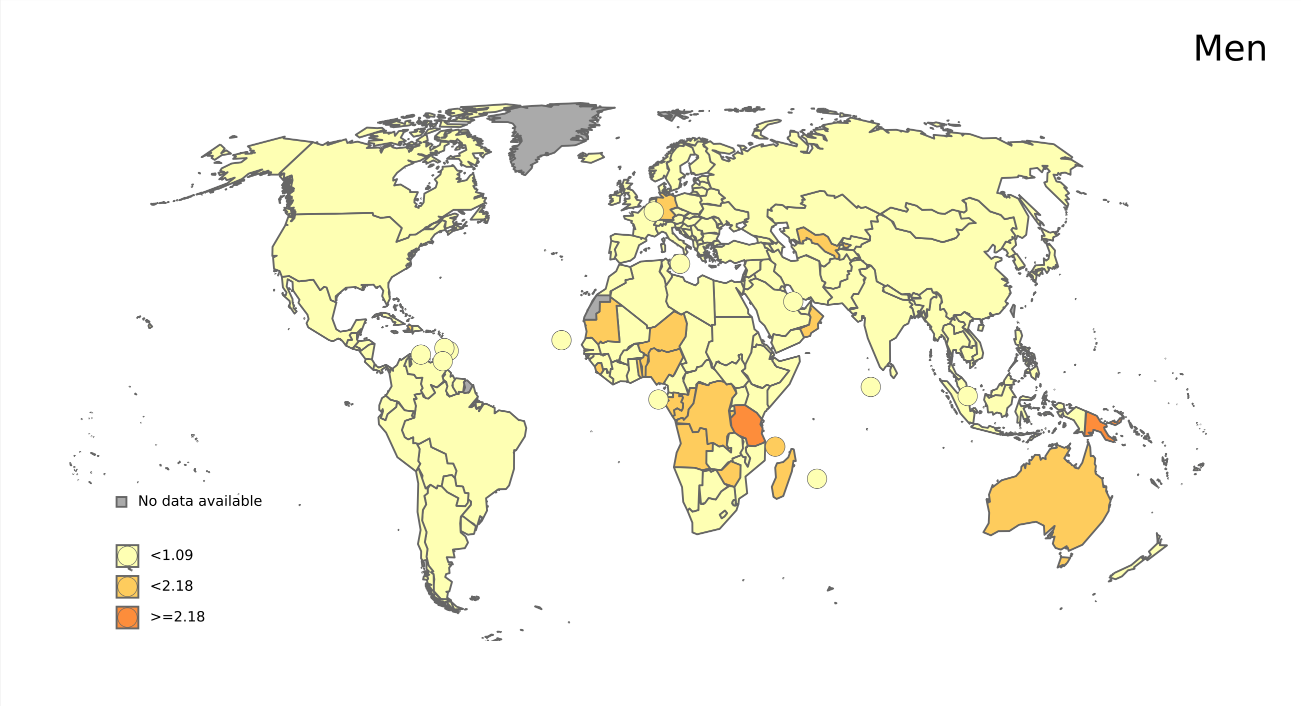
[a] Cumulative risk (incidence) is the probability or risk of individuals getting from the disease during ages 0-74 years. For cancer, it is expressed as the % of new born children who would be expected to develop from a particular cancer before the age of 75 if they had the rates of cancer observed in the period in the absence of competing causes.

[b] Rates per 100,000 men per year.

Data Sources:

Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2020). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [27 January 2021].

Figure 30: Age-standardised incidence rates of anal cancer among men in the World (estimates for 2020)



Data accessed on 27 Jan 2021
For more detailed methods of estimation please refer to http://gco.iarc.fr/today/data-sources-methods
[a] Rates per 100,000 men per year.
Data Sources:
Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2020). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [27 January 2021].

3.4.1.2 Anal cancer mortality

Table 8: Mortality of anal cancer in women by World region and sub regions (estimates for 2020)

Area	N Cases	Uncertainty intervals of new cancer cases [95% UI]	Crude rate[b]	ASR[b]	Cumulative risk (%) ages 0-74 years[a]	Ranking	
						All women	Women 15-44 years
World	9,877	[7,794.6-12,515.7]	0.26	0.19	0.02	24	29
High income	3,486	[3,111.6-3,905.5]	0.56	0.22	0.02	23	23
Low and middle income	6,391	[2,029.7-3,441.6]	0.20	0.17	0.02	26	29
Upper middle income	2,643	[2,029.7-3,441.6]	0.18	0.12	0.01	25	28
Lower middle income	3,101	[2,099.8-4,579.5]	0.21	0.23	0.03	29	29
Low income	647	[325.9-1,284.3]	0.21	0.34	0.04	24	21
Africa	1,937	[931.6-4,027.6]	0.29	0.46	0.05	23	20
Eastern Africa	846	[323.3-2,213.6]	0.38	0.68	0.08	21	18
Middle Africa	327	[110.7-965.6]	0.36	0.76	0.10	19	24
Northern Africa	179	[89.8-356.8]	0.15	0.16	0.02	26	24
Southern Africa	80	[55.3-115.6]	0.23	0.23	0.02	25	17
Western Africa	505	[191.2-1,334]	0.25	0.45	0.05	22	17
Americas	1,843	[731.5-1,032.4]	0.36	0.22	0.03	23	22
Caribbean	55	[26.3-114.8]	0.25	0.17	0.02	26	28
Central America	82	[55.4-121.3]	0.09	0.08	0.01	28	24
Northern America	974	[905.6-1,047.6]	0.52	0.26	0.03	22	19
South America	732	[635.8-842.7]	0.33	0.23	0.03	24	24
Asia	3,570	[2,573.9-4,951.6]	0.16	0.12	0.01	29	30
Central Asia	119	[17.5-41.8]	0.32	0.33	0.04	22	20
Eastern Asia	1,454	[1,117-1,892.6]	0.18	0.09	0.01	25	28
South-Eastern Asia	443	[199-986]	0.13	0.11	0.01	27	29
Southern Asia	1,440	[5.40-106.9]	0.15	0.16	0.02	28	28
Western Asia	114	[42.6-305.1]	0.09	0.09	0.01	28	31
Europe	2,427	[2,042.4-2,884]	0.63	0.24	0.03	23	24
Eastern Europe	715	[514.6-993.4]	0.46	0.20	0.02	25	29
Northern Europe	452	[394.7-517.6]	0.84	0.33	0.04	23	18
Southern Europe	376	[307.3-460.1]	0.48	0.16	0.02	26	23
Western Europe	884	[781.9-999.4]	0.89	0.31	0.03	23	18
Oceania	100	[69.1-144.7]	0.47	0.27	0.03	23	24
Australia & New Zealand	79	[59.3-105.2]	0.52	0.23	0.03	23	26
Melanesia	21	[10.5-42.2]	0.39	0.60	0.07	18	22
Micronesia	0	[0-9.20]	0	0	0	28	11
Polynesia	0	[0-11.3]	0	0	0	22	14

Data accessed on 27 Jan 2021

For more detailed methods of estimation please refer to http://gco.iarc.fr/today/data-sources-methods

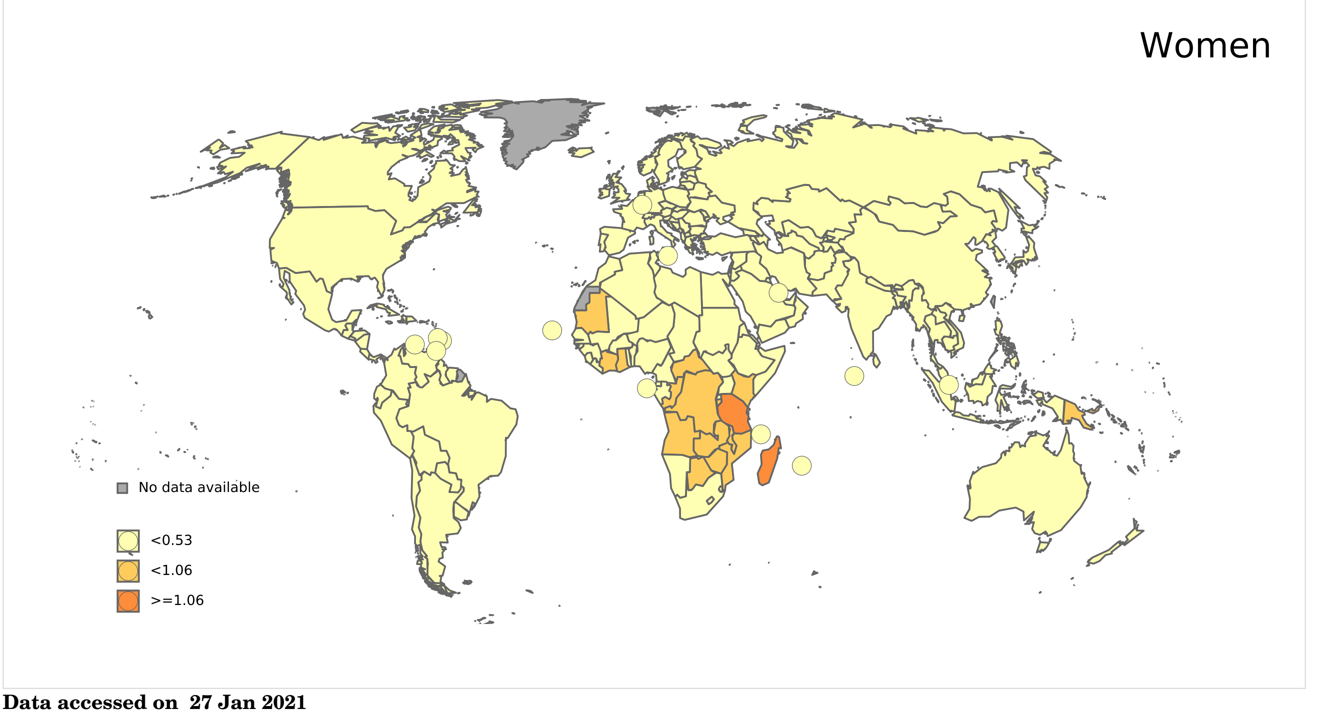
[a] Cumulative risk (mortality) is the probability or risk of individuals dying from the disease during ages 0-74 years. For cancer, it is expressed as the % of new born children who would be expected to die from a particular cancer before the age of 75 if they had the rates of cancer observed in the period in the absence of competing causes.

[b] Rates per 100,000 women per year.

Data Sources:

Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2020). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [27 January 2021].

Figure 31: Age-standardised mortality rates of anal cancer among women in the World (estimates for 2020)



Data accessed on 27 Jan 2021

For more detailed methods of estimation please refer to http://gco.iarc.fr/today/data-sources-methods

[a] Rates per 100,000 women per year.

Data Sources:

Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2020). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [27 January 2021].

Table 9: Mortality of anal cancer in men by World region and sub regions (estimates for 2020)

Area	N Cases	Uncertainty intervals of new cancer cases [95% UI]	Crude rate[b]	ASR[b]	Cumulative risk (%) ages 0-74 years[a]	Ranking	
						All men	Men 15-44 years
World	9,416	[7,282.2-12,175]	0.24	0.21	0.02	27	25
High income	2,321	[1,998.9-2,695]	0.38	0.19	0.02	25	24
Low and middle income	7,095	[1,991-3,330.3]	0.21	0.21	0.02	27	25
Upper middle income	2,575	[1,991-3,330.3]	0.18	0.13	0.02	27	28
Lower middle income	3,869	[2,550.2-5,869.8]	0.25	0.31	0.04	24	23
Low income	651	[307.8-1,376.7]	0.22	0.43	0.05	22	20
Africa	2,124	[978.3-4,611.5]	0.32	0.59	0.07	19	17
Eastern Africa	657	[201.7-2,139.7]	0.30	0.70	0.08	19	20
Middle Africa	359	[111.3-1,157.8]	0.40	0.95	0.12	18	19
Northern Africa	235	[120.9-456.9]	0.19	0.24	0.02	21	26
Southern Africa	73	[49.8-107]	0.22	0.30	0.03	24	20
Western Africa	800	[303-2,112.3]	0.40	0.77	0.09	16	11
Americas	1,055	[404.5-635.4]	0.21	0.15	0.02	27	24
Caribbean	53	[23.2-121.3]	0.25	0.17	0.01	26	27
Central America	46	[28.7-73.8]	0.05	0.05	0.01	28	27
Northern America	548	[497.9-603.2]	0.30	0.17	0.02	25	19
South America	408	[338.9-491.3]	0.19	0.16	0.02	27	25
Asia	4,550	[3,348.7-6,182.3]	0.19	0.17	0.02	26	25
Central Asia	133	[9.70-29.7]	0.36	0.44	0.05	19	18
Eastern Asia	1,642	[1,297.5-2,077.9]	0.19	0.12	0.01	26	27
South-Eastern Asia	612	[287.8-1,301.5]	0.18	0.19	0.02	26	27
Southern Asia	2,003	[8.10-206.9]	0.20	0.22	0.03	24	23
Western Asia	160	[73.2-349.8]	0.11	0.14	0.02	25	26
Europe	1,600	[1,287.9-1,987.7]	0.44	0.22	0.02	26	22
Eastern Europe	523	[355.7-769.1]	0.38	0.23	0.03	27	23
Northern Europe	301	[254.7-355.7]	0.57	0.27	0.03	21	19
Southern Europe	266	[206.9-342]	0.35	0.15	0.02	27	26
Western Europe	510	[433-600.7]	0.53	0.24	0.03	23	18
Oceania	87	[56.4-134.3]	0.41	0.25	0.03	23	28
Australia & New Zealand	60	[42.8-84.1]	0.40	0.20	0.02	25	28
Melanesia	27	[12.6-58]	0.48	0.98	0.10	19	22
Micronesia	0	[0-9.20]	0	0	0	25	26
Polynesia	0	[0-11.3]	0	0	0	27	28

Data accessed on 27 Jan 2021

For more detailed methods of estimation please refer to http://gco.iarc.fr/today/data-sources-methods

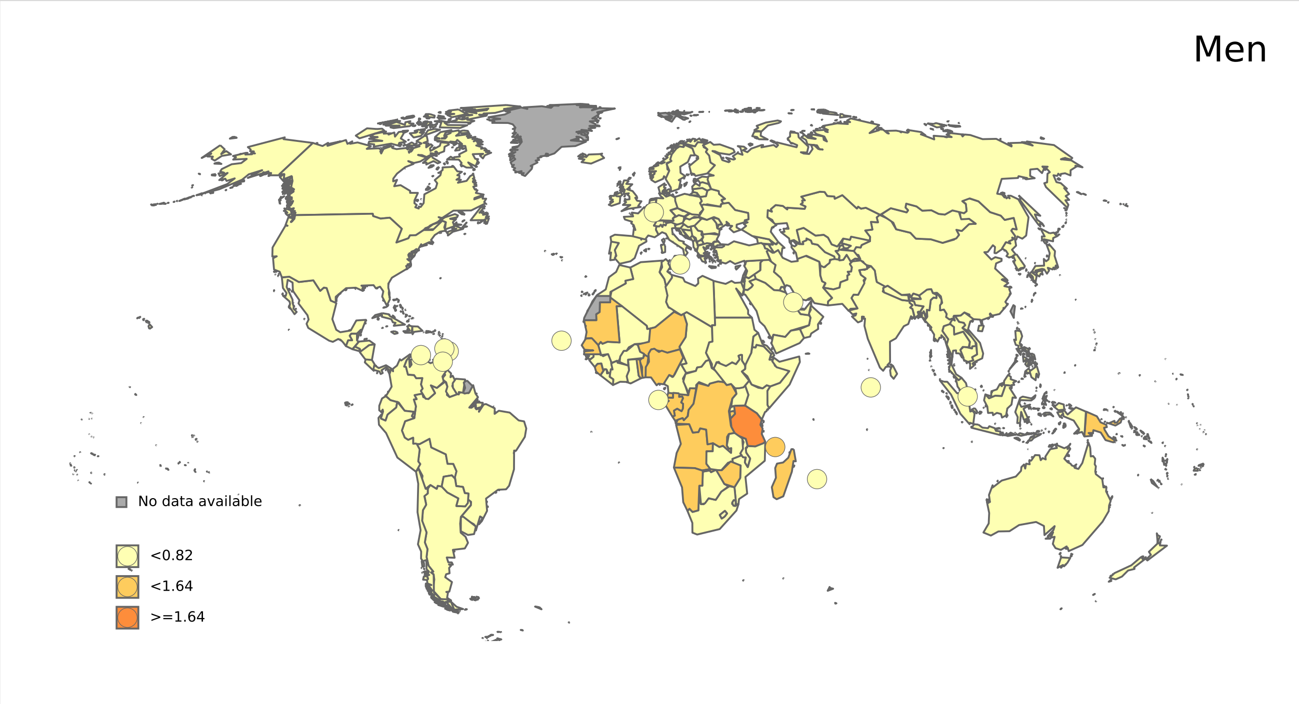
[a] Cumulative risk (mortality) is the probability or risk of individuals dying from the disease during ages 0-74 years. For cancer, it is expressed as the % of new born children who would be expected to die from a particular cancer before the age of 75 if they had the rates of cancer observed in the period in the absence of competing causes.

[b] Rates per 100,000 men per year.

Data Sources:

Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2020). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [27 January 2021].

Figure 32: Age-standardised mortality rates of anal cancer among men in the World (estimates for 2020)



Data accessed on 27 Jan 2021

For more detailed methods of estimation please refer to http://gco.iarc.fr/today/data-sources-methods

[a] Rates per 100,000 men per year.

Data Sources:

Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2020). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [27 January 2021].

3.4.2 Vulvar cancer

3.4.2.1 Vulvar cancer incidence

Table 10: Incidence of vulvar cancer in women by World region and sub regions (estimates for 2020)

Area	N Cases	Uncertainty intervals of new cancer cases [95% UI]	Crude rate[b]	ASR[b]	Cumulative risk (%) ages 0-74 years[a]	Ranking	
						All women	Women 15-44 years
World	45,240	[40,655.5-50,341.5]	1.17	0.85	0.09	21	23
High income	22,666	[21,685.4-23,690.9]	3.67	1.56	0.17	19	17
Low and middle income	22,560	[10,668.7-14,065.6]	0.70	0.60	0.07	22	23
Upper middle income	12,250	[10,668.7-14,065.6]	0.84	0.56	0.06	22	23
Lower middle income	8,504	[6,311.1-11,458.8]	0.57	0.62	0.07	23	23
Low income	1,806	[1,148.4-2,840.2]	0.60	0.88	0.09	19	15
Africa	5,144	[3,330-7,946.2]	0.77	1.11	0.12	19	13
Eastern Africa	2,025	[1,113.9-3,681.4]	0.90	1.39	0.14	17	11
Middle Africa	612	[300.5-1,246.6]	0.68	1.31	0.15	14	11
Northern Africa	747	[469.5-1,188.4]	0.61	0.66	0.08	22	26
Southern Africa	487	[427.5-554.7]	1.42	1.39	0.14	20	8
Western Africa	1,273	[497.5-3,257.4]	0.64	0.99	0.11	17	11
Americas	10,870	[3,141.7-4,654.5]	2.10	1.30	0.14	19	18
Caribbean	211	[107.3-414.9]	0.96	0.68	0.08	23	23
Central America	667	[539.1-825.3]	0.73	0.62	0.07	21	19
Northern America	7,046	[6,861.7-7,235.2]	3.78	1.91	0.21	19	17
South America	2,946	[2,286-3,796.5]	1.35	0.93	0.10	22	19
Asia	12,181	[10,152-14,615.5]	0.54	0.41	0.05	23	27
Central Asia	258	[98.9-155.5]	0.69	0.70	0.08	20	22
Eastern Asia	4,999	[4,421.3-5,652.2]	0.61	0.33	0.03	23	24
South-Eastern Asia	2,205	[1,392.3-3,491.9]	0.66	0.57	0.07	21	19
Southern Asia	4,111	[9.70-156.7]	0.44	0.46	0.06	26	28
Western Asia	608	[344.2-1,074]	0.46	0.47	0.06	25	27
Europe	16,506	[15,463.8-17,618.4]	4.26	1.68	0.19	19	18
Eastern Europe	5,012	[4,689.4-5,356.8]	3.23	1.30	0.15	19	19
Northern Europe	2,227	[2,091.7-2,371.1]	4.14	1.85	0.20	20	16
Southern Europe	3,048	[2,591.8-3,584.4]	3.89	1.35	0.15	19	18
Western Europe	6,219	[5,899.9-6,555.4]	6.23	2.43	0.26	19	15
Oceania	539	[473-614.2]	2.53	1.55	0.17	20	19
Australia & New Zealand	521	[470.7-576.7]	3.42	1.75	0.20	20	19
Melanesia	18	[6.60-48.8]	0.33	0.40	0.04	26	20
Micronesia	0	[0-15.6]	0	0	0	24	6
Polynesia	0	[0-12.8]	0	0	0	29	24

Data accessed on 27 Jan 2021

For more detailed methods of estimation please refer to http://gco.iarc.fr/today/data-sources-methods

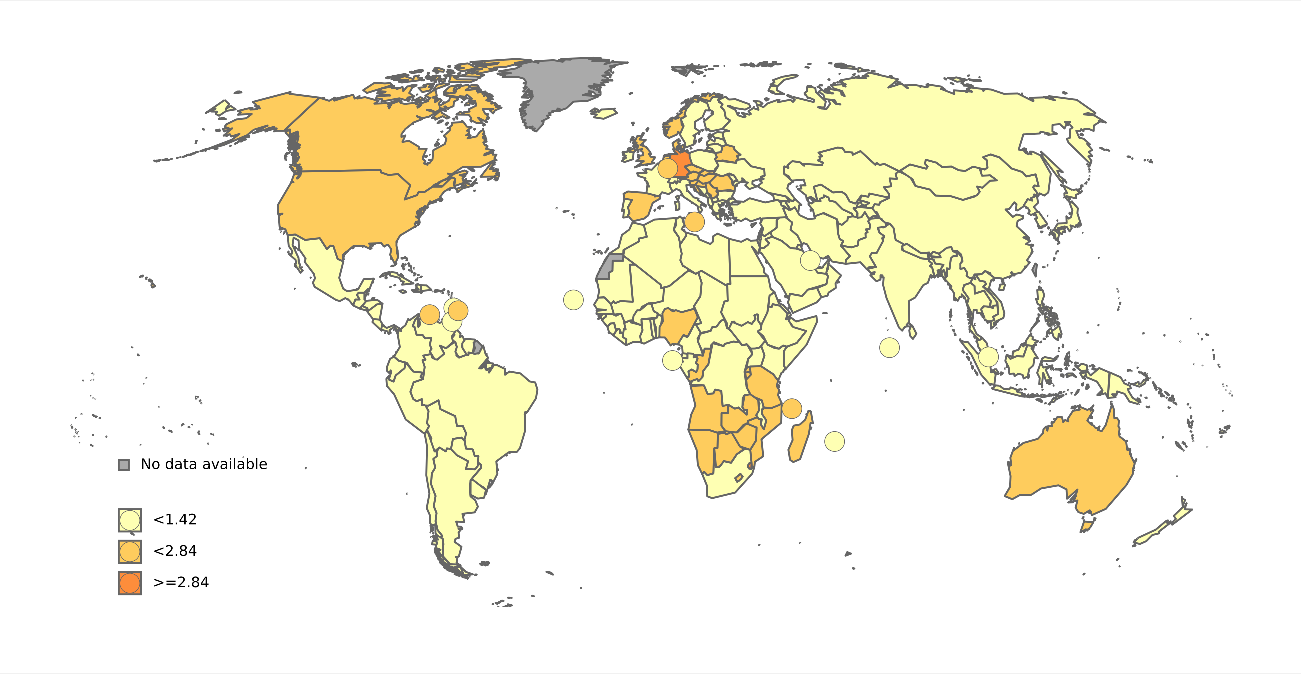
[a] Cumulative risk (incidence) is the probability or risk of individuals getting from the disease during ages 0-74 years. For cancer, it is expressed as the % of new born children who would be expected to develop from a particular cancer before the age of 75 if they had the rates of cancer observed in the period in the absence of competing causes.

[b] Rates per 100,000 women per year.

Data Sources:

Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2020). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [27 January 2021].

Figure 33: Age-standardised incidence rates of vulvar cancer among women in the World (estimates for 2020)



Data accessed on 27 Jan 2021

For more detailed methods of estimation please refer to http://gco.iarc.fr/today/data-sources-methods

[a] Rates per 100,000 women per year.

Data Sources:

Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2020). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [27 January 2021].

3.4.2.2 Vulvar cancer mortality

Table 11: Mortality of vulvar cancer in women by World region and sub regions (estimates for 2020)

Area	N Cases	Uncertainty intervals of new cancer cases [95% UI]	Crude rate[b]	ASR[b]	Cumulative risk (%) ages 0-74 years[a]	Ranking	
						All women	Women 15-44 years
World	17,427	[14,496.7-20,949.6]	0.45	0.30	0.03	22	23
High income	7,116	[6,539.7-7,743]	1.15	0.35	0.03	20	24
Low and middle income	10,310	[3,930.1-6,114.2]	0.32	0.27	0.03	23	23
Upper middle income	4,902	[3,930.1-6,114.2]	0.34	0.21	0.02	23	23
Lower middle income	4,337	[3,316.1-5,672.3]	0.29	0.32	0.04	23	24
Low income	1,071	[645.6-1,776.8]	0.35	0.56	0.06	20	15
Africa	2,858	[1,742.9-4,686.6]	0.43	0.66	0.07	20	12
Eastern Africa	1,176	[591.7-2,337.4]	0.52	0.89	0.09	18	12
Middle Africa	367	[182.8-736.7]	0.41	0.85	0.09	14	15
Northern Africa	357	[213.2-597.8]	0.29	0.32	0.03	22	23
Southern Africa	221	[177.5-275.1]	0.64	0.62	0.06	20	9
Western Africa	737	[334.1-1,625.6]	0.37	0.64	0.07	17	12
Americas	3,127	[1,204.7-1,585.4]	0.60	0.31	0.03	21	23
Caribbean	57	[29.2-111.3]	0.26	0.15	0.01	25	27
Central America	226	[187.6-272.3]	0.25	0.20	0.02	22	27
Northern America	1,745	[1,651.1-1,844.2]	0.94	0.36	0.04	19	20
South America	1,099	[976-1,237.5]	0.50	0.31	0.03	21	25
Asia	4,826	[3,694-6,304.9]	0.21	0.16	0.02	24	28
Central Asia	127	[47.3-83.9]	0.34	0.35	0.04	20	26
Eastern Asia	1,662	[1,304.2-2,117.9]	0.20	0.10	0.01	23	25
South-Eastern Asia	763	[477.4-1,219.5]	0.23	0.19	0.02	23	19
Southern Asia	2,019	[6.60-87.5]	0.21	0.23	0.03	25	29
Western Asia	255	[169.6-383.4]	0.19	0.19	0.02	25	30
Europe	6,503	[5,811.5-7,276.8]	1.68	0.51	0.05	19	19
Eastern Europe	2,561	[2,144.3-3,058.7]	1.65	0.59	0.06	20	18
Northern Europe	795	[712.9-886.5]	1.48	0.45	0.04	19	23
Southern Europe	1,293	[1,155.8-1,446.5]	1.65	0.40	0.04	18	27
Western Europe	1,854	[1,704.8-2,016.2]	1.86	0.49	0.05	18	16
Oceania	113	[83.5-153]	0.53	0.26	0.02	22	19
Australia & New Zealand	107	[84.8-135.1]	0.70	0.27	0.02	21	19
Melanesia	6	[3.40-10.7]	0.11	0.15	0.02	26	20
Micronesia	0	[0-9.20]	0	0	0	20	2
Polynesia	0	[0-11.3]	0	0	0	26	22

Data accessed on 27 Jan 2021

For more detailed methods of estimation please refer to http://gco.iarc.fr/today/data-sources-methods

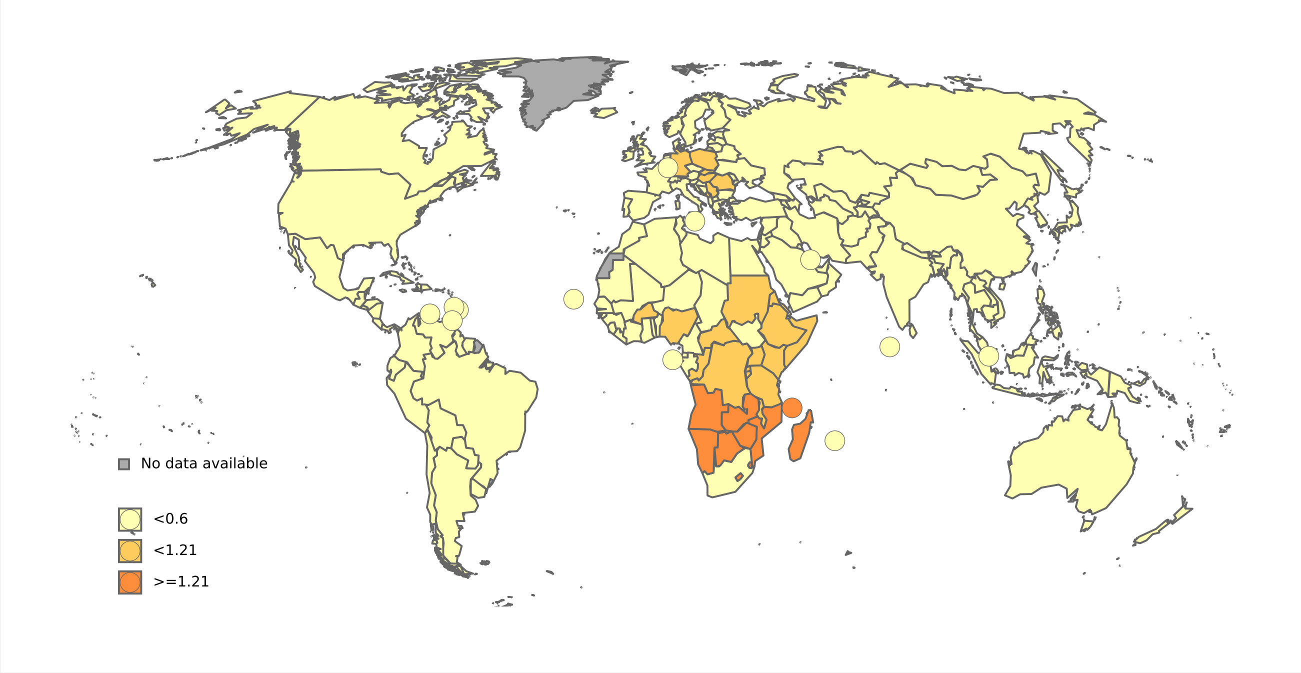
[a] Cumulative risk (mortality) is the probability or risk of individuals dying from the disease during ages 0-74 years. For cancer, it is expressed as the % of new born children who would be expected to die from a particular cancer before the age of 75 if they had the rates of cancer observed in the period in the absence of competing causes.

[b] Rates per 100,000 women per year.

Data Sources:

Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2020). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [27 January 2021].

Figure 34: Age-standardised mortality rates of vulvar cancer among women in the World (estimates for 2020)



Data accessed on 27 Jan 2021

For more detailed methods of estimation please refer to http://gco.iarc.fr/today/data-sources-methods

[a] Rates per 100,000 women per year.

Data Sources:

Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2020). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [27 January 2021].

3.4.3 Vaginal cancer

3.4.3.1 Vaginal cancer incidence

Table 12: Incidence of vaginal cancer in women by World region and sub regions (estimates for 2020)

Area	N Cases	Uncertainty intervals of new cancer cases [95% UI]	Crude rate[b]	ASR[b]	Cumulative risk (%) ages 0-74 years[a]	Ranking	
						All women	Women 15-44 years
World	17,908	[14,678.3-21,848.4]	0.46	0.36	0.04	28	28
High income	4,622	[4,185.7-5,103.8]	0.75	0.33	0.04	27	26
Low and middle income	13,283	[3,740.8-5,882.6]	0.41	0.36	0.04	27	28
Upper middle income	4,691	[3,740.8-5,882.6]	0.32	0.23	0.03	27	27
Lower middle income	7,714	[5,780.3-10,294.5]	0.52	0.57	0.07	25	26
Low income	878	[443.4-1,738.6]	0.29	0.45	0.05	27	24
Africa	2,001	[1,031-3,883.5]	0.30	0.45	0.05	27	25
Eastern Africa	790	[299.4-2,084.6]	0.35	0.59	0.07	25	23
Middle Africa	278	[91.6-844.1]	0.31	0.55	0.06	24	22
Northern Africa	275	[128.3-589.5]	0.22	0.25	0.03	28	28
Southern Africa	218	[180.2-263.8]	0.64	0.66	0.07	25	22
Western Africa	440	[104.6-1,850.7]	0.22	0.37	0.04	26	22
Americas	3,061	[1,047-1,964]	0.59	0.38	0.04	27	25
Caribbean	143	[77.1-265.4]	0.65	0.47	0.06	27	25
Central America	320	[223.2-458.9]	0.35	0.32	0.04	24	23
Northern America	1,627	[1,540.6-1,718.2]	0.87	0.44	0.05	27	24
South America	971	[632.7-1,490.2]	0.44	0.32	0.04	27	25
Asia	9,762	[7,601.9-12,535.9]	0.43	0.34	0.04	27	25
Central Asia	104	[35.1-71.2]	0.28	0.29	0.04	29	29
Eastern Asia	2,226	[1,804-2,746.7]	0.27	0.17	0.02	27	26
South-Eastern Asia	954	[470.9-1,932.7]	0.29	0.25	0.03	28	28
Southern Asia	6,216	[3.90-103.7]	0.66	0.69	0.08	22	22
Western Asia	262	[114.7-598.5]	0.20	0.21	0.02	29	28
Europe	2,947	[2,536.3-3,424.3]	0.76	0.33	0.04	28	27
Eastern Europe	1,005	[876.9-1,151.8]	0.65	0.31	0.04	27	29
Northern Europe	450	[389.9-519.4]	0.84	0.38	0.04	28	26
Southern Europe	553	[384.9-794.5]	0.70	0.29	0.03	28	24
Western Europe	939	[813-1,084.5]	0.94	0.36	0.04	29	30
Oceania	137	[103.2-181.9]	0.64	0.43	0.05	27	27
Australia & New Zealand	113	[90.6-140.9]	0.74	0.39	0.04	27	25
Melanesia	24	[4.40-132.3]	0.44	0.55	0.05	23	31
Micronesia	0	[0-15.6]	0	0	0	20	16
Polynesia	0	[0-12.8]	0	0	0	28	29

Data accessed on 27 Jan 2021

For more detailed methods of estimation please refer to http://gco.iarc.fr/today/data-sources-methods

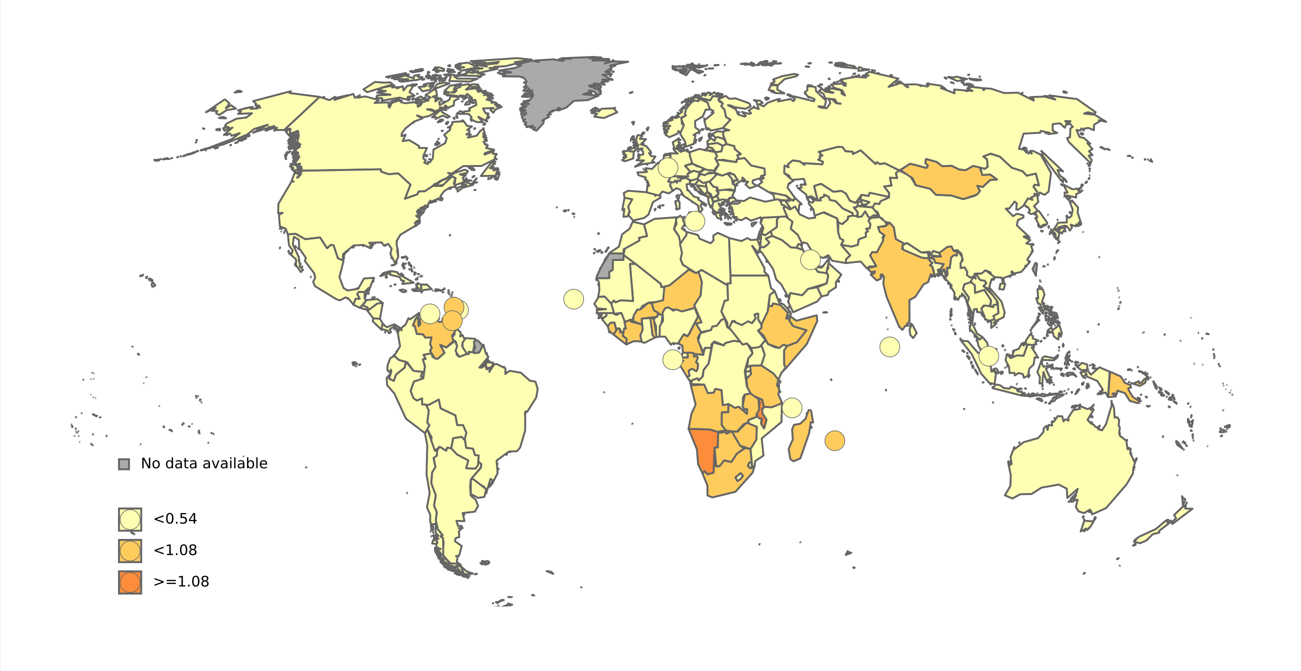
[a] Cumulative risk (incidence) is the probability or risk of individuals getting from the disease during ages 0-74 years. For cancer, it is expressed as the % of new born children who would be expected to develop from a particular cancer before the age of 75 if they had the rates of cancer observed in the period in the absence of competing causes.

[b] Rates per 100,000 women per year.

Data Sources:

Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2020). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [27 January 2021].

Figure 35: Age-standardised incidence rates of vaginal cancer among women in the World (estimates for 2020)



Data accessed on 27 Jan 2021

For more detailed methods of estimation please refer to http://gco.iarc.fr/today/data-sources-methods

[a] Rates per 100,000 women per year.

Data Sources:

Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2020). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [27 January 2021].

3.4.3.2 Vaginal cancer mortality

Table 13: Mortality of vaginal cancer in women by World region and sub regions (estimates for 2020)

Area	N Cases	Uncertainty intervals of new cancer cases [95% UI]	Crude rate[b]	ASR[b]	Cumulative risk (%) ages 0-74 years[a]	Ranking	
						All women	Women 15-44 years
World	7,995	[5,982.6-10,684.2]	0.21	0.16	0.02	28	28
High income	1,701	[1,441.9-2,006.7]	0.28	0.09	0.01	28	28
Low and middle income	6,294	[1,305.9-2,706.4]	0.19	0.17	0.02	27	28
Upper middle income	1,880	[1,305.9-2,706.4]	0.13	0.09	0.01	29	29
Lower middle income	3,883	[2,578-5,848.7]	0.26	0.29	0.03	25	25
Low income	531	[247.4-1,139.8]	0.18	0.28	0.03	27	23
Africa	1,102	[518.4-2,342.6]	0.16	0.26	0.03	27	23
Eastern Africa	473	[154.9-1,444]	0.21	0.38	0.05	27	22
Middle Africa	162	[51.9-505.4]	0.18	0.34	0.04	24	22
Northern Africa	125	[53.6-291.5]	0.10	0.11	0.01	29	27
Southern Africa	74	[45.7-119.7]	0.22	0.22	0.02	26	22
Western Africa	268	[60-1,196.7]	0.13	0.24	0.03	27	24
Americas	965	[376.9-647.5]	0.19	0.10	0.01	27	29
Caribbean	59	[32.9-105.9]	0.27	0.18	0.02	24	25
Central America	107	[77.9-146.9]	0.12	0.10	0.01	25	29
Northern America	471	[423.8-523.5]	0.25	0.10	0.01	26	28
South America	328	[257.5-417.8]	0.15	0.10	0.01	27	28
Asia	4,607	[3,083.4-6,883.5]	0.20	0.16	0.02	25	25
Central Asia	46	[13.5-35.8]	0.12	0.13	0.02	29	31
Eastern Asia	923	[657-1,296.5]	0.11	0.06	0.01	28	26
South-Eastern Asia	463	[223.3-959.9]	0.14	0.12	0.01	26	28
Southern Asia	3,060	[3.20-69.3]	0.33	0.34	0.04	23	22
Western Asia	115	[52.2-253.3]	0.09	0.09	0.01	27	29
Europe	1,267	[978.5-1,640.6]	0.33	0.11	0.01	28	30
Eastern Europe	485	[322.4-729.7]	0.31	0.13	0.01	28	30
Northern Europe	185	[147.6-231.9]	0.34	0.13	0.01	27	22
Southern Europe	247	[189.5-322]	0.31	0.09	0.01	28	22
Western Europe	350	[287.4-426.2]	0.35	0.10	0.01	27	29
Oceania	54	[31.1-93.7]	0.25	0.17	0.02	25	30
Australia & New Zealand	37	[23.7-57.7]	0.24	0.11	0.01	26	27
Melanesia	17	[7.70-37.4]	0.31	0.39	0.04	21	29
Micronesia	0	[0-9.20]	0	0	0	21	19
Polynesia	0	[0-11.3]	0	0	0	25	23

Data accessed on 27 Jan 2021

For more detailed methods of estimation please refer to http://gco.iarc.fr/today/data-sources-methods

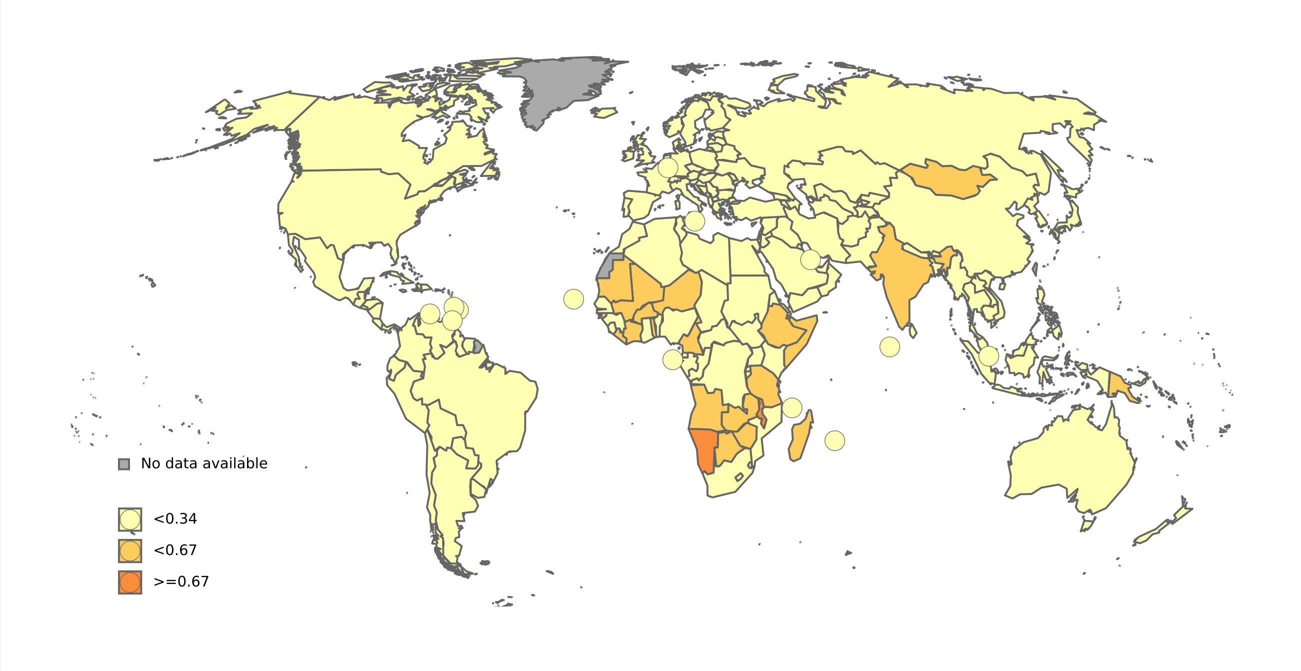
[a] Cumulative risk (mortality) is the probability or risk of individuals dying from the disease during ages 0-74 years. For cancer, it is expressed as the % of new born children who would be expected to die from a particular cancer before the age of 75 if they had the rates of cancer observed in the period in the absence of competing causes.

[b] Rates per 100,000 women per year.

Data Sources:

Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2020). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [27 January 2021].

Figure 36: Age-standardised mortality rates of vaginal cancer among women in the World (estimates for 2020)



Data accessed on 27 Jan 2021
For more detailed methods of estimation please refer to http://gco.iarc.fr/today/data-sources-methods
[a] Rates per 100,000 women per year.
Data Sources:
Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2020). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [27 January 2021].

3.4.4 Penile cancer

3.4.4.1 Penile cancer incidence

Table 14: Incidence of penile cancer in men by World region and sub regions (estimates for 2020)

Area	N Cases	Uncertainty intervals of new cancer cases [95% UI]	Crude rate[b]	ASR[b]	Cumulative risk (%) ages 0-74 years[a]	Ranking	
						All men	Men 15-44 years
World	36,068	[30,962.6-42,015.2]	0.92	0.80	0.09	24	25
High income	8,293	[7,573-9,081.5]	1.35	0.66	0.08	25	26
Low and middle income	27,762	[10,593.4-14,114.9]	0.84	0.83	0.09	24	24
Upper middle income	12,228	[10,593.4-14,114.9]	0.83	0.65	0.07	24	24
Lower middle income	14,499	[11,772-17,857.7]	0.94	1.15	0.14	19	21
Low income	1,035	[512.8-2,088.8]	0.34	0.64	0.06	22	22
Africa	2,060	[1,012.6-4,190.6]	0.31	0.53	0.05	25	22
Eastern Africa	1,271	[564.8-2,860.2]	0.58	1.18	0.12	18	18
Middle Africa	341	[100.6-1,155.5]	0.38	0.75	0.08	23	16
Northern Africa	51	[8.30-315.1]	0.04	0.05	0.01	28	28
Southern Africa	311	[257.5-375.6]	0.94	1.12	0.12	21	13
Western Africa	86	[7.70-955.9]	0.04	0.10	0.01	28	27
Americas	6,729	[4,039.3-6,159.5]	1.33	0.97	0.10	21	21
Caribbean	392	[248.7-617.9]	1.82	1.43	0.16	18	17
Central America	908	[751.7-1,096.8]	1.03	1.03	0.10	19	15
Northern America	1,741	[1,651.8-1,835.1]	0.95	0.51	0.05	26	25
South America	3,688	[2,830.3-4,805.6]	1.74	1.46	0.14	21	17
Asia	20,315	[17,288.8-23,870.9]	0.86	0.74	0.09	22	21
Central Asia	54	[23.3-52.5]	0.15	0.19	0.02	28	28
Eastern Asia	5,369	[4,726.9-6,098.2]	0.63	0.40	0.04	25	23
South-Eastern Asia	2,791	[2,154.7-3,615.2]	0.84	0.83	0.10	22	21
Southern Asia	12,011	[1.70-71.1]	1.20	1.35	0.16	17	20
Western Asia	90	[16.6-486.8]	0.06	0.08	0.01	28	28
Europe	6,762	[6,053.1-7,553.9]	1.87	0.94	0.11	23	25
Eastern Europe	2,038	[1,828.1-2,272]	1.48	0.91	0.11	23	23
Northern Europe	1,155	[1,055.5-1,263.9]	2.20	1.11	0.13	22	23
Southern Europe	1,471	[1,127.2-1,919.6]	1.96	0.86	0.10	23	25
Western Europe	2,098	[1,892.5-2,325.9]	2.18	0.95	0.11	23	26
Oceania	202	[158.1-258.1]	0.95	0.64	0.07	25	22
Australia & New Zealand	152	[125.7-183.8]	1.01	0.54	0.06	25	23
Melanesia	50	[15.1-165.9]	0.88	1.45	0.12	19	17
Micronesia	0	[0-15.6]	0	0	0	24	24
Polynesia	0	[0-12.8]	0	0	0	27	22

Data accessed on 27 Jan 2021

For more detailed methods of estimation please refer to http://gco.iarc.fr/today/data-sources-methods

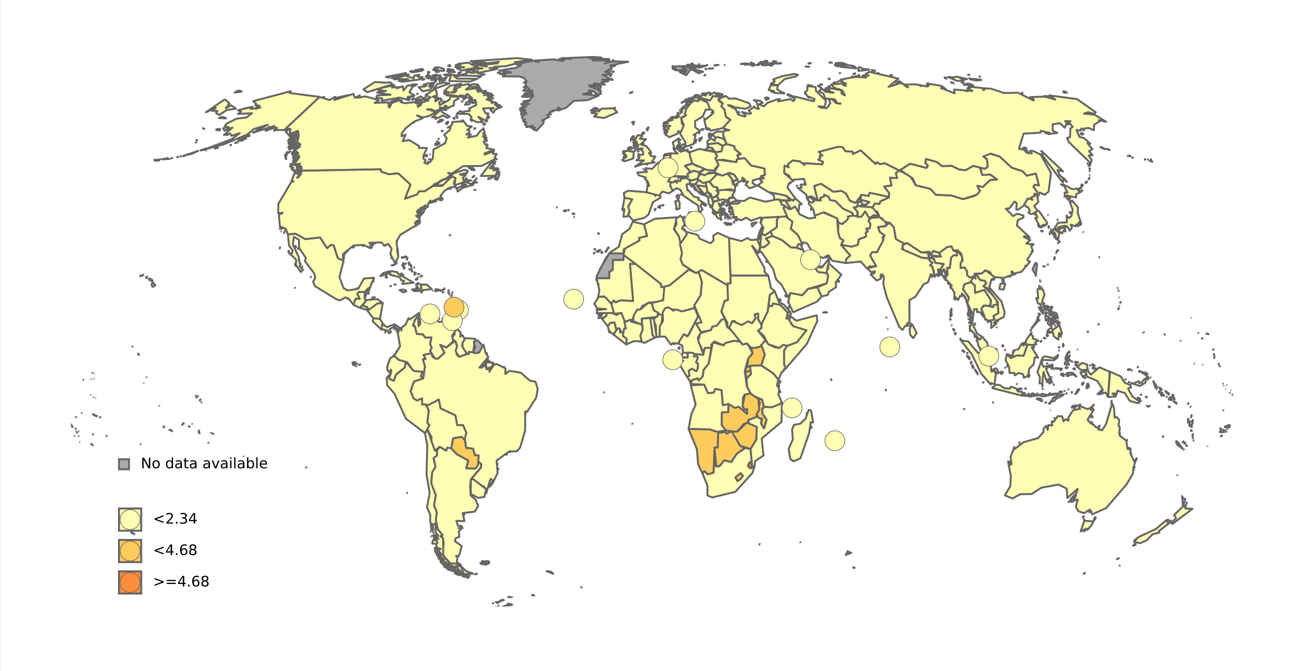
[a] Cumulative risk (incidence) is the probability or risk of individuals getting from the disease during ages 0-74 years. For cancer, it is expressed as the % of new born children who would be expected to develop from a particular cancer before the age of 75 if they had the rates of cancer observed in the period in the absence of competing causes.

[b] Rates per 100,000 men per year.

Data Sources:

Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2020). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [27 January 2021].

Figure 37: Age-standardised incidence rates of penile cancer among men in the World (estimates for 2020)



Data accessed on 27 Jan 2021

For more detailed methods of estimation please refer to http://gco.iarc.fr/today/data-sources-methods

[a] Rates per 100,000 men per year.

Data Sources:

Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2020). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [27 January 2021].

3.4.4.2 Penile cancer mortality

Table 15: Mortality of penile cancer in men by World region and sub regions (estimates for 2020)

Area	N Cases	Uncertainty intervals of new cancer cases [95% UI]	Crude rate[b]	ASR[b]	Cumulative risk (%) ages 0-74 years[a]	Ranking	
						All men	Men 15-44 years
World	13,211	[10,686.7-16,331.5]	0.34	0.29	0.03	25	27
High income	2,204	[1,876.4-2,588.8]	0.36	0.16	0.02	26	26
Low and middle income	11,006	[3,361.1-5,240.7]	0.33	0.33	0.03	23	27
Upper middle income	4,197	[3,361.1-5,240.7]	0.29	0.22	0.02	25	21
Lower middle income	6,305	[4,009.8-9,914]	0.41	0.51	0.05	20	27
Low income	504	[229.9-1,105]	0.17	0.32	0.03	24	21
Africa	942	[420-2,112.7]	0.14	0.25	0.02	27	21
Eastern Africa	606	[241-1,523.7]	0.27	0.58	0.06	20	16
Middle Africa	156	[92.6-262.9]	0.17	0.36	0.04	24	17
Northern Africa	29	[6.20-134.8]	0.02	0.03	0.00	28	27
Southern Africa	111	[78.7-156.5]	0.33	0.43	0.05	20	18
Western Africa	40	[21.3-75]	0.02	0.04	0.00	28	28
Americas	2,104	[1,420.3-1,863.8]	0.42	0.30	0.03	23	19
Caribbean	129	[84.1-197.9]	0.60	0.45	0.05	19	17
Central America	300	[254.4-353.8]	0.34	0.35	0.04	20	17
Northern America	477	[429.6-529.6]	0.26	0.13	0.01	27	24
South America	1,198	[1,062.3-1,351.1]	0.56	0.47	0.05	20	19
Asia	8,189	[5,922.4-11,323]	0.35	0.30	0.03	21	26
Central Asia	19	[6-23.9]	0.05	0.06	0.01	28	28
Eastern Asia	1,788	[1,395.5-2,291]	0.21	0.13	0.01	25	24
South-Eastern Asia	1,034	[788.9-1,355.3]	0.31	0.32	0.03	22	21
Southern Asia	5,311	[0.90-28.4]	0.53	0.60	0.07	19	27
Western Asia	37	[8.70-157.9]	0.03	0.03	0.00	28	28
Europe	1,938	[1,569.7-2,392.7]	0.54	0.25	0.03	24	26
Eastern Europe	762	[550.6-1,054.6]	0.55	0.33	0.04	26	26
Northern Europe	252	[204.2-311]	0.48	0.21	0.02	25	20
Southern Europe	414	[336-510.1]	0.55	0.21	0.02	25	25
Western Europe	510	[434.2-599.1]	0.53	0.20	0.02	24	25
Oceania	38	[18.8-76.7]	0.18	0.12	0.01	27	24
Australia & New Zealand	25	[14.7-42.6]	0.17	0.08	0.01	27	22
Melanesia	13	[2.40-70.5]	0.23	0.36	0.05	25	27
Micronesia	0	[0-9.20]	0	0	0	20	17
Polynesia	0	[0-11.3]	0	0	0	24	15

Data accessed on 27 Jan 2021

For more detailed methods of estimation please refer to http://gco.iarc.fr/today/data-sources-methods

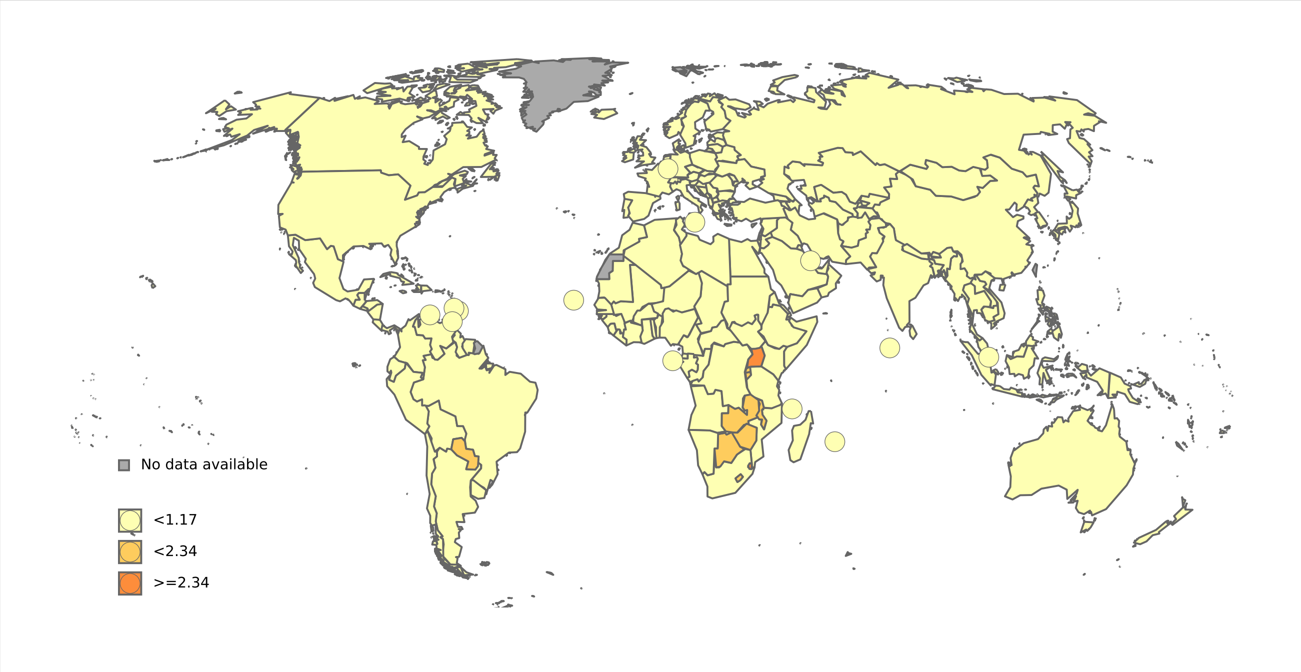
[a] Cumulative risk (mortality) is the probability or risk of individuals dying from the disease during ages 0-74 years. For cancer, it is expressed as the % of new born children who would be expected to die from a particular cancer before the age of 75 if they had the rates of cancer observed in the period in the absence of competing causes.

[b] Rates per 100,000 men per year.

Data Sources:

Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2020). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [27 January 2021].

Figure 38: Age-standardised mortality rates of penile cancer among men in the World (estimates for 2020)



Data accessed on 27 Jan 2021
For more detailed methods of estimation please refer to http://gco.iarc.fr/today/data-sources-methods
[a] Rates per 100,000 men per year.
Data Sources:
Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2020). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [27 January 2021].

3.5 Head and neck cancers

3.5.1 Oropharyngeal cancer

3.5.1.1 Oropharyngeal cancer incidence

Table 16: Incidence of oropharyngeal cancer in women by World region and sub regions (estimates for 2020)

Area	N Cases	Uncertainty intervals of new cancer cases [95% UI]	Crude rate[b]	ASR[b]	Cumulative risk (%) ages 0-74 years[a]	Ranking	
						All women	Women 15-44 years
World	19,367	[16,278.9-23,040.9]	0.50	0.40	0.05	27	30
High income	9,005	[8,332.2-9,732.1]	1.46	0.80	0.10	24	25
Low and middle income	10,356	[3,636.3-5,733.4]	0.32	0.28	0.03	29	30
Upper middle income	4,566	[3,636.3-5,733.4]	0.31	0.22	0.02	28	29
Lower middle income	5,464	[4,059.3-7,354.8]	0.37	0.40	0.05	29	30
Low income	326	[131.2-809.9]	0.11	0.17	0.02	29	29
Africa	749	[228.8-2,451.9]	0.11	0.17	0.02	29	29
Eastern Africa	143	[17-1,206.1]	0.06	0.11	0.01	30	29
Middle Africa	76	[10.3-561.7]	0.08	0.16	0.02	29	27
Northern Africa	169	[44.1-647.4]	0.14	0.16	0.02	30	29
Southern Africa	120	[85.5-168.5]	0.35	0.39	0.05	27	29
Western Africa	241	[31.9-1,819.8]	0.12	0.20	0.02	29	28
Americas	4,139	[1,225.2-2,171.2]	0.80	0.54	0.06	26	28
Caribbean	165	[83.7-325.4]	0.75	0.46	0.05	26	29
Central America	145	[96.8-217.1]	0.16	0.13	0.01	27	30
Northern America	2,508	[2,400.8-2,619.9]	1.35	0.79	0.10	25	25
South America	1,321	[930.9-1,874.7]	0.60	0.44	0.05	25	27
Asia	7,579	[5,782.4-9,933.9]	0.33	0.26	0.03	29	29
Central Asia	176	[30.4-66.6]	0.47	0.47	0.05	23	21
Eastern Asia	1,812	[1,424-2,305.7]	0.22	0.13	0.01	29	28
South-Eastern Asia	1,012	[521.2-1,965]	0.30	0.27	0.03	27	23
Southern Asia	4,430	[9.40-234.1]	0.47	0.49	0.06	25	27
Western Asia	149	[40.2-552.3]	0.11	0.12	0.01	31	31
Europe	6,717	[6,016.9-7,498.6]	1.73	0.92	0.11	24	23
Eastern Europe	1,891	[1,696.2-2,108.2]	1.22	0.68	0.08	23	22
Northern Europe	1,090	[990.5-1,199.5]	2.03	1.21	0.15	24	22
Southern Europe	770	[546.9-1,084.1]	0.98	0.45	0.06	27	29
Western Europe	2,966	[2,699.3-3,259.1]	2.97	1.53	0.19	22	25
Oceania	183	[145.8-229.7]	0.86	0.63	0.08	26	23
Australia & New Zealand	173	[145-206.5]	1.13	0.73	0.09	26	23
Melanesia	10	[1.80-56.3]	0.18	0.23	0.04	27	25
Micronesia	0	[0-15.6]	0	0	0	31	30
Polynesia	0	[0-12.8]	0	0	0	22	14

Data accessed on 27 Jan 2021

For more detailed methods of estimation please refer to http://gco.iarc.fr/today/data-sources-methods

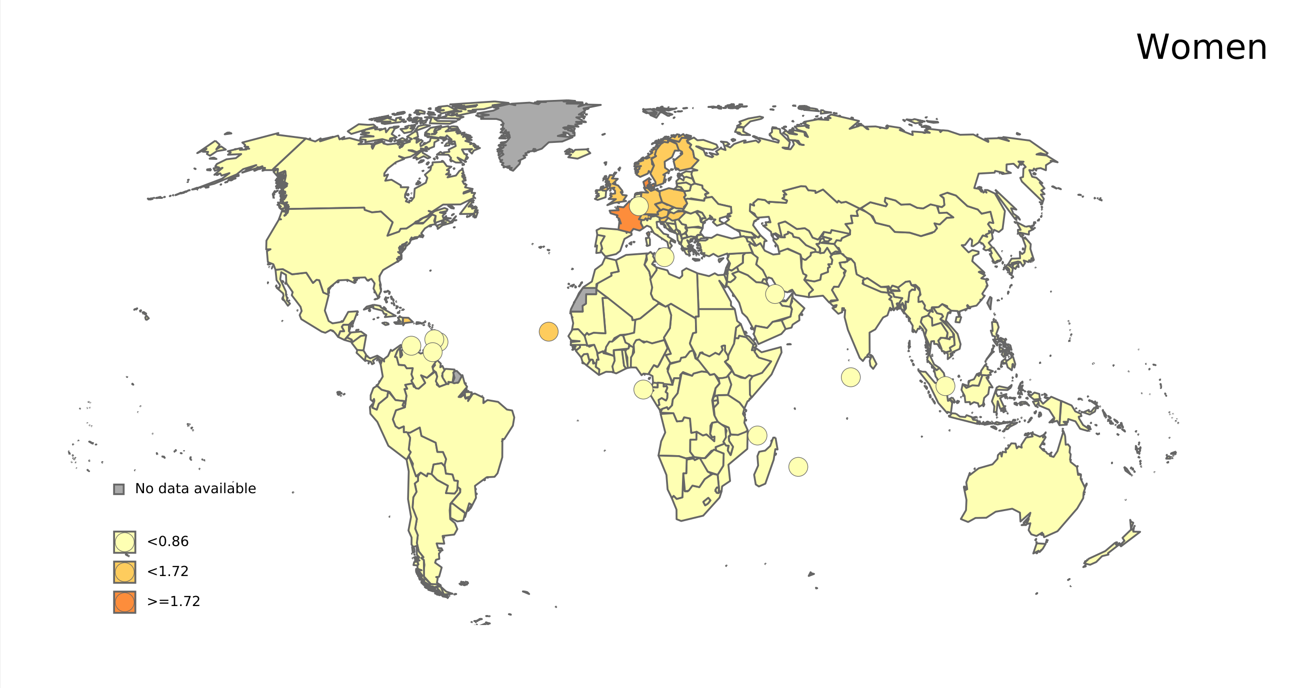
[a] Cumulative risk (incidence) is the probability or risk of individuals getting from the disease during ages 0-74 years. For cancer, it is expressed as the % of new born children who would be expected to develop from a particular cancer before the age of 75 if they had the rates of cancer observed in the period in the absence of competing causes.

[b] Rates per 100,000 women per year.

Data Sources:

Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2020). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [27 January 2021].

Figure 39: Age-standardised incidence rates of oropharyngeal cancer among women in the World (estimates for 2020)



Data accessed on 27 Jan 2021

For more detailed methods of estimation please refer to http://gco.iarc.fr/today/data-sources-methods

[a] Rates per 100,000 women per year.

Data Sources:

Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2020). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [27 January 2021].

Table 17: Incidence of oropharyngeal cancer in men by World region and sub regions (estimates for 2020)

Area	N Cases	Uncertainty intervals of new cancer cases [95% UI]	Crude rate[b]	ASR[b]	Cumulative risk (%) ages 0-74 years[a]	Ranking	
						All men	Men 15-44 years
World	79,045	[72,769-85,862.3]	2.01	1.79	0.22	19	20
High income	33,310	[32,131.3-34,531.9]	5.43	3.28	0.41	19	15
Low and middle income	45,685	[16,448-20,724.8]	1.38	1.36	0.16	18	20
Upper middle income	18,463	[16,448-20,724.8]	1.26	0.97	0.11	20	22
Lower middle income	26,280	[23,140.8-29,845]	1.70	2.07	0.25	15	18
Low income	942	[575.4-1,542.1]	0.31	0.58	0.07	23	25
Africa	2,164	[1,093.9-4,280.9]	0.32	0.57	0.07	24	25
Eastern Africa	736	[216.3-2,504.5]	0.33	0.69	0.08	23	25
Middle Africa	351	[117.8-1,046.2]	0.39	0.80	0.09	22	21
Northern Africa	312	[134.4-724.1]	0.25	0.31	0.04	25	26
Southern Africa	408	[340.2-489.3]	1.23	1.59	0.19	19	23
Western Africa	357	[70.2-1,816.8]	0.18	0.34	0.04	23	23
Americas	18,771	[6,266.7-8,394.5]	3.72	2.93	0.36	19	18
Caribbean	912	[703.8-1,181.8]	4.24	3.42	0.41	14	20
Central America	370	[295.7-463]	0.42	0.43	0.05	24	24
Northern America	11,518	[11,287.3-11,753.4]	6.31	4.01	0.50	17	16
South America	5,971	[5,016.6-7,107.1]	2.82	2.48	0.29	19	16
Asia	34,597	[30,752.9-38,921.6]	1.46	1.27	0.15	19	19
Central Asia	323	[72.6-124.4]	0.88	1.11	0.14	17	22
Eastern Asia	8,377	[7,528-9,321.7]	0.98	0.63	0.07	20	20
South-Eastern Asia	3,620	[2,885.2-4,541.8]	1.08	1.05	0.13	19	20
Southern Asia	21,941	[39.7-272.6]	2.19	2.44	0.29	14	15
Western Asia	336	[151.6-744.6]	0.23	0.29	0.04	26	27
Europe	22,522	[21,230.9-23,891.7]	6.23	3.74	0.46	18	14
Eastern Europe	9,200	[8,757.3-9,665]	6.67	4.36	0.54	16	13
Northern Europe	3,342	[3,163-3,531.1]	6.37	4.00	0.48	17	12
Southern Europe	2,941	[2,483.5-3,482.8]	3.92	2.11	0.27	19	21
Western Europe	7,039	[6,609-7,497]	7.30	4.06	0.51	17	15
Oceania	991	[895.6-1,096.6]	4.64	3.63	0.45	18	15
Australia & New Zealand	868	[802.9-938.4]	5.76	3.95	0.47	18	14
Melanesia	114	[44.7-290.7]	2.01	3.50	0.55	12	24
Micronesia	3	[0.80-11.9]	1.08	1.14	0.19	15	15
Polynesia	6	[1.70-21.5]	1.73	1.71	0.25	20	13

Data accessed on 27 Jan 2021

For more detailed methods of estimation please refer to http://gco.iarc.fr/today/data-sources-methods

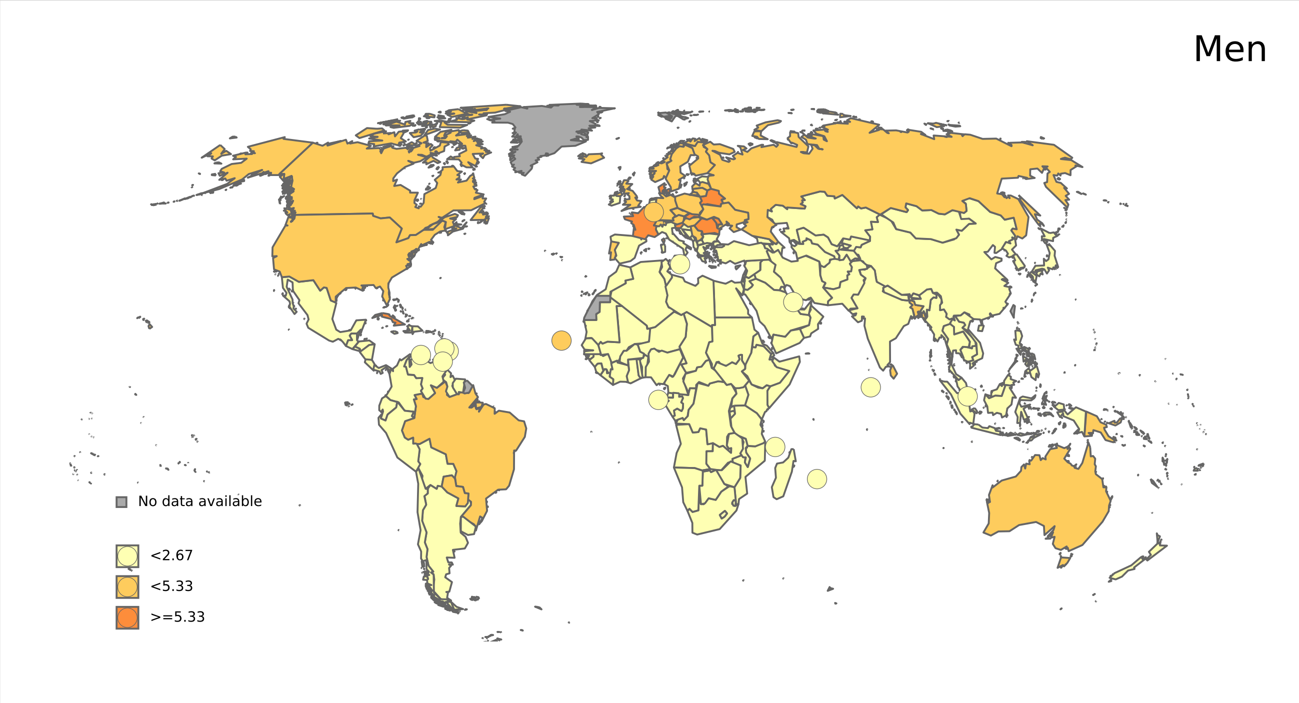
[a] Cumulative risk (incidence) is the probability or risk of individuals getting from the disease during ages 0-74 years. For cancer, it is expressed as the % of new born children who would be expected to develop from a particular cancer before the age of 75 if they had the rates of cancer observed in the period in the absence of competing causes.

[b] Rates per 100,000 men per year.

Data Sources:

Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2020). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [27 January 2021].

Figure 40: Age-standardised incidence rates of oropharyngeal cancer among men in the World (estimates for 2020)



Data accessed on 27 Jan 2021

For more detailed methods of estimation please refer to http://gco.iarc.fr/today/data-sources-methods

[a] Rates per 100,000 men per year.

Data Sources:

Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2020). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [27 January 2021].

3.5.1.2 Oropharyngeal cancer mortality

Table 18: Mortality of oropharyngeal cancer in women by World region and sub regions (estimates for 2020)

Area	N Cases	Uncertainty intervals of new cancer cases [95% UI]	Crude rate[b]	ASR[b]	Cumulative risk (%) ages 0-74 years[a]	Ranking	
						All women	Women 15-44 years
World	8,553	[6,683.7-10,945.2]	0.22	0.17	0.02	27	30
High income	3,092	[2,730.3-3,501.6]	0.50	0.22	0.03	24	27
Low and middle income	5,458	[1,474.9-2,772.1]	0.17	0.15	0.02	28	30
Upper middle income	2,022	[1,474.9-2,772.1]	0.14	0.09	0.01	28	30
Lower middle income	3,222	[2,162.1-4,801.4]	0.22	0.24	0.03	27	30
Low income	214	[77.4-592]	0.07	0.12	0.01	29	29
Africa	436	[113.2-1,679.5]	0.07	0.10	0.01	30	29
Eastern Africa	93	[40.4-213.9]	0.04	0.07	0.01	30	30
Middle Africa	51	[12-216]	0.06	0.12	0.02	29	28
Northern Africa	72	[20.4-254.6]	0.06	0.07	0.01	30	29
Southern Africa	57	[39-83.4]	0.17	0.19	0.02	28	30
Western Africa	163	[51.6-515.1]	0.08	0.14	0.02	29	27
Americas	1,613	[683-965.3]	0.31	0.18	0.02	24	27
Caribbean	97	[51.3-183.5]	0.44	0.25	0.02	21	31
Central America	83	[58.3-118.2]	0.09	0.08	0.01	27	30
Northern America	801	[738.4-868.9]	0.43	0.20	0.02	24	27
South America	632	[548-728.8]	0.29	0.20	0.02	25	26
Asia	4,094	[2,701.7-6,203.7]	0.18	0.14	0.02	27	27
Central Asia	117	[19.5-46.1]	0.31	0.31	0.04	23	22
Eastern Asia	777	[539.6-1,118.7]	0.09	0.05	0.01	29	29
South-Eastern Asia	441	[224.3-866.8]	0.13	0.11	0.01	28	26
Southern Asia	2,665	[6.10-120.3]	0.28	0.30	0.04	24	27
Western Asia	94	[38.3-230.4]	0.07	0.08	0.01	29	28
Europe	2,352	[1,973.5-2,803.1]	0.61	0.28	0.03	24	27
Eastern Europe	710	[506.4-995.5]	0.46	0.23	0.03	26	26
Northern Europe	328	[279.1-385.5]	0.61	0.30	0.04	24	21
Southern Europe	393	[323.5-477.5]	0.50	0.19	0.02	25	30
Western Europe	921	[817-1,038.3]	0.92	0.40	0.05	22	22
Oceania	58	[36.8-91.3]	0.27	0.16	0.02	24	23
Australia & New Zealand	54	[38.2-76.3]	0.35	0.17	0.02	24	21
Melanesia	4	[1.30-12.3]	0.07	0.10	0.02	28	26
Micronesia	0	[0-9.20]	0	0	0	26	16
Polynesia	0	[0-11.3]	0	0	0	24	17

Data accessed on 27 Jan 2021

For more detailed methods of estimation please refer to http://gco.iarc.fr/today/data-sources-methods

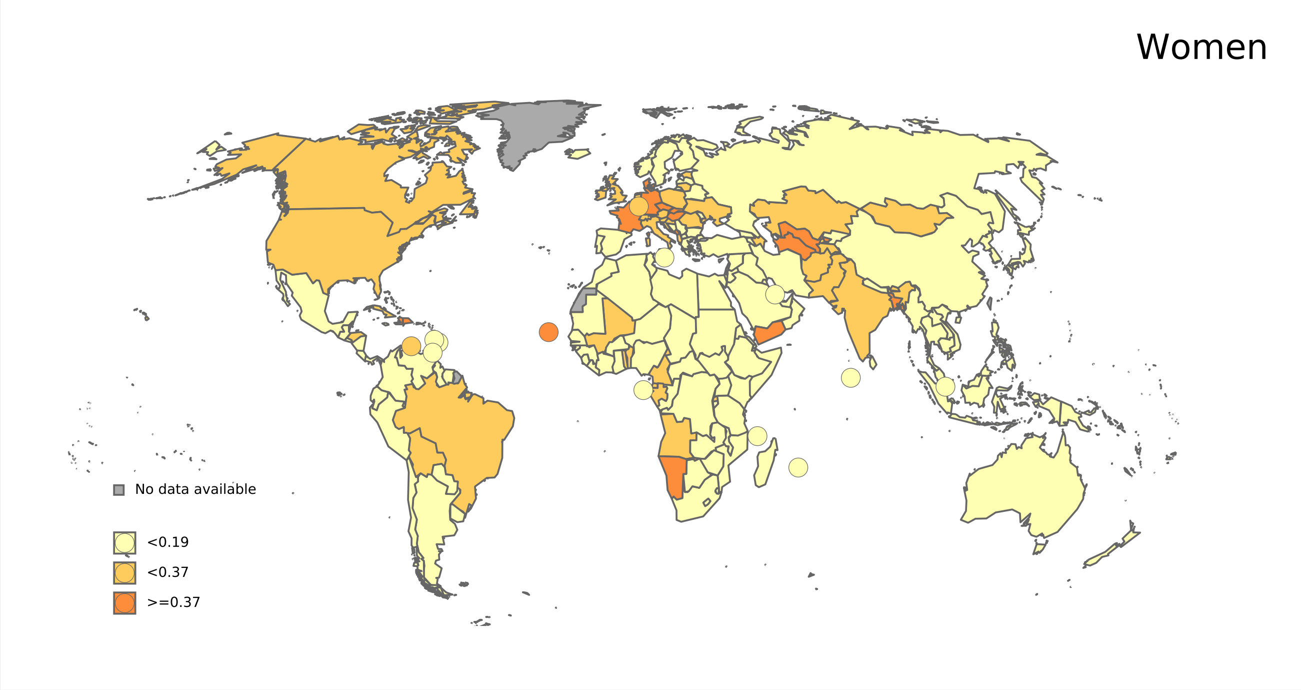
[a] Cumulative risk (mortality) is the probability or risk of individuals dying from the disease during ages 0-74 years. For cancer, it is expressed as the % of new born children who would be expected to die from a particular cancer before the age of 75 if they had the rates of cancer observed in the period in the absence of competing causes.

[b] Rates per 100,000 women per year.

Data Sources:

Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2020). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [27 January 2021].

Figure 41: Age-standardised mortality rates of oropharyngeal cancer among women in the World (estimates for 2020)



Data accessed on 27 Jan 2021
For more detailed methods of estimation please refer to http://gco.iarc.fr/today/data-sources-methods
[a] Rates per 100,000 women per year.
Data Sources:
Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2020). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [27 January 2021].

Table 19: Mortality of oropharyngeal cancer in men by World region and sub regions (estimates for 2020)

Area	N Cases	Uncertainty intervals of new cancer cases [95% UI]	Crude rate[b]	ASR[b]	Cumulative risk (%) ages 0-74 years[a]	Ranking	
						All men	Men 15-44 years
World	39,590	[35,255.1-44,457.9]	1.01	0.89	0.11	17	19
High income	12,793	[11,985-13,655.4]	2.09	1.14	0.14	18	16
Low and middle income	26,780	[8,867.8-11,624.4]	0.81	0.80	0.10	17	18
Upper middle income	10,153	[8,867.8-11,624.4]	0.69	0.53	0.06	18	20
Lower middle income	15,991	[12,881.5-19,851.2]	1.03	1.27	0.16	14	17
Low income	636	[366.6-1,103.5]	0.21	0.41	0.05	23	23
Africa	1,346	[619.5-2,924.4]	0.20	0.37	0.05	22	23
Eastern Africa	493	[241.1-1,008.2]	0.22	0.49	0.06	21	23
Middle Africa	232	[109.8-490.1]	0.26	0.57	0.07	22	20
Northern Africa	147	[57.7-374.3]	0.12	0.15	0.02	26	25
Southern Africa	235	[197.5-279.6]	0.71	0.98	0.12	18	21
Western Africa	239	[127.7-447.4]	0.12	0.24	0.03	22	22
Americas	6,963	[3,826.3-4,399.7]	1.38	1.03	0.13	17	17
Caribbean	425	[334.4-540.2]	1.98	1.53	0.19	16	23
Central America	263	[216.2-319.9]	0.30	0.31	0.04	22	23
Northern America	2,860	[2,741.4-2,983.8]	1.57	0.87	0.11	17	21
South America	3,415	[3,225.6-3,615.5]	1.61	1.40	0.17	16	15
Asia	20,197	[16,384.4-24,896.7]	0.85	0.74	0.09	19	17
Central Asia	248	[69.6-113.9]	0.67	0.85	0.11	15	20
Eastern Asia	4,208	[3,566.5-4,964.9]	0.49	0.31	0.03	20	20
South-Eastern Asia	2,092	[1,657.6-2,640.3]	0.63	0.62	0.08	18	17
Southern Asia	13,474	[27.7-166.7]	1.35	1.51	0.19	13	14
Western Asia	175	[99.6-307.5]	0.12	0.15	0.02	24	27
Europe	10,793	[9,874-11,797.5]	2.98	1.70	0.21	17	15
Eastern Europe	4,925	[4,330.6-5,601]	3.57	2.31	0.29	15	15
Northern Europe	1,154	[1,055.9-1,261.2]	2.20	1.16	0.15	18	15
Southern Europe	1,605	[1,446-1,781.5]	2.14	1.07	0.13	18	16
Western Europe	3,109	[2,911.8-3,319.6]	3.23	1.64	0.21	17	15
Oceania	291	[237.2-357]	1.36	0.94	0.12	17	19
Australia & New Zealand	224	[192.3-260.9]	1.49	0.86	0.11	17	18
Melanesia	65	[37.5-112.6]	1.15	2.04	0.30	13	25
Micronesia	0	[0-9.20]	0	0	0	27	22
Polynesia	2	[0.20-22.5]	0.58	0.54	0.08	19	10

Data accessed on 27 Jan 2021

For more detailed methods of estimation please refer to http://gco.iarc.fr/today/data-sources-methods

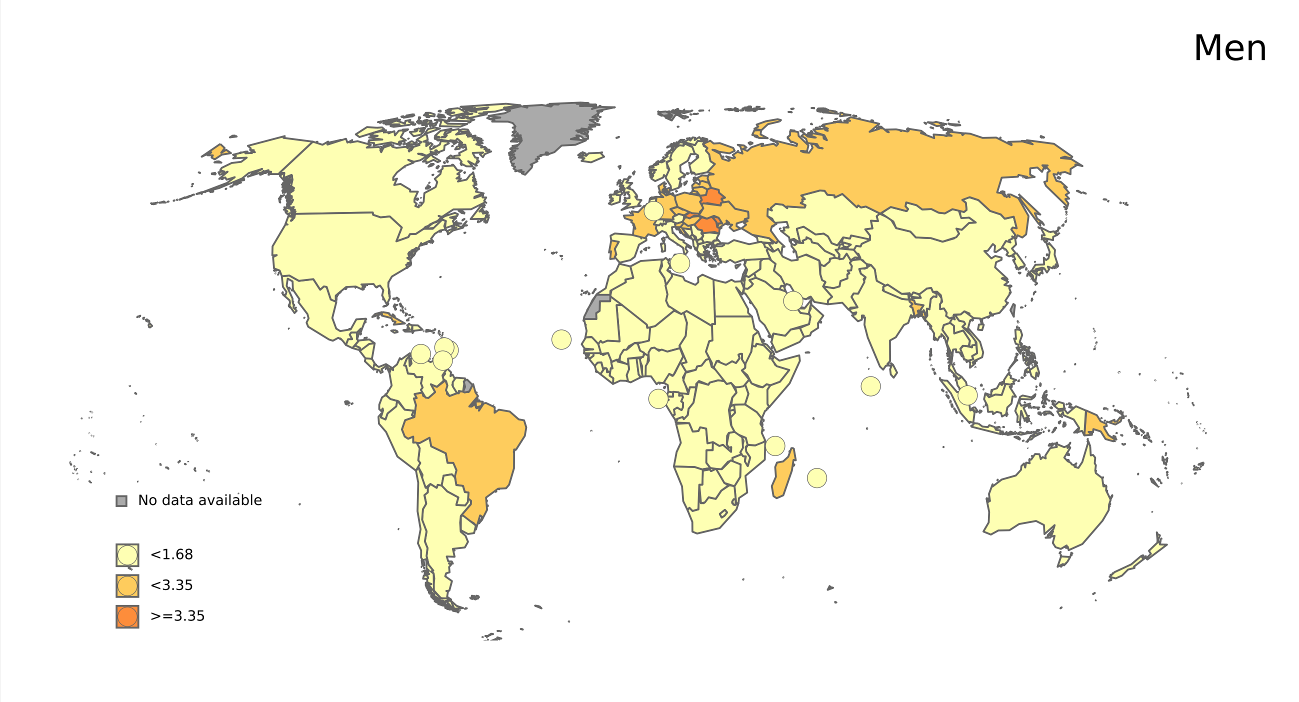
[a] Cumulative risk (mortality) is the probability or risk of individuals dying from the disease during ages 0-74 years. For cancer, it is expressed as the % of new born children who would be expected to die from a particular cancer before the age of 75 if they had the rates of cancer observed in the period in the absence of competing causes.

[b] Rates per 100,000 men per year.

Data Sources:

Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2020). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [27 January 2021].

Figure 42: Age-standardised mortality rates of oropharyngeal cancer among men in the World (estimates for 2020)



Data accessed on 27 Jan 2021
For more detailed methods of estimation please refer to http://gco.iarc.fr/today/data-sources-methods
[a] Rates per 100,000 men per year.
Data Sources:
Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2020). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [27 January 2021].

3.5.2 Oral cavity cancer

3.5.2.1 Oral cavity cancer incidence

Table 20: Incidence of oral cancer in women by World region and sub regions (estimates for 2020)

Area	N Cases	Uncertainty intervals of new cancer cases [95% UI]	Crude rate[b]	ASR[b]	Cumulative risk (%) ages 0-74 years[a]	Ranking	
						All women	Women 15-44 years
World	113,502	[105,598.7-121,996.8]	2.94	2.28	0.26	18	15
High income	33,170	[31,945.4-34,441.5]	5.37	2.51	0.29	18	15
Low and middle income	80,305	[25,796.4-30,598.4]	2.47	2.19	0.25	15	13
Upper middle income	28,095	[25,796.4-30,598.4]	1.93	1.30	0.15	17	17
Lower middle income	49,473	[45,377.1-53,938.7]	3.32	3.61	0.42	8	9
Low income	2,737	[1,871.4-4,003]	0.91	1.44	0.17	18	20
Africa	6,112	[4,125.2-9,055.7]	0.91	1.43	0.16	18	19
Eastern Africa	1,963	[1,063.1-3,624.5]	0.87	1.53	0.18	18	19
Middle Africa	552	[294.9-1,033.3]	0.61	1.14	0.13	15	14
Northern Africa	1,489	[1,042.3-2,127.2]	1.22	1.31	0.14	19	17
Southern Africa	827	[731.5-935]	2.41	2.59	0.28	15	14
Western Africa	1,281	[593.6-2,764.2]	0.64	1.15	0.14	16	19
Americas	15,129	[5,350.7-7,121.6]	2.92	1.86	0.21	18	15
Caribbean	486	[330.2-715.4]	2.21	1.43	0.16	17	17
Central America	1,132	[961.4-1,332.9]	1.24	1.09	0.12	20	16
Northern America	8,956	[8,750.9-9,165.9]	4.81	2.56	0.29	18	15
South America	4,555	[3,813.8-5,440.2]	2.08	1.44	0.14	19	16
Asia	69,964	[64,840-75,493]	3.09	2.44	0.28	15	13
Central Asia	575	[138.8-203.3]	1.53	1.55	0.17	15	15
Eastern Asia	17,500	[16,363.1-18,715.8]	2.13	1.19	0.13	19	15
South-Eastern Asia	7,084	[6,265.3-8,009.6]	2.12	1.82	0.21	14	14
Southern Asia	43,148	[147.2-591.3]	4.59	4.73	0.55	4	6
Western Asia	1,657	[1,212.8-2,263.9]	1.25	1.27	0.14	20	18
Europe	20,760	[19,532.1-22,065.1]	5.36	2.38	0.27	18	15
Eastern Europe	6,199	[5,864-6,553.2]	3.99	1.87	0.21	17	15
Northern Europe	3,457	[3,283.5-3,639.7]	6.43	3.10	0.36	19	15
Southern Europe	4,461	[3,852.4-5,165.7]	5.69	2.08	0.23	18	17
Western Europe	6,643	[6,249.6-7,061.2]	6.66	3.06	0.36	18	17
Oceania	1,537	[1,404.3-1,682.3]	7.21	4.97	0.55	13	11
Australia & New Zealand	1,026	[957-1,100]	6.73	3.64	0.41	14	14
Melanesia	503	[319-793.2]	9.23	11.9	1.35	4	5
Micronesia	4	[1-15.8]	1.47	1.27	0.12	14	29
Polynesia	4	[1-15.2]	1.19	1.05	0.12	18	16

Data accessed on 27 Jan 2021

For more detailed methods of estimation please refer to http://gco.iarc.fr/today/data-sources-methods

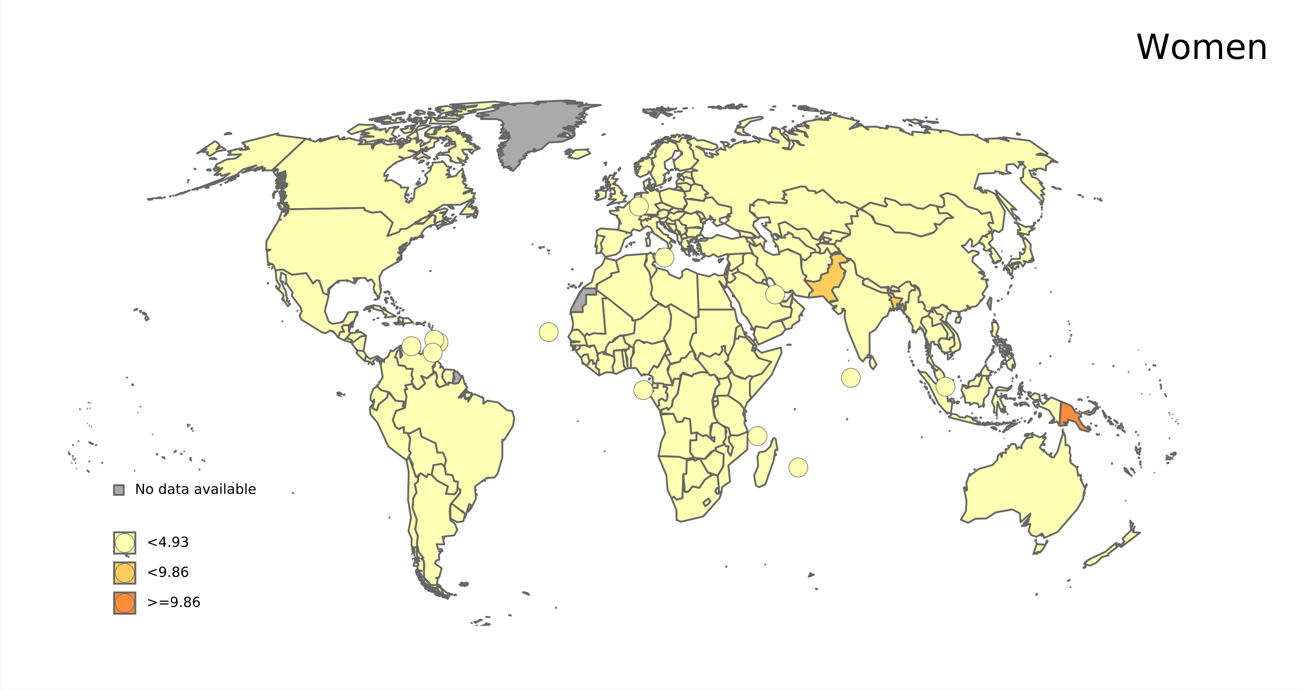
[a] Cumulative risk (incidence) is the probability or risk of individuals getting from the disease during ages 0-74 years. For cancer, it is expressed as the % of new born children who would be expected to develop from a particular cancer before the age of 75 if they had the rates of cancer observed in the period in the absence of competing causes.

[b] Rates per 100,000 women per year.

Data Sources:

Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2020). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [27 January 2021].

Figure 43: Age-standardised incidence rates of oral cancer among women in the World (estimates for 2020)



Data accessed on 27 Jan 2021

For more detailed methods of estimation please refer to http://gco.iarc.fr/today/data-sources-methods

[a] Rates per 100,000 women per year.

Data Sources:

Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2020). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [27 January 2021].

Table 21: Incidence of oral cancer in men by World region and sub regions (estimates for 2020)

Area	N Cases	Uncertainty intervals of new cancer cases [95% UI]	Crude rate[b]	ASR[b]	Cumulative risk (%) ages 0-74 years[a]	Ranking	
						All men	Men 15-44 years
World	264,211	[251,152.9-277,948.1]	6.72	5.96	0.68	11	3
High income	66,860	[65,089.5-68,678.6]	10.9	6.28	0.75	13	10
Low and middle income	197,263	[48,758.8-55,275.4]	5.95	5.80	0.65	7	2
Upper middle income	51,915	[48,758.8-55,275.4]	3.54	2.73	0.32	16	13
Lower middle income	141,593	[133,948.7-149,673.6]	9.15	10.5	1.17	2	1
Low income	3,755	[2,796.5-5,042.1]	1.25	2.24	0.26	13	12
Africa	8,174	[5,994.3-11,146.2]	1.22	2.13	0.25	15	14
Eastern Africa	2,690	[1,569.5-4,610.5]	1.22	2.36	0.28	12	11
Middle Africa	879	[507.6-1,522.2]	0.98	2.02	0.23	10	10
Northern Africa	1,727	[1,267.6-2,352.8]	1.40	1.68	0.19	16	15
Southern Africa	1,305	[1,196.8-1,423]	3.93	5.30	0.66	9	12
Western Africa	1,573	[743.8-3,326.7]	0.78	1.55	0.17	13	13
Americas	30,228	[10,613.4-12,931]	6.00	4.57	0.55	13	11
Caribbean	1,193	[937.8-1,517.6]	5.55	4.53	0.53	12	11
Central America	886	[752.8-1,042.7]	1.01	1.04	0.12	20	17
Northern America	18,513	[18,218.9-18,811.9]	10.1	6.01	0.73	12	11
South America	9,636	[8,569.7-10,835]	4.54	3.95	0.46	14	11
Asia	178,396	[168,926.8-188,396]	7.52	6.51	0.72	7	2
Central Asia	1,258	[357.3-459.1]	3.42	4.52	0.53	11	13
Eastern Asia	33,658	[31,886-35,528.5]	3.93	2.55	0.29	15	13
South-Eastern Asia	11,297	[10,121.5-12,609.1]	3.38	3.32	0.38	11	10
Southern Asia	129,467	[336.8-1,133.9]	12.9	13.6	1.51	1	1
Western Asia	2,716	[2,056.9-3,586.2]	1.86	2.23	0.26	17	14
Europe	44,519	[42,859.3-46,243]	12.3	7.03	0.85	12	11
Eastern Europe	19,884	[19,288.1-20,498.3]	14.4	9.22	1.12	8	11
Northern Europe	5,582	[5,371.5-5,800.8]	10.6	6.01	0.72	13	11
Southern Europe	7,926	[7,158.6-8,775.6]	10.6	5.18	0.61	14	11
Western Europe	11,127	[10,646.6-11,629.1]	11.5	6.20	0.76	13	12
Oceania	2,894	[2,714.7-3,085.1]	13.5	10.0	1.22	10	11
Australia & New Zealand	2,070	[1,971.3-2,173.7]	13.7	8.52	1.01	11	10
Melanesia	796	[577.1-1,097.8]	14.0	22.2	2.82	2	4
Micronesia	12	[5.80-25]	4.33	4.74	0.64	10	17
Polynesia	16	[6.80-37.5]	4.61	4.36	0.52	13	15

Data accessed on 27 Jan 2021

For more detailed methods of estimation please refer to http://gco.iarc.fr/today/data-sources-methods

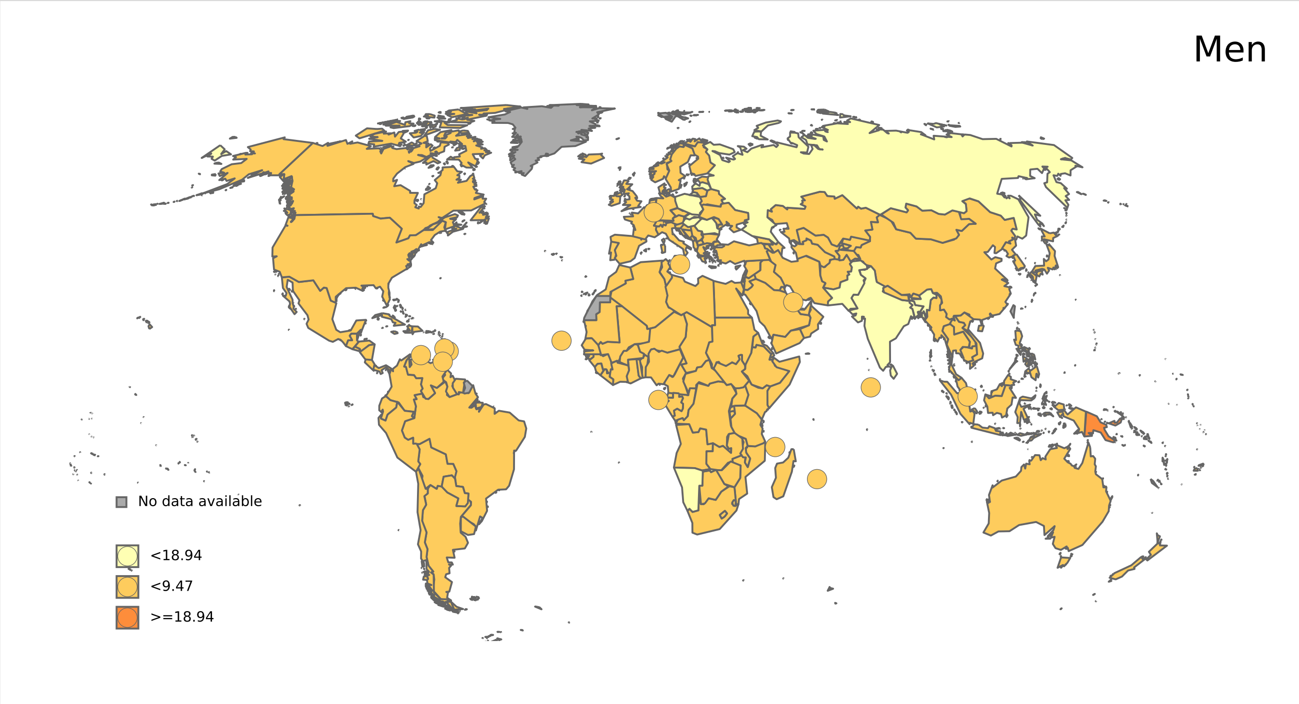
[a] Cumulative risk (incidence) is the probability or risk of individuals getting from the disease during ages 0-74 years. For cancer, it is expressed as the % of new born children who would be expected to develop from a particular cancer before the age of 75 if they had the rates of cancer observed in the period in the absence of competing causes.

[b] Rates per 100,000 men per year.

Data Sources:

Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2020). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [27 January 2021].

Figure 44: Age-standardised incidence rates of oral cancer among men in the World (estimates for 2020)



Data accessed on 27 Jan 2021
For more detailed methods of estimation please refer to http://gco.iarc.fr/today/data-sources-methods
[a] Rates per 100,000 men per year.
Data Sources:
Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2020). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [27 January 2021].

3.5.2.2 Oral cavity cancer mortality

Table 22: Mortality of oral cancer in women by World region and sub regions (estimates for 2020)

Area	N Cases	Uncertainty intervals of new cancer cases [95% UI]	Crude rate[b]	ASR[b]	Cumulative risk (%) ages 0-74 years[a]	Ranking	
						All women	Women 15-44 years
World	52,735	[47,690.5-58,313]	1.36	1.04	0.12	17	12
High income	9,644	[8,954.5-10,386.6]	1.56	0.55	0.06	19	15
Low and middle income	43,084	[12,416.6-12,849.1]	1.33	1.17	0.13	14	12
Upper middle income	12,631	[12,416.6-12,849.1]	0.87	0.56	0.06	20	19
Lower middle income	28,629	[28,119.9-29,147.3]	1.92	2.11	0.25	10	11
Low income	1,824	[1,192.4-2,790.2]	0.60	0.99	0.12	16	18
Africa	3,482	[2,226.6-5,445.3]	0.52	0.85	0.09	17	19
Eastern Africa	1,264	[624.1-2,560.1]	0.56	1.03	0.12	17	19
Middle Africa	352	[185.6-667.5]	0.39	0.77	0.09	17	16
Northern Africa	727	[489.3-1,080.3]	0.59	0.64	0.06	19	17
Southern Africa	318	[273.3-370]	0.93	1.00	0.10	16	16
Western Africa	821	[364.1-1,851.5]	0.41	0.78	0.10	16	18
Americas	4,129	[2,132.2-2,629.9]	0.80	0.44	0.04	20	16
Caribbean	186	[128.9-268.4]	0.84	0.48	0.04	19	20
Central America	407	[352.7-469.7]	0.44	0.38	0.04	19	19
Northern America	1,761	[1,666.9-1,860.3]	0.95	0.39	0.04	18	17
South America	1,775	[1,622.6-1,941.7]	0.81	0.53	0.05	20	16
Asia	37,849	[34,843.5-41,113.8]	1.67	1.30	0.15	15	12
Central Asia	405	[102.7-154.5]	1.08	1.08	0.12	13	13
Eastern Asia	7,850	[7,009.5-8,791.4]	0.95	0.47	0.05	19	18
South-Eastern Asia	3,516	[3,094.7-3,994.7]	1.05	0.88	0.09	14	15
Southern Asia	25,299	[112.6-410.6]	2.69	2.79	0.33	8	9
Western Asia	779	[619-980.3]	0.59	0.59	0.06	18	17
Europe	6,930	[6,194.8-7,752.4]	1.79	0.70	0.08	18	16
Eastern Europe	2,729	[2,286.3-3,257.5]	1.76	0.82	0.09	18	15
Northern Europe	1,004	[910.7-1,106.9]	1.87	0.72	0.08	18	14
Southern Europe	1,483	[1,340.4-1,640.8]	1.89	0.56	0.06	17	16
Western Europe	1,714	[1,563.2-1,879.3]	1.72	0.59	0.07	19	19
Oceania	345	[273.9-434.6]	1.62	0.99	0.11	18	14
Australia & New Zealand	188	[157.6-224.3]	1.23	0.50	0.05	18	15
Melanesia	155	[96.1-249.9]	2.84	3.96	0.48	8	10
Micronesia	1	[0.20-4.80]	0.37	0.34	0	18	18
Polynesia	1	[0.10-11.3]	0.30	0.18	0	19	19

Data accessed on 27 Jan 2021

For more detailed methods of estimation please refer to http://gco.iarc.fr/today/data-sources-methods

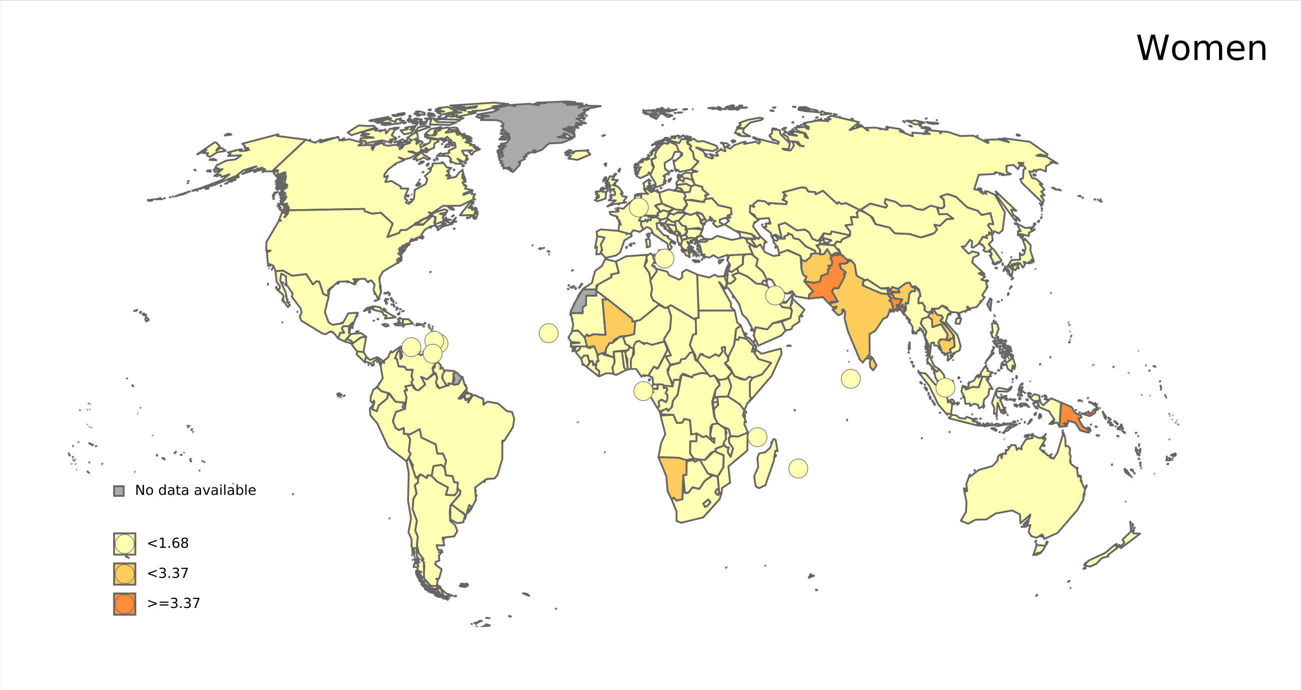
[a] Cumulative risk (mortality) is the probability or risk of individuals dying from the disease during ages 0-74 years. For cancer, it is expressed as the % of new born children who would be expected to die from a particular cancer before the age of 75 if they had the rates of cancer observed in the period in the absence of competing causes.

[b] Rates per 100,000 women per year.

Data Sources:

Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2020). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [27 January 2021].

Figure 45: Age-standardised mortality rates of oral cancer among women in the World (estimates for 2020)



Data accessed on 27 Jan 2021

For more detailed methods of estimation please refer to http://gco.iarc.fr/today/data-sources-methods

[a] Rates per 100,000 women per year.

Data Sources:

Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2020). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [27 January 2021].

Table 23: Mortality of oral cancer in men by World region and sub regions (estimates for 2020)

Area	N Cases	Uncertainty intervals of new cancer cases [95% UI]	Crude rate[b]	ASR[b]	Cumulative risk (%) ages 0-74 years[a]	Ranking All men	Ranking Men 15-44 years
World	125,022	[116,572.6-134,083.9]	3.18	2.82	0.32	12	6
High income	19,247	[18,157.7-20,401.7]	3.14	1.70	0.20	14	10
Low and middle income	105,751	[22,883.2-27,439.5]	3.19	3.12	0.35	9	4
Upper middle income	25,058	[22,883.2-27,439.5]	1.71	1.31	0.15	15	13
Lower middle income	78,273	[68,299.6-89,702.8]	5.06	5.84	0.67	5	1
Low income	2,420	[1,740.7-3,364.4]	0.81	1.51	0.18	14	12
Africa	4,606	[3,236.8-6,554.3]	0.69	1.26	0.15	15	15
Eastern Africa	1,716	[928.6-3,171.1]	0.78	1.61	0.20	13	12
Middle Africa	552	[311.8-977.2]	0.62	1.36	0.16	12	13
Northern Africa	739	[524.2-1,041.7]	0.60	0.74	0.08	17	15
Southern Africa	596	[532.6-666.9]	1.79	2.56	0.33	11	22
Western Africa	1,003	[438.7-2,293.3]	0.50	1.07	0.12	13	16
Americas	8,404	[4,859.8-5,521.2]	1.67	1.23	0.15	16	14
Caribbean	482	[385.2-603.1]	2.24	1.72	0.20	14	13
Central America	446	[386.8-514.3]	0.51	0.52	0.06	18	16
Northern America	3,224	[3,097.1-3,356.1]	1.77	0.96	0.11	16	13
South America	4,252	[4,036.4-4,479.1]	2.00	1.74	0.21	15	13
Asia	93,761	[83,519.8-105,258]	3.95	3.43	0.38	9	4
Central Asia	679	[206.4-279]	1.84	2.40	0.29	12	15
Eastern Asia	14,083	[12,818.4-15,472.4]	1.65	1.04	0.11	15	11
South-Eastern Asia	6,409	[5,717.3-7,184.4]	1.92	1.92	0.21	13	10
Southern Asia	71,632	[246.2-761.6]	7.16	7.58	0.86	2	1
Western Asia	958	[772.6-1,187.8]	0.66	0.81	0.09	16	17
Europe	17,645	[16,366.6-19,023.3]	4.88	2.73	0.33	13	10
Eastern Europe	9,761	[8,900.6-10,704.5]	7.08	4.54	0.56	11	7
Northern Europe	1,714	[1,590.6-1,846.9]	3.27	1.67	0.20	16	11
Southern Europe	2,751	[2,537.1-2,982.9]	3.67	1.67	0.20	16	13
Western Europe	3,419	[3,207.7-3,644.2]	3.55	1.71	0.21	15	14
Oceania	606	[501.8-731.9]	2.84	1.99	0.26	16	11
Australia & New Zealand	281	[243.3-324.5]	1.86	1.03	0.13	16	15
Melanesia	313	[214.9-455.8]	5.52	9.27	1.19	5	5
Micronesia	5	[1-24]	1.80	1.94	0.34	13	24
Polynesia	7	[1.10-43.9]	2.02	1.94	0.22	16	12

Data accessed on 27 Jan 2021

For more detailed methods of estimation please refer to http://gco.iarc.fr/today/data-sources-methods

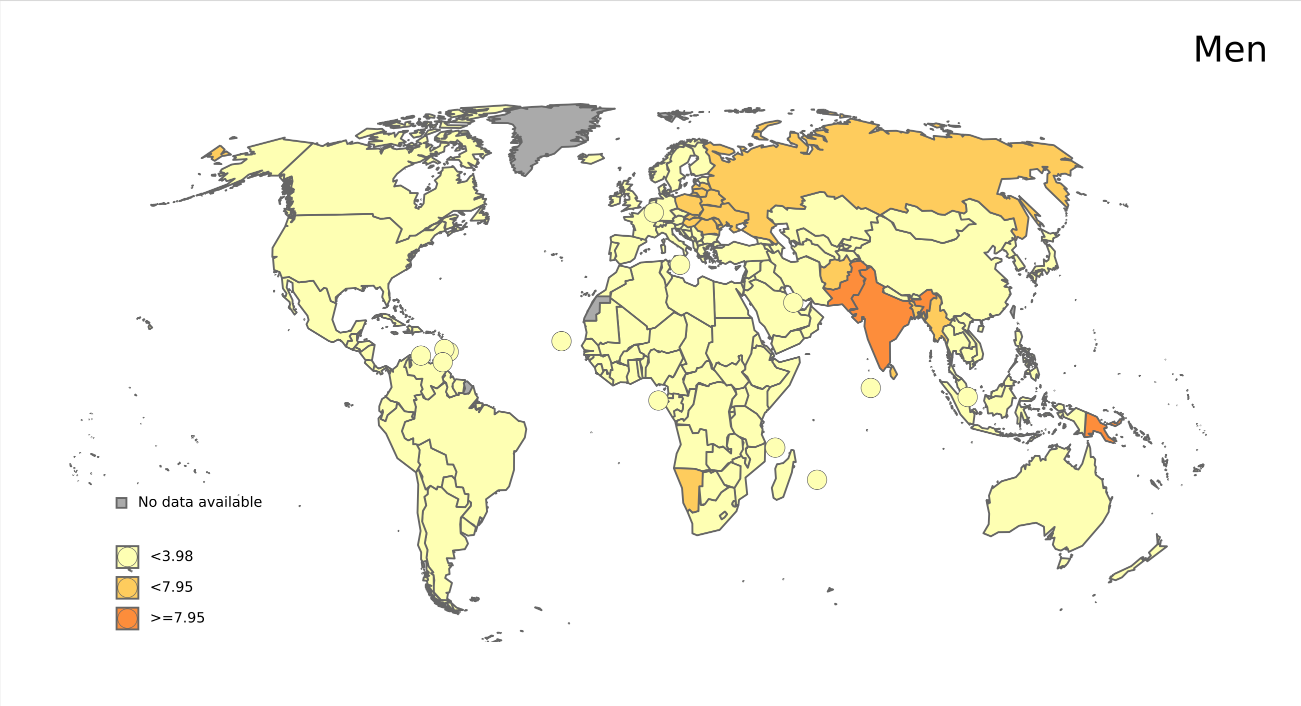
[a] Cumulative risk (mortality) is the probability or risk of individuals dying from the disease during ages 0-74 years. For cancer, it is expressed as the % of new born children who would be expected to die from a particular cancer before the age of 75 if they had the rates of cancer observed in the period in the absence of competing causes.

[b] Rates per 100,000 men per year.

Data Sources:

Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2020). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [27 January 2021].

Figure 46: Age-standardised mortality rates of oral cancer among men in the World (estimates for 2020)



Data accessed on 27 Jan 2021
For more detailed methods of estimation please refer to http://gco.iarc.fr/today/data-sources-methods
[a] Rates per 100,000 men per year.
Data Sources:
Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2020). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [27 January 2021].

3.5.3 Laryngeal cancer

3.5.3.1 Laryngeal cancer incidence

Table 24: Incidence of laryngeal cancer in women by World region and sub regions (estimates for 2020)

Area	N Cases	Uncertainty intervals of new cancer cases [95% UI]	Crude rate[b]	ASR[b]	Cumulative risk (%) ages 0-74 years[a]	Ranking	
						All women	Women 15-44 years
World	24,350	[20,845.2-28,444.1]	0.63	0.49	0.06	25	29
High income	7,443	[6,899.6-8,029.2]	1.21	0.63	0.08	25	28
Low and middle income	16,896	[6,923.5-9,771.2]	0.52	0.46	0.05	25	29
Upper middle income	8,225	[6,923.5-9,771.2]	0.57	0.38	0.05	25	28
Lower middle income	8,052	[6,239.2-10,391.5]	0.54	0.59	0.07	24	27
Low income	619	[330.4-1,159.5]	0.20	0.32	0.04	28	27
Africa	1,422	[608.2-3,324.9]	0.21	0.33	0.04	28	28
Eastern Africa	413	[98.9-1,723.8]	0.18	0.31	0.04	28	27
Middle Africa	102	[19.7-529.5]	0.11	0.22	0.03	28	28
Northern Africa	438	[201.2-953.3]	0.36	0.39	0.05	24	25
Southern Africa	169	[131.4-217.3]	0.49	0.54	0.07	26	27
Western Africa	300	[49.4-1,822.7]	0.15	0.28	0.04	28	29
Americas	5,363	[2,078.4-3,282.6]	1.03	0.69	0.09	24	27
Caribbean	355	[246.6-511]	1.61	1.11	0.13	19	21
Central America	278	[209-369.7]	0.30	0.26	0.03	26	27
Northern America	2,751	[2,640.2-2,866.5]	1.48	0.83	0.10	24	27
South America	1,979	[1,486.1-2,635.5]	0.90	0.66	0.08	24	26
Asia	12,536	[10,300.5-15,256.7]	0.55	0.43	0.05	22	26
Central Asia	130	[34.4-69.8]	0.35	0.35	0.04	26	27
Eastern Asia	3,831	[3,280.6-4,473.7]	0.47	0.26	0.03	24	29
South-Eastern Asia	1,215	[630-2,343.1]	0.36	0.31	0.03	24	26
Southern Asia	6,681	[12.5-177]	0.71	0.74	0.09	20	21
Western Asia	679	[425-1,084.9]	0.51	0.54	0.06	22	23
Europe	4,912	[4,313.9-5,593]	1.27	0.64	0.08	25	26
Eastern Europe	1,550	[1,367.4-1,756.9]	1.00	0.53	0.07	25	24
Northern Europe	666	[593.5-747.3]	1.24	0.62	0.08	27	27
Southern Europe	1,101	[848.5-1,428.6]	1.40	0.64	0.08	24	27
Western Europe	1,595	[1,413.2-1,800.2]	1.60	0.80	0.10	25	26
Oceania	117	[83.1-164.8]	0.55	0.37	0.04	28	24
Australia & New Zealand	80	[61.2-104.5]	0.52	0.28	0.03	28	29
Melanesia	36	[5.60-230.5]	0.66	0.81	0.07	21	17
Micronesia	0	[0-15.6]	0	0	0	28	14
Polynesia	1	[0.10-12.8]	0.30	0.20	0	21	22

Data accessed on 27 Jan 2021

For more detailed methods of estimation please refer to http://gco.iarc.fr/today/data-sources-methods

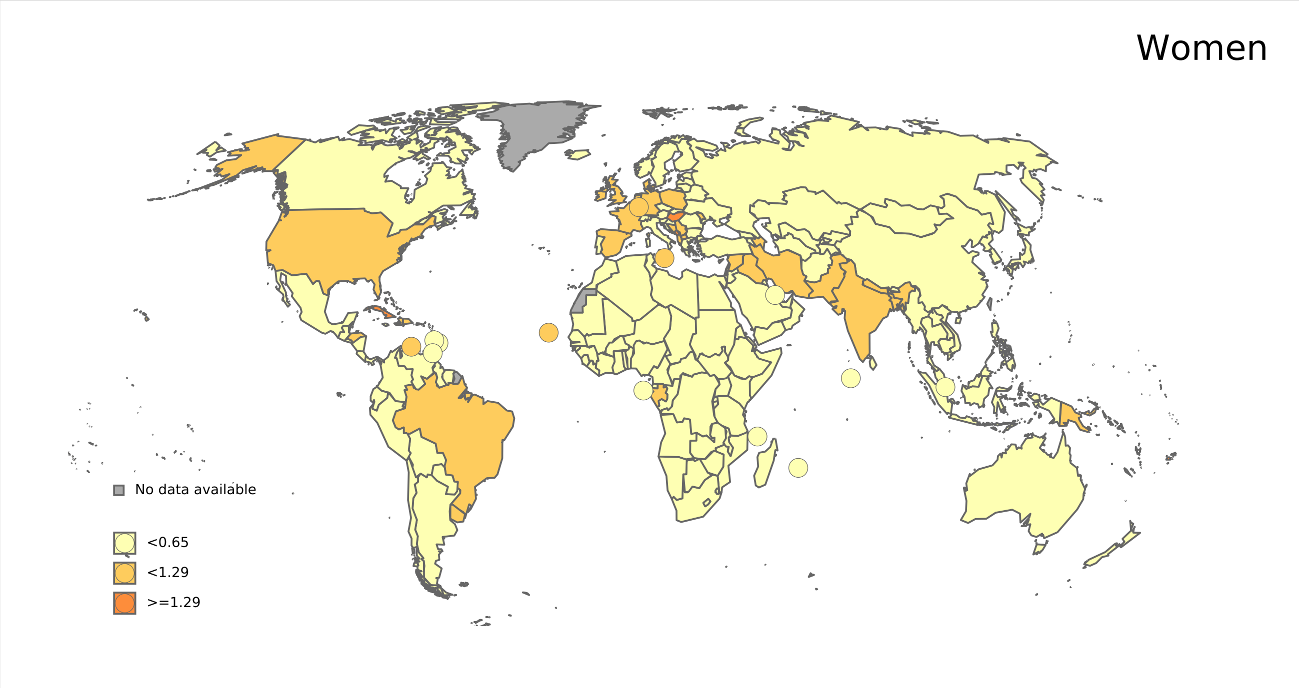
[a] Cumulative risk (incidence) is the probability or risk of individuals getting from the disease during ages 0-74 years. For cancer, it is expressed as the % of new born children who would be expected to develop from a particular cancer before the age of 75 if they had the rates of cancer observed in the period in the absence of competing causes.

[b] Rates per 100,000 women per year.

Data Sources:

Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2020). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [27 January 2021].

Figure 47: Age-standardised incidence rates of laryngeal cancer among women in the World (estimates for 2020)



Data accessed on 27 Jan 2021
For more detailed methods of estimation please refer to http://gco.iarc.fr/today/data-sources-methods
[a] Rates per 100,000 women per year.
Data Sources:
Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2020). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [27 January 2021].

Table 25: Incidence of laryngeal cancer in men by World region and sub regions (estimates for 2020)

Area	N Cases	Uncertainty intervals of new cancer cases [95% UI]	Crude rate[b]	ASR[b]	Cumulative risk (%) ages 0-74 years[a]	Ranking	
						All men	Men 15-44 years
World	160,265	[150,633.1-170,512.8]	4.08	3.59	0.45	15	19
High income	42,375	[40,944.5-43,855.4]	6.91	3.70	0.47	17	23
Low and middle income	117,797	[57,986.7-65,372.6]	3.55	3.55	0.44	13	17
Upper middle income	61,569	[57,986.7-65,372.6]	4.19	3.20	0.40	15	19
Lower middle income	53,246	[48,824.9-58,067.4]	3.44	4.25	0.53	10	15
Low income	2,982	[2,291.5-3,880.6]	0.99	1.99	0.24	15	19
Africa	8,486	[6,079.3-11,845.5]	1.27	2.43	0.30	14	23
Eastern Africa	1,860	[1,013.1-3,414.9]	0.84	1.89	0.23	15	22
Middle Africa	537	[267.5-1,077.9]	0.60	1.38	0.18	16	26
Northern Africa	4,042	[3,181.6-5,135.2]	3.27	4.05	0.50	10	17
Southern Africa	786	[705-876.3]	2.37	3.28	0.41	15	25
Western Africa	1,261	[574-2,770.1]	0.62	1.37	0.17	16	21
Americas	24,322	[12,223.7-14,971.4]	4.82	3.56	0.45	17	23
Caribbean	1,966	[1,679.2-2,301.8]	9.15	7.26	0.90	5	15
Central America	1,332	[1,184-1,498.5]	1.51	1.57	0.19	16	22
Northern America	10,794	[10,573.1-11,019.5]	5.91	3.34	0.42	18	24
South America	10,230	[9,033.3-11,585.2]	4.82	4.18	0.52	13	22
Asia	91,794	[85,968.1-98,014.7]	3.87	3.36	0.41	14	16
Central Asia	734	[403.7-512.9]	1.99	2.51	0.32	14	19
Eastern Asia	33,020	[31,412-34,710.3]	3.86	2.41	0.30	16	18
South-Eastern Asia	10,178	[9,071.8-11,419.1]	3.05	3.07	0.36	12	16
Southern Asia	41,582	[80.7-515.5]	4.15	4.67	0.58	7	12
Western Asia	6,280	[5,187.5-7,602.6]	4.31	5.29	0.66	12	13
Europe	34,951	[33,406.8-36,566.6]	9.66	5.36	0.68	15	17
Eastern Europe	16,580	[15,999.7-17,181.3]	12.0	7.58	0.97	9	16
Northern Europe	3,160	[2,995.5-3,333.5]	6.02	3.16	0.39	19	22
Southern Europe	8,174	[7,470.6-8,943.7]	10.9	5.38	0.67	13	18
Western Europe	7,037	[6,639.6-7,458.2]	7.30	3.55	0.46	18	24
Oceania	712	[628.8-806.2]	3.33	2.31	0.29	20	23
Australia & New Zealand	582	[529.4-639.8]	3.86	2.17	0.27	20	25
Melanesia	114	[53.5-243]	2.01	3.40	0.42	11	14
Micronesia	5	[1.50-17.1]	1.80	1.93	0.39	14	28
Polynesia	11	[3.70-32.9]	3.17	3.08	0.34	16	19

Data accessed on 27 Jan 2021

For more detailed methods of estimation please refer to http://gco.iarc.fr/today/data-sources-methods

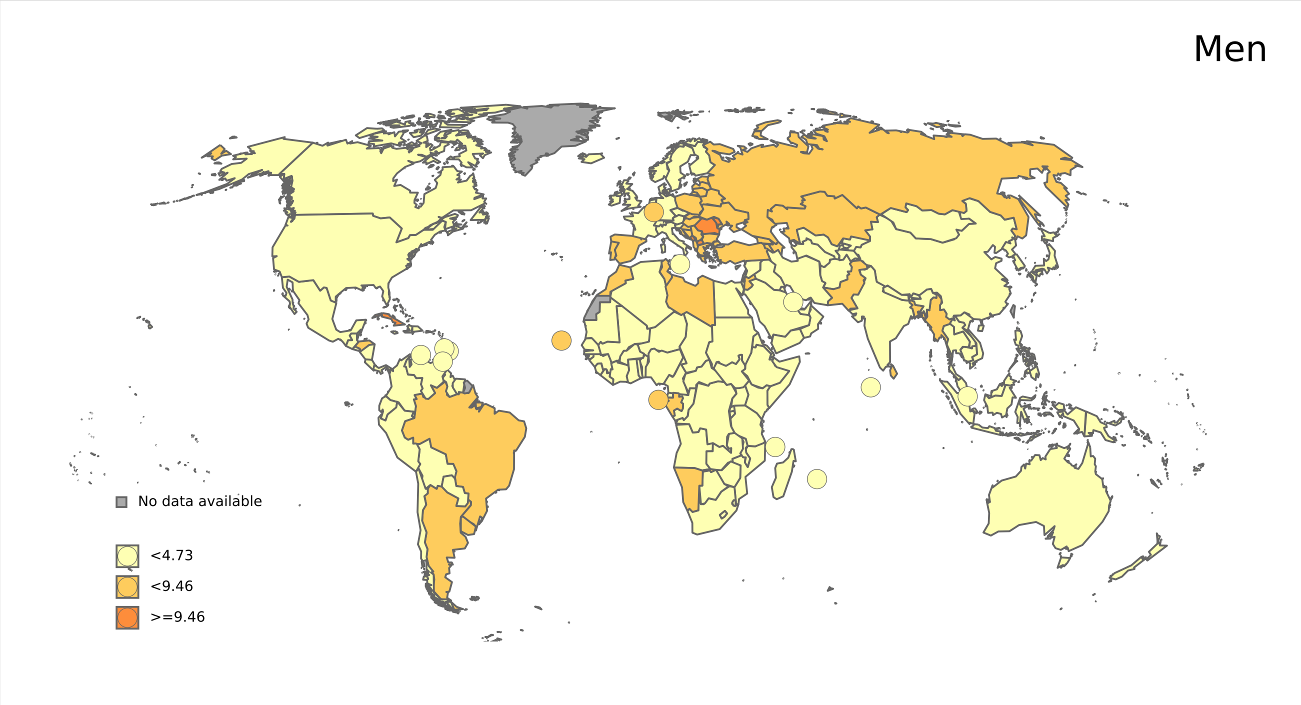
[a] Cumulative risk (incidence) is the probability or risk of individuals getting from the disease during ages 0-74 years. For cancer, it is expressed as the % of new born children who would be expected to develop from a particular cancer before the age of 75 if they had the rates of cancer observed in the period in the absence of competing causes.

[b] Rates per 100,000 men per year.

Data Sources:

Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2020). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [27 January 2021].

Figure 48: Age-standardised incidence rates of laryngeal cancer among men in the World (estimates for 2020)



Data accessed on 27 Jan 2021

For more detailed methods of estimation please refer to http://gco.iarc.fr/today/data-sources-methods

[a] Rates per 100,000 men per year.

Data Sources:

Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2020). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [27 January 2021].

3.5.3.2 Laryngeal cancer mortality

Table 26: Mortality of laryngeal cancer in women by World region and sub regions (estimates for 2020)

Area	N Cases	Uncertainty intervals of new cancer cases [95% UI]	Crude rate[b]	ASR[b]	Cumulative risk (%) ages 0-74 years[a]	Ranking	
						All women	Women 15-44 years
World	14,489	[11,901.8-17,638.6]	0.37	0.28	0.03	23	26
High income	2,635	[2,321.4-2,991]	0.43	0.18	0.02	25	29
Low and middle income	11,847	[4,383.6-6,230.3]	0.36	0.32	0.04	21	26
Upper middle income	5,226	[4,383.6-6,230.3]	0.36	0.23	0.03	22	25
Lower middle income	6,170	[4,630.9-8,220.6]	0.41	0.46	0.06	20	23
Low income	451	[223.6-909.8]	0.15	0.24	0.03	28	26
Africa	961	[365.8-2,524.9]	0.14	0.23	0.03	28	28
Eastern Africa	283	[112.4-712.8]	0.13	0.22	0.03	28	25
Middle Africa	70	[54.2-90.4]	0.08	0.16	0.02	28	30
Northern Africa	295	[124.4-699.6]	0.24	0.27	0.03	23	22
Southern Africa	108	[83.9-139.1]	0.31	0.34	0.04	23	25
Western Africa	205	[102.6-409.6]	0.10	0.20	0.03	28	29
Americas	2,270	[1,238.6-1,611.9]	0.44	0.27	0.03	22	25
Caribbean	200	[143.5-278.7]	0.91	0.58	0.06	17	16
Central America	152	[118.4-195.1]	0.17	0.14	0.02	23	23
Northern America	857	[794.1-924.9]	0.46	0.21	0.03	23	29
South America	1,061	[950.3-1,184.6]	0.49	0.34	0.04	22	22
Asia	9,228	[7,235.8-11,768.6]	0.41	0.31	0.04	21	22
Central Asia	91	[18.4-45.7]	0.24	0.24	0.03	25	23
Eastern Asia	2,537	[2,066.8-3,114.2]	0.31	0.16	0.02	21	27
South-Eastern Asia	863	[443.3-1,680.2]	0.26	0.21	0.02	21	24
Southern Asia	5,311	[10.8-127.1]	0.57	0.59	0.07	17	17
Western Asia	426	[319-568.9]	0.32	0.33	0.04	22	25
Europe	1,986	[1,675.4-2,354.2]	0.51	0.22	0.03	25	26
Eastern Europe	741	[632.8-867.8]	0.48	0.24	0.03	24	24
Northern Europe	251	[208.1-302.7]	0.47	0.19	0.02	25	27
Southern Europe	475	[391.2-576.8]	0.61	0.22	0.03	23	24
Western Europe	519	[440.8-611.1]	0.52	0.22	0.03	25	30
Oceania	44	[24.4-79.5]	0.21	0.13	0.01	28	27
Australia & New Zealand	33	[20.9-52.1]	0.22	0.10	0.01	27	29
Melanesia	10	[3-33.3]	0.18	0.24	0.03	24	21
Micronesia	0	[0-9.20]	0	0	0	29	7
Polynesia	1	[0.10-11.3]	0.30	0.20	0	18	11

Data accessed on 27 Jan 2021

For more detailed methods of estimation please refer to http://gco.iarc.fr/today/data-sources-methods

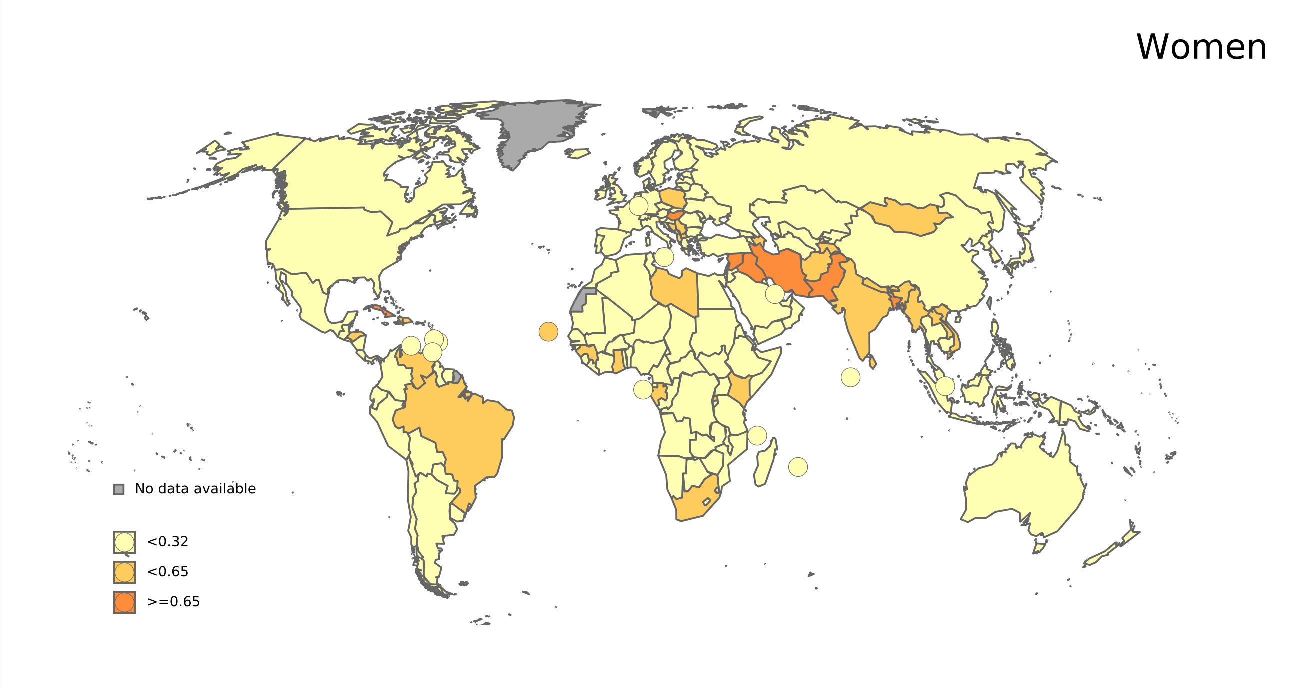
[a] Cumulative risk (mortality) is the probability or risk of individuals dying from the disease during ages 0-74 years. For cancer, it is expressed as the % of new born children who would be expected to die from a particular cancer before the age of 75 if they had the rates of cancer observed in the period in the absence of competing causes.

[b] Rates per 100,000 women per year.

Data Sources:

Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2020). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [27 January 2021].

Figure 49: Age-standardised mortality rates of laryngeal cancer among women in the World (estimates for 2020)



Data accessed on 27 Jan 2021

For more detailed methods of estimation please refer to http://gco.iarc.fr/today/data-sources-methods

[a] Rates per 100,000 women per year.

Data Sources:

Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2020). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [27 January 2021].

Table 27: Mortality of laryngeal cancer in men by World region and sub regions (estimates for 2020)

Area	N Cases	Uncertainty intervals of new cancer cases [95% UI]	Crude rate[b]	ASR[b]	Cumulative risk (%) ages 0-74 years[a]	Ranking	
						All men	Men 15-44 years
World	85,351	[78,895.2-92,335]	2.17	1.89	0.23	14	16
High income	16,400	[15,449.7-17,408.7]	2.67	1.30	0.16	16	20
Low and middle income	68,905	[32,166.9-36,925.1]	2.08	2.09	0.26	14	16
Upper middle income	34,464	[32,166.9-36,925.1]	2.35	1.78	0.21	14	16
Lower middle income	32,243	[28,707.9-36,213.4]	2.08	2.61	0.33	10	15
Low income	2,198	[1,637.3-2,950.6]	0.73	1.52	0.19	15	17
Africa	5,675	[3,883.4-8,293.2]	0.85	1.71	0.20	14	19
Eastern Africa	1,279	[640-2,556.1]	0.58	1.36	0.16	16	19
Middle Africa	369	[282-482.9]	0.41	0.99	0.13	16	24
Northern Africa	2,696	[2,066.8-3,516.7]	2.18	2.77	0.32	11	16
Southern Africa	462	[407.3-524.1]	1.39	1.98	0.25	14	23
Western Africa	869	[364.4-2,072]	0.43	0.99	0.12	14	19
Americas	12,164	[8,367.8-9,275.6]	2.41	1.73	0.21	14	18
Caribbean	1,092	[945.7-1,261]	5.08	3.87	0.47	9	14
Central America	906	[817.5-1,004.1]	1.03	1.05	0.12	14	18
Northern America	3,354	[3,227.2-3,485.8]	1.84	0.94	0.11	15	23
South America	6,812	[6,529.6-7,106.6]	3.21	2.75	0.34	13	16
Asia	49,621	[44,998.4-54,718.4]	2.09	1.82	0.22	15	14
Central Asia	442	[223.7-299.8]	1.20	1.54	0.20	14	19
Eastern Asia	15,261	[14,048.8-16,577.8]	1.78	1.09	0.13	14	17
South-Eastern Asia	5,905	[5,239.3-6,655.4]	1.77	1.82	0.20	14	13
Southern Asia	25,077	[65.4-367.3]	2.51	2.86	0.37	9	13
Western Asia	2,936	[2,612-3,300.2]	2.01	2.62	0.32	11	15
Europe	17,618	[16,676.2-18,613]	4.87	2.54	0.32	14	16
Eastern Europe	9,518	[9,129.8-9,922.7]	6.91	4.26	0.55	13	16
Northern Europe	1,223	[1,116.1-1,340.1]	2.33	1.07	0.13	17	18
Southern Europe	4,054	[3,789.5-4,337]	5.41	2.31	0.28	14	17
Western Europe	2,823	[2,632.6-3,027.2]	2.93	1.26	0.15	18	24
Oceania	273	[219.3-339.8]	1.28	0.81	0.10	18	20
Australia & New Zealand	193	[163.2-228.2]	1.28	0.61	0.07	18	24
Melanesia	70	[46.2-106.1]	1.23	2.19	0.29	12	15
Micronesia	3	[0.30-27.6]	1.08	0.86	0.11	14	14
Polynesia	7	[1.10-43.9]	2.02	1.88	0.20	15	24

Data accessed on 27 Jan 2021

For more detailed methods of estimation please refer to http://gco.iarc.fr/today/data-sources-methods

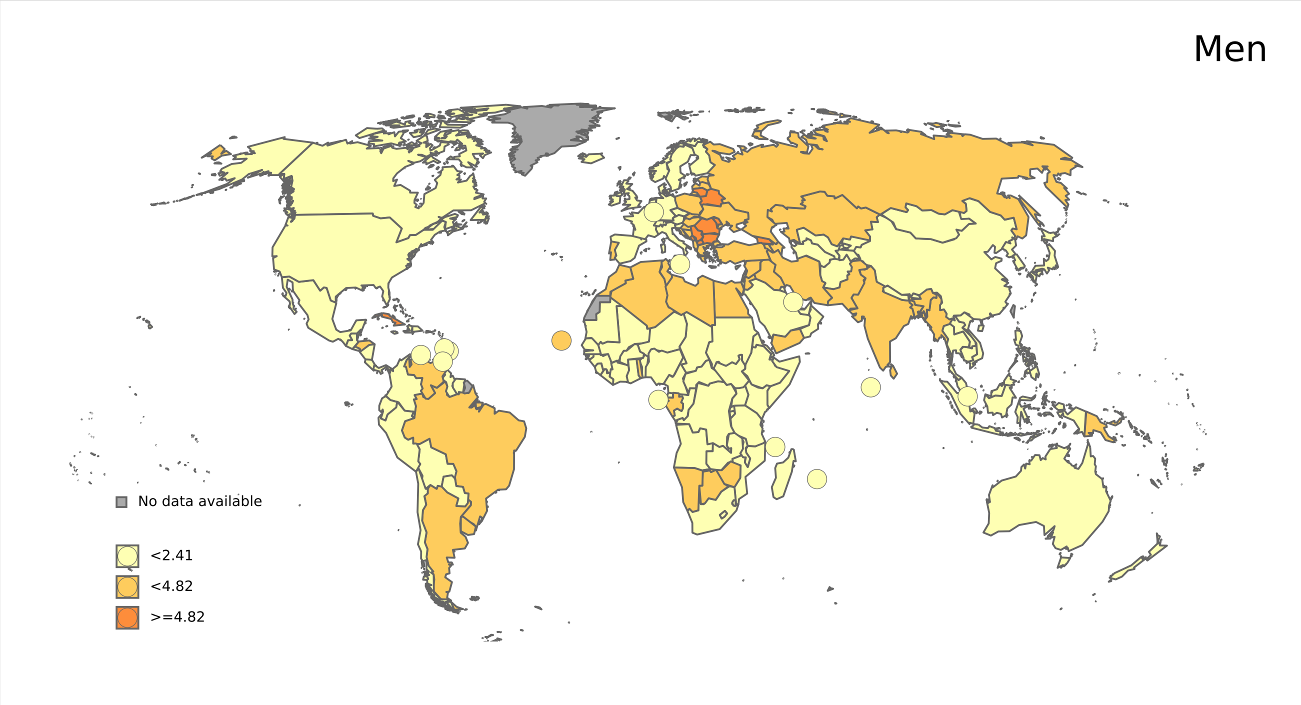
[a] Cumulative risk (mortality) is the probability or risk of individuals dying from the disease during ages 0-74 years. For cancer, it is expressed as the % of new born children who would be expected to die from a particular cancer before the age of 75 if they had the rates of cancer observed in the period in the absence of competing causes.

[b] Rates per 100,000 men per year.

Data Sources:

Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2020). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [27 January 2021].

Figure 50: Age-standardised mortality rates of laryngeal cancer among men in the World (estimates for 2020)



Data accessed on 27 Jan 2021

For more detailed methods of estimation please refer to http://gco.iarc.fr/today/data-sources-methods

[a] Rates per 100,000 men per year.

Data Sources:

Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, Znaor A, Soerjomataram I, Bray F (2020). Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Available from: https://gco.iarc.fr/today, accessed [27 January 2021].

4 HPV related statistics

HPV infection is commonly found in the anogenital tract of men and women with and without clinical lesions. The aetiological role of HPV infection among women with cervical cancer is well-established, and there is growing evidence of its central role in other anogenital sites. HPV is also responsible for other diseases such as recurrent juvenile respiratory papillomatosis and genital warts, both mainly caused by HPV types 6 and 11(Lacey CJ, Vaccine 2006; 24(S3):35). For this section, the methodologies used to compile the information on HPV burden are derived from systematic reviews and meta-analyses of the literature. Due to the limitations of HPV DNA detection methods and study designs used, these data should be interpreted with caution and used only as a guide to assess the burden of HPV infection in the population. (Vaccine 2006, Vol. 24, Suppl 3; Vaccine 2008, Vol. 26, Suppl 10; Vaccine 2012, Vol. 30, Suppl 5; IARC Monographs 2007, Vol. 90).

4.1 HPV burden in women with normal cervical cytology, cervical precancerous lesions or invasive cervical cancer

The statistics shown in this section focus on HPV infection in the cervix uteri. HPV cervical infection results in cervical morphological lesions ranging from normalcy (cytologically normal women) to different stages of precancerous lesions (CIN-1, CIN-2, CIN-3/CIS) and invasive cervical cancer. HPV infection is measured by means of HPV DNA detection in cervical cells (fresh tissue, paraffin embedded or exfoliated cells).

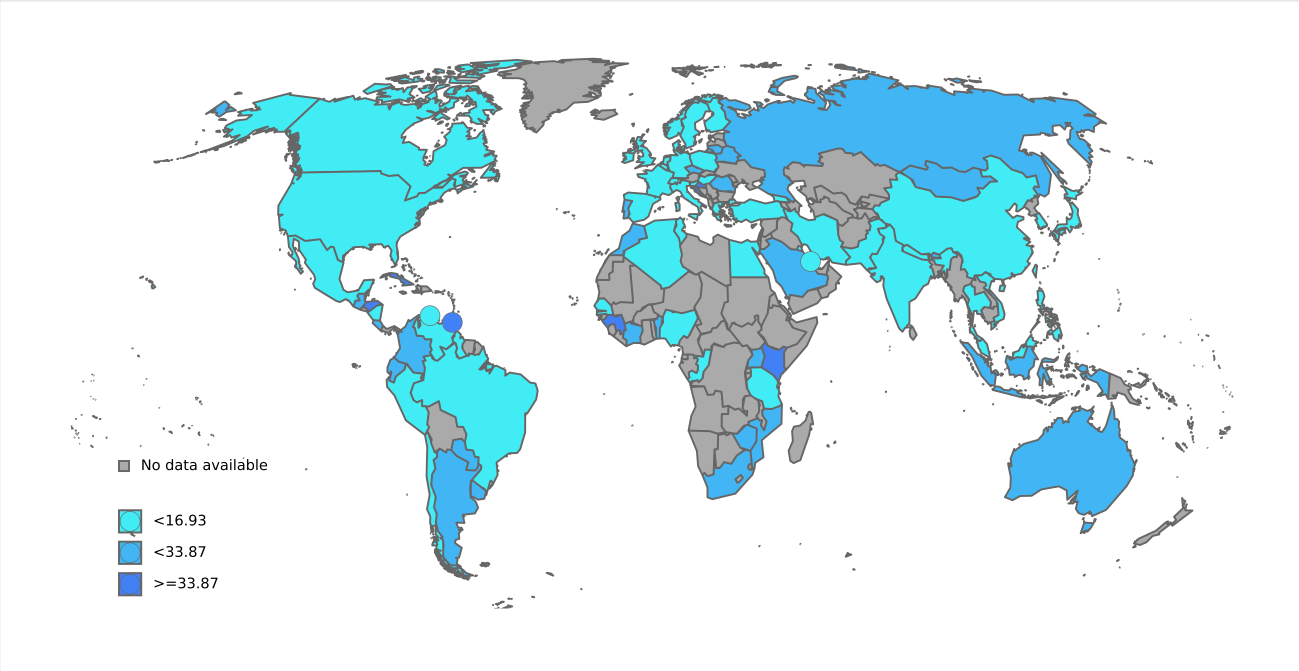
The prevalence of HPV increases with severity of the lesion. HPV causes virtually 100cervical cancer, and an underestimation of HPV prevalence in cervical cancer is most likely due to the limitations of study methodologies. Worldwide, HPV-16 and 18, the two vaccine-preventable types. contribute to over 7016-32% of low-grade cervical lesions. After HPV-16/18, the six most common HPV types are the same in all world regions, namely 31, 33, 35, 45, 52 and 58; these account for an additional 20cancers worldwide (Clifford G et al. Vaccine 2006;24(S3):26-34).

Methods: Prevalence and type distribution of human papillomavirus in cervical carcinoma, low-grade cervical lesions, high-grade cervical lesions and normal cytology: systematic review and meta-analysis

A systematic review of the literature was conducted regarding the worldwide HPV-prevalence and type distribution for cervical carcinoma, low-grade cervical lesions, high-grade cervical lesions and normal cytology from 1990 to 'data as of' indicated in each section. The search terms for the review were 'HPV' AND cerv* using Pubmed. There were no limits in publication language. References cited in selected articles were also investigated. Inclusion criteria were: HPV DNA detection by means of PCR or HC2, a minimum of 20 cases for cervical carcinoma, 20 cases for low-grade cervical lesions, 20 cases for highgrade cervical lesions and 100 cases for normal cytology and a detailed description of HPV DNA detection and genotyping techniques used. The number of cases tested and HPV positive extracted for each study were pooled to estimate the prevalence of HPV DNA and the HPV type distribution globally and by geographical region. Binomial 95% confidence intervals were calculated for each HPV prevalence. For more details refer to the methods document.

4.1.1 HPV prevalence in women with normal cervical cytology

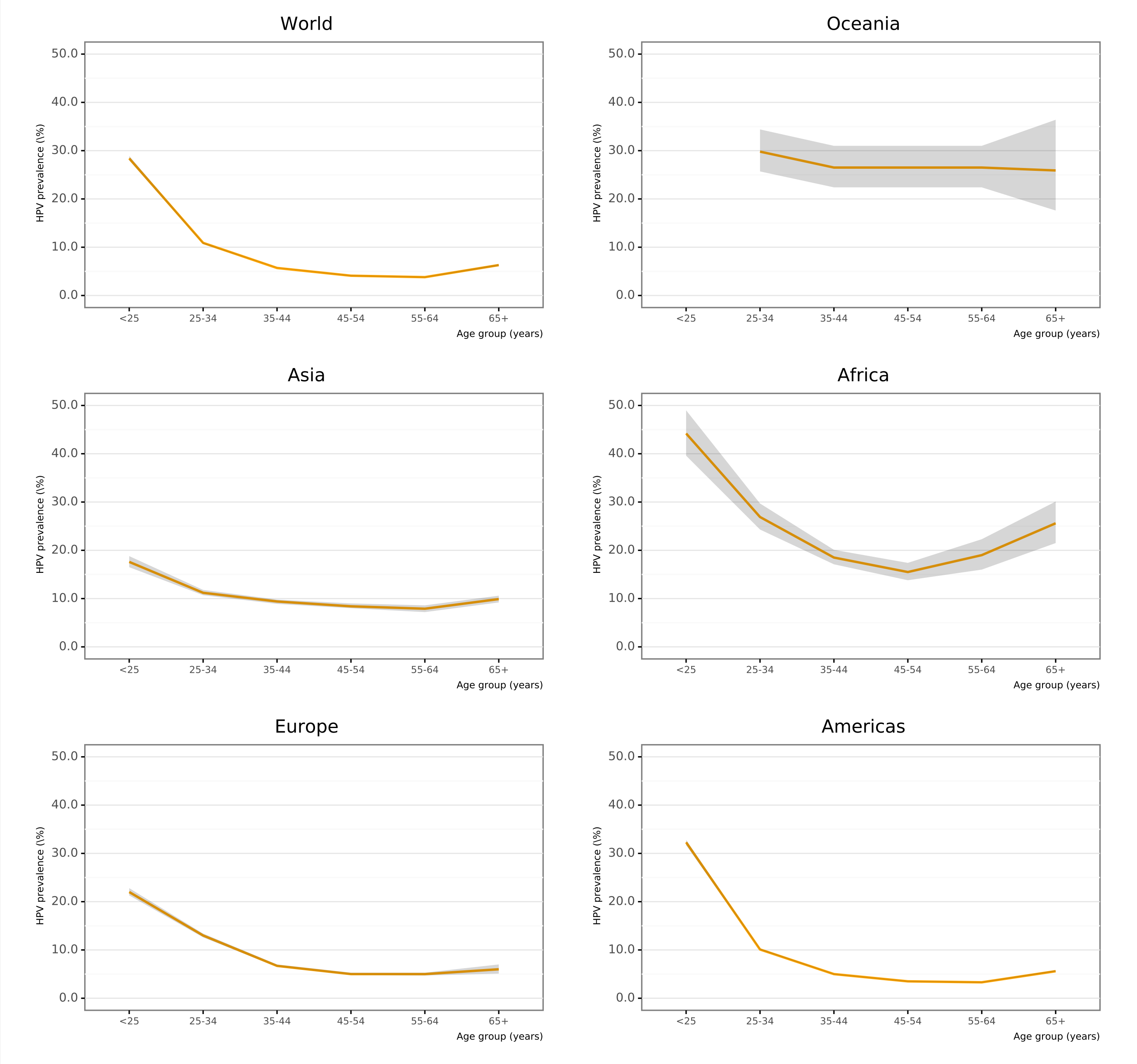
Figure 51: Prevalence of HPV among women with normal cervical cytology in the World



Data updated on 22 May 2023 (data as of 30 Jun 2015)

Data Sources: See references in Section 9 References.

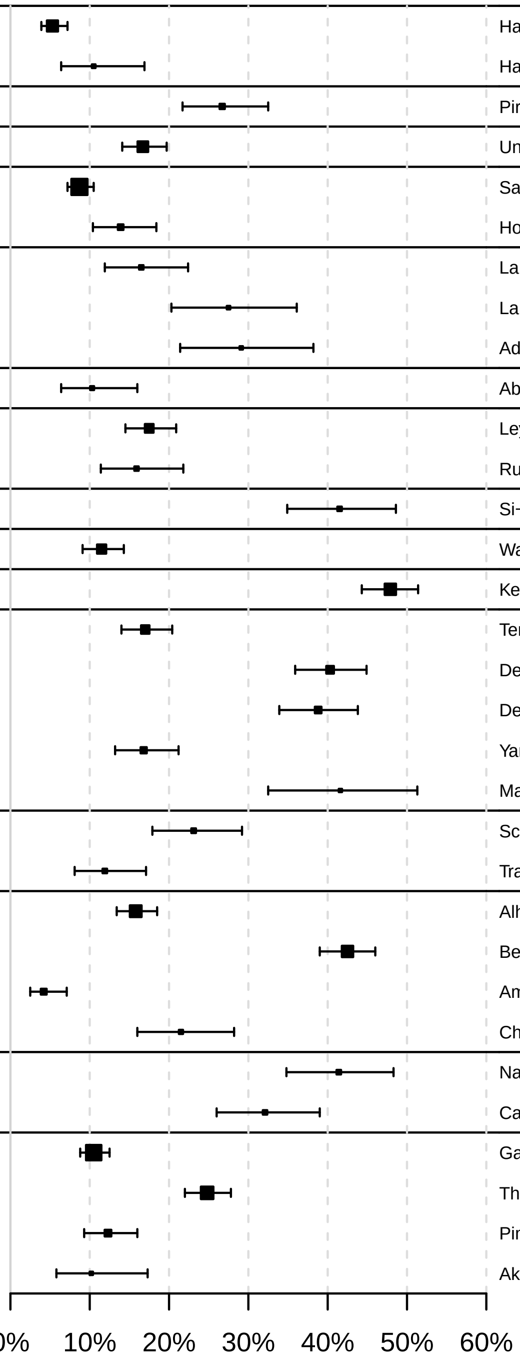
Figure 52: Crude age-specific HPV prevalence (%) and 95% confidence interval in women with normal cervical cytology in the World and its regions



Data updated on 22 May 2023 (data as of 30 Jun 2014)

Data Sources: See references in Section 9 References.

Figure 53: Prevalence of HPV among women with normal cervical cytology in Africa by country and study

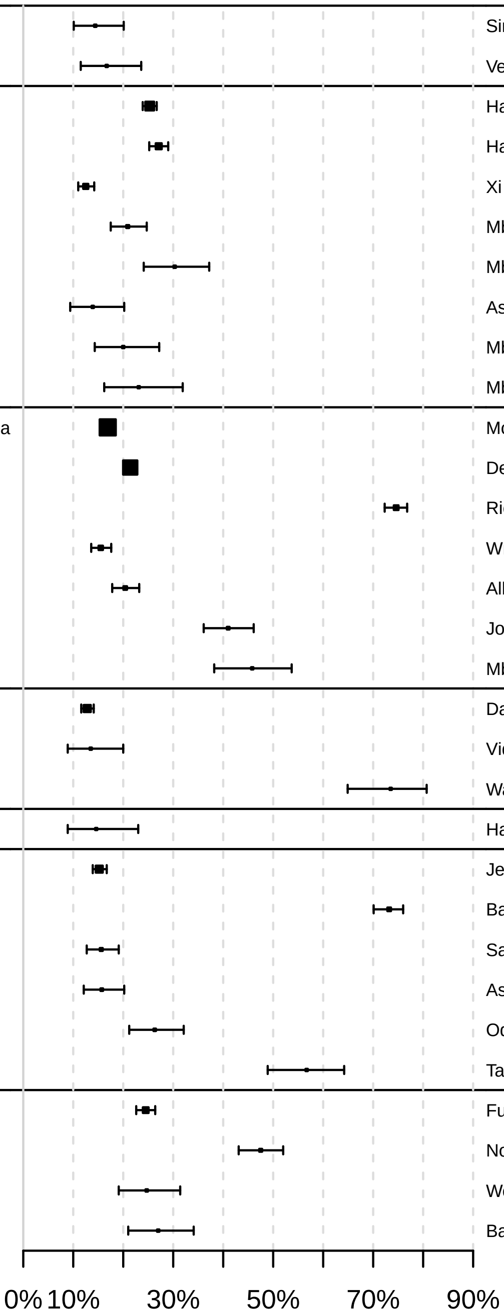


Country	Study	Age	N	% (95% CI)
Algeria	Hammouda 2011 (Zeralda (Algiers))	15−65	732	5.3 (3.9−7.2)
	Hammouda 2005 (Algiers)	31−80	133	10.5 (6.4−16.9)
Benin	Piras 2011	15−70	258	26.7 (21.7−32.5)
Cameroon	Untiet 2014 (Yaoundé)	20−89	694	16.7 (14.1−19.7)
Congo	Sangwa−Lugoma 2011 (Mbuku, Kinshasa)	>=30	1138	8.7 (7.2−10.5)
	Hovland 2010 (Bukavu)	−	287	13.9 (10.4−18.4)
Côte d'Ivoire	La Ruche 1998 (Abidjan)	20−50	194	16.5 (11.9−22.4)
	La Ruche 1998 (Abidjan)	20−50	120	27.5 (20.3−36.1)
	Adjorlolo−Johnson 2010 (Abidjan)	23−69	110	29.1 (21.4−38.2)
Egypt	Abdel Aziz 2006 (Cairo)	20−60	156	10.3 (6.4−16.0)
Ethiopia	Leyh−Bannurah 2014 (Gurage)	15−64	537	17.5 (14.5−20.9)
	Ruland 2006 (Gurage)	18−65	189	15.9 (11.4−21.8)
Gabon	Si−Mohamed 2005 (Libreville)	18−44	195	41.5 (34.9−48.6)
Gambia	Wall 2005 (Farafenni)	15−54	576	11.5 (9.1−14.3)
Guinea	Keita 2009 (Conakry)	15−64	752	47.9 (44.3−51.4)
Kenya	Temmerman 1999 (Nairobi)	19−54	513	17.0 (14.0−20.4)
	De Vuyst 2010 (Mombasa)	>=15	454	40.3 (35.9−44.9)
	De Vuyst 2003 (Nairobi)	25−55	369	38.8 (33.9−43.8)
	Yamada 2008 (Nairobi)	16−61	333	16.8 (13.2−21.2)
	Maranga 2013 (Nairobi)	21−50	101	41.6 (32.5−51.3)
Mali	Schluterman 2013 (Naréna)	15−65	212	23.1 (17.9−29.2)
	Tracy 2011 (Bamako)	15−65	202	11.9 (8.1−17.1)
Morocco	Alhamany 2010 (Rabat)	17−80	785	15.8 (13.4−18.5)
	Bennani 2012 (Fez)	17−81	751	42.5 (39.0−46.0)
	Amrani 2003 (Rabat)	25−54	306	4.2 (2.5−7.1)
	Chaouki 1998 (Rabat)	18−70	172	21.5 (16.0−28.2)
Mozambique	Naucler 2011 (Maputo)	>=25	203	41.4 (34.8−48.3)
	Castellsagué 2001 (Manhiça)	14−61	196	32.1 (26.0−39.0)
Nigeria	Gage 2012 (Irun)	>=15	1075	10.5 (8.8−12.5)
	Thomas 2004 (Idikan (Ibadan))	15−98	844	24.8 (22.0−27.8)
	Pimentel 2013 (Okene, Abuja and Katari)	19−85	374	12.3 (9.3−16.0)
	Akarolo−Anthony 2013 (Abuja)	−	108	10.2 (5.8−17.3)

Data updated on 22 May 2023 (data as of 30 Jun 2014)

The samples for HPV testing come from cervical specimens (fresh/fixed biopsies or exfoliated cells)
[a] Number of women tested
Data Sources: See references in Section 9 References.

Figure 53: Prevalence of HPV among women with normal cervical cytology in Africa by country and study (continued)

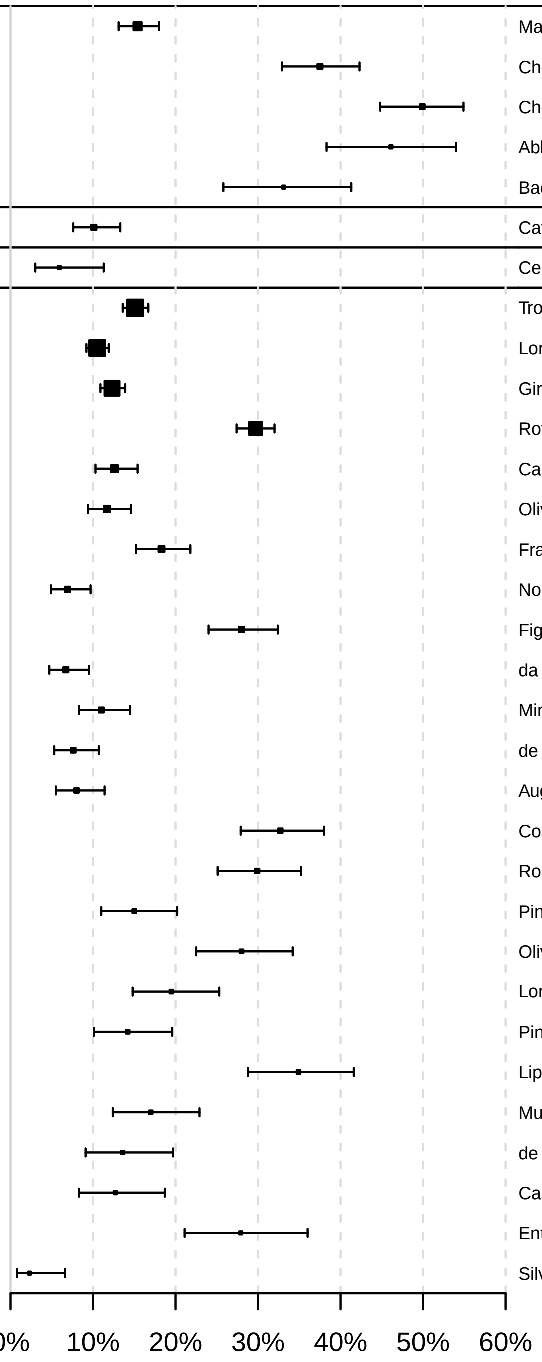


Country	Study	Age	N	% (95% CI)
Rwanda	Singh 2009	>=25	188	14.4 (10.1−20.1)
	Veldhuijzen 2012 (Kigali)	−	144	16.7 (11.5−23.6)
Senegal	Hawes 2003 (Dakar)	>=15	3633	25.3 (23.9−26.7)
	Hanisch 2013 (Dakar)	15−84	2139	27.1 (25.2−29.0)
	Xi 2003 (Dakar)	35−80	1639	12.5 (11.0−14.2)
	Mbaye 2014 (Dakar)	18−80	498	20.9 (17.5−24.7)
	Mbaye 2014 (Thiès)	18−80	185	30.3 (24.1−37.2)
	Astori 1999 (Dakar)	20−75	158	13.9 (9.4−20.2)
	Mbaye 2014 (Saint−Louis)	18−80	145	20.0 (14.3−27.2)
	Mbaye 2014 (Louga)	18−80	108	23.1 (16.2−31.9)
South Africa	McDonald 2012 (Khayelitsha)	17−65	7569	16.9 (16.1−17.8)
	Denny 2005 (Khayelitsha)	35−65	6555	21.4 (20.4−22.4)
	Richter 2013	16−83	1445	74.6 (72.3−76.8)
	Wright 2000 (Cape Town)	35−65	1269	15.5 (13.6−17.6)
	Allan 2008 (Cape Town)	21−59	848	20.4 (17.8−23.2)
	Jones 2007 (Cape Town)	>=18	368	41.0 (36.1−46.1)
	Mbulawa 2010 (Gugulethu (Cape Town))	−	155	45.8 (38.2−53.7)
Tanzania	Dartell 2014 (Dar es Salaam, Pwani, Mwanza)	15−82	2737	12.8 (11.6−14.1)
	Vidal 2011 (Kilimanjaro)	>=18	148	13.5 (8.9−20.0)
	Watson−Jones 2013 (Mwanza)	10−25	117	73.5 (64.9−80.7)
Tunisia	Hassen 2003 (Sousse)	20−45	96	14.6 (8.9−23.0)
Uganda	Jeronimo 2014 (Kampala)	25−60	2676	15.2 (13.9−16.7)
	Banura 2008 (Kampala)	12−24	868	73.2 (70.1−76.0)
	Safaeian 2007 (Rakai)	15−49	505	15.6 (12.7−19.1)
	Asiimwe 2008 (Bushenyi District)	25−37	305	15.7 (12.1−20.2)
	Odida 2011 (Kampala)	18−74	251	26.3 (21.2−32.1)
	Taube 2010 (Kampala)	18−30	157	56.7 (48.9−64.2)
Zimbabwe	Fukuchi 2009 (Chitungwiza, Epworth (Harare))	18−49	1987	24.5 (22.6−26.4)
	Nowak 2011 (Chitungwiza and Harare)	18−35	478	47.5 (43.1−52.0)
	Womack 2000 (Chitungwiza and Harare)	25−55	186	24.7 (19.1−31.4)
	Baay 2004 (Mupfure)	15−49	174	27.0 (21.0−34.1)

Data updated on 22 May 2023 (data as of 30 Jun 2014)

The samples for HPV testing come from cervical specimens (fresh/fixed biopsies or exfoliated cells)
[a] Number of women tested
Data Sources: See references in Section 9 References.

Figure 54: Prevalence of HPV among women with normal cervical cytology in the Americas by country and study

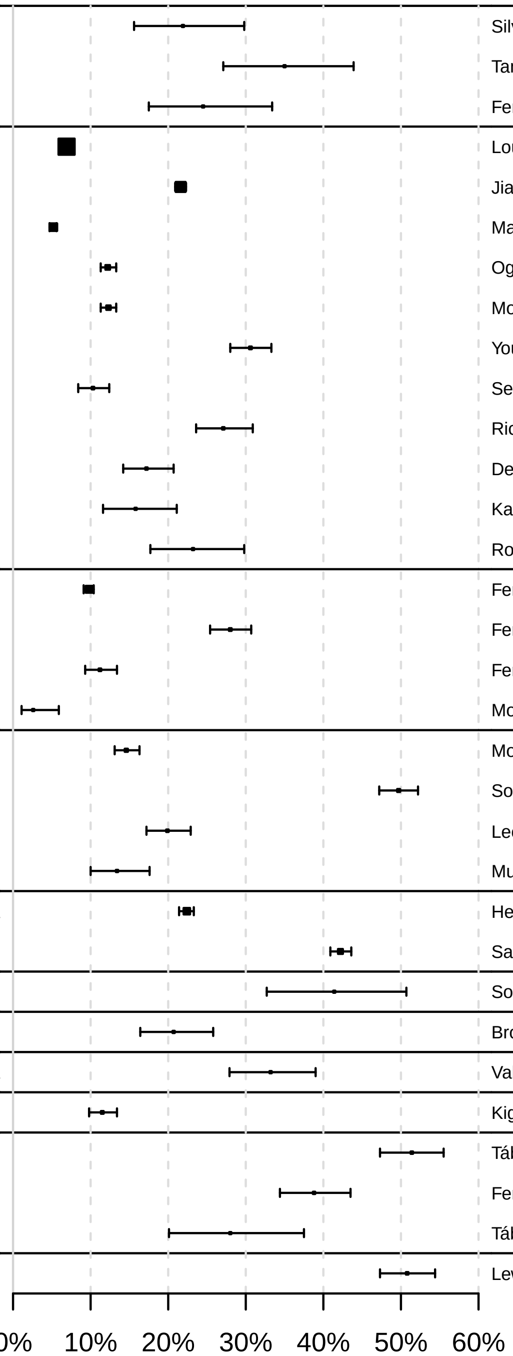


Country	Study	Age	N	% (95% CI)
Argentina	Matos 2003 (Entre Ríos)	13−78	843	15.4 (13.1−18.0)
	Chouhy 2013[b]	14−77	403	37.5 (32.9−42.3)
	Chouhy 2013 (Buenos Aires)	15−69	371	49.9 (44.8−54.9)
	Abba 2003 (La Plata)	15−70	152	46.1 (38.3−54.0)
	Badano 2011 (Posadas City)	18−62	139	33.1 (25.8−41.3)
Belize	Cathro 2009 (Belize City)	−	426	10.1 (7.6−13.3)
Bolivia	Cervantes 2003 (Amazonian lowland)	16−71	135	5.9 (3.0−11.3)
Brazil	Trottier 2006 (Sao Paulo)[c]	18−59	1988	15.1 (13.6−16.7)
	Lorenzi 2013 (Barretos (Sao Paulo))	18−76	1921	10.5 (9.2−11.9)
	Girianelli 2010	25−59	1800	12.3 (10.9−13.9)
	Roteli−Martins 2011	15−25	1509	29.7 (27.4−32.0)
	Carestiato 2006 (Rio de Janeiro)	11−70	672	12.6 (10.3−15.4)
	Oliveira 2007 (Pacoti, Ceara)	13−49	579	11.7 (9.4−14.6)
	Franco 1995 (Paraiba)	15−65	525	18.3 (15.2−21.8)
	Noronha 2005 (Para)	30−45	433	6.9 (4.9−9.7)
	Figueiredo Alves 2013 (Goiana)[d]	15−19	432	28.0 (24.0−32.4)
	da Silva 2012 (Paiçandú (Paraná))	15−83	418	6.7 (4.7−9.5)
	Miranda 2012	18−65	399	11.0 (8.3−14.5)
	de Abreu 2012	15−83	370	7.6 (5.3−10.7)
	Augusto 2014 (Niterói City)	14−79	338	8.0 (5.5−11.4)
	Coser 2013 (Cruz Alta)	−	327	32.7 (27.9−38.0)
	Rocha 2013 (Coari (Amazonas State))	18−78	314	29.9 (25.1−35.2)
	Pinto 2011 (Pará)	>=13	233	15.0 (11.0−20.2)
	Oliveira 2010 (Niterói City (Rio de Janeiro))	14−24	225	28.0 (22.5−34.2)
	Lorenzato 2000 (Recife)[e]	13−84	215	19.5 (14.8−25.3)
	Pinto 2011 (Tucuruí)	>=13	211	14.2 (10.1−19.6)
	Lippman 2010 (Sao Pulo)	18−40	209	34.9 (28.8−41.6)
	Muñoz 1996 (Sao Paulo)	26−77	194	17.0 (12.4−22.9)
	de Oliveira 2013 (Rio Grande)[f]	>=14	162	13.6 (9.1−19.7)
	Cassel 2014 (Porto Alegre)	−	158	12.7 (8.3−18.7)
	Entiauspe 2014 (Pelotas)	18−45	136	27.9 (21.1−36.0)
	Silva 2009 (Maricá)	14−79	130	2.3 (0.8−6.6)

Data updated on 22 May 2023 (data as of 30 Jun 2014)

The samples for HPV testing come from cervical specimens (fresh/fixed biopsies or exfoliated cells)
[a] Number of women tested
[b] Granadero Baigorria City (Santa Fe Province)
[c] Maringá, Paiçandú and Uniao da Vitoria (Paraná State)
[d] Duque de Caxias and Nova Iguaçu (State of Rio de Janeiro)
[e] Ouro Preto city (Minas Gerais)
[f] Northwest Territories, Nunavut, Labrador, Yukon.
Data Sources: See references in Section 9 References.

Figure 54: Prevalence of HPV among women with normal cervical cytology in the Americas by country and study (continued)

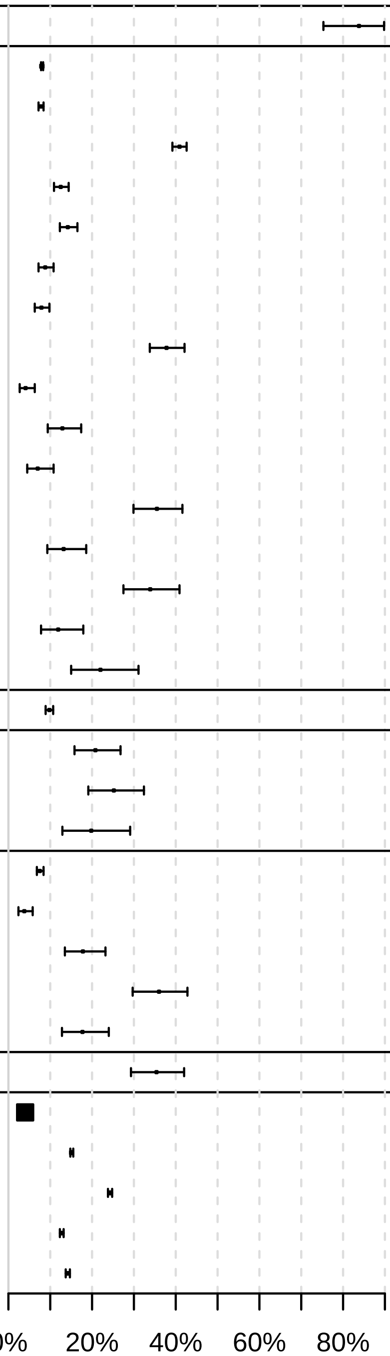


Country	Study	Age	N	% (95% CI)
Brazil	Silva 2009 (Itaboraí)	14−79	128	21.9 (15.6−29.8)
	Tamegão−Lopes 2014 (Juruti (Pará))	−	120	35.0 (27.1−43.9)
	Fernandes 2009 (Natal)	15−65	110	24.5 (17.5−33.4)
Canada	Louvanto 2014 (Montreal)	30−65	23739	6.9 (6.6−7.3)
	Jiang 2013	14−69	13379	21.6 (20.9−22.3)
	Mayrand 2006 (Montreal and Newfoundland)	30−69	9245	5.2 (4.7−5.6)
	Ogilvie 2013 (British Columbia)	−	4330	12.2 (11.3−13.3)
	Moore 2009 (British Columbia)	>=15	4003	12.3 (11.3−13.3)
	Young 1997 (Winnipeg)	−	1132	30.6 (28.0−33.3)
	Sellors 2000 (Ontario)	15−49	878	10.3 (8.4−12.4)
	Richardson 2003 (Montreal)	17−42	568	27.1 (23.6−30.9)
	Demers 2012 (Manitoba)	>=18	517	17.2 (14.2−20.7)
	Kapala 2007 (Ontario)	−	222	15.8 (11.6−21.1)
	Roteli−Martins 2011	15−25	185	23.2 (17.7−29.8)
Chile	Ferreccio 2013 (Santiago)	16−78	8127	9.8 (9.1−10.4)
	Ferreccio 2008	16−97	1100	28.0 (25.4−30.7)
	Ferreccio 2004 (Santiago)	15−86	913	11.2 (9.3−13.4)
	Montalvo 2011 (Arica)	18−25	195	2.6 (1.1−5.9)
Colombia	Molano 2002 (Bogota)	13−85	1831	14.6 (13.1−16.3)
	Soto−De Leon 2011	14−77	1564	49.7 (47.2−52.2)
	Leon 2009 (Girardot)[b]	14−80	744	19.9 (17.2−22.9)
	Muñoz 1996 (Cali)	19−74	307	13.4 (10.0−17.6)
Costa Rica	Herrero 2005 (Guanacaste)	18−94	7459	22.4 (21.4−23.3)
	Safaeian 2007 (Guanacaste)	18−25	4857	42.2 (40.9−43.6)
Cuba	Soto 2014 (La Havana)	30−69	111	41.4 (32.7−50.7)
Ecuador	Brown 2009 (Guayas)	18−78	285	20.7 (16.4−25.8)
Guatemala	Vallès 2009 (Escuintla)	18−49	274	33.2 (27.9−39.0)
Guyana	Kightlinger 2010	13−80	1168	11.5 (9.8−13.4)
Honduras	Tábora 2009 (Tegucigalpa)	18−65	562	51.4 (47.3−55.5)
	Ferrera 1999 (Tegucigalpa)	15−65	438	38.8 (34.4−43.5)
	Tábora 2005 (Tegucigalpa)	18−35	100	28.0 (20.1−37.5)
Jamaica	Lewis−Bell 2013	16−49	765	50.8 (47.3−54.4)

Data updated on 22 May 2023 (data as of 30 Jun 2014)

The samples for HPV testing come from cervical specimens (fresh/fixed biopsies or exfoliated cells)
[a] Number of women tested
[b] Bogotá, Leticia, Chaparral, Giradot and Tumaco
Data Sources: See references in Section 9 References.

Figure 54: Prevalence of HPV among women with normal cervical cytology in the Americas by country and study (continued)

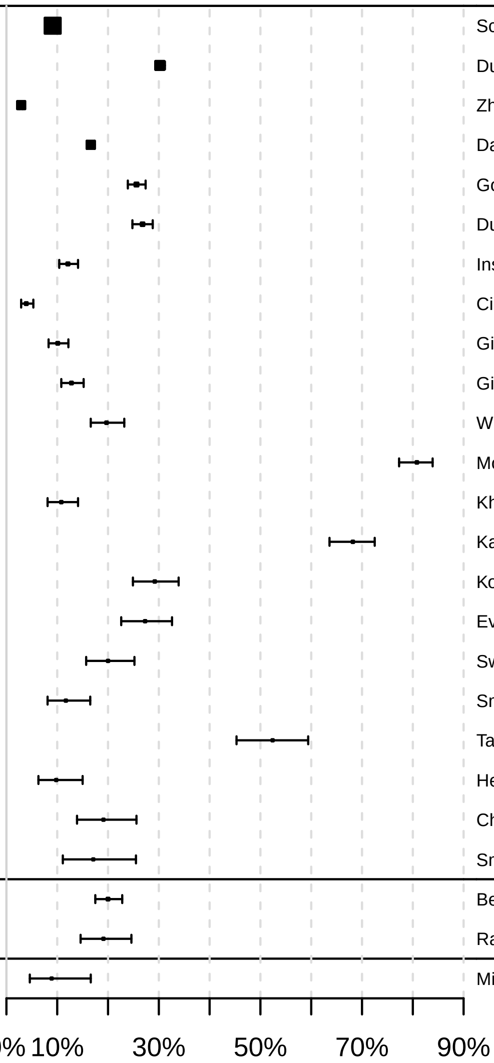


Country	Study	Age	N	% (95% CI)
Jamaica	Watt 2009 (Western Jamaica)[b]	–	99	83.8 (75.3–89.8)
Mexico	Lazcano–Ponce 2010	20–70	49053	8.0 (7.8–8.3)
	Salmerón 2003 (Morelos)	15–85	7545	7.8 (7.2–8.4)
	Illades–Aguiar 2010	15–97	3117	40.9 (39.2–42.6)
	Lazcano–Ponce 2001 (Morelos)	18–82	1340	12.5 (10.9–14.4)
	Hernández–Girón 2005 (Cuernavaca)	17–39	1060	14.2 (12.3–16.5)
	Giuliano 2001 (Sonora)	15–79	995	8.8 (7.2–10.8)
	López Rivera 2012 (Mexico City)	18–76	916	7.9 (6.3–9.8)
	Carrillo–García 2014	–	518	37.8 (33.8–42.1)
	Sánchez–Anguiano 2006 (Durango City)	20–69	487	4.1 (2.7–6.3)
	Monroy 2010 (Mexico City)	17–51	272	12.9 (9.4–17.4)
	Giuliano 2005 (Sonora)	40–82	258	7.0 (4.5–10.8)
	Illades–Aguiar 2009 (Acapulco)	–	256	35.5 (29.9–41.6)
	Hernández–Avila 1997 (Mexico City)	25–75	204	13.2 (9.3–18.6)
	Rojo Contreras 2008 (Guadalajara)	18–55	189	33.9 (27.5–40.9)
	Piña–Sánchez 2006 (Mexico City)	19–64	159	11.9 (7.8–17.9)
	Velázquez–Márquez 2010 (Tlaxcala)	18–74	100	22.0 (15.0–31.1)
Nicaragua	Jeronimo 2014 (Masaya Province)	30–49	4340	9.8 (8.9–10.7)
Paraguay	Mendoza 2011 (Asunción)	16–77	207	20.8 (15.8–26.8)
	Torres 2009 (Asunción)	17–65	159	25.2 (19.1–32.4)
	Rolón 2000 (Asunción)[c]	25–73	91	19.8 (12.9–29.1)
Peru	Almonte 2007 (San Martin)	25–49	4218	7.5 (6.8–8.4)
	García 2004	18–65	501	3.8 (2.4–5.8)
	Silva–Caso 2014 (Cajamarca)	18–65	241	17.8 (13.5–23.2)
	Martorell 2012 (Iquitos and Loretos)	–	203	36.0 (29.7–42.8)
	Santos 2001 (Lima)	21–82	175	17.7 (12.8–24.0)
Trinidad and Tobago	Ragin 2007 (Tobago)	18–65	212	35.4 (29.3–42.0)
United States of America	Castle 2009 (Northern California)	30–90	580289	4.0 (3.9–4.0)
	Castle 2011 (23 US States)	25–42	38403	15.1 (14.8–15.5)
	Wheeler 2013 (New Mexico)	–	33614	24.3 (23.8–24.8)
	Sherman 2003 (Portland)	16–94	20156	12.7 (12.3–13.2)
	Castle 2012 (Portland)	16–94	19512	14.2 (13.7–14.7)

Data updated on 22 May 2023 (data as of 30 Jun 2014)

The samples for HPV testing come from cervical specimens (fresh/fixed biopsies or exfoliated cells)
[a] Number of women tested
[b] Acapulco, Chilpancingo and Iguala (State of Guerrero)
[c] Boston, Baltimore, New Orleans, Denver, Seattle, Los Angeles
Data Sources: See references in Section 9 References.

Figure 54: Prevalence of HPV among women with normal cervical cytology in the Americas by country and study (continued)

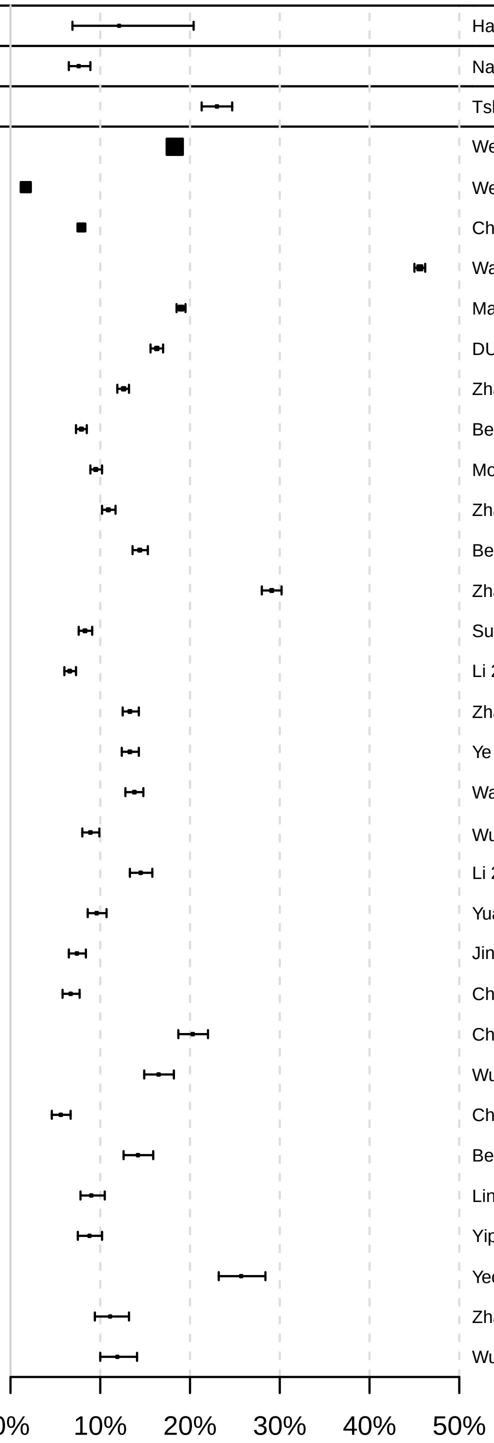


Country	Study	Age	N	% (95% CI)
United States of America	Schiffman 2011 (Portland)	16−94	18450	9.1 (8.7−9.6)
	Dunne 2013	11−29	9231	30.2 (29.3−31.2)
	Zhao 2007 (Pittsburgh)	11−90	8070	2.9 (2.5−3.2)
	Datta 2008	18−65	8055	16.6 (15.8−17.4)
	Goodman 2008 (Hawaii)	18−85	2356	25.6 (23.9−27.4)
	Dunne 2007	14−59	1921	26.8 (24.8−28.8)
	Insinga 2007	16−23	1203	12.1 (10.4−14.1)
	Cibas 2007 (Boston)	30−45	1000	3.9 (2.9−5.3)
	Giuliano 1999 (Tucson)	18−47	911	10.1 (8.3−12.2)
	Giuliano 2001 (Arizona)	15−79	881	12.8 (10.8−15.2)
	Winer 2003 (Seattle)	18−20	553	19.7 (16.6−23.2)
	Moscicki 2001 (San Francisco)	13−24	547	80.8 (77.3−83.9)
	Khanna 2007 (Baltimore)	18−69	418	10.8 (8.1−14.1)
	Kahn 2008 (Cincinnati)	13−26	409	68.2 (63.6−72.5)
	Kotloff 1998 (Maryland)	17−44	390	29.2 (24.9−33.9)
	Evans 2006 (Vermont)	16−69	300	27.3 (22.6−32.6)
	Swan 1999 (Texas)	18−45	270	20.0 (15.7−25.2)
	Smith 2003 (Iowa)	42−85	223	11.7 (8.1−16.5)
	Tarkowski 2004 (Atlanta)	12−20	189	52.4 (45.3−59.4)
	Hernandez 2004 (Hawaii)	>=18	183	9.8 (6.3−15.0)
	Chaturvedi 2005 (New Orleans)	18−70	173	19.1 (13.9−25.6)
	Smith 2004 (Iowa)	45−64	105	17.1 (11.1−25.5)
Uruguay	Berois 2014 (Montevideo)	<=69	883	20.0 (17.5−22.8)
	Ramas 2013	18−62	236	19.1 (14.6−24.6)
Venezuela	Michelli 2011 (Mérida State)	15−69	90	8.9 (4.6−16.6)

Data updated on 22 May 2023 (data as of 30 Jun 2014)

The samples for HPV testing come from cervical specimens (fresh/fixed biopsies or exfoliated cells)
[a] Number of women tested
Data Sources: See references in Section 9 References.

Figure 55: Prevalence of HPV among women with normal cervical cytology in Asia by country and study

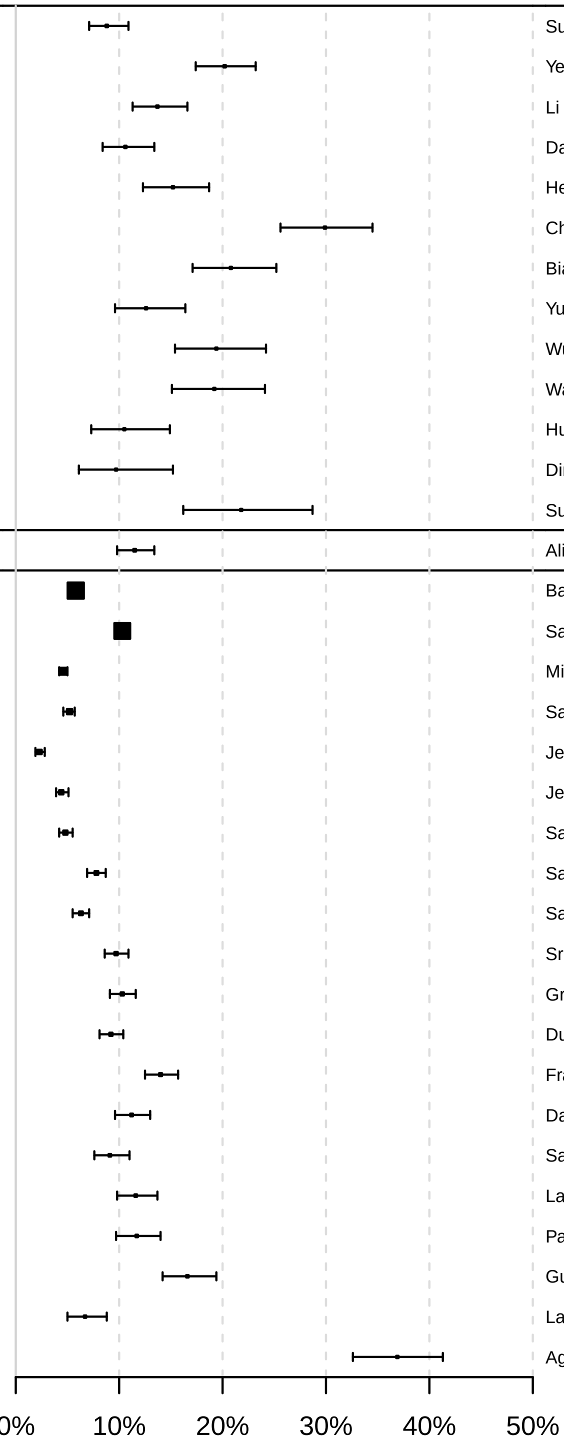


Country	Study	Age	N	% (95% CI)
Bahrain	Hajjaj 2006	20−60	91	12.1 (6.9−20.4)
Bangladesh	Nahar 2014 (Dhaka and Mirzapur)[b]	13−64	1902	7.6 (6.5−8.9)
Bhutan	Tshomo 2014 (Thimphu)	18−69	2272	23.0 (21.3−24.7)
China	Wei 2014 (Shenyang (Liaoning Province))[c]	18−81	118096	18.3 (18.1−18.5)
	Wei 2014 (Shenyang (Liaoning Province))[d]	18−81	67172	1.7 (1.6−1.8)
	Chen 2012 (Chaozhou)	35−60	48559	7.9 (7.7−8.1)
	Wang 2012 (Shenyang (Liaoning Province))	18−60	24041	45.6 (45.0−46.2)
	Mai 2014	>=18	22114	19.0 (18.5−19.5)
	DU 2012 (Shenzhen)	20−59	10017	16.3 (15.6−17.0)
	Zhang 2013 (Shangai)	17−89	10000	12.6 (11.9−13.2)
	Belinson 2011 (Guangdong Province)	25−59	7525	7.9 (7.3−8.5)
	Moy 2010	30−54	7367	9.5 (8.9−10.2)
	Zhao 2013 (Yangcheng, Xinmi and Tonggu)	25−65	7089	10.9 (10.2−11.7)
	Belinson 2003	27−56	6643	14.4 (13.6−15.3)
	Zhang 2008 (Shangai)	18−78	6405	29.1 (28.0−30.2)
	Sun 2012 (Qujing (Yunnan Province))	18−65	5936	8.3 (7.6−9.1)
	Li 2010 (Beijing)[e]	25−54	5530	6.6 (6.0−7.3)
	Zhao 2014 (Jiangsi Province)	18−25	5416	13.3 (12.5−14.3)
	Ye 2010 (Zhejiang Province)	20−79	4987	13.3 (12.4−14.3)
	Wang 2013 (Shenzhen)	>=15	4413	13.8 (12.8−14.8)
	Wu 2013[f]	17−54	3737	8.9 (8.0−9.9)
	Li 2013 (Hunan Province)	17−74	3115	14.5 (13.3−15.8)
	Yuan 2011 (Shandong Province)	20−61	3112	9.6 (8.6−10.7)
	Jin 2010 (Tibetan Autonomous Region)[g]	19−65	2847	7.4 (6.5−8.4)
	Chan 2009 (Hong Kong)	19−83	2604	6.7 (5.8−7.7)
	Chen 2013 (Urumqi)	18−69	2269	20.3 (18.7−22.0)
	Wu 2010 (Shenzhen (Guangdong Province))	25−59	2000	16.5 (14.9−18.2)
	Chan 2002 (Hong Kong)	19−83	1962	5.6 (4.6−6.7)
	Belinson 2001	35−45	1784	14.2 (12.6−15.9)
	Lin 2008 (Guandong)	20−68	1705	9.0 (7.8−10.5)
	Yip 2010 (Macao)	20−60	1600	8.8 (7.5−10.2)
	Yeoh 2006 (Hong Kong)[h]	−	1090	25.7 (23.2−28.4)
	Zhang 2012	20−64	1032	11.1 (9.4−13.2)
	Wu 2007 (Shenzhen)	15−59	942	11.9 (10.0−14.1)

Data updated on 22 May 2023 (data as of 30 Jun 2014)

The samples for HPV testing come from cervical specimens (fresh/fixed biopsies or exfoliated cells)
[a] Number of women tested
[b] Yangcheng and Xiangyuan (Shanxi)
[c] Beijing, Shanghai, Shanxi, Henan, Xinjiang
[d] Lishui County (Zhejiang Province)
[e] Uyghur (Yutian County, Xingjian Province)
[f] Shiquan County (Shaanxi Province)
[g] Shantou City (Guandong Province)
[h] Wufeng County (Hubei Province)
Data Sources: See references in Section 9 References.

Figure 55: Prevalence of HPV among women with normal cervical cytology in Asia by country and study (continued)

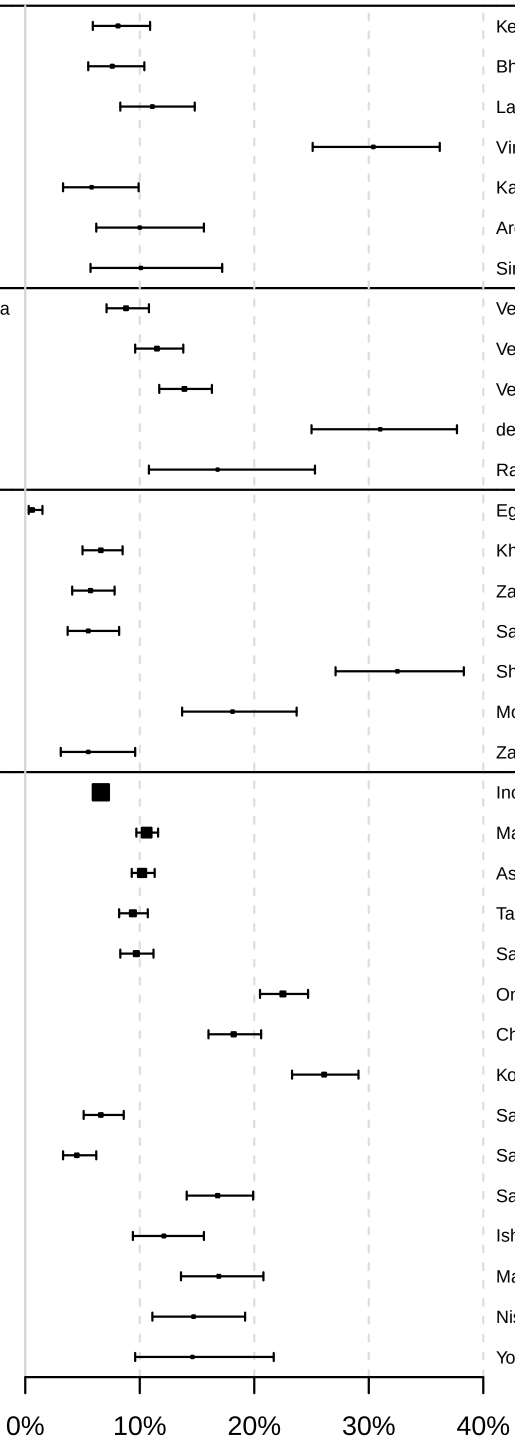


Country	Study	Age	N	% (95% CI)
China	Sui 2013	16−59	883	8.8 (7.1−10.9)
	Ye 2010	25−65	734	20.2 (17.4−23.2)
	Li 2006 (Shenyang)[b]	17−59	663	13.7 (11.3−16.6)
	Dai 2006 (Shanxi)	19−59	601	10.6 (8.4−13.4)
	He 2008 (Hangzhou)	−	480	15.2 (12.3−18.7)
	Chui 2012 (Macau)	20−66	402	29.9 (25.6−34.5)
	Bian 2013 (Beijing)	20−55	379	20.8 (17.1−25.2)
	Yu 2013	20−60	373	12.6 (9.6−16.4)
	Wu 2010 (Fujian Province)	20−70	314	19.4 (15.4−24.2)
	Wang 2013 (Huzhou)	20−35	292	19.2 (15.1−24.1)
	Hu 2011 (Jaingsu Province)	18−25	257	10.5 (7.3−14.9)
	Ding 2014 (Beijing)	18−68	165	9.7 (6.1−15.2)
	Sun 2010 (Liaoning Province)	−	165	21.8 (16.2−28.7)
Georgia	Alibegashvili 2011 (Tbilisi)	15−59	1247	11.5 (9.8−13.4)
India	Basu 2013 (West Bengal)[c]	30−65	28039	5.8 (5.5−6.1)
	Sankaranarayanan 2005 (Osnamabad)	30−59	27301	10.3 (9.9−10.7)
	Mittal 2014 (Kolkata)	30−60	9630	4.6 (4.2−5.0)
	Sankaranarayanan 2004 (Kolkata (2))	25−65	6278	5.2 (4.6−5.7)
	Jeronimo 2014 (Rural Uttar Pradesh)	30−59	4547	2.3 (1.9−2.8)
	Jeronimo 2014 (Hyderabad)	30−49	4385	4.4 (3.9−5.1)
	Sankaranarayanan 2004 (Trivandrum)	25−65	4332	4.8 (4.2−5.5)
	Sankaranarayanan 2004 (Kolkata (1))	25−65	3390	7.8 (6.9−8.7)
	Sankaranarayanan 2004 (Mumbai)	25−65	3365	6.3 (5.5−7.1)
	Srivastava 2012 (Varanasi)	17−80	2480	9.7 (8.6−10.9)
	Gravitt 2010	>=25	2331	10.3 (9.1−11.6)
	Dutta 2012 (Eastern India)	25−65	2313	9.2 (8.1−10.4)
	Franceschi 2005 (Tamil Nadu)	17−59	1799	14.0 (12.5−15.7)
	Datta 2010 (Govindpuri (New Delhi))	16−24	1300	11.2 (9.6−13.0)
	Sarkar 2011 (West Bengal)	>=15	1106	9.1 (7.6−11.0)
	Laikangbam 2007 (West Bengal)	14−80	1007	11.6 (9.8−13.7)
	Pandey 2012 (Lucknow)	20−70	890	11.7 (9.7−14.0)
	Gupta 2009 (New Delhi)	18−45	769	16.6 (14.2−19.4)
	Laikangbam 2007 (Manipur)	20−80	672	6.7 (5.0−8.8)
	Aggarwal 2006 (Chandigarh)	19−75	472	36.9 (32.6−41.3)

Data updated on 22 May 2023 (data as of 30 Jun 2014)

The samples for HPV testing come from cervical specimens (fresh/fixed biopsies or exfoliated cells)
[a] Number of women tested
[b] Shanxi, Jiangxi and Gansu Provinces
[c] Medchal Mandal (Andhra Pradesh)
Data Sources: See references in Section 9 References.

Figure 55: Prevalence of HPV among women with normal cervical cytology in Asia by country and study (continued)

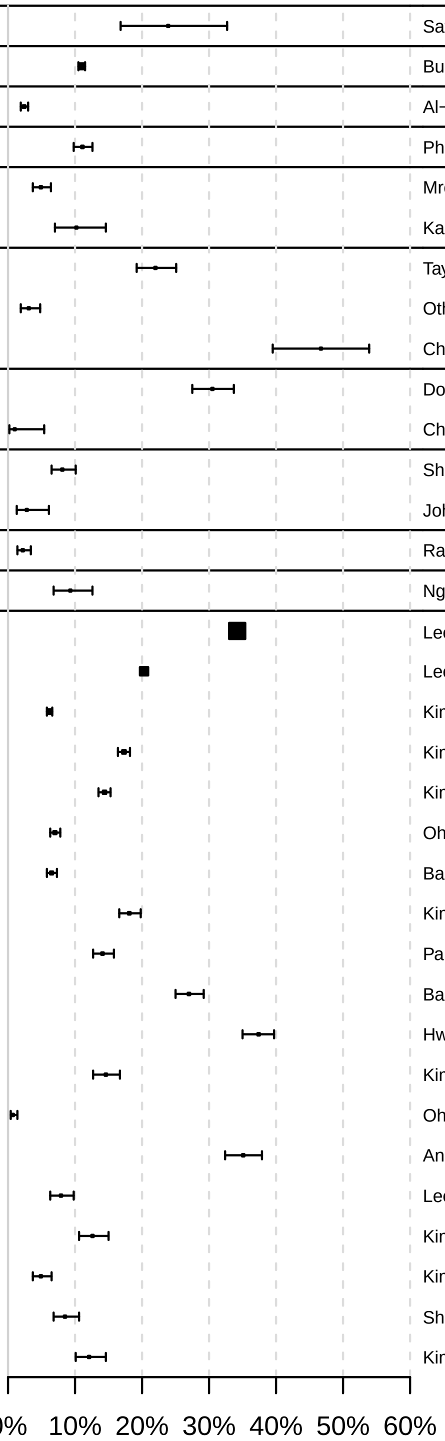


Country	Study	Age	N	% (95% CI)
India	Kerkar 2011 (Mumbai)	–	470	8.1 (5.9–10.9)
	Bhatla 2008 (New Delhi)	30–65	458	7.6 (5.5–10.4)
	Laikangbam 2007 (Sikkim)	19–75	359	11.1 (8.3–14.8)
	Vinodhini 2012 (Tamil Nadu)	–	257	30.4 (25.1–36.2)
	Kashyap 2013	46–58	207	5.8 (3.3–9.9)
	Arora 2005 (New Delhi)	20–60	160	10.0 (6.2–15.6)
	Singh 2009 (North India)	–	109	10.1 (5.7–17.2)
Indonesia	Vet 2008 (Tasikmalaya)	12–70	919	8.8 (7.1–10.8)
	Vet 2008 (Bali)	12–70	887	11.5 (9.6–13.8)
	Vet 2008 (Jakarta)	12–70	880	13.9 (11.7–16.3)
	de Boer 2006 (Jakarta)	21–75	200	31.0 (25.0–37.7)
	Rachmadi 2012 (Jakarta, Tasikmalaya and Bali)	18–60	101	16.8 (10.8–25.3)
Iran	Eghbali 2012 (Bushehr Port)	17–50	799	0.6 (0.3–1.5)
	Khodakarami 2012 (Tehran)	18–59	791	6.6 (5.0–8.5)
	Zavarei 2008 (Tehran)[b]	15–55	600	5.7 (4.1–7.8)
	Safaei 2010 (Shiraz)	20–72	400	5.5 (3.7–8.2)
	Shahramian 2011 (Zabol)	–	265	32.5 (27.1–38.3)
	Moradi 2011 (Gorgan)	15–75	226	18.1 (13.7–23.7)
	Zandi 2010 (Bushehr)	–	200	5.5 (3.1–9.6)
Japan	Inoue 2006 (Ishikawa)	14–94	7564	6.6 (6.0–7.2)
	Maehama 2005 (Okinawa)	20–89	4078	10.6 (9.7–11.6)
	Asato 2004 (Okinawa)	18–85	3249	10.2 (9.3–11.3)
	Takehara 2011	15–98	2068	9.4 (8.2–10.7)
	Sasagawa 2001	16–72	1562	9.7 (8.3–11.2)
	Onuki 2009 (Ibaraki)	15–78	1517	22.5 (20.5–24.7)
	Chen 2013 (Nagasaki)	–	1111	18.2 (16.0–20.6)
	Konno 2011	20–25	908	26.1 (23.3–29.1)
	Saito 1995 (Osaka)	18–72	800	6.6 (5.1–8.6)
	Sasagawa 1997 (Ishikawa and Toyama)	16–82	778	4.5 (3.3–6.2)
	Sasagawa 2005 (Hokuriku)	15–59	637	16.8 (14.1–19.9)
	Ishi 2004 (Chiba)[c]	17–73	420	12.1 (9.4–15.6)
	Masumoto 2004 (Tokyo)	20–89	414	16.9 (13.6–20.8)
	Nishiwaki 2008	19–70	292	14.7 (11.1–19.2)
	Yoshikawa 1999	<=55	130	14.6 (9.6–21.7)

Data updated on 22 May 2023 (data as of 30 Jun 2014)

The samples for HPV testing come from cervical specimens (fresh/fixed biopsies or exfoliated cells)
[a] Number of women tested
[b] Aomori, Tokyo, Fukui, Osaka, Hiroshima, Miyazaki and Kagoshima
[c] Hokuriku(Fukui, Ishikawa and Toyama)
Data Sources: See references in Section 9 References.

Figure 55: Prevalence of HPV among women with normal cervical cytology in Asia by country and study (continued)

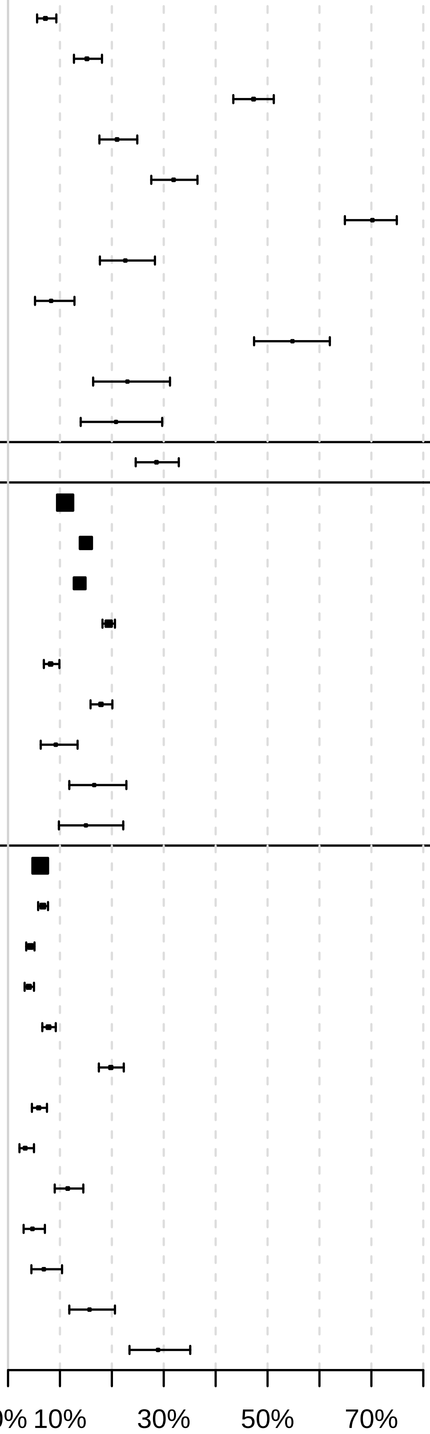


Country	Study	Age	N	% (95% CI)
Japan	Satoh 2013 (Tsukuba, Tokyo)	19–88	109	23.9 (16.8–32.7)
Kazakhstan	Buleshov 2011 (South)	35–60	17000	11.0 (10.5–11.5)
Kuwait	Al–Awadhi 2011	18–81	3011	2.4 (1.9–3.0)
Laos	Phongsavan 2012	25–48	1922	11.1 (9.8–12.6)
Lebanon	Mroueh 2002	18–70	1026	4.9 (3.7–6.4)
	Karam 2005	20–67	246	10.2 (7.0–14.6)
Malaysia	Tay 2009 (Johor and Singapore)[b]	18–77	745	22.0 (19.2–25.1)
	Othman 2014	–	588	3.1 (1.9–4.8)
	Chong 2010 (Southern Selangor)	19–69	180	46.7 (39.5–53.9)
Mongolia	Dondog 2008 (Ulaanbaatar)	15–59	842	30.5 (27.5–33.7)
	Chimeddorj 2008	–	100	1.0 (0.2–5.4)
Nepal	Sherpa 2010 (Bharatpur (Chitawan Province))	15–59	898	8.1 (6.5–10.1)
	Johnson 2014	16–60	211	2.8 (1.3–6.1)
Pakistan	Raza 2010 (Karachi)	15–59	877	2.2 (1.4–3.4)
Philippines	Ngelangel 1998 (Manila)	21–72	377	9.3 (6.8–12.6)
Republic of Korea	Lee 2012[c]	18–79	60775	34.2 (33.8–34.6)
	Lee 2012 (Suwon)	–	26980	20.3 (19.9–20.8)
	Kim 2012 (Seoul)	–	11800	6.2 (5.8–6.6)
	Kim 2013 (Seoul)	–	6681	17.3 (16.4–18.2)
	Kim 2014 (Cheonan)	19–78	5494	14.4 (13.5–15.3)
	Oh 2009 (Busan and Suwon)	20–69	4467	7.0 (6.3–7.8)
	Bae 2009 (Gyeonggi, Seoul)	30–84	4111	6.5 (5.8–7.3)
	Kim 2013 (Seoul)	21–76	2146	18.1 (16.6–19.8)
	Park 2014	43–57	1938	14.1 (12.7–15.8)
	Bae 2009	15–75	1750	27.0 (25.0–29.2)
	Hwang 2004	18–62	1609	37.4 (35.0–39.7)
	Kim 2012	–	1214	14.6 (12.7–16.7)
	Oh 2001 (Seoul)	23–72	1144	0.7 (0.4–1.4)
	An 2003 (Kyonggi–do)	–	1143	35.1 (32.4–37.9)
	Lee 2014 (Seoul, Busan, Cheonan)	25–79	912	7.9 (6.3–9.8)
	Kim 2010	20–59	902	12.6 (10.6–15.0)
	Kim 2012	20–59	902	4.9 (3.7–6.5)
	Shin 2003 (Busan)[d]	20–74	821	8.5 (6.8–10.6)
	Kim 2014 (Gangnam (Seoul))	25–81	799	12.1 (10.1–14.6)

Data updated on 22 May 2023 (data as of 30 Jun 2014)

The samples for HPV testing come from cervical specimens (fresh/fixed biopsies or exfoliated cells)
[a] Number of women tested
[b] Chiang Mai, Khon Kaen, Bangkok, Songkla and Hat Yai
[c] Luang Prabang, Champassack and Vientiane
[d] North-Eastern region os West Malaysia
Data Sources: See references in Section 9 References.

Figure 55: Prevalence of HPV among women with normal cervical cytology in Asia by country and study (continued)

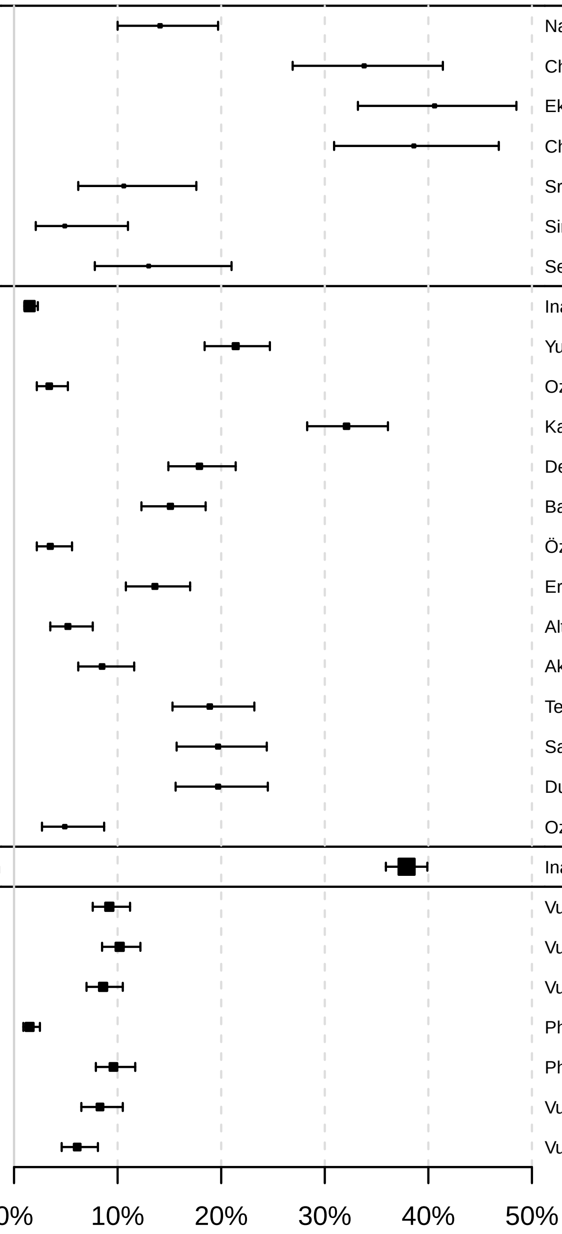


Country	Study	Age	N	% (95% CI)
Republic of Korea	Lee 2003 (Seoul)	–	746	7.2 (5.6–9.3)
	Shin 2004 (Busan)	16–29	672	15.2 (12.7–18.1)
	Cho 2011	–	624	47.3 (43.4–51.2)
	Bae 2014 (Seoul)	18–85	471	21.0 (17.6–24.9)
	Cho 2003 (Kyonggi–do)	22–70	414	31.9 (27.6–36.5)
	Kim 2014 (Busan)	22–83	315	70.2 (64.9–74.9)
	Shim 2010 (Seoul)	21–48	235	22.6 (17.7–28.3)
	Kim 2013 (Gwangju)	–	206	8.3 (5.2–12.8)
	Hwang 2012	21–77	177	54.8 (47.4–62.0)
	Um 2011[b]	–	122	23.0 (16.4–31.2)
	Lee 2011	–	101	20.8 (14.0–29.7)
Saudi Arabia	Al–Ahdal 2014 (Riyadh)	20–74	455	28.6 (24.6–32.9)
Taiwan	Lai 2012 (Taoyuan)	30–94	14724	11.0 (10.6–11.6)
	Wang 2010	14–87	10543	15.0 (14.3–15.7)
	Chen 2011	30–65	10190	13.8 (13.2–14.5)
	Lin 2006 (South Taiwan)	16–78	4383	19.4 (18.2–20.6)
	Huang 2008	23–80	1310	8.2 (6.9–9.9)
	Jeng 2005 (Taipei)	21–65	1279	17.9 (15.9–20.1)
	Liaw 1995	30–64	260	9.2 (6.3–13.4)
	Tsai 2005 (Kaohsiung County)	>=20	175	16.6 (11.8–22.8)
	Lin 2005 (Kaohsiung)	–	127	15.0 (9.8–22.2)
Thailand	Swangvaree 2010 (Bangkok)	20–77	14205	6.2 (5.8–6.6)
	Laowahutanont 2014 (Bangkok)	>=20	2735	6.7 (5.8–7.7)
	Siriaunkgul 2014 (Chiang Mai)	30–60	2633	4.3 (3.5–5.1)
	Paengchit 2014 (Lampang Province)	30–70	1961	4.0 (3.2–5.0)
	Chansaenroj 2010 (Bangkok)	–	1622	7.8 (6.6–9.2)
	Marks 2011	20–37	1070	19.8 (17.5–22.3)
	Sukvirach 2003 (Lampang)[c]	15–76	972	5.9 (4.6–7.5)
	Sukvirach 2003 (Songkla)	15–85	687	3.3 (2.2–5.0)
	Wongworapat 2008 (Chiang–Mai)	20–65	531	11.5 (9.0–14.5)
	Chandeying 2006 (Hat Yai (South Thailand))	15–47	430	4.7 (3.0–7.1)
	Thomas 2001 (Bangkok)	24–60	291	6.9 (4.5–10.4)
	Chichareon 1998 (Songkla)	19–78	261	15.7 (11.8–20.6)
	Suwannarurk 2009 (Pathumthani)	–	225	28.9 (23.4–35.1)

Data updated on 22 May 2023 (data as of 30 Jun 2014)

The samples for HPV testing come from cervical specimens (fresh/fixed biopsies or exfoliated cells)
[a] Number of women tested
[b] Sanphebagar Village (Achham District)
[c] Sanchi, Chutung, Potzu,Kaoshu, Makung, Paihsa and Huhsi
Data Sources: See references in Section 9 References.

Figure 55: Prevalence of HPV among women with normal cervical cytology in Asia by country and study (continued)

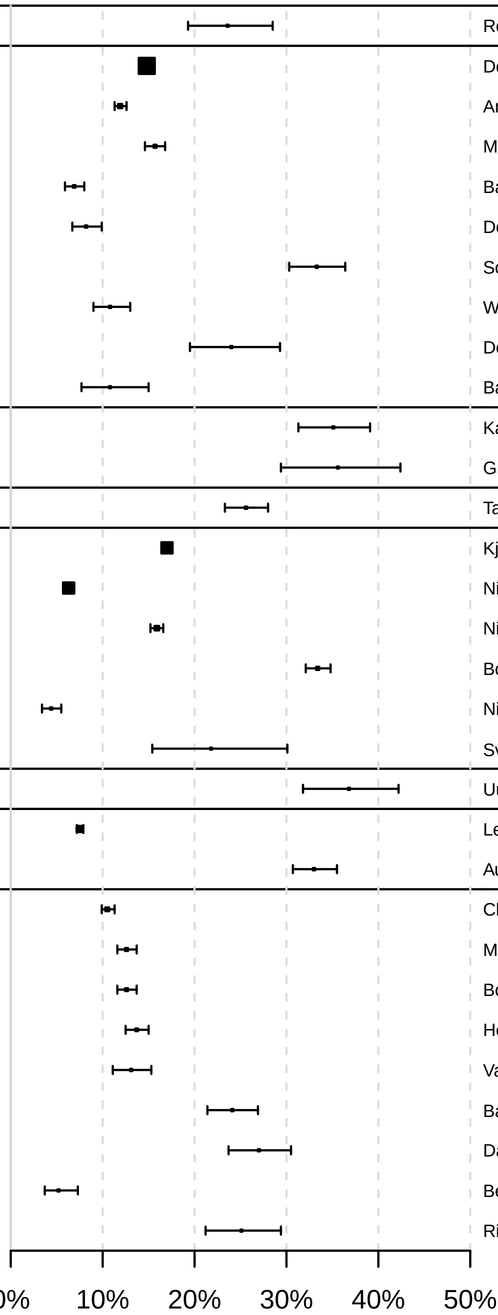


Country	Study	Age	N	% (95% CI)
Thailand	Natphopsuk 2013 (Khon Kaen)	26−81	198	14.1 (10.0−19.7)
	Chopjitt 2009 (Khon Kaen)[b]	−	160	33.8 (26.9−41.4)
	Ekalaksananan 2010 (Khon Kaen)	18−54	155	40.6 (33.2−48.5)
	Chaiwongkot 2007 (Khon Kaen)	−	140	38.6 (30.9−46.8)
	Sriamporn 2006 (Khon Kaen)	>=35	113	10.6 (6.2−17.6)
	Siritantikorn 1997 (Bangkok)	16−77	102	4.9 (2.1−11.0)
	Settheetham−Ishida 2005 (Khon Kaen)	25−70	100	13.0 (7.8−21.0)
Turkey	Inal 2007 (Izmir)	15−45	1344	1.5 (1.0−2.3)
	Yuce 2012 (Ankara)	30−70	640	21.4 (18.4−24.7)
	Ozalp 2012 (Eskisehir region)	−	564	3.4 (2.2−5.2)
	Kasap 2011 (Izmir)	15−65	546	32.1 (28.3−36.1)
	Demir 2012	15−68	530	17.9 (14.9−21.4)
	Bayram 2011 (Gaziantep)	18−56	502	15.1 (12.3−18.5)
	Özcan 2011	16−64	480	3.5 (2.2−5.6)
	Eren 2010 (Istanbul)	19−85	469	13.6 (10.8−17.0)
	Altun 2011 (Adana)	20−68	460	5.2 (3.5−7.6)
	Akcali 2013 (Manisa)[c]	−	410	8.5 (6.2−11.6)
	Tezcan 2014 (Mersin Province)	18−76	380	18.9 (15.3−23.2)
	Sahiner 2014 (Ankara)	17−74	315	19.7 (15.7−24.4)
	Dursun 2009	20−67	310	19.7 (15.6−24.5)
	Oztürk 2004	18−62	206	4.9 (2.7−8.7)
Uzbekistan	Inamova 2009 (Tashkent)	18−40	2295	37.9 (35.9−39.9)
Viet Nam	Vu 2012 (Thai Nguyen)	18−69	1000	9.2 (7.6−11.2)
	Vu 2012 (Can Tho)	18−65	1000	10.2 (8.5−12.2)
	Vu 2012 (Hue)	18−69	1000	8.6 (7.0−10.5)
	Pham 2003 (Hanoi)	15−69	983	1.5 (0.9−2.5)
	Pham 2003 (Ho Chi Minh City)	15−69	914	9.6 (7.9−11.7)
	Vu 2011 (Ho Chi Minh)	18−69	750	8.3 (6.5−10.5)
	Vu 2011 (Hanoi)	18−69	750	6.1 (4.6−8.1)

Data updated on 22 May 2023 (data as of 30 Jun 2014)

The samples for HPV testing come from cervical specimens (fresh/fixed biopsies or exfoliated cells)
[a] Number of women tested
[b] Istanbul, Ankara, Antalya, Nigde and Elazig
[c] Taipei, Taoyuan, Chungli, Hsinchu, Keelung)
Data Sources: See references in Section 9 References.

Figure 56: Prevalence of HPV among women with normal cervical cytology in Europe by country and study

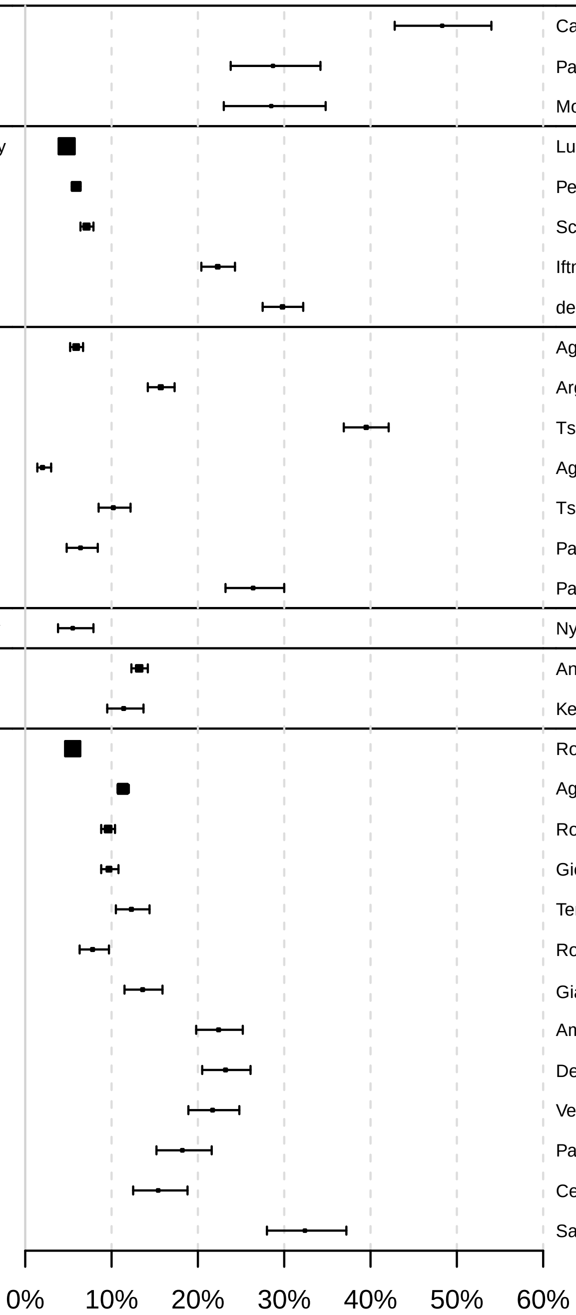


Country	Study	Age	N	% (95% CI)
Belarus	Rogovskaya 2013 (Minsk)	15−63	322	23.6 (19.3−28.5)
Belgium	Depuydt 2010 (Flanders)	14−97	57876	14.8 (14.5−15.1)
	Arbyn 2009 (Antwerp)	15−85	8729	11.9 (11.3−12.6)
	Merckx 2014 (Flanders and Brussels)	4−18	4180	15.7 (14.6−16.8)
	Baay 2005 (Antwerp)	20−50	2293	6.9 (5.9−8.0)
	Depuydt 2012	30−65	1139	8.2 (6.7−9.9)
	Schmitt 2013 (Flanders)[b]	15−86	913	33.3 (30.3−36.4)
	Weyn 2013 (Brussels)	>=20	906	10.8 (9.0−13.0)
	Depuydt 2003 (Flanders)	17−85	287	24.0 (19.5−29.3)
	Baay 2001 (Antwerp)	17−78	286	10.8 (7.7−15.0)
Croatia	Kaliterna 2007 (Split and Dalmatian County)	18−62	570	35.1 (31.3−39.1)
	Grahovac 2007 (Zagreb,Rijeka)	−	205	35.6 (29.4−42.4)
Czechia	Tachezy 2013	14−79	1302	25.6 (23.3−28.0)
Denmark	Kjær 2014 (Copenhagen)	14−95	37958	17.0 (16.6−17.4)
	Nielsen 2012 (Copenhagen)	14−95	37958	6.3 (6.1−6.5)
	Nielsen 2008 (Copenhagen)	20−29	10220	15.9 (15.2−16.6)
	Bonde 2014 (Copenhagen and Frederiksberg)	16−89	4671	33.4 (32.1−34.8)
	Nielsen 2008 (Copenhagen)	40−50	1443	4.4 (3.4−5.5)
	Svare 1998[c]	20−39	119	21.8 (15.4−30.1)
Estonia	Uusküla 2010 (Tartu)	18−35	326	36.8 (31.8−42.2)
Finland	Leinonen 2008 (Uusimaa)	25−65	16895	7.5 (7.2−7.9)
	Auvinen 2005 (Helsinki)	19−47	1469	33.0 (30.7−35.5)
France	Clavel 2001 (Reims)	15−76	7339	10.5 (9.9−11.3)
	Monsonego 2011 (Paris)	20−65	4004	12.6 (11.6−13.7)
	Boulanger 2004 (Amiens)	20−62	3617	12.6 (11.6−13.7)
	Heard 2013	−	3023	13.7 (12.5−15.0)
	Vaucel 2011 (Nantes)	17−86	980	13.1 (11.1−15.3)
	Baudu 2014 (Franche−Comté)[d]	15−23	948	24.1 (21.4−26.9)
	Dalstein 2003 (Besançon)	16−76	652	27.0 (23.7−30.5)
	Beby−Defaux 2004 (Poitiers)	17−77	613	5.2 (3.7−7.3)
	Riethmuller 1999 (Besançon, Belfort)	16−76	426	25.1 (21.2−29.4)

Data updated on 22 May 2023 (data as of 30 Jun 2014)

The samples for HPV testing come from cervical specimens (fresh/fixed biopsies or exfoliated cells)
[a] Number of women tested
[b] Geneve, Vaud, Neuchatel, Fribourg, Valais and Tessin
[c] Alava, Girona, Guipuzcoa, Murcia, Navarra, Salamanca, Sevilla, Vizcaya, Zaragoza
[d] Alsace, Auvergne, Centre - Pays de Loire, Ile-de-France and Vaucluse
Data Sources: See references in Section 9 References.

Figure 56: Prevalence of HPV among women with normal cervical cytology in Europe by country and study (continued)

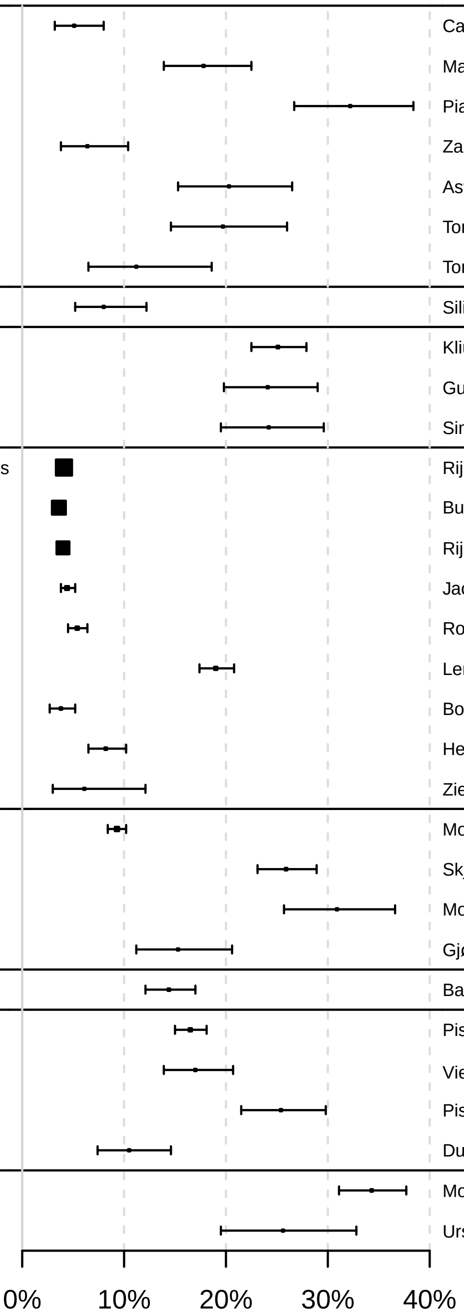


Country	Study	Age	N	% (95% CI)
France	Casalegno 2011 (Lyon)	15−88	302	48.3 (42.8−54.0)
	Pannier−Stockman 2008 (Amiens)[b]	18−78	289	28.7 (23.8−34.2)
	Monsonego 2005 (Paris)	19−79	221	28.5 (23.0−34.8)
Germany	Luyten 2009 (Wolfsburg)	>=30	16386	4.8 (4.5−5.1)
	Petry 2003 (Hannover and Tuebingen)	30−85	7832	5.9 (5.4−6.4)
	Schneider 2000 (East Thuringia)	18−70	4604	7.1 (6.4−7.9)
	Iftner 2010	10−30	1692	22.3 (20.4−24.3)
	de Jonge 2013	>=20	1463	29.8 (27.5−32.2)
Greece	Agorastos 2009	−	4139	5.9 (5.2−6.7)
	Argyri 2013 (Athens)	14−70	2218	15.7 (14.2−17.3)
	Tsiodras 2011	−	1348	39.5 (36.9−42.1)
	Agorastos 2004	17−69	1272	2.0 (1.4−3.0)
	Tsiodras 2010 (Athens)	21−45	1029	10.2 (8.5−12.2)
	Paraskevaidis 2001 (Ioannina)	17−79	738	6.4 (4.8−8.4)
	Panotopoulou 2007 (Athens)	18−48	639	26.4 (23.2−30.0)
Hungary	Nyári 2006	20−60	491	5.5 (3.8−7.9)
Ireland	Anderson 2013 (Northern Ireland)	20−64	5068	13.2 (12.3−14.2)
	Keegan 2007 (Dublin)	16−72	886	11.4 (9.5−13.7)
Italy	Ronco 2006	35−60	15361	5.5 (5.2−5.9)
	Agarossi 2009[c]	15−73	9148	11.3 (10.7−12.0)
	Ronco 2006	25−34	5334	9.6 (8.8−10.4)
	Giorgi Rossi 2011	25−64	3151	9.7 (8.8−10.8)
	Tenti 1997 (Pavia)	16−47	1064	12.3 (10.5−14.4)
	Ronco 2005 (Turin)	25−70	997	7.8 (6.3−9.7)
	Giambi 2013[d]	18−26	907	13.6 (11.5−15.9)
	Ammatuna 2008 (Sicily)	18−24	894	22.4 (19.8−25.2)
	Del Prete 2008 (Apulia)[d]	>=20	871	23.2 (20.5−26.1)
	Verteramo 2009 (Rome)	17−57	737	21.7 (18.9−24.8)
	Panatto 2013 (Turin, Milan and Genoa)	16−26	566	18.2 (15.2−21.6)
	Centurioni 2005 (Genova)	20−81	500	15.4 (12.5−18.8)
	Sammarco 2013 (Molise)	18−63	398	32.4 (28.0−37.2)

Data updated on 22 May 2023 (data as of 30 Jun 2014)

The samples for HPV testing come from cervical specimens (fresh/fixed biopsies or exfoliated cells)
[a] Number of women tested
[b] Birmingham, Edinburg, London, Manchester and Mansfield
[c] Abruzzo, Campania, Lazio, Sardinia and Sicily
[d] Turin, Trento, Veneto, Emilia Romagna, Florence and Lazio
Data Sources: See references in Section 9 References.

Figure 56: Prevalence of HPV among women with normal cervical cytology in Europe by country and study (continued)

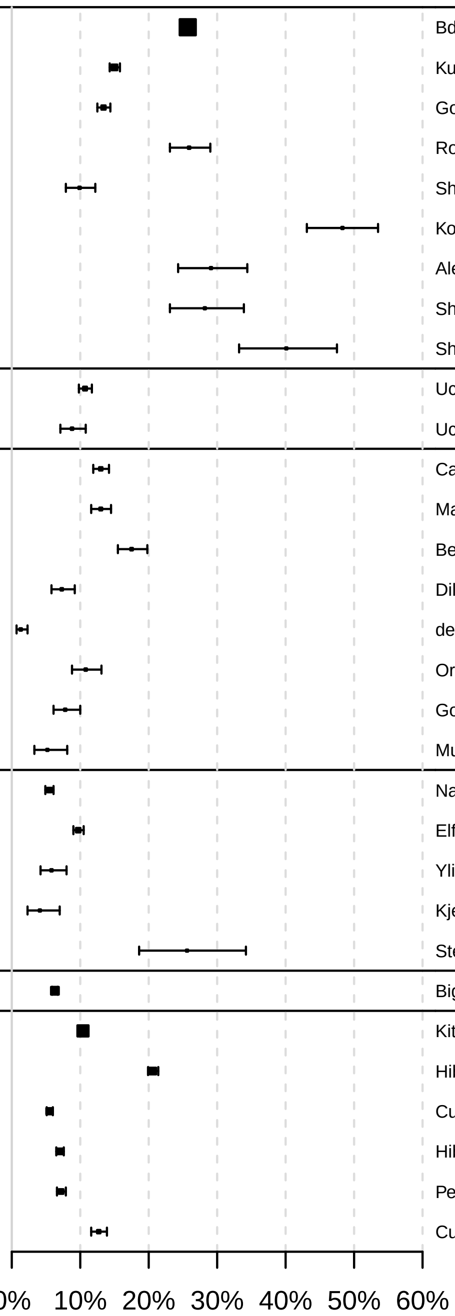


Country	Study	Age	N	% (95% CI)
Italy	Carozzi 2000 (Florence)	25−64	332	5.1 (3.2−8.0)
	Masia 2009 (Sardinia)	18−46	309	17.8 (13.9−22.5)
	Piana 2011 (North Sardinia)	15−54	242	32.2 (26.7−38.4)
	Zappacosta 2009 (Molise)	21−64	220	6.4 (3.8−10.4)
	Astori 1997 (Udine)	18−67	197	20.3 (15.3−26.5)
	Tornesello 2006 (Milan, Naples)	18−63	183	19.7 (14.6−26.0)
	Tornesello 2008 (Naples)	−	107	11.2 (6.5−18.6)
Latvia	Silins 2004	18−89	237	8.0 (5.2−12.2)
Lithuania	Kliucinskas 2006	18−50	1001	25.1 (22.5−27.9)
	Gudleviciene 2005 (Vilnius)[b]	16−64	332	24.1 (19.8−29.0)
	Simanaviciene 2014 (Vilnius)	18−81	277	24.2 (19.5−29.6)
Netherlands	Rijkaart 2012 (Utrecht)	29−61	25196	4.1 (3.8−4.3)
	Bulkmans 2004 (Amsterdam)[c]	30−60	21245	3.6 (3.3−3.9)
	Rijkaart 2012	30−56	19373	4.0 (3.7−4.2)
	Jacobs 2000 (Amsterdam)	16−68	3299	4.4 (3.8−5.2)
	Rozendaal 2000 (Amsterdam)	34−54	2250	5.4 (4.5−6.4)
	Lenselink 2008	18−29	2065	19.0 (17.4−20.8)
	Boers 2014	30−60	900	3.8 (2.7−5.2)
	Hesselink 2013 (Utrecht region)	31−60	858	8.2 (6.5−10.2)
	Zielinski 2001 (Zeeland)	34−54	114	6.1 (3.0−12.1)
Norway	Molden 2005 (Oslo)	30−69	3970	9.3 (8.4−10.2)
	Skjeldestad 2008 (Oslo, Trondheim, and Levanger)	16−24	896	25.9 (23.1−28.9)
	Molden 2006 (Oslo)	<=30	275	30.9 (25.7−36.6)
	Gjøoen 1996 (Oslo)	20−44	222	15.3 (11.2−20.6)
Poland	Bardin 2008 (Warsaw)	18−59	799	14.4 (12.1−17.0)
Portugal	Pista 2011	18−64	2172	16.5 (15.0−18.1)
	Vieira 2013[d]	18−76	464	17.0 (13.9−20.7)
	Pista 2011	18−67	425	25.4 (21.5−29.8)
	Dutra 2008 (Açores)	16−81	286	10.5 (7.4−14.6)
Romania	Moga 2014 (Brasov County)	17−57	801	34.3 (31.1−37.7)
	Ursu 2011 (Northeast)[d]	−	164	25.6 (19.5−32.8)

Data updated on 22 May 2023 (data as of 30 Jun 2014)

The samples for HPV testing come from cervical specimens (fresh/fixed biopsies or exfoliated cells)
[a] Number of women tested
[b] Arnhem, Nijmegen, and Den Bosch
[c] Lisbon area and southern region
[d] Gothenburg, Malmö, Uppsala, Umeå, and Stockholm
Data Sources: See references in Section 9 References.

Figure 56: Prevalence of HPV among women with normal cervical cytology in Europe by country and study (continued)

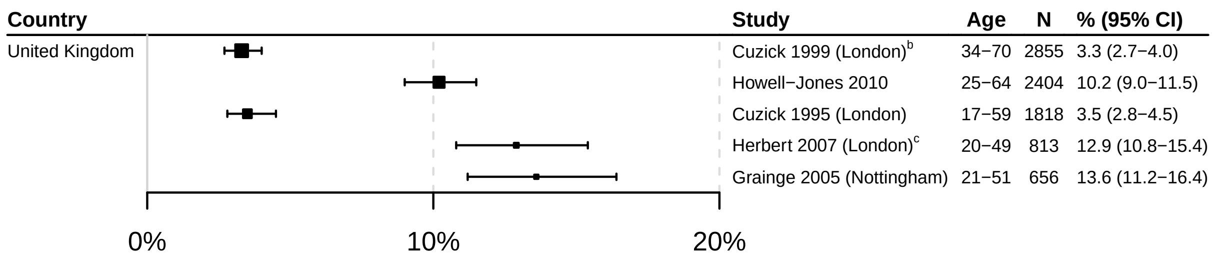


Country	Study	Age	N	% (95% CI)
Russian Federation	Bdaizieva 2010 (Moscow)	15−69	33112	25.7 (25.2−26.1)
	Kubanov 2005 (Moscow)	−	8533	15.0 (14.3−15.8)
	Goncharevskaya 2011 (Moscow)	15−77	5182	13.4 (12.5−14.4)
	Rogovskaya 2013 (Moscow and Novgorod)	16−76	833	25.9 (23.1−29.0)
	Shipitsyna 2011 (St Petersburg)	30−65	741	9.9 (7.9−12.2)
	Komarova 2010 (Moscow)	16−76	352	48.3 (43.1−53.5)
	Alexandrova 1999 (St. Petersburg)	15−45	309	29.1 (24.3−34.4)
	Shargorodskaya 2011 (Moscow)	18−30	266	28.2 (23.1−33.9)
	Shipulina 2011 (Moscow)	13−19	177	40.1 (33.2−47.5)
Slovenia	Ucakar 2012	20−64	4199	10.7 (9.8−11.7)
	Ucakar 2014	20−64	944	8.8 (7.1−10.8)
Spain	Castellsagué 2012	18−65	3059	13.0 (11.9−14.2)
	Martorell 2010 (Valencia)	18−64	1956	13.0 (11.6−14.5)
	Bernal 2008 (Zaragoza)	−	1200	17.5 (15.5−19.8)
	Dillner 2008 (Maresme)	14−82	939	7.3 (5.8−9.2)
	de Sanjose 2003 (Barcelona)	14−75	847	1.3 (0.7−2.3)
	Ortiz 2006 (Madrid and Alicante)	14−67	818	10.8 (8.8−13.1)
	González 2006 (Alicante)	−	703	7.8 (6.1−10.0)
	Muñoz 1996	18−75	329	5.2 (3.3−8.1)
Sweden	Naucler 2007	29−46	5877	5.5 (4.9−6.1)
	Elfström 2014	32−38	5772	9.7 (9.0−10.5)
	Ylitalo 2000 (Uppsala)	15−49	617	5.8 (4.2−8.0)
	Kjellberg 1998 (Västerbotten County)	20−63	295	4.1 (2.3−7.0)
	Stenvall 2007 (Uppsala)	35−50	117	25.6 (18.6−34.2)
Switzerland	Bigras 2005	17−93	13349	6.3 (5.9−6.7)
United Kingdom	Kitchener 2006 (Manchester)	20−64	21380	10.4 (10.0−10.8)
	Hibbitts 2014 (Wales)	20−22	10890	20.6 (19.9−21.4)
	Cuzick 2003	30−60	9709	5.5 (5.1−6.0)
	Hibbitts 2008 (South Wales)	20−65	8434	7.0 (6.5−7.6)
	Peto 2004 (Manchester)	15−64	6128	7.2 (6.6−7.9)
	Cuschieri 2004 (Edinburgh)	16−78	3089	12.7 (11.6−13.9)

Data updated on 22 May 2023 (data as of 30 Jun 2014)

The samples for HPV testing come from cervical specimens (fresh/fixed biopsies or exfoliated cells)
[a] Number of women tested
Data Sources: See references in Section 9 References.

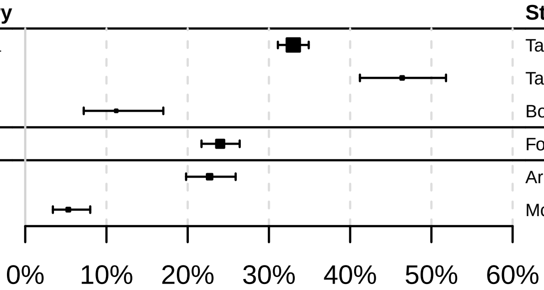
Figure 56: Prevalence of HPV among women with normal cervical cytology in Europe by country and study (continued)



Data updated on 22 May 2023 (data as of 30 Jun 2014)

The samples for HPV testing come from cervical specimens (fresh/fixed biopsies or exfoliated cells)
[a] Number of women tested
[b] Gateshead, Birmingham, London, Gloucestershire and Norfolk
[c] Thessaloniki, Thermi, Mihaniona, Corfu, Veria and Serres
Data Sources: See references in Section 9 References.

Figure 57: Prevalence of HPV among women with normal cervical cytology in Oceania by country and study



Country	Study	Age	N	% (95% CI)
Australia	Tabrizi 2014	15−66	2271	33.0 (31.1−34.9)
	Tabrizi 2012 (Sydney, Melbourne and Perth)	18−24	338	46.4 (41.2−51.8)
	Bowden 2005 (Australian Capital Territory)	16−19	161	11.2 (7.2−17.0)
Fiji	Foliaki 2014 (Suva)	16−63	1244	24.0 (21.7−26.4)
Vanuatu	Aruhuri 2012	18−64	726	22.7 (19.8−25.9)
	McAdam 2010 (Port Vila (Efate Island))	30−50	379	5.3 (3.4−8.0)

Data updated on 22 May 2023 (data as of 30 Jun 2014)

The samples for HPV testing come from cervical specimens (fresh/fixed biopsies or exfoliated cells)
[a] Number of women tested
Data Sources: See references in Section 9 References.

4.1.2 HPV type distribution among women with normal cervical cytology, precancerous cervical lesions and cervical cancer

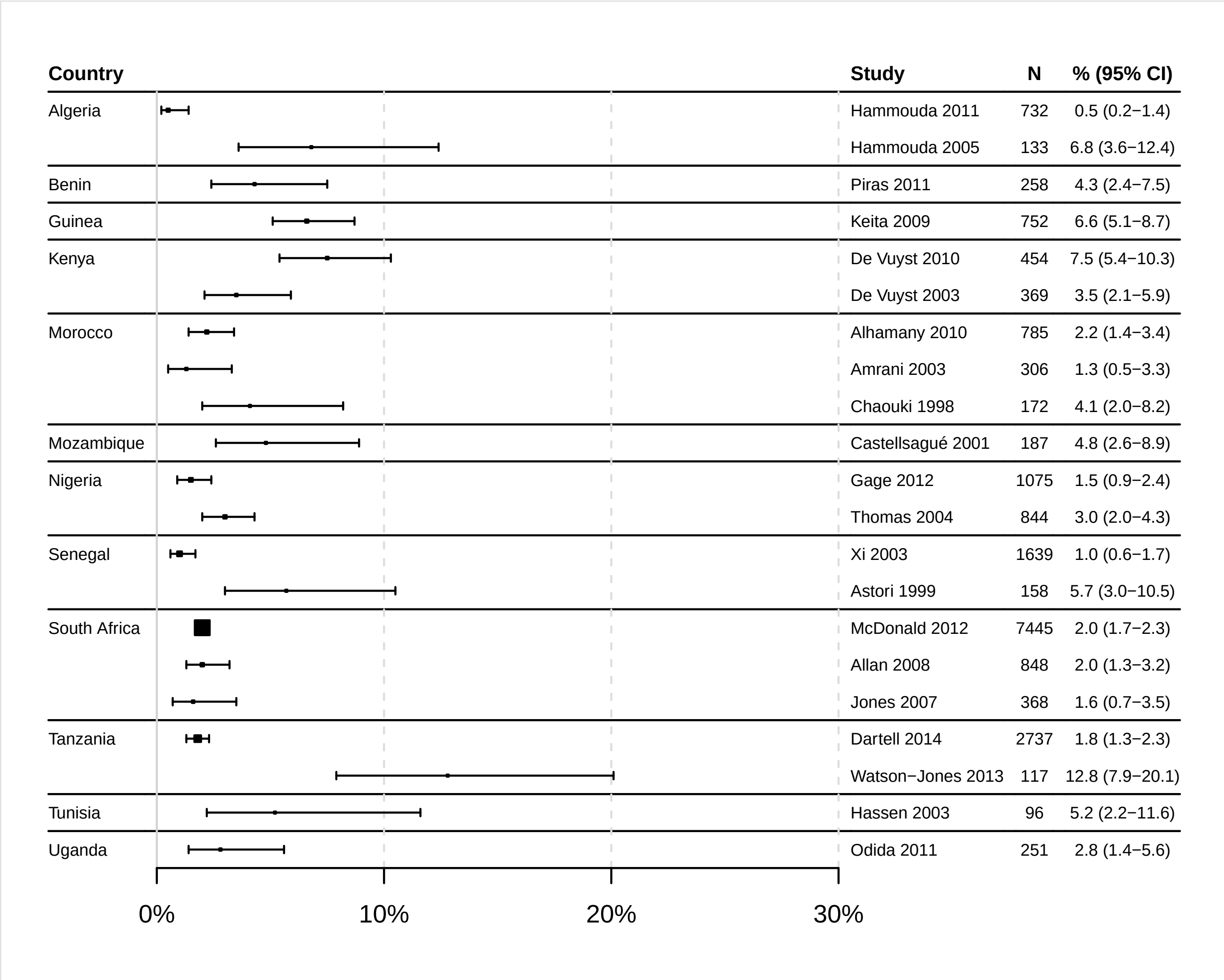
Table 28: Prevalence of HPV 16/18 in women with normal cervical cytology, precancerous cervical lesions and invasive cervical cancer in the World and sub-regions

Country /Region	Normal cytology		Low-grade lesions		High-grade lesions		Cervical cancer	
	No. tested[a]	HPV Prev (95% CI)[b]	No. tested[a]	HPV Prev (95% CI)[b]	No. tested[a]	HPV Prev (95% CI)[b]	No. tested[a]	HPV Prev (95% CI)[b]
World	453,184	3.9 (3.8-4.0)	38,191	25.8 (25.4-26.2)	50,202	51.9 (51.5-52.3)	453,184	69.4 (69.0-69.8)
Less developed regions	282,155	3.8 (3.7-3.9)	28,495	25.9 (25.4-26.4)	33,652	54.1 (53.6-54.6)	282,155	71.8 (71.2-72.4)
More developed regions	168,376	3.8 (3.7-3.9)	9,696	25.1 (24.2-26.0)	13,447	46.7 (45.9-47.5)	168,376	69.5 (68.9-70.1)
Africa	19,726	3.8 (3.5-4.1)	465	24.9 (21.2-29.1)	399	38.6 (34.0-43.5)	19,726	67.2 (65.7-68.7)
Eastern Africa	4,115	4.7 (4.1-5.4)	150	30.0 (23.2-37.8)	138	45.7 (37.6-54.0)	4,115	67.9 (65.3-70.3)
Middle Africa	-	- -	24	12.5 (4.3-31.0)	-	- -	-	- -
Northern Africa	2,224	3.0 (2.4-3.8)	24	20.8 (9.2-40.5)	-	- -	2,224	78.9 (75.6-81.8)
Southern Africa	8,661	3.2 (2.8-3.6)	57	21.1 (12.5-33.3)	98	33.7 (25.1-43.5)	8,661	62.5 (59.0-65.8)
Western Africa	4,726	4.3 (3.8-4.9)	210	24.3 (19.0-30.5)	163	35.6 (28.6-43.2)	4,726	55.6 (52.4-58.8)
Americas	105,042	4.5 (4.4-4.6)	9,893	26.7 (25.8-27.6)	13,590	56.9 (56.1-57.7)	105,042	68.2 (67.3-69.1)
Caribbean	323	15.8 (12.2-20.2)	263	7.6 (5.0-11.5)	285	32.6 (27.5-38.3)	323	60.2 (51.7-68.1)
Central America	16,786	4.1 (3.8-4.4)	1,424	15.0 (13.3-17.0)	559	40.8 (36.8-44.9)	16,786	63.1 (61.3-64.8)
Northern America	77,952	4.4 (4.3-4.5)	6,015	27.1 (26.0-28.2)	10,230	58.6 (57.6-59.6)	77,952	71.4 (69.9-72.8)
South America	10,180	5.8 (5.4-6.3)	2,191	35.6 (33.6-37.6)	2,516	56.3 (54.4-58.2)	10,180	62.6 (61.4-63.8)
Asia	142,676	3.4 (3.3-3.5)	7,959	21.2 (20.3-22.1)	13,444	42.1 (41.3-42.9)	142,676	68.9 (68.3-69.5)
Central Asia	-	- -	-	- -	-	- -	-	- -
Eastern Asia	111,548	3.4 (3.3-3.5)	6,981	20.3 (19.4-21.3)	10,551	41.0 (40.1-41.9)	111,548	65.0 (64.2-65.8)
South-Eastern Asia	8,755	3.0 (2.7-3.4)	474	27.4 (23.6-31.6)	1,044	33.4 (30.6-36.3)	8,755	70.4 (68.8-71.9)
Southern Asia	14,520	4.4 (4.1-4.7)	225	30.2 (24.6-36.5)	287	63.4 (57.7-68.8)	14,520	80.3 (78.8-81.7)
Western Asia	7,853	2.5 (2.2-2.9)	279	24.0 (19.4-29.4)	1,562	52.3 (49.8-54.8)	7,853	72.4 (69.5-75.2)
Europe	180,090	3.8 (3.7-3.9)	19,401	27.1 (26.5-27.7)	21,140	54.5 (53.8-55.2)	180,090	74.0 (73.4-74.6)
Eastern Europe	7,818	9.7 (9.1-10.4)	1,058	31.8 (29.0-34.6)	661	60.5 (56.7-64.2)	7,818	84.7 (82.9-86.3)
Northern Europe	86,821	4.2 (4.1-4.3)	4,949	30.6 (29.3-31.9)	8,448	54.9 (53.8-56.0)	86,821	77.0 (75.9-78.1)
Southern Europe	31,831	3.8 (3.6-4.0)	10,519	25.4 (24.6-26.2)	5,866	53.2 (51.9-54.5)	31,831	68.0 (66.5-69.4)
Western Europe	56,074	2.6 (2.5-2.7)	2,875	25.2 (23.7-26.8)	3,062	59.4 (57.7-61.1)	56,074	78.7 (77.2-80.1)
Oceania	2,997	8.3 (7.4-9.4)	473	27.1 (23.3-31.2)	1,629	59.1 (56.7-61.5)	2,997	76.6 (73.7-79.3)
Australia & New Zealand	2,271	8.5 (7.4-9.7)	473	27.1 (23.3-31.2)	1,517	58.4 (55.9-60.9)	2,271	76.1 (72.9-78.9)
Melanesia	726	7.7 (6.0-9.9)	-	- -	112	68.8 (59.7-76.6)	726	82.9 (72.4-89.9)
Micronesia	-	- -	-	- -	-	- -	-	- -
Polynesia	-	- -	-	- -	-	- -	-	- -

Data updated on 22 May 2023 (data as of 30 Jun 2015 / 30 Nov 2014)

The samples for HPV testing come from cervical specimens (fresh/fixed biopsies or exfoliated cells)
[a] Number of women tested
[b] 95% Confidence Interval
Data Sources: See references in Section 9 References.

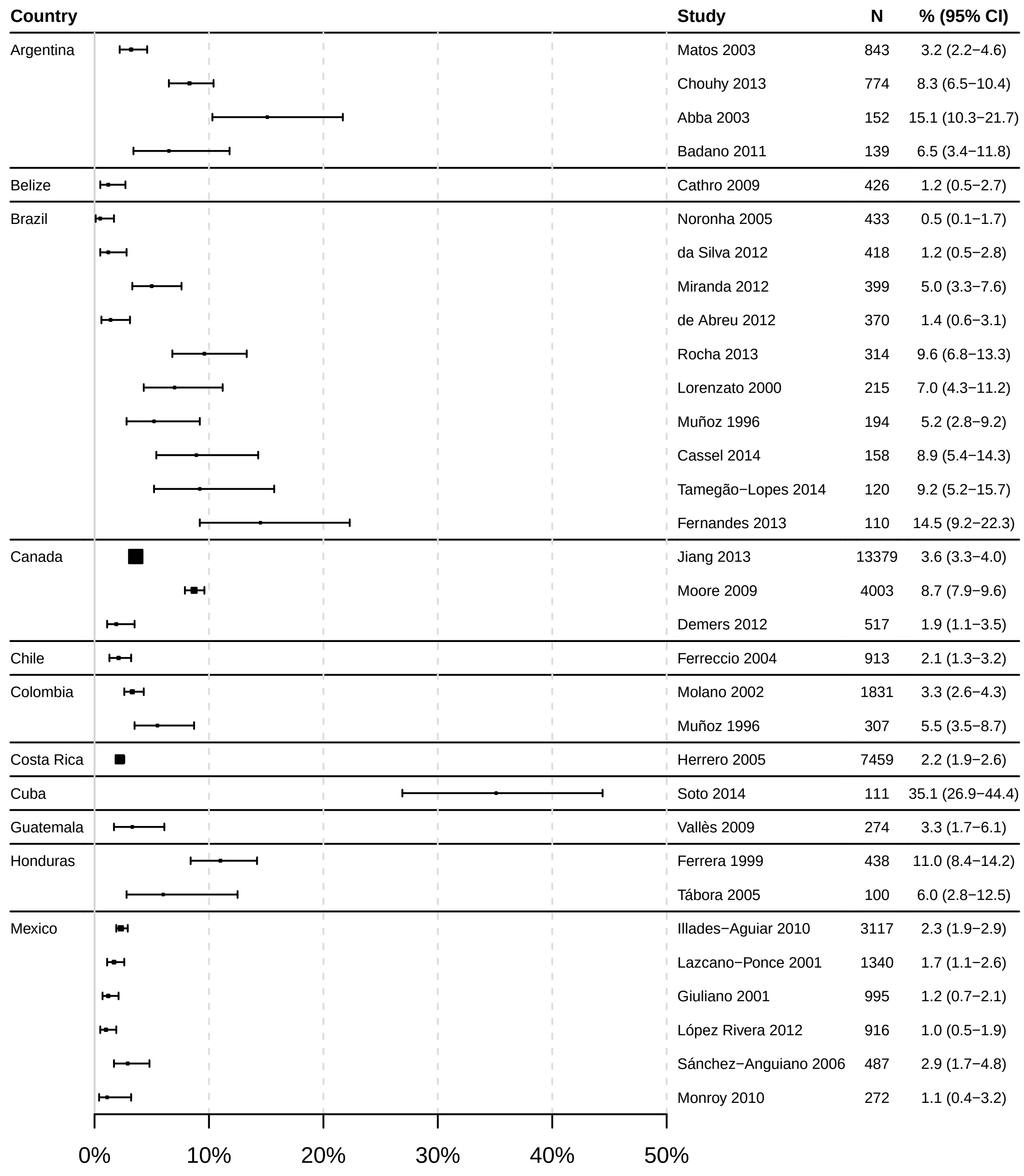
Figure 58: Prevalence of HPV 16 among women with normal cervical cytology in Africa by country and study



Data updated on 22 May 2023 (data as of 30 Jun 2014)

The samples for HPV testing come from cervical specimens (fresh/fixed biopsies or exfoliated cells)
[a] Number of women tested
Data Sources: See references in Section 9 References.

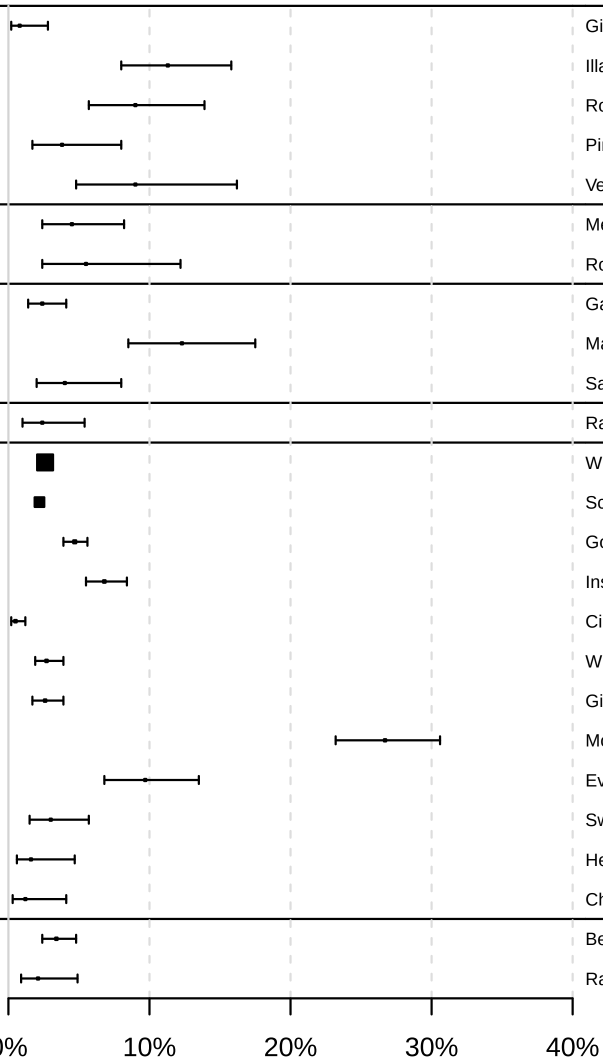
Figure 59: Prevalence of HPV 16 among women with normal cervical cytology in the Americas by country and study



Data updated on 22 May 2023 (data as of 30 Jun 2014)

The samples for HPV testing come from cervical specimens (fresh/fixed biopsies or exfoliated cells)
[a] Number of women tested
Data Sources: See references in Section 9 References.

Figure 59: Prevalence of HPV 16 among women with normal cervical cytology in the Americas by country and study (continued)

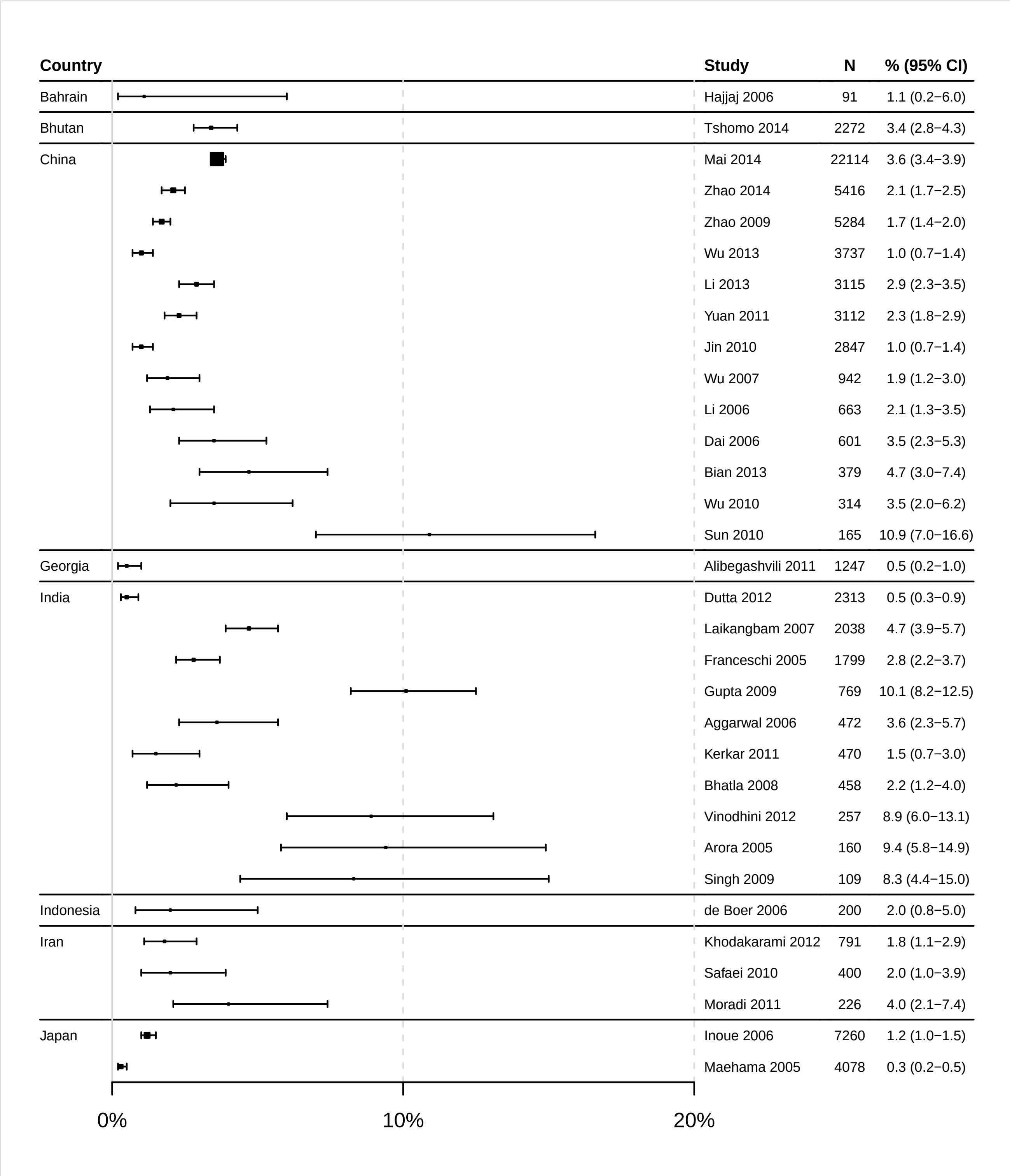


Country	Study	N	% (95% CI)
Mexico	Giuliano 2005	258	0.8 (0.2–2.8)
	Illades–Aguiar 2009	256	11.3 (8.0–15.8)
	Rojo Contreras 2008	189	9.0 (5.7–13.9)
	Piña–Sánchez 2006	159	3.8 (1.7–8.0)
	Velázquez–Márquez 2010	100	9.0 (4.8–16.2)
Paraguay	Mendoza 2011	202	4.5 (2.4–8.2)
	Rolón 2000	91	5.5 (2.4–12.2)
Peru	García 2004	501	2.4 (1.4–4.1)
	Martorell 2012	203	12.3 (8.5–17.5)
	Santos 2001	175	4.0 (2.0–8.0)
Trinidad and Tobago	Ragin 2007	212	2.4 (1.0–5.4)
United States of America	Wheeler 2013	33614	2.6 (2.4–2.8)
	Schiffman 2011	18450	2.2 (2.0–2.4)
	Goodman 2008	2356	4.7 (3.9–5.6)
	Insinga 2007	1203	6.8 (5.5–8.4)
	Cibas 2007	1000	0.5 (0.2–1.2)
	Wideroff 1998	958	2.7 (1.9–3.9)
	Giuliano 2001	881	2.6 (1.7–3.9)
	Moscicki 2001	547	26.7 (23.2–30.6)
	Evans 2006	300	9.7 (6.8–13.5)
	Swan 1999	270	3.0 (1.5–5.7)
	Hernandez 2004	183	1.6 (0.6–4.7)
	Chaturvedi 2005	173	1.2 (0.3–4.1)
Uruguay	Berois 2014	883	3.4 (2.4–4.8)
	Ramas 2013	236	2.1 (0.9–4.9)

Data updated on 22 May 2023 (data as of 30 Jun 2014)

The samples for HPV testing come from cervical specimens (fresh/fixed biopsies or exfoliated cells)
[a] Number of women tested
Data Sources: See references in Section 9 References.

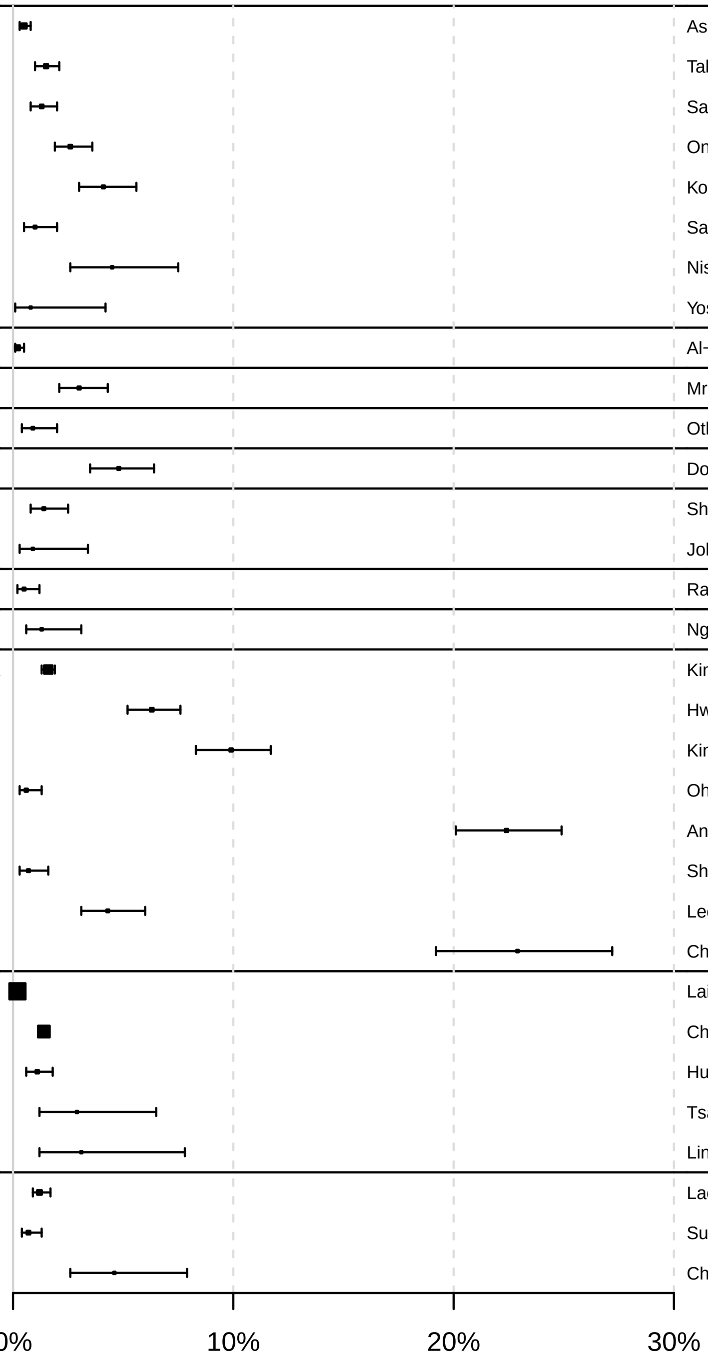
Figure 60: Prevalence of HPV 16 among women with normal cervical cytology in Asia by country and study



Data updated on 22 May 2023 (data as of 30 Jun 2014)

The samples for HPV testing come from cervical specimens (fresh/fixed biopsies or exfoliated cells)
[a] Number of women tested
Data Sources: See references in Section 9 References.

Figure 60: Prevalence of HPV 16 among women with normal cervical cytology in Asia by country and study (continued)

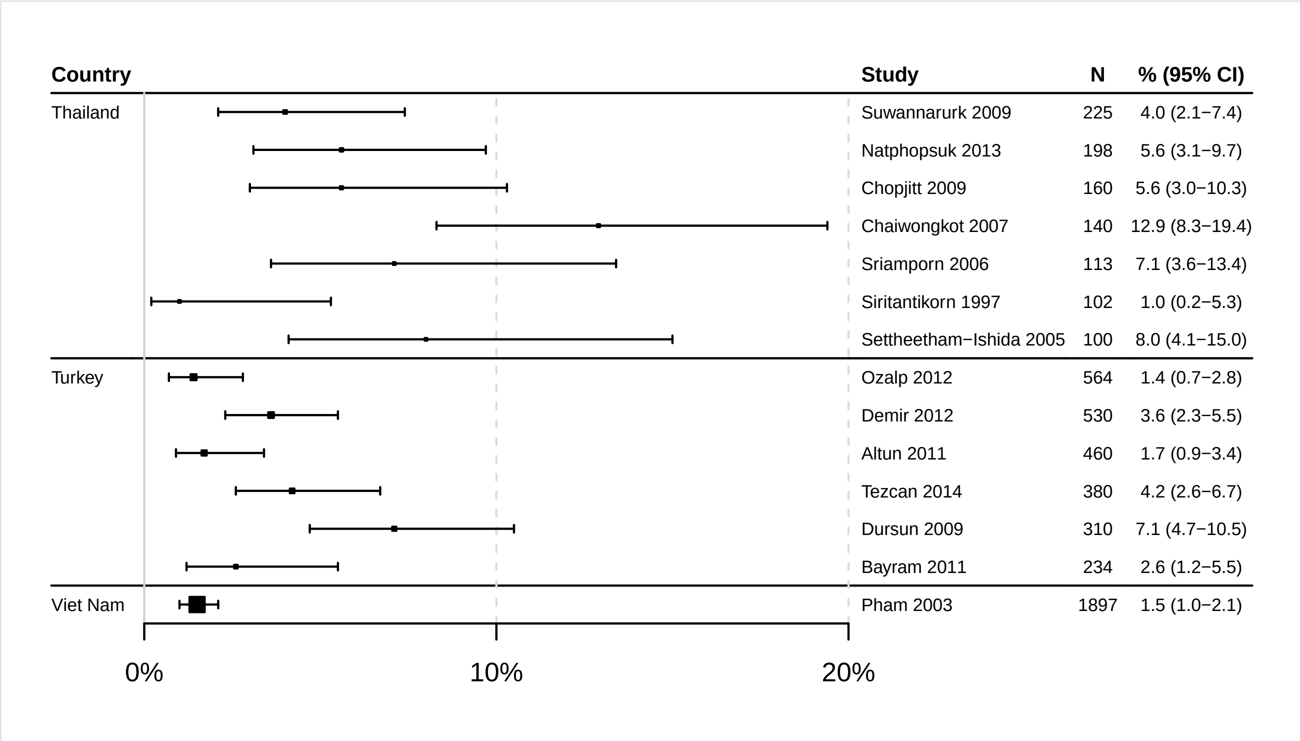


Country	Study	N	% (95% CI)
Japan	Asato 2004	3249	0.5 (0.3−0.8)
	Takehara 2011	2068	1.5 (1.0−2.1)
	Sasagawa 2001	1562	1.3 (0.8−2.0)
	Onuki 2009	1517	2.6 (1.9−3.6)
	Konno 2011	908	4.1 (3.0−5.6)
	Sasagawa 1997	778	1.0 (0.5−2.0)
	Nishiwaki 2008	292	4.5 (2.6−7.5)
	Yoshikawa 1999	130	0.8 (0.1−4.2)
Kuwait	Al−Awadhi 2011	3011	0.2 (0.1−0.5)
Lebanon	Mroueh 2002	1026	3.0 (2.1−4.3)
Malaysia	Othman 2014	588	0.9 (0.4−2.0)
Mongolia	Dondog 2008	842	4.8 (3.5−6.4)
Nepal	Sherpa 2010	898	1.4 (0.8−2.5)
	Johnson 2014	211	0.9 (0.3−3.4)
Pakistan	Raza 2010	877	0.5 (0.2−1.2)
Philippines	Ngelangel 1998	377	1.3 (0.6−3.1)
Republic of Korea	Kim 2013	6681	1.6 (1.3−1.9)
	Hwang 2004	1609	6.3 (5.2−7.6)
	Kim 2012	1214	9.9 (8.3−11.7)
	Oh 2001	1144	0.6 (0.3−1.3)
	An 2003	1143	22.4 (20.1−24.9)
	Shin 2003	821	0.7 (0.3−1.6)
	Lee 2003	746	4.3 (3.1−6.0)
	Cho 2003	414	22.9 (19.2−27.2)
Taiwan	Lai 2012	14724	0.2 (0.2−0.3)
	Chen 2011	10067	1.4 (1.2−1.6)
	Huang 2008	1310	1.1 (0.6−1.8)
	Tsai 2005	175	2.9 (1.2−6.5)
	Lin 2005	127	3.1 (1.2−7.8)
Thailand	Laowahutanont 2014	2735	1.2 (0.9−1.7)
	Sukvirach 2003	1659	0.7 (0.4−1.3)
	Chichareon 1998	261	4.6 (2.6−7.9)

Data updated on 22 May 2023 (data as of 30 Jun 2014)

The samples for HPV testing come from cervical specimens (fresh/fixed biopsies or exfoliated cells)
[a] Number of women tested
Data Sources: See references in Section 9 References.

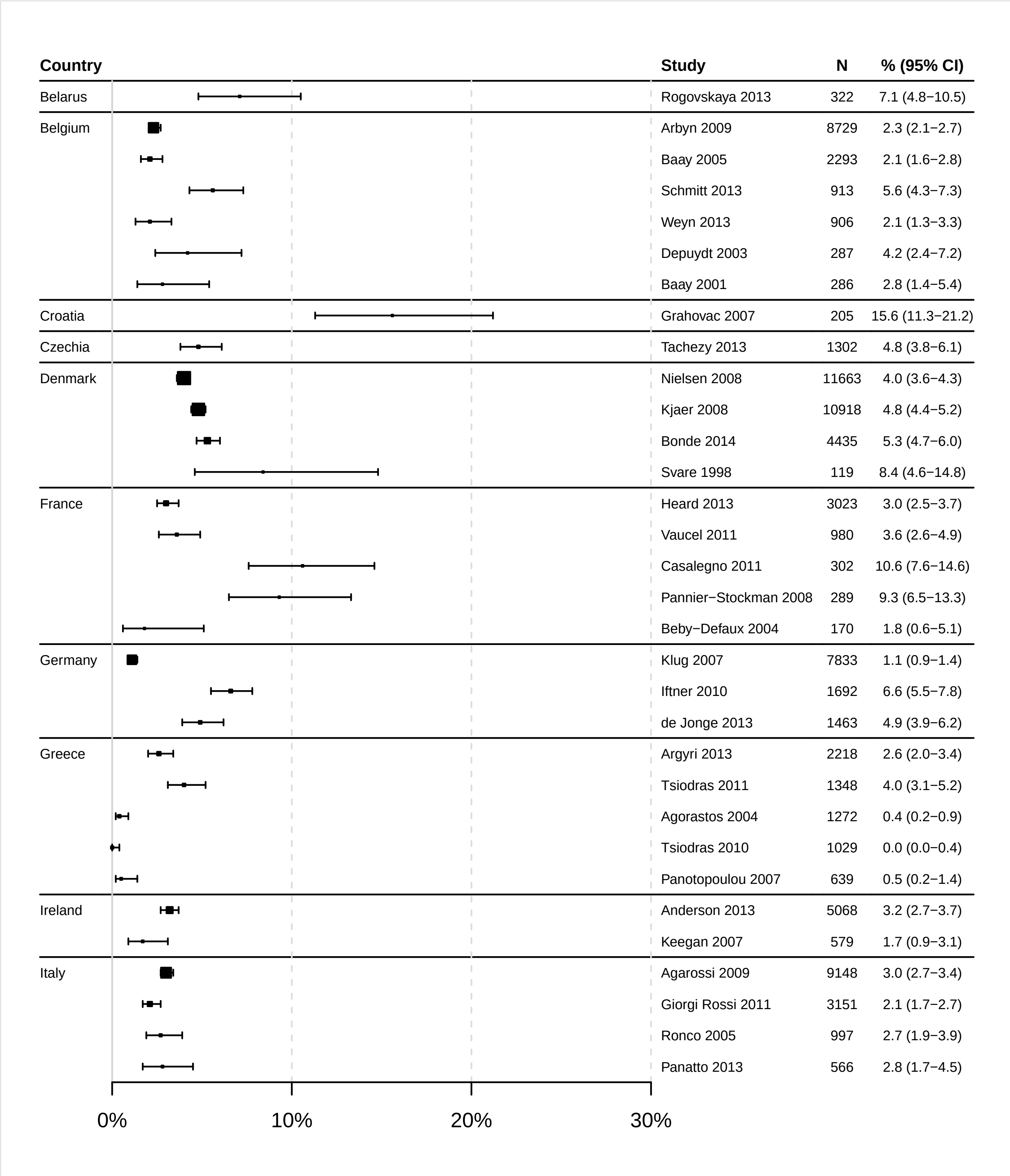
Figure 60: Prevalence of HPV 16 among women with normal cervical cytology in Asia by country and study (continued)



Data updated on 22 May 2023 (data as of 30 Jun 2014)

The samples for HPV testing come from cervical specimens (fresh/fixed biopsies or exfoliated cells)
[a] Number of women tested
Data Sources: See references in Section 9 References.

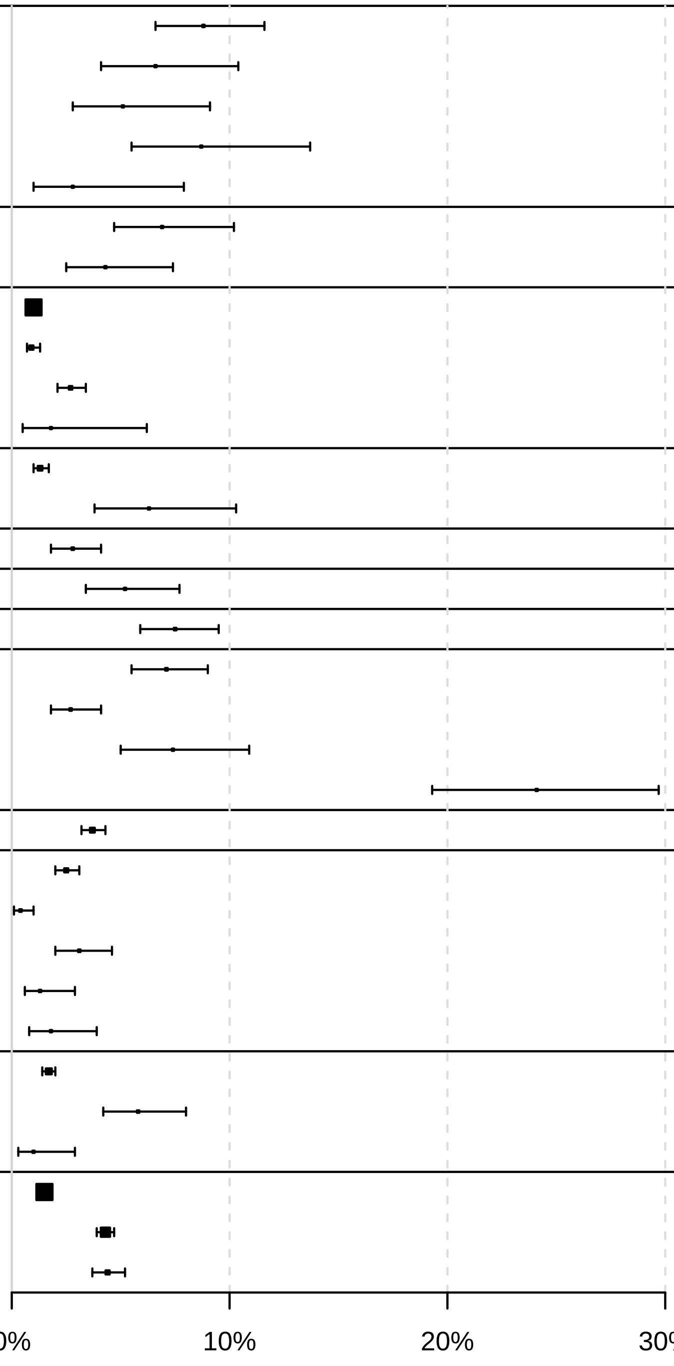
Figure 61: Prevalence of HPV 16 among women with normal cervical cytology in Europe by country and study



Data updated on 22 May 2023 (data as of 30 Jun 2014)

The samples for HPV testing come from cervical specimens (fresh/fixed biopsies or exfoliated cells)
[a] Number of women tested
Data Sources: See references in Section 9 References.

Figure 61: Prevalence of HPV 16 among women with normal cervical cytology in Europe by country and study (continued)

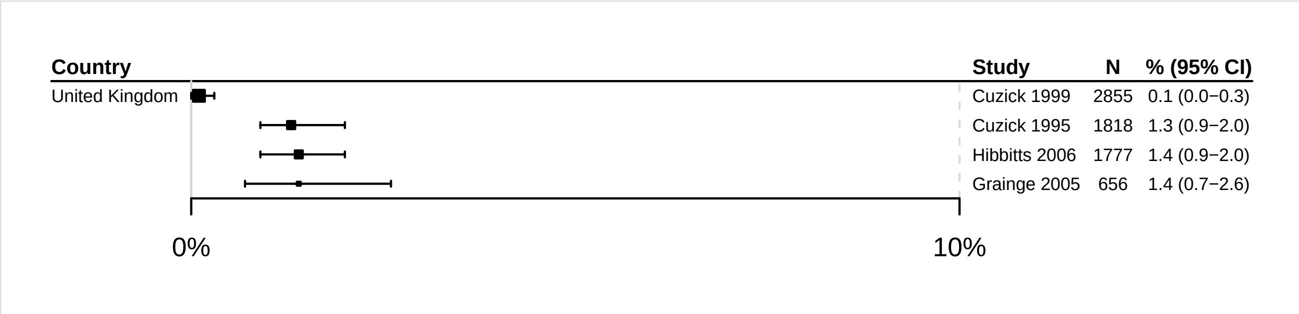


Country	Study	N	% (95% CI)
Italy	Centurioni 2005	500	8.8 (6.6−11.6)
	Sammarco 2013	244	6.6 (4.1−10.4)
	Astori 1997	197	5.1 (2.8−9.1)
	Tornesello 2006	183	8.7 (5.5−13.7)
	Tornesello 2008	107	2.8 (1.0−7.9)
Lithuania	Gudleviciene 2005	332	6.9 (4.7−10.2)
	Simanaviciene 2014	277	4.3 (2.5−7.4)
Netherlands	Bulkmans 2007	21245	1.0 (0.9−1.1)
	Jacobs 2000	3299	0.9 (0.7−1.3)
	Rozendaal 2000	2250	2.7 (2.1−3.4)
	Zielinski 2001	114	1.8 (0.5−6.2)
Norway	Molden 2005	3970	1.3 (1.0−1.7)
	Gjøoen 1996	222	6.3 (3.8−10.3)
Poland	Bardin 2008	799	2.8 (1.8−4.1)
Portugal	Pista 2011	425	5.2 (3.4−7.7)
Romania	Moga 2014	801	7.5 (5.9−9.5)
Russian Federation	Rogovskaya 2013	833	7.1 (5.5−9.0)
	Shipitsyna 2011	741	2.7 (1.8−4.1)
	Alexandrova 1999	309	7.4 (5.0−10.9)
	Komarova 2010	257	24.1 (19.3−29.7)
Slovenia	Ucakar 2012	4199	3.7 (3.2−4.3)
Spain	Castellsagué 2012	3059	2.5 (2.0−3.1)
	de Sanjose 2003	847	0.4 (0.1−1.0)
	Dillner 2008	721	3.1 (2.0−4.6)
	González 2006	447	1.3 (0.6−2.9)
	Muñoz 1996	329	1.8 (0.8−3.9)
Sweden	Naucler 2007	5877	1.7 (1.4−2.0)
	Ylitalo 2000	617	5.8 (4.2−8.0)
	Kjellberg 1998	295	1.0 (0.3−2.9)
United Kingdom	Sargent 2008	21364	1.5 (1.3−1.7)
	Hibbitts 2014	10890	4.3 (3.9−4.7)
	Cuschieri 2004	3089	4.4 (3.7−5.2)

Data updated on 22 May 2023 (data as of 30 Jun 2014)

The samples for HPV testing come from cervical specimens (fresh/fixed biopsies or exfoliated cells)
[a] Number of women tested
Data Sources: See references in Section 9 References.

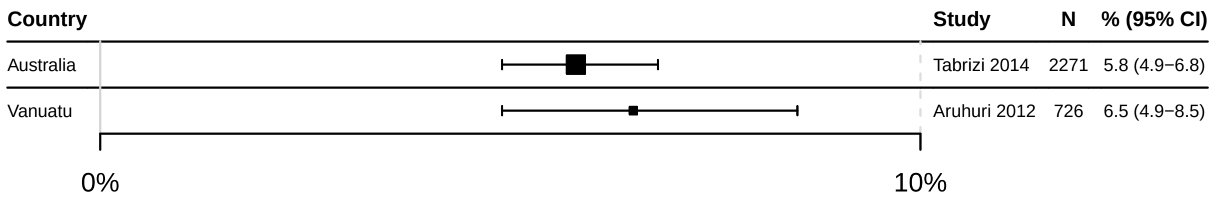
Figure 61: Prevalence of HPV 16 among women with normal cervical cytology in Europe by country and study (continued)



Data updated on 22 May 2023 (data as of 30 Jun 2014)

The samples for HPV testing come from cervical specimens (fresh/fixed biopsies or exfoliated cells)
[a] Number of women tested
Data Sources: See references in Section 9 References.

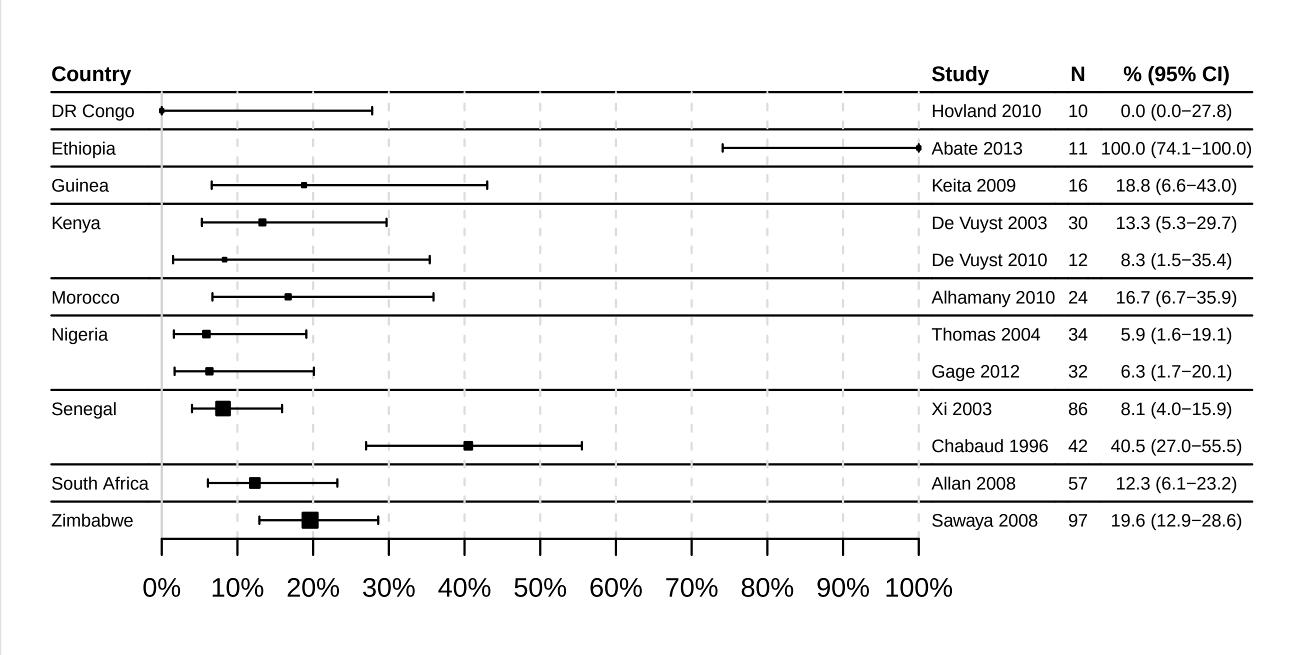
Figure 62: Prevalence of HPV 16 among women with normal cervical cytology in Oceania by country and study



Data updated on 22 May 2023 (data as of 30 Jun 2014)

The samples for HPV testing come from cervical specimens (fresh/fixed biopsies or exfoliated cells)
[a] Number of women tested
Data Sources: See references in Section 9 References.

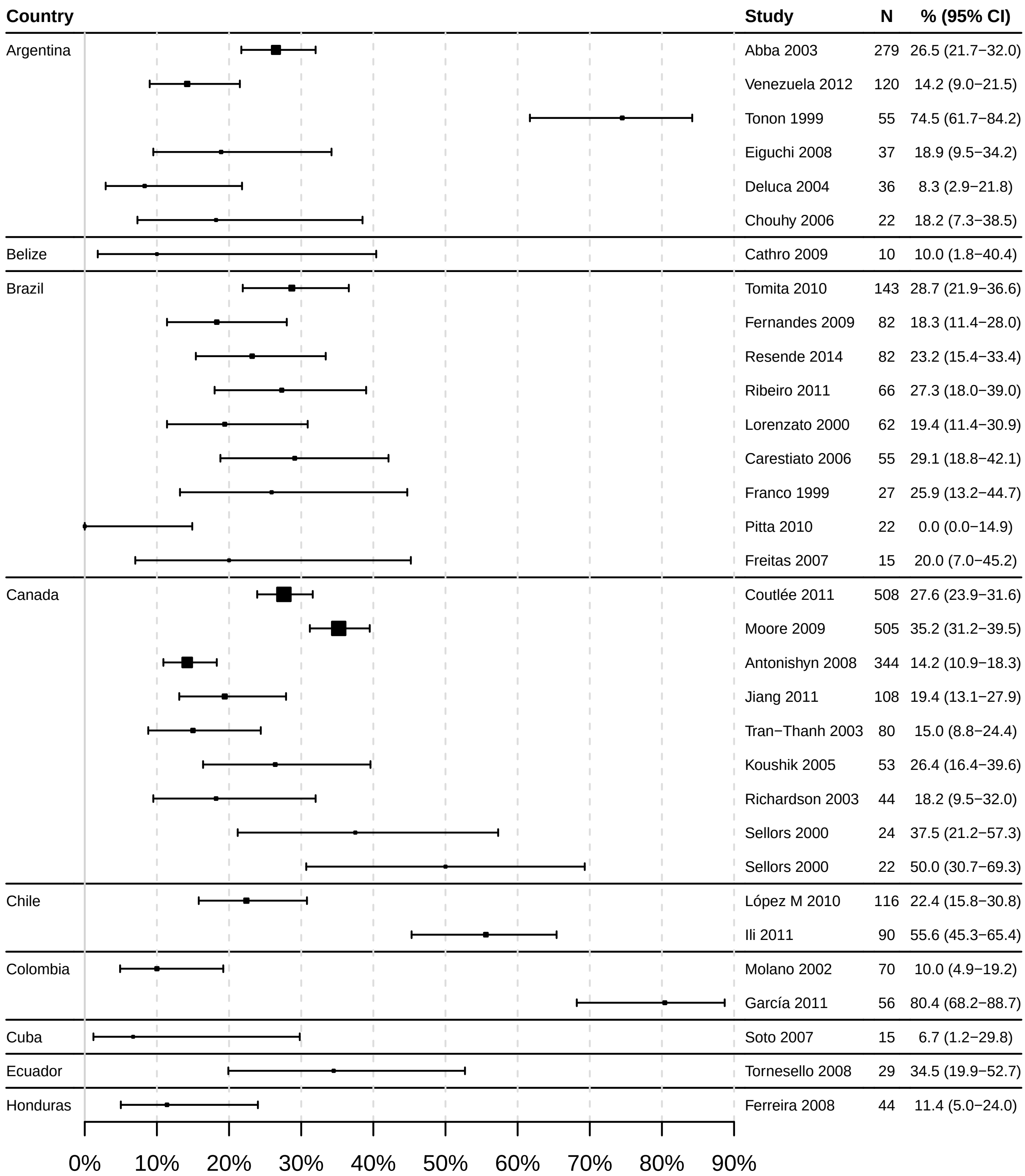
Figure 63: Prevalence of HPV 16 among women with low-grade cervical lesions in Africa by country and study



Data updated on 22 May 2023 (data as of 30 Jun 2015)

The samples for HPV testing come from cervical specimens (fresh/fixed biopsies or exfoliated cells)
[a] Number of women tested
Data Sources: See references in Section 9 References.

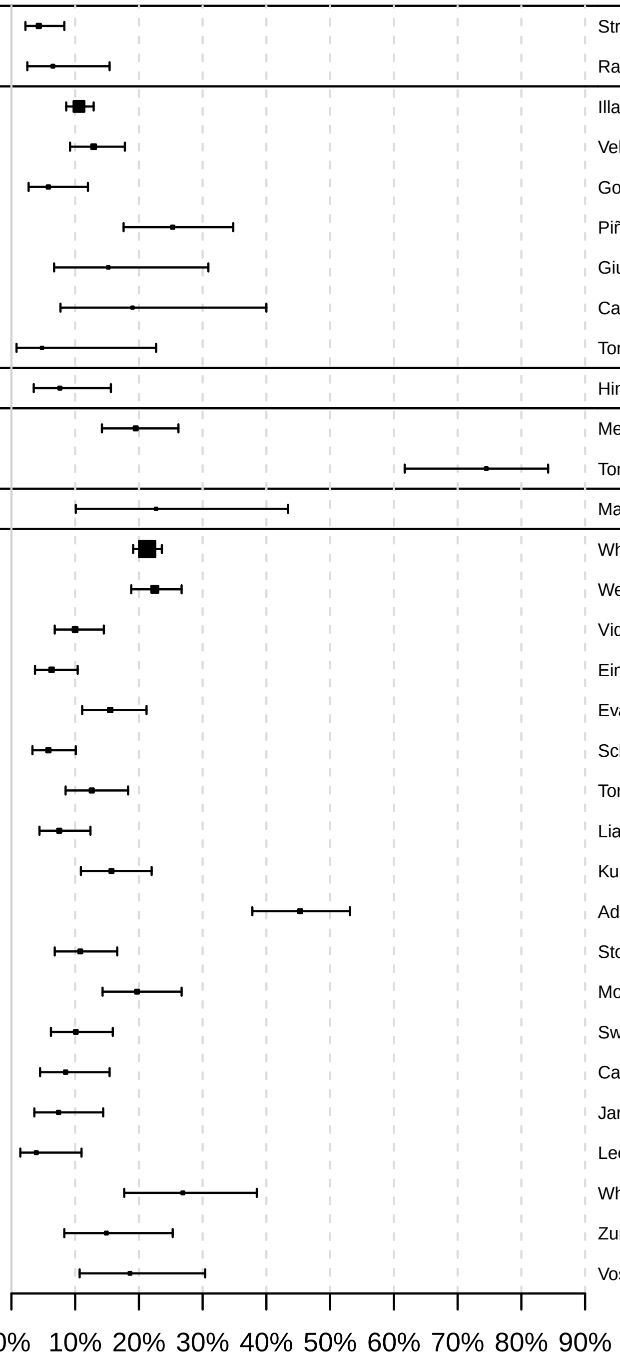
Figure 64: Prevalence of HPV 16 among women with low-grade cervical lesions in the Americas by country and study



Data updated on 22 May 2023 (data as of 30 Jun 2015)

The samples for HPV testing come from cervical specimens (fresh/fixed biopsies or exfoliated cells)
[a] Number of women tested
Data Sources: See references in Section 9 References.

Figure 64: Prevalence of HPV 16 among women with low-grade cervical lesions in the Americas by country and study (continued)

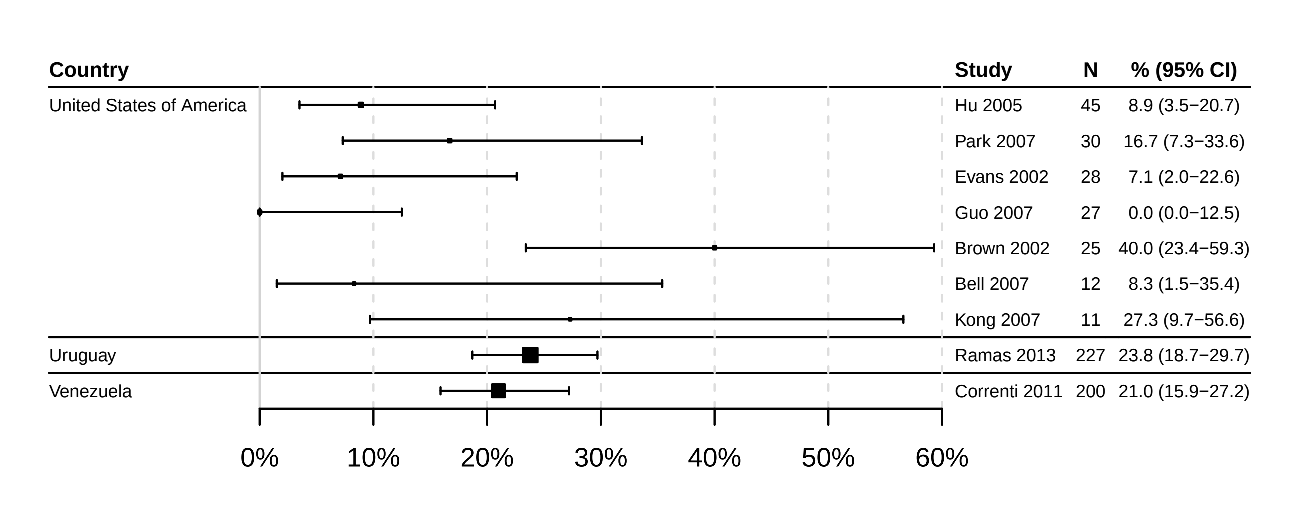


Country	Study	N	% (95% CI)
Jamaica	Strickler 1999	186	4.3 (2.2−8.3)
	Rattray 1996	62	6.5 (2.5−15.4)
Mexico	Illades−Aguiar 2010	784	10.6 (8.6−12.9)
	Velázquez−Márquez 2009	233	12.9 (9.2−17.8)
	González−Losa 2004	104	5.8 (2.7−12.0)
	Piña−Sánchez 2006	95	25.3 (17.6−34.8)
	Giuliano 2001	33	15.2 (6.7−30.9)
	Carrillo 2004	21	19.0 (7.7−40.0)
	Torroella−Kouri 1998	21	4.8 (0.8−22.7)
Nicaragua	Hindryckx 2006	79	7.6 (3.5−15.6)
Paraguay	Mendoza 2011	164	19.5 (14.2−26.2)
	Tonon 1999	55	74.5 (61.7−84.2)
Peru	Martorell 2012	22	22.7 (10.1−43.4)
United States of America	Wheeler 2006	1273	21.3 (19.1−23.6)
	Wentzensen 2009	431	22.5 (18.8−26.7)
	Vidal 2014	239	10.0 (6.8−14.5)
	Einstein 2007	207	6.3 (3.7−10.4)
	Evans 2006	200	15.5 (11.1−21.2)
	Schiff 2000	190	5.8 (3.3−10.1)
	Tortolero−Luna 1998	175	12.6 (8.5−18.3)
	Liaw 1999	173	7.5 (4.4−12.4)
	Kulasingam 2002	166	15.7 (10.9−22.0)
	Adam 2000	161	45.3 (37.8−53.1)
	Stoler 2011	158	10.8 (6.8−16.6)
	Moscicki 2008	157	19.7 (14.3−26.7)
	Swan 1999	149	10.1 (6.2−15.9)
	Castle 2011	106	8.5 (4.5−15.4)
	Jarboe 2004	95	7.4 (3.6−14.4)
	Lee 2009	76	3.9 (1.4−11.0)
	Wheeler 2009	67	26.9 (17.7−38.5)
	Zuna 2007	67	14.9 (8.3−25.3)
	Voss 2009	59	18.6 (10.7−30.4)

Data updated on 22 May 2023 (data as of 30 Jun 2015)

The samples for HPV testing come from cervical specimens (fresh/fixed biopsies or exfoliated cells)
[a] Number of women tested
Data Sources: See references in Section 9 References.

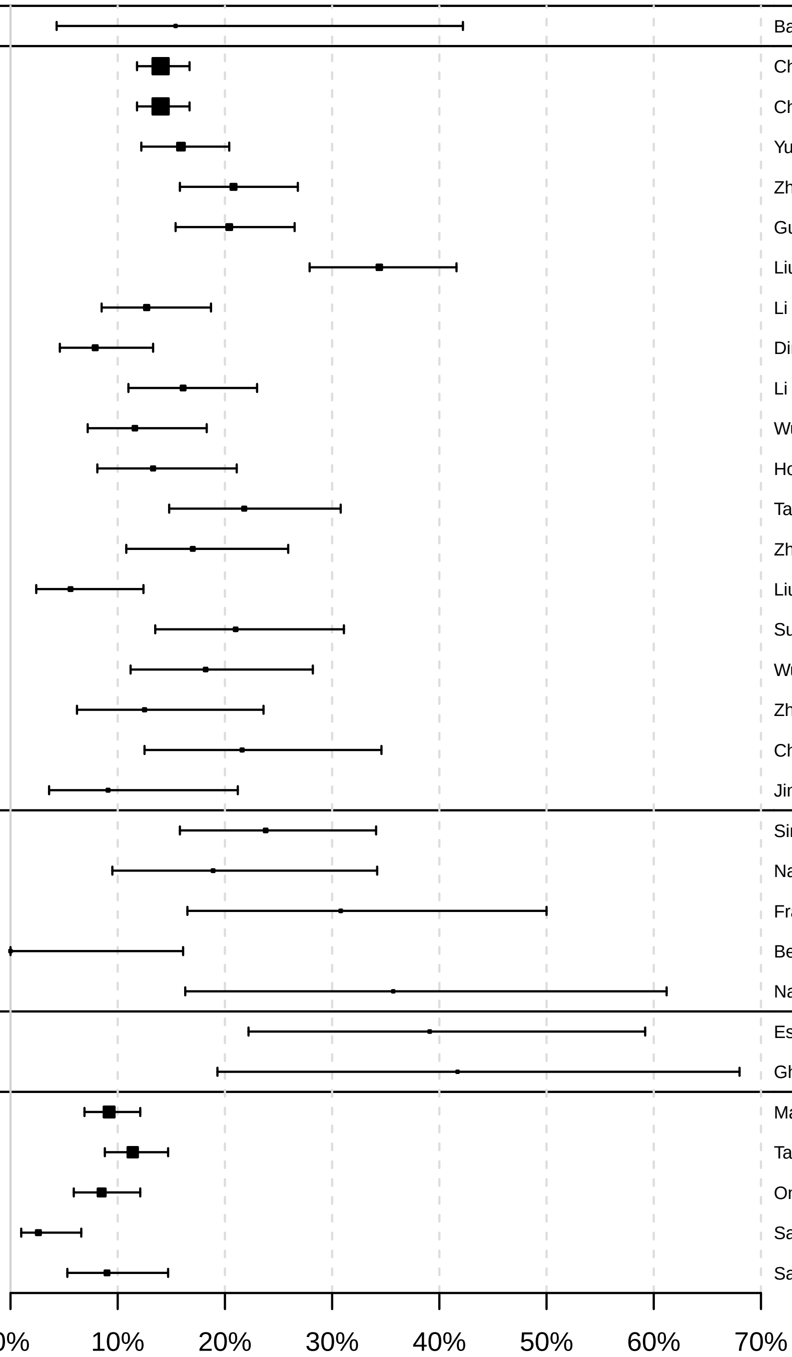
Figure 64: Prevalence of HPV 16 among women with low-grade cervical lesions in the Americas by country and study (continued)



Data updated on 22 May 2023 (data as of 30 Jun 2015)

The samples for HPV testing come from cervical specimens (fresh/fixed biopsies or exfoliated cells)
[a] Number of women tested
Data Sources: See references in Section 9 References.

Figure 65: Prevalence of HPV 16 among women with low-grade cervical lesions in Asia by country and study



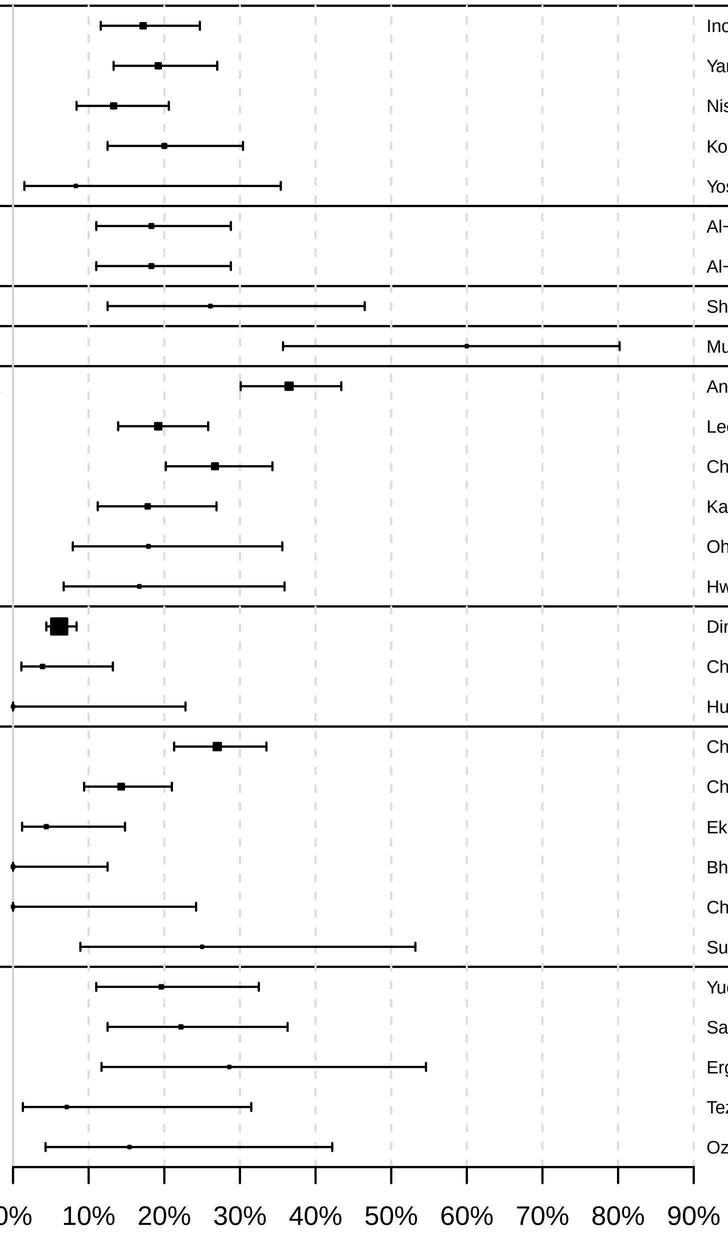
Country	Study	N	% (95% CI)
Bangladesh	Banik 2013	13	15.4 (4.3−42.2)
China	Chan 2006	769	14.0 (11.8−16.7)
	Chan 2012	769	14.0 (11.8−16.7)
	Yuan 2011	302	15.9 (12.2−20.4)
	Zhao 2014	207	20.8 (15.8−26.8)
	Guo 2010	201	20.4 (15.4−26.5)
	Liu 2010	180	34.4 (27.9−41.6)
	Li 2013	165	12.7 (8.5−18.7)
	Ding 2014	152	7.9 (4.6−13.3)
	Li 2012	143	16.1 (11.0−23.0)
	Wu 2010	129	11.6 (7.2−18.3)
	Hong 2008	105	13.3 (8.1−21.1)
	Tao 2006	101	21.8 (14.8−30.8)
	Zhang 2013	94	17.0 (10.8−25.9)
	Liu 2008	90	5.6 (2.4−12.4)
	Sun 2014	81	21.0 (13.5−31.1)
	Wu 2013	77	18.2 (11.2−28.2)
	Zhao 2008	56	12.5 (6.2−23.6)
	Chan 1999	51	21.6 (12.5−34.6)
	Jin 2010	44	9.1 (3.6−21.2)
India	Singh 2009	80	23.8 (15.8−34.1)
	Nair 1999	37	18.9 (9.5−34.2)
	Franceschi 2005	26	30.8 (16.5−50.0)
	Berlin Grace 2009	20	0.0 (0.0−16.1)
	Nagpal 2002	14	35.7 (16.3−61.2)
Iran	Esmaeili 2008	23	39.1 (22.2−59.2)
	Ghaffari 2006	12	41.7 (19.3−68.0)
Japan	Matsumoto 2011	479	9.2 (6.9−12.1)
	Takehara 2011	447	11.4 (8.8−14.7)
	Onuki 2009	318	8.5 (5.9−12.1)
	Saito 2001	151	2.6 (1.0−6.6)
	Sasagawa 2001	145	9.0 (5.3−14.7)

Data updated on 22 May 2023 (data as of 30 Jun 2015)

The samples for HPV testing come from cervical specimens (fresh/fixed biopsies or exfoliated cells)
^{a} Number of women tested
Data Sources: See references in Section 9 References.

Figure 65: Prevalence of HPV 16 among women with low-grade cervical lesions in Asia by country and study (continued)

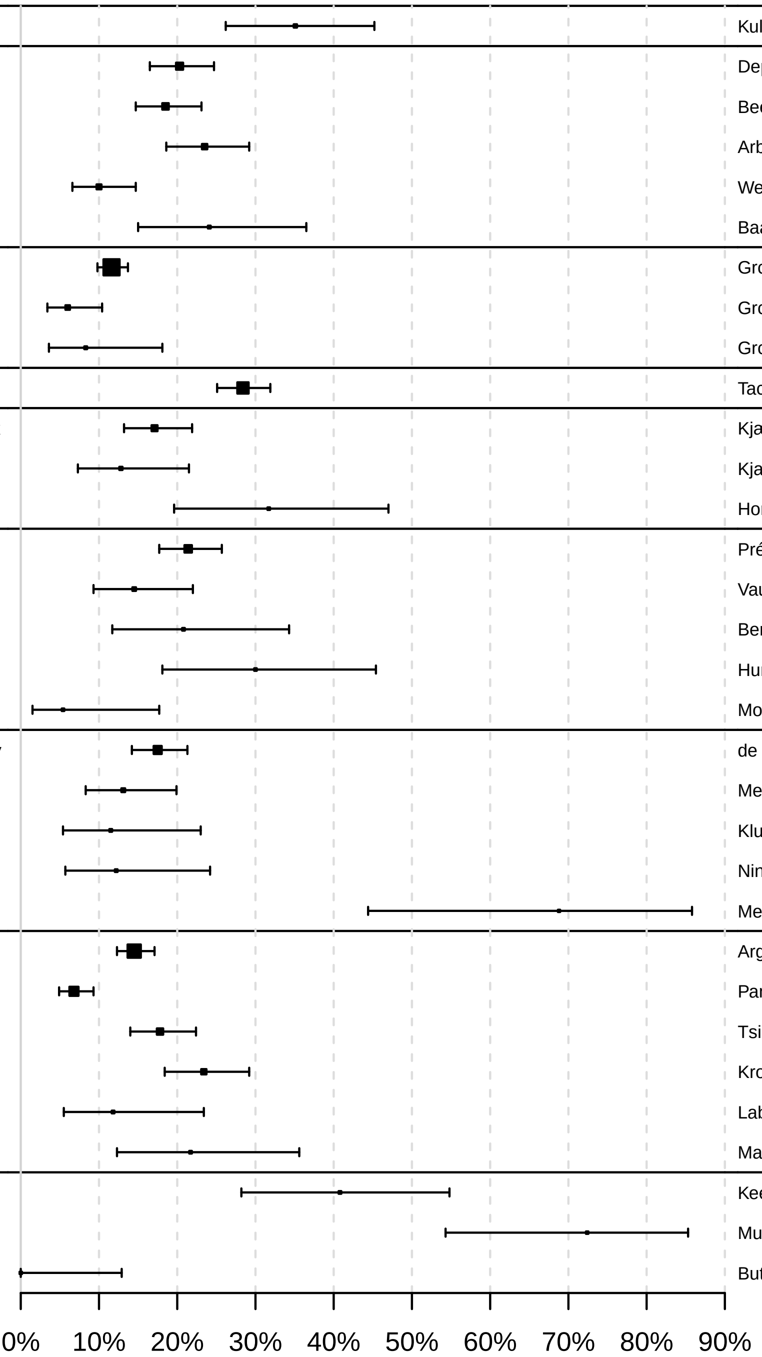
Country	Study	N	% (95% CI)
Japan	Inoue 2006	128	17.2 (11.6−24.7)
	Yamasaki 2011	125	19.2 (13.3−27.0)
	Nishiwaki 2008	120	13.3 (8.4−20.6)
	Konno 2011	75	20.0 (12.5−30.4)
	Yoshida 2004	12	8.3 (1.5−35.4)
Kuwait	Al−Awadhi 2011	71	18.3 (11.0−28.8)
	Al−Awadhi 2013	71	18.3 (11.0−28.8)
Malaysia	Sharifah 2009	23	26.1 (12.5−46.5)
Myanmar	Mu−Mu−Shwe 2014	15	60.0 (35.7−80.2)
Republic of Korea	An 2003	200	36.5 (30.1−43.4)
	Lee 2007	167	19.2 (13.9−25.8)
	Cho 2003	150	26.7 (20.2−34.3)
	Kang 2009	90	17.8 (11.2−26.9)
	Oh 2001	28	17.9 (7.9−35.6)
	Hwang 2003	24	16.7 (6.7−35.9)
Taiwan	Ding 2008	542	6.1 (4.4−8.4)
	Chao 2008	51	3.9 (1.1−13.2)
	Huang 2008	13	0.0 (0.0−22.8)
Thailand	Chansaenroj 2014	200	27.0 (21.3−33.5)
	Chaiwongkot 2007	140	14.3 (9.4−21.0)
	Ekalaksananan 2001	45	4.4 (1.2−14.8)
	Bhattarakosol 2002	27	0.0 (0.0−12.5)
	Chansaenroj 2010	12	0.0 (0.0−24.2)
	Suwannarurk 2009	12	25.0 (8.9−53.2)
Turkey	Yuce 2012	51	19.6 (11.0−32.5)
	Sahiner 2012	45	22.2 (12.5−36.3)
	Ergünay 2008	14	28.6 (11.7−54.6)
	Tezcan 2014	14	7.1 (1.3−31.5)
	Ozgul 2008	13	15.4 (4.3−42.2)



Data updated on 22 May 2023 (data as of 30 Jun 2015)

The samples for HPV testing come from cervical specimens (fresh/fixed biopsies or exfoliated cells)
[a] Number of women tested
Data Sources: See references in Section 9 References.

Figure 66: Prevalence of HPV 16 among women with low-grade cervical lesions in Europe by country and study

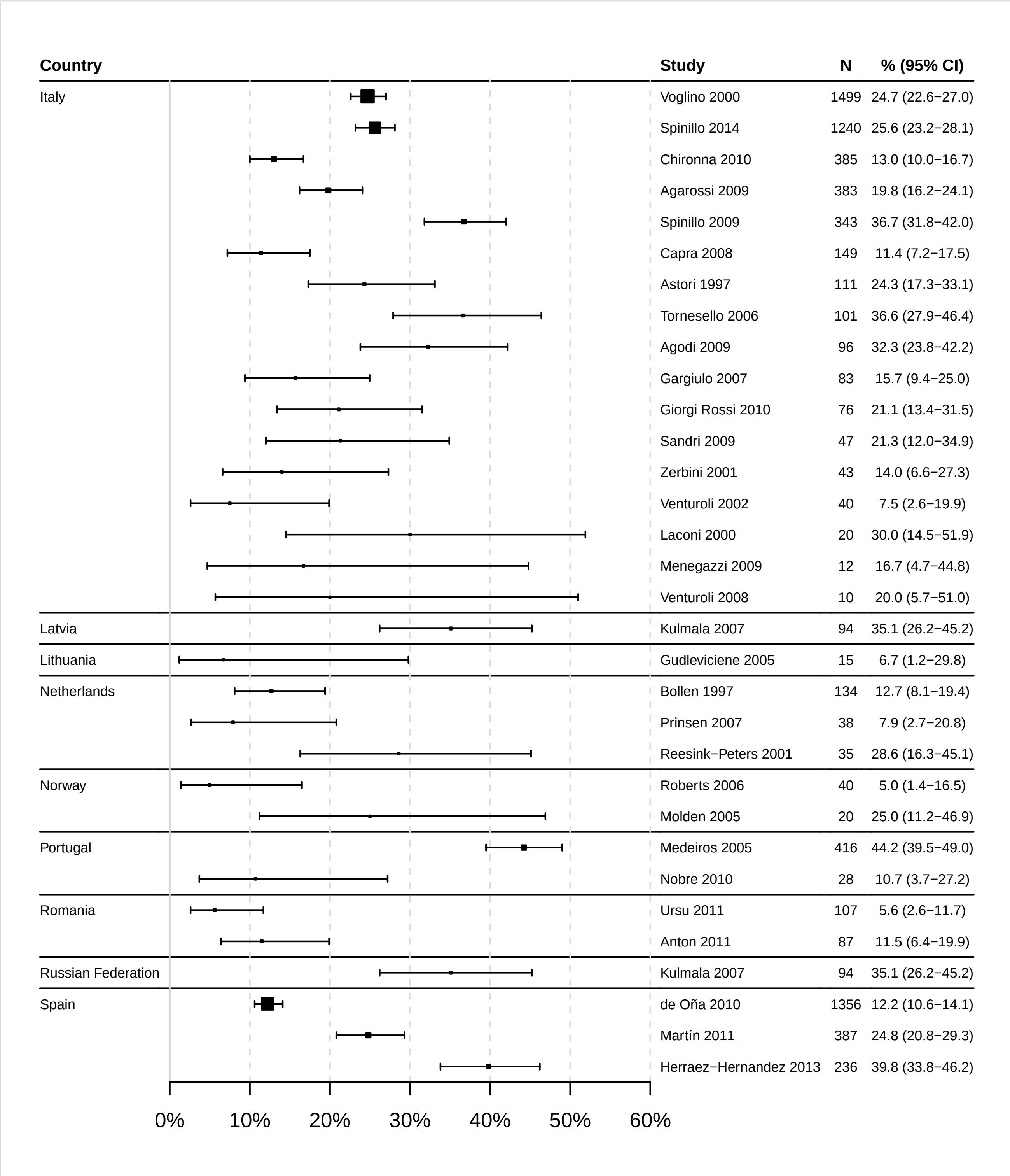


Country	Study	N	% (95% CI)
Belarus	Kulmala 2007	94	35.1 (26.2−45.2)
Belgium	Depuydt 2003	369	20.3 (16.5−24.7)
	Beerens 2005	324	18.5 (14.7−23.1)
	Arbyn 2009	243	23.5 (18.6−29.2)
	Weyn 2013	211	10.0 (6.6−14.7)
	Baay 2001	58	24.1 (15.0−36.5)
Croatia	Grce 2001	1028	11.6 (9.8−13.7)
	Grce 1997	183	6.0 (3.4−10.4)
	Grce 2004	60	8.3 (3.6−18.1)
Czechia	Tachezy 2011	676	28.4 (25.1−31.9)
Denmark	Kjær 2014	287	17.1 (13.2−21.9)
	Kjaer 2008	86	12.8 (7.3−21.5)
	Hording 1995	41	31.7 (19.6−47.0)
France	Prétet 2008	397	21.4 (17.7−25.7)
	Vaucel 2011	117	14.5 (9.3−22.0)
	Bergeron 1992	48	20.8 (11.7−34.3)
	Humbey 2002	40	30.0 (18.1−45.4)
	Monsonego 2008	37	5.4 (1.5−17.7)
Germany	de Jonge 2013	441	17.5 (14.2−21.3)
	Meyer 2001	130	13.1 (8.3−19.9)
	Klug 2007	52	11.5 (5.4−23.0)
	Nindl 1999	49	12.2 (5.7−24.2)
	Merkelbach−Bruse 1999	16	68.8 (44.4−85.8)
Greece	Argyri 2013	821	14.5 (12.3−17.1)
	Panotopoulou 2007	516	6.8 (4.9−9.3)
	Tsiodras 2011	314	17.8 (14.0−22.4)
	Kroupis 2007	235	23.4 (18.4−29.2)
	Labropoulou 1997	51	11.8 (5.5−23.4)
	Mammas 2008	46	21.7 (12.3−35.6)
Ireland	Keegan 2014	49	40.8 (28.2−54.8)
	Murphy 2003	29	72.4 (54.3−85.3)
	Butler 2000	26	0.0 (0.0−12.9)

Data updated on 22 May 2023 (data as of 30 Jun 2015)

The samples for HPV testing come from cervical specimens (fresh/fixed biopsies or exfoliated cells)
[a] Number of women tested
Data Sources: See references in Section 9 References.

Figure 66: Prevalence of HPV 16 among women with low-grade cervical lesions in Europe by country and study (continued)



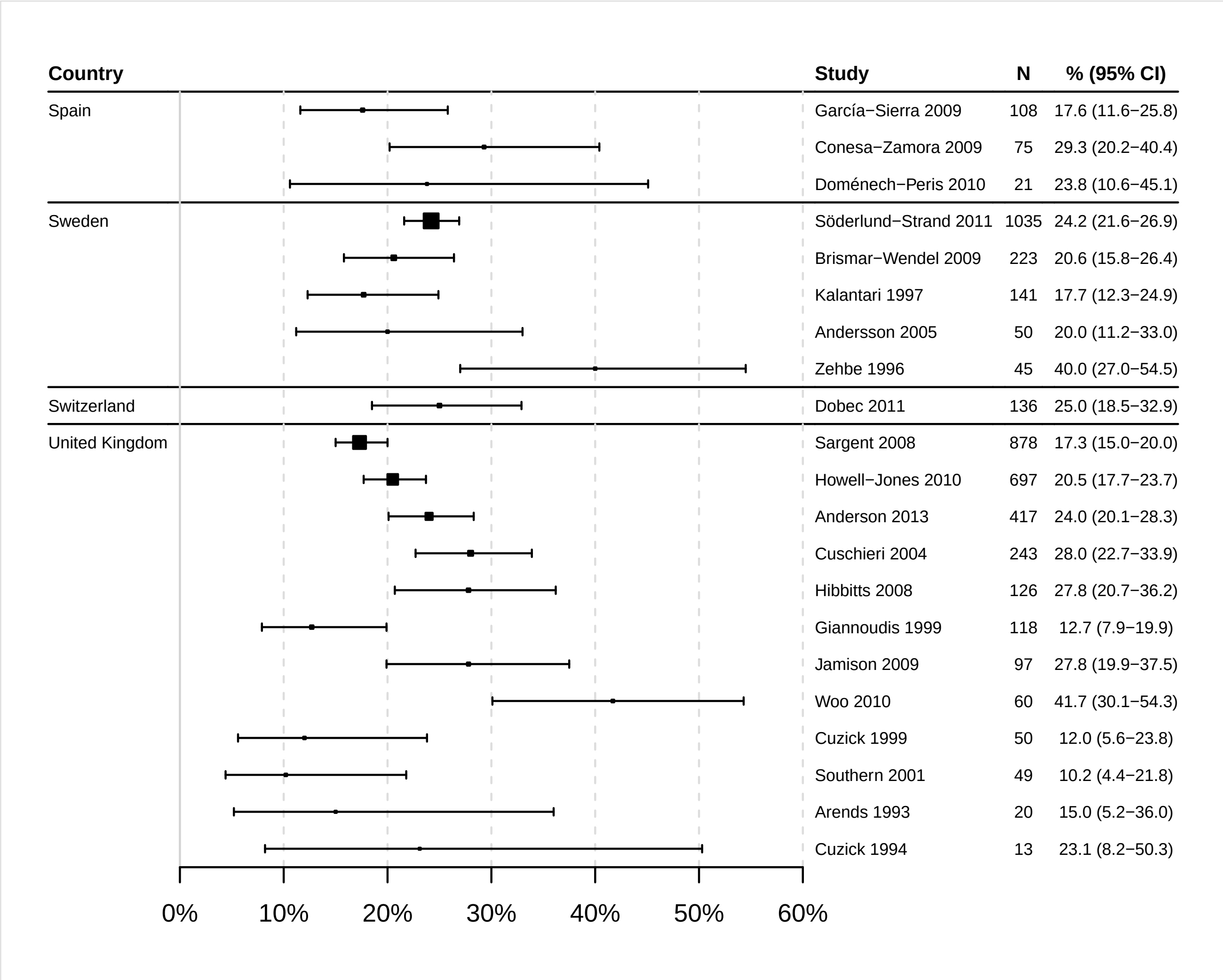
Data updated on 22 May 2023 (data as of 30 Jun 2015)

The samples for HPV testing come from cervical specimens (fresh/fixed biopsies or exfoliated cells)

[a] Number of women tested

Data Sources: See references in Section 9 References.

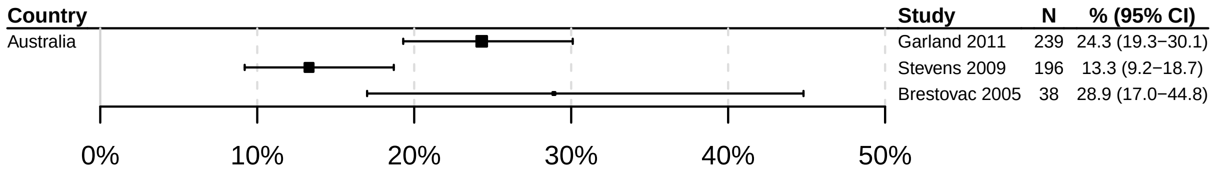
Figure 66: Prevalence of HPV 16 among women with low-grade cervical lesions in Europe by country and study (continued)



Data updated on 22 May 2023 (data as of 30 Jun 2015)

The samples for HPV testing come from cervical specimens (fresh/fixed biopsies or exfoliated cells)
[a] Number of women tested
Data Sources: See references in Section 9 References.

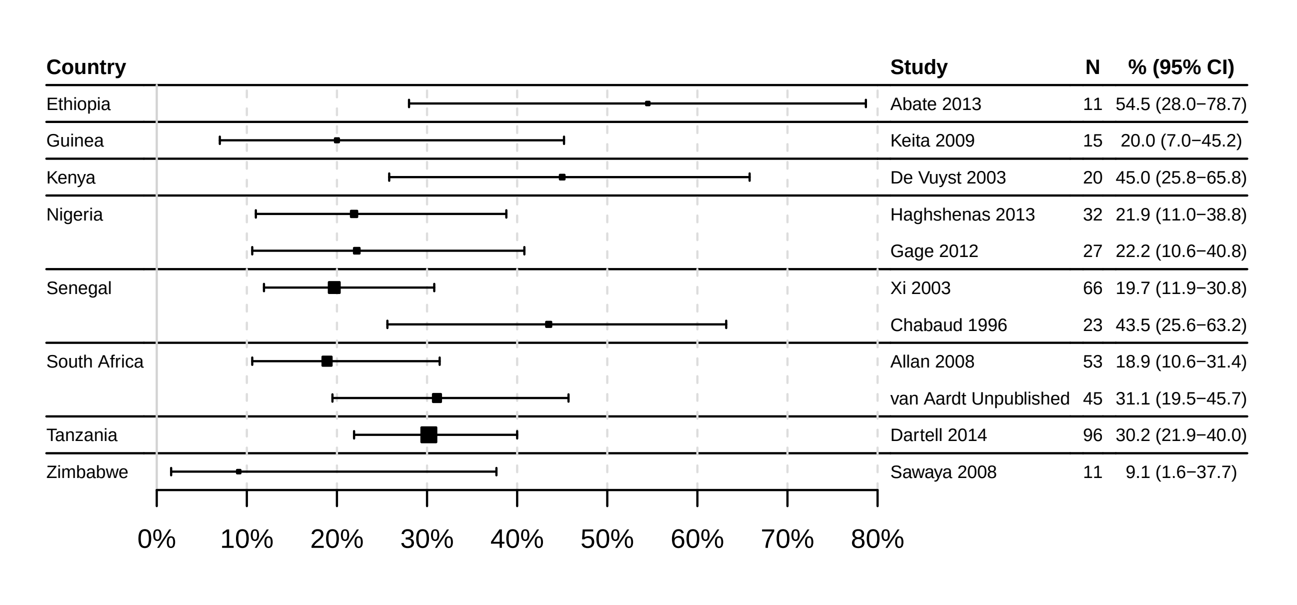
Figure 67: Prevalence of HPV 16 among women with low-grade cervical lesions in Oceania by country and study



Data updated on 22 May 2023 (data as of 30 Jun 2015)

The samples for HPV testing come from cervical specimens (fresh/fixed biopsies or exfoliated cells)
[a] Number of women tested
Data Sources: See references in Section 9 References.

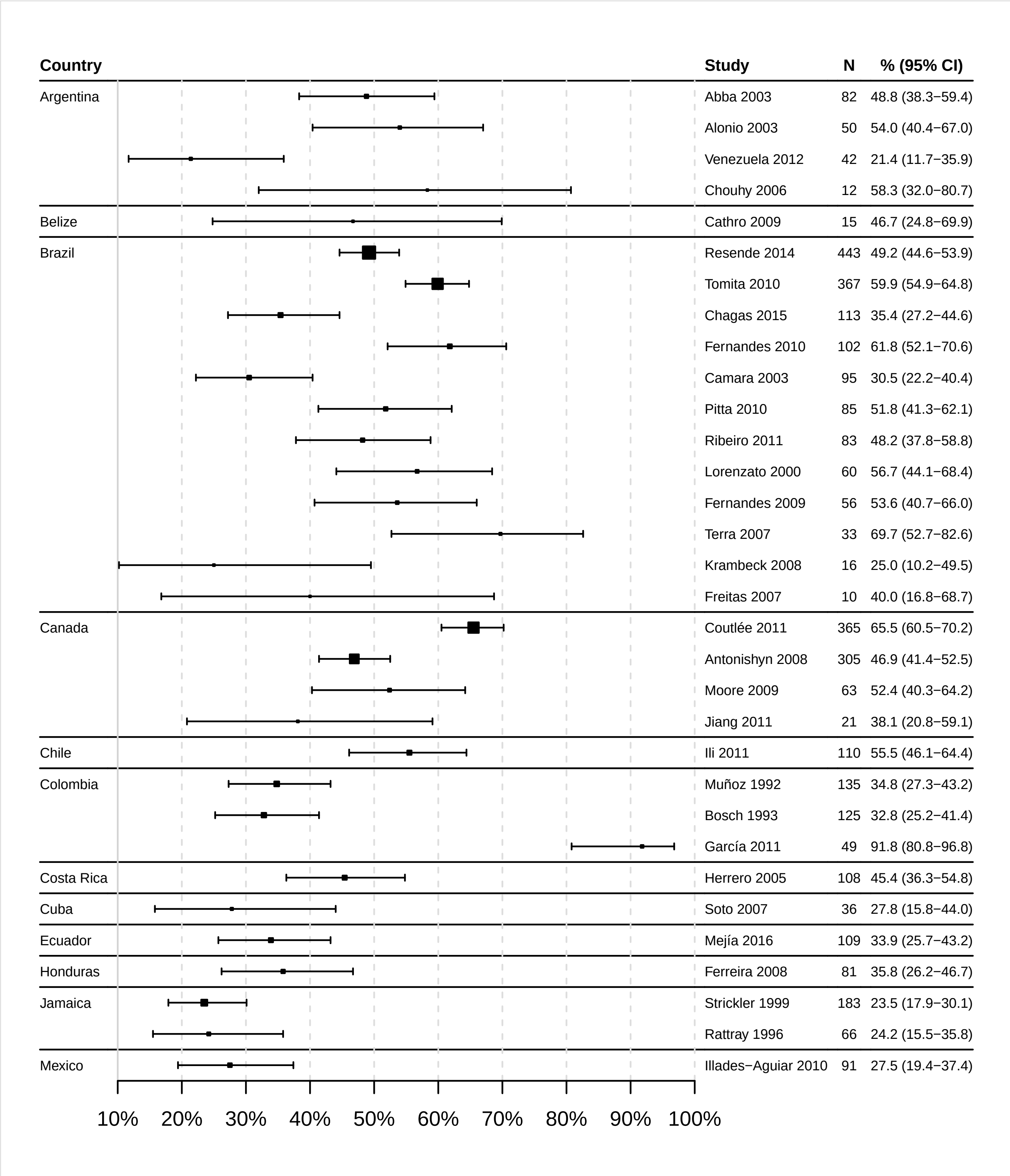
Figure 68: Prevalence of HPV 16 among women with high-grade cervical lesions in Africa by country and study



Data updated on 22 May 2023 (data as of 30 Jun 2015)

The samples for HPV testing come from cervical specimens (fresh/fixed biopsies or exfoliated cells)
[a] Number of women tested
Data Sources: See references in Section 9 References.

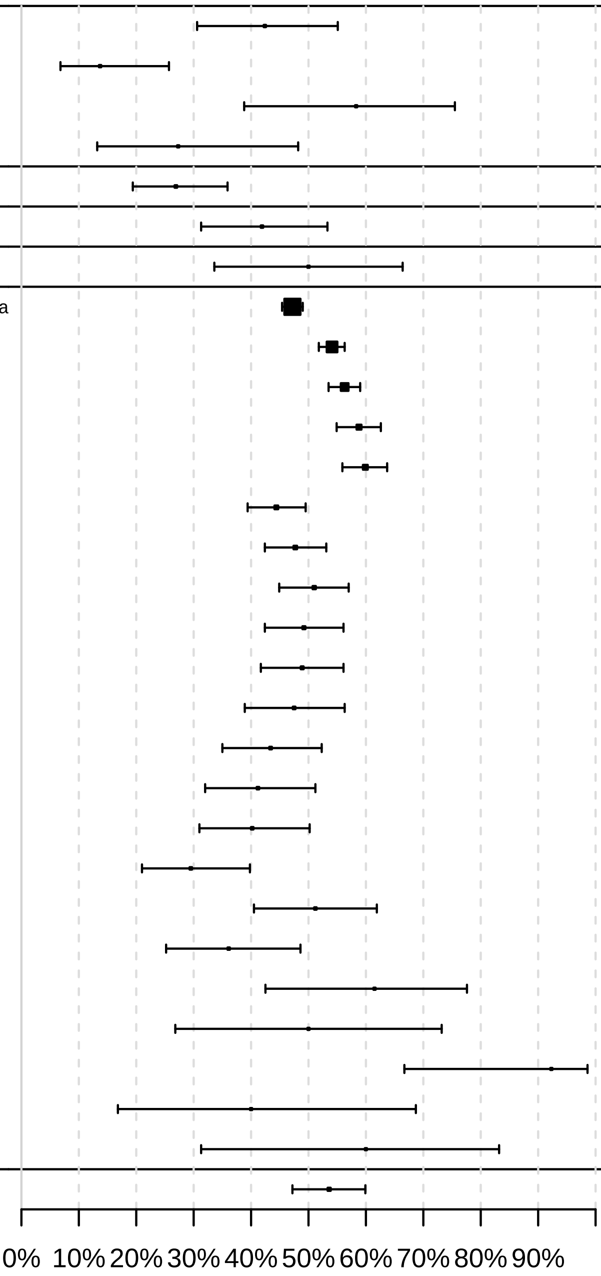
Figure 69: Prevalence of HPV 16 among women with high-grade cervical lesions in the Americas by country and study



Data updated on 22 May 2023 (data as of 30 Jun 2015)

The samples for HPV testing come from cervical specimens (fresh/fixed biopsies or exfoliated cells)
[a] Number of women tested
Data Sources: See references in Section 9 References.

Figure 69: Prevalence of HPV 16 among women with high-grade cervical lesions in the Americas by country and study (continued)

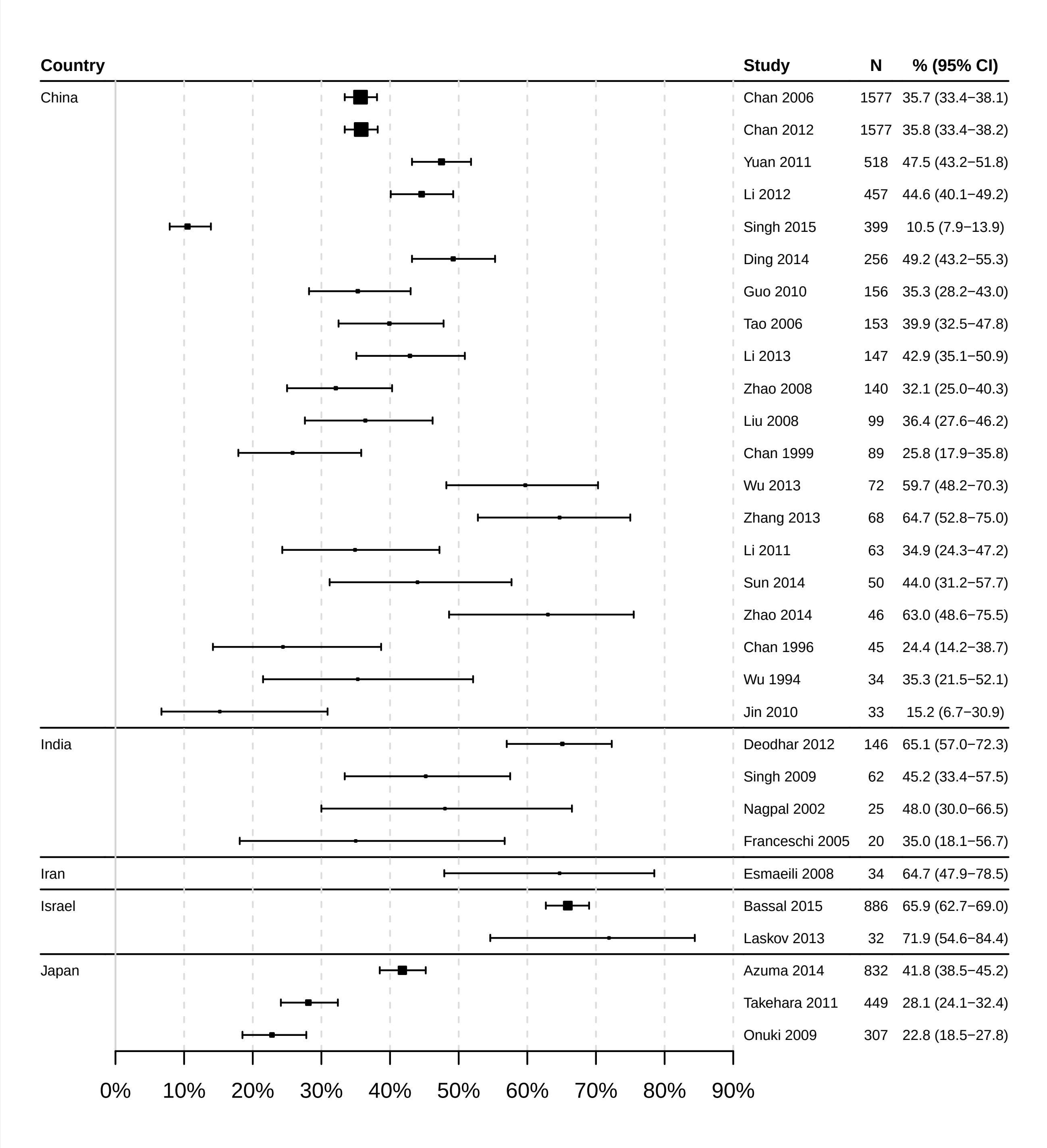


Country	Study	N	% (95% CI)
Mexico	Piña−Sánchez 2006	59	42.4 (30.6−55.1)
	Velázquez−Márquez 2009	51	13.7 (6.8−25.7)
	Torroella−Kouri 1998	24	58.3 (38.8−75.5)
	Giuliano 2001	22	27.3 (13.2−48.2)
Nicaragua	Hindryckx 2006	108	26.9 (19.4−35.9)
Paraguay	Mendoza 2011	74	41.9 (31.3−53.3)
Peru	Martorell 2012	32	50.0 (33.6−66.4)
United States of America	Hariri 2012	3058	47.2 (45.4−49.0)
	Joste 2015	1880	54.1 (51.8−56.3)
	Wheeler 2009	1230	56.3 (53.5−59.0)
	Wentzensen 2009	626	58.8 (54.9−62.6)
	Castle 2010	608	59.9 (55.9−63.7)
	Castle 2011	367	44.4 (39.4−49.5)
	Wheeler 2006	331	47.7 (42.4−53.1)
	Adam 1998	257	51.0 (44.9−57.0)
	Evans 2006	199	49.2 (42.4−56.1)
	Hariri 2012	180	48.9 (41.7−56.1)
	Moscicki 2008	122	47.5 (38.9−56.3)
	Zuna 2007	122	43.4 (35.0−52.3)
	Einstein 2007	97	41.2 (32.0−51.2)
	Hu 2005	97	40.2 (31.0−50.2)
	Vidal 2014	88	29.5 (21.0−39.8)
	Stoler 2011	80	51.2 (40.5−61.9)
	Guo 2007	61	36.1 (25.2−48.6)
	Voss 2009	26	61.5 (42.5−77.6)
	Kong 2007	14	50.0 (26.8−73.2)
	Evans 2003	13	92.3 (66.7−98.6)
	Bell 2007	10	40.0 (16.8−68.7)
	Lee 2009	10	60.0 (31.3−83.2)
Venezuela	Sánchez−Lander 2012	233	53.6 (47.2−59.9)

Data updated on 22 May 2023 (data as of 30 Jun 2015)

The samples for HPV testing come from cervical specimens (fresh/fixed biopsies or exfoliated cells)
[a] Number of women tested
Data Sources: See references in Section 9 References.

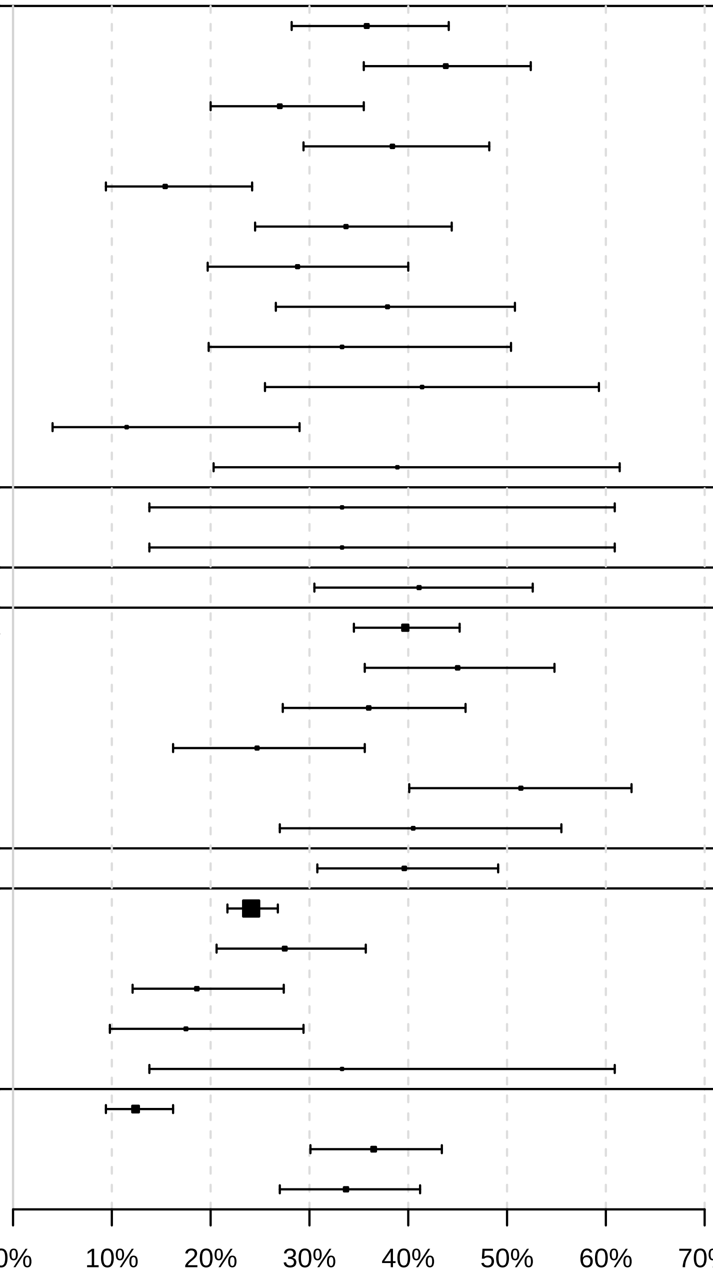
Figure 70: Prevalence of HPV 16 among women with high-grade cervical lesions in Asia by country and study



Data updated on 22 May 2023 (data as of 30 Jun 2015)

The samples for HPV testing come from cervical specimens (fresh/fixed biopsies or exfoliated cells)
[a] Number of women tested
Data Sources: See references in Section 9 References.

Figure 70: Prevalence of HPV 16 among women with high-grade cervical lesions in Asia by country and study (continued)

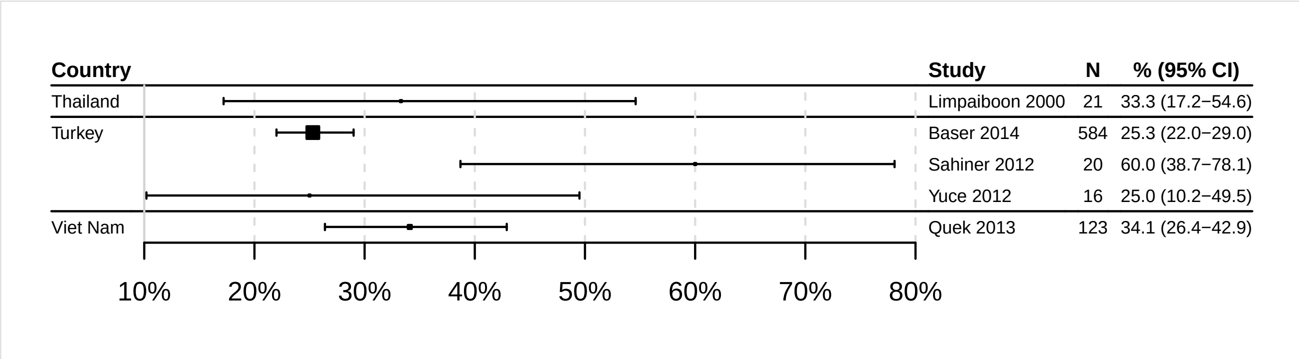


Country	Study	N	% (95% CI)
Japan	Sasagawa 2001	137	35.8 (28.2−44.1)
	Yamasaki 2011	128	43.8 (35.5−52.4)
	Okadome 2014	122	27.0 (20.0−35.5)
	Nakamura 2015	99	38.4 (29.4−48.2)
	Matsumoto 2011	91	15.4 (9.4−24.2)
	Inoue 2006	83	33.7 (24.5−44.4)
	Nishiwaki 2008	73	28.8 (19.7−40.0)
	Nagai 2000	58	37.9 (26.6−50.8)
	Yoshida 2004	33	33.3 (19.8−50.4)
	Ichimura 2003	29	41.4 (25.5−59.3)
	Tsuda 2003	26	11.5 (4.0−29.0)
	Niwa 2003	18	38.9 (20.3−61.4)
Kuwait	Al−Awadhi 2011	12	33.3 (13.8−60.9)
	Al−Awadhi 2013	12	33.3 (13.8−60.9)
Malaysia	Quek 2013	73	41.1 (30.5−52.6)
Republic of Korea	Kang 2009	317	39.7 (34.5−45.2)
	Kahng 2014	100	45.0 (35.6−54.8)
	Quek 2013	100	36.0 (27.3−45.8)
	Hwang 2003	73	24.7 (16.2−35.6)
	Cho 2003	72	51.4 (40.1−62.6)
	Oh 2001	42	40.5 (27.0−55.5)
Singapore	Quek 2013	106	39.6 (30.8−49.1)
Taiwan	Chao 2010	1086	24.1 (21.7−26.8)
	Lai 2003	131	27.5 (20.6−35.7)
	Ho 2005	97	18.6 (12.1−27.4)
	Chao 2008	57	17.5 (9.8−29.4)
	Lin 2005	12	33.3 (13.8−60.9)
Thailand	Swangvaree 2013	355	12.4 (9.4−16.2)
	Chansaenroj 2014	200	36.5 (30.1−43.4)
	Sukasem 2011	166	33.7 (27.0−41.2)

Data updated on 22 May 2023 (data as of 30 Jun 2015)

The samples for HPV testing come from cervical specimens (fresh/fixed biopsies or exfoliated cells)
[a] Number of women tested
Data Sources: See references in Section 9 References.

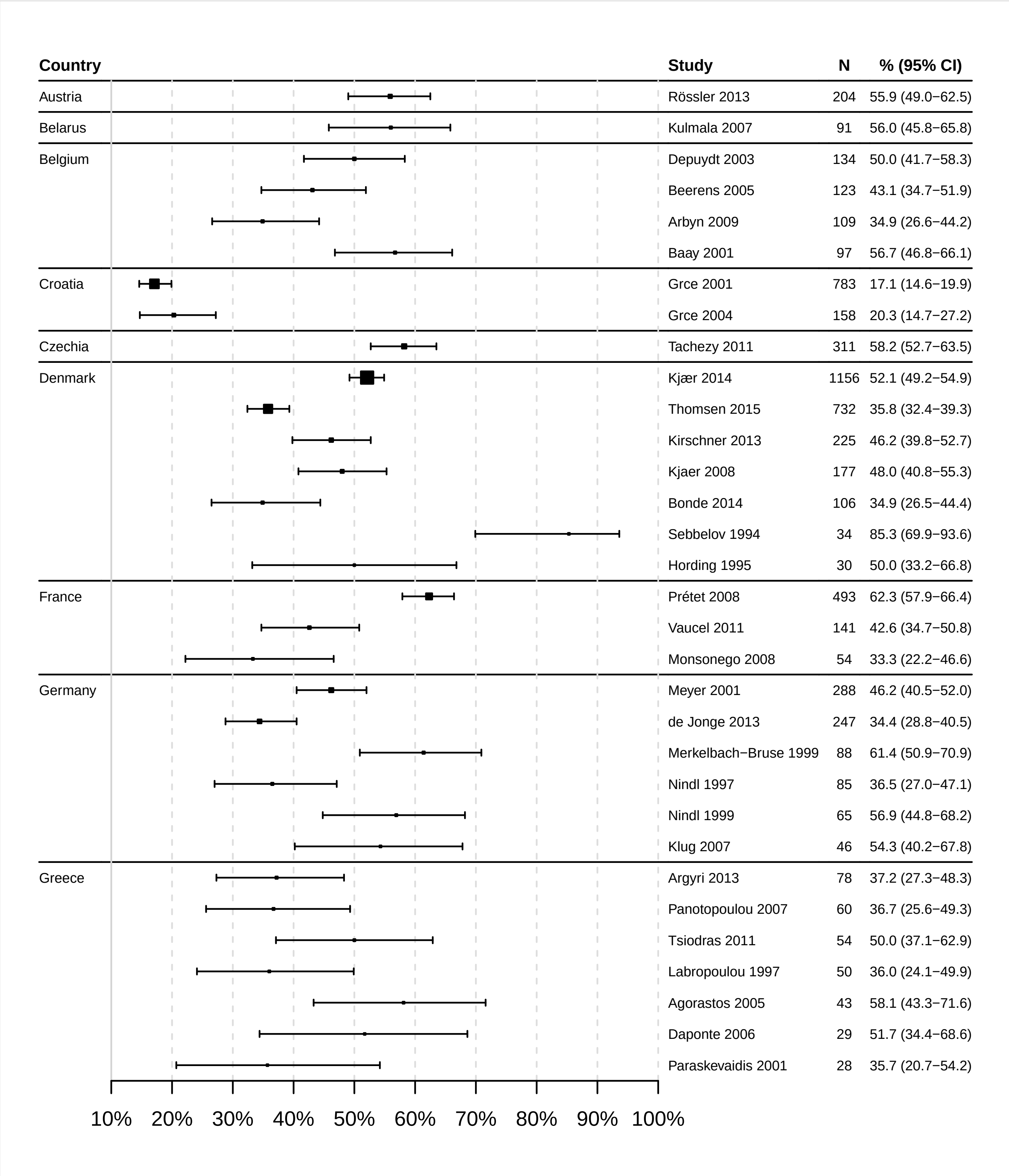
Figure 70: Prevalence of HPV 16 among women with high-grade cervical lesions in Asia by country and study (continued)



Data updated on 22 May 2023 (data as of 30 Jun 2015)

The samples for HPV testing come from cervical specimens (fresh/fixed biopsies or exfoliated cells)
[a] Number of women tested
Data Sources: See references in Section 9 References.

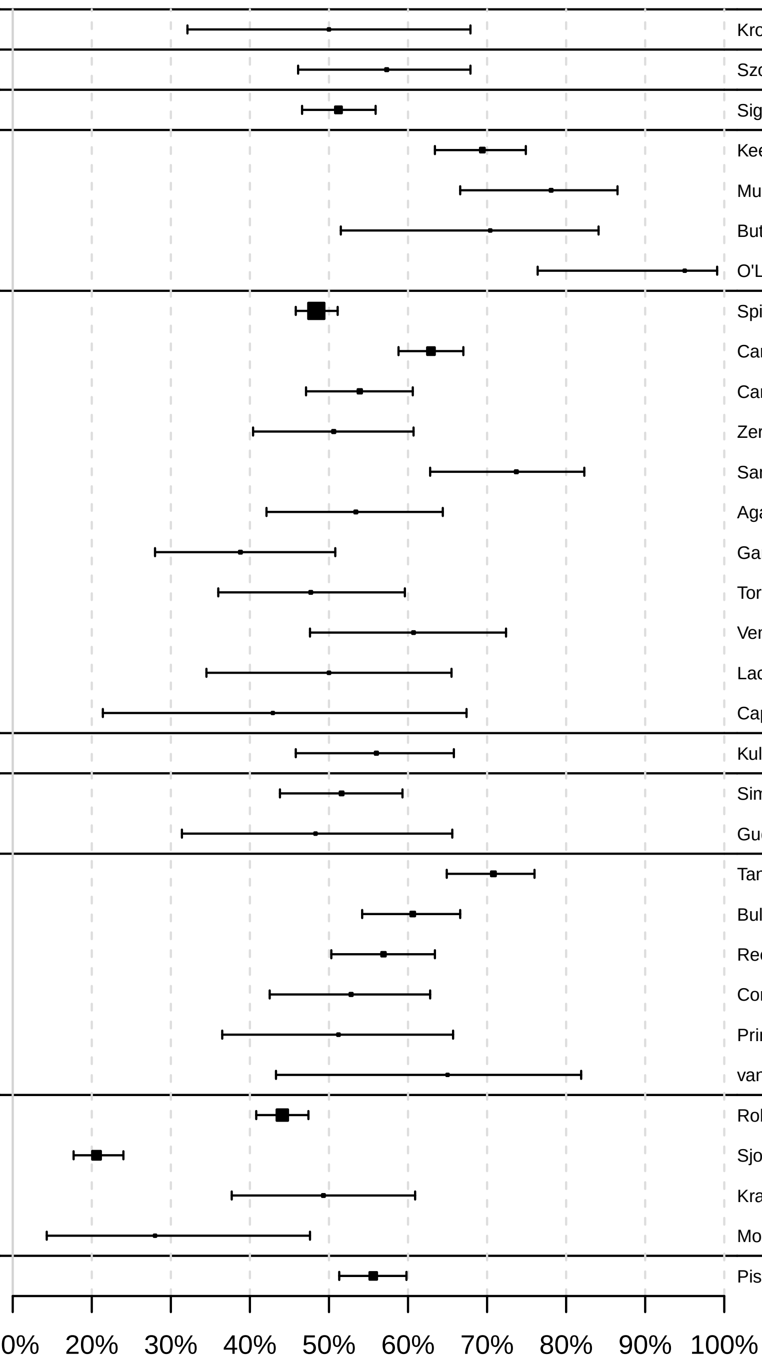
Figure 71: Prevalence of HPV 16 among women with high-grade cervical lesions in Europe by country and study



Data updated on 22 May 2023 (data as of 30 Jun 2015)

The samples for HPV testing come from cervical specimens (fresh/fixed biopsies or exfoliated cells)
[a] Number of women tested
Data Sources: See references in Section 9 References.

Figure 71: Prevalence of HPV 16 among women with high-grade cervical lesions in Europe by country and study (continued)

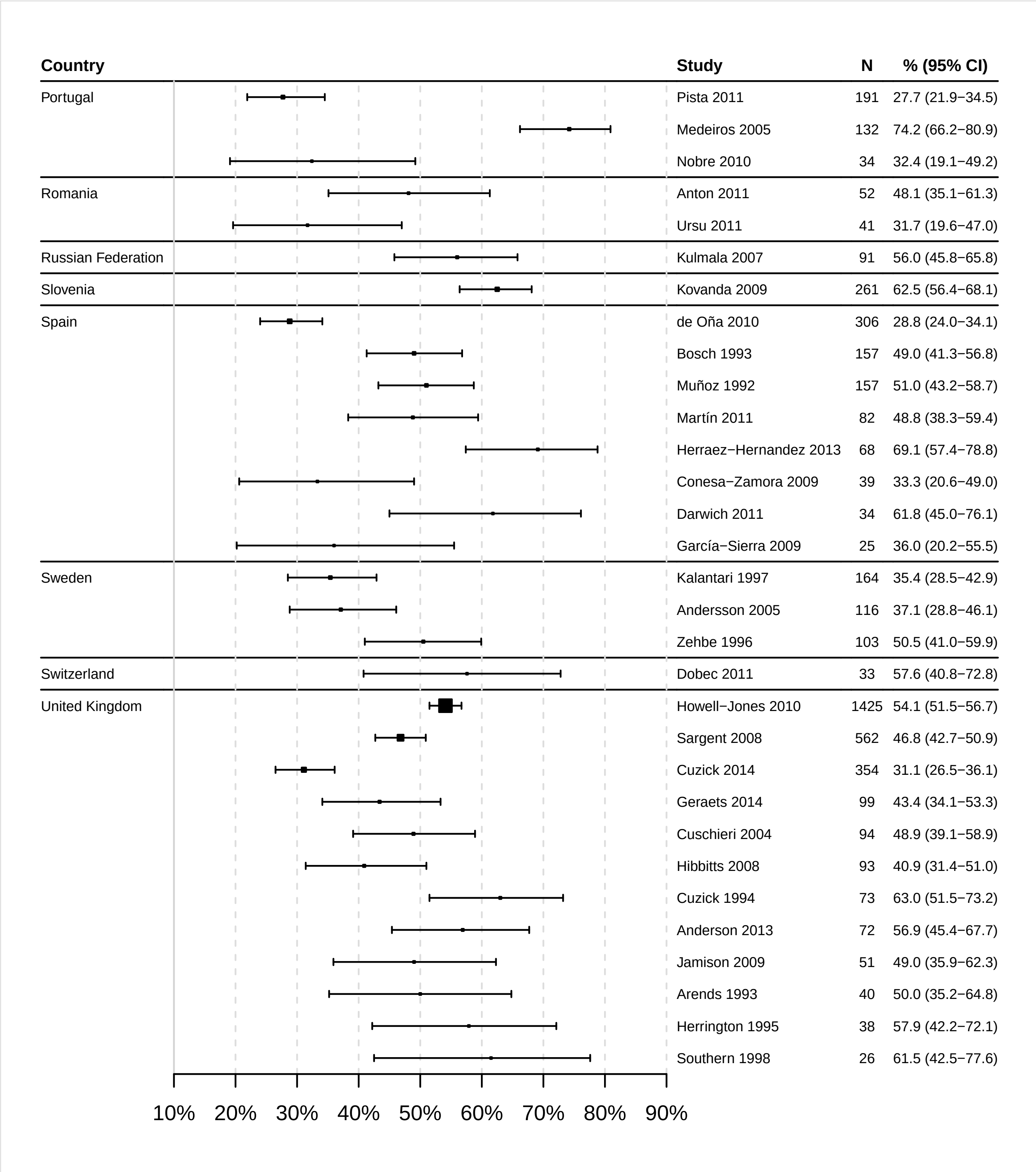


Country	Study	N	% (95% CI)
Greece	Kroupis 2007	26	50.0 (32.1−67.9)
Hungary	Szoke 2003	75	57.3 (46.1−67.9)
Iceland	Sigurdsson 2007	441	51.2 (46.6−55.9)
Ireland	Keegan 2014	242	69.4 (63.4−74.9)
	Murphy 2003	64	78.1 (66.6−86.5)
	Butler 2000	27	70.4 (51.5−84.1)
	O'Leary 1998	20	95.0 (76.4−99.1)
Italy	Spinillo 2014	1344	48.4 (45.8−51.1)
	Carozzi 2010	529	62.9 (58.8−67.0)
	Carozzi 2014	204	53.9 (47.1−60.6)
	Zerbini 2001	89	50.6 (40.4−60.7)
	Sandri 2009	76	73.7 (62.8−82.3)
	Agarossi 2009	73	53.4 (42.1−64.4)
	Gargiulo 2007	67	38.8 (28.0−50.8)
	Tornesello 2006	65	47.7 (36.0−59.6)
	Venturoli 2008	56	60.7 (47.6−72.4)
	Laconi 2000	36	50.0 (34.5−65.5)
	Capra 2008	14	42.9 (21.4−67.4)
Latvia	Kulmala 2007	91	56.0 (45.8−65.8)
Lithuania	Simanaviciene 2014	157	51.6 (43.8−59.3)
	Gudleviciene 2005	29	48.3 (31.4−65.6)
Netherlands	Tang 2009	253	70.8 (64.9−76.0)
	Bulkmans 2005	236	60.6 (54.2−66.6)
	Reesink−Peters 2001	216	56.9 (50.3−63.4)
	Cornelissen 1992	89	52.8 (42.5−62.8)
	Prinsen 2007	41	51.2 (36.5−65.7)
	van Duin 2003	20	65.0 (43.3−81.9)
Norway	Roberts 2006	885	44.1 (40.8−47.4)
	Sjoeborg 2010	630	20.6 (17.7−24.0)
	Kraus 2004	67	49.3 (37.7−60.9)
	Molden 2005	25	28.0 (14.3−47.6)
Portugal	Pista 2013	518	55.6 (51.3−59.8)

Data updated on 22 May 2023 (data as of 30 Jun 2015)

The samples for HPV testing come from cervical specimens (fresh/fixed biopsies or exfoliated cells)
[a] Number of women tested
Data Sources: See references in Section 9 References.

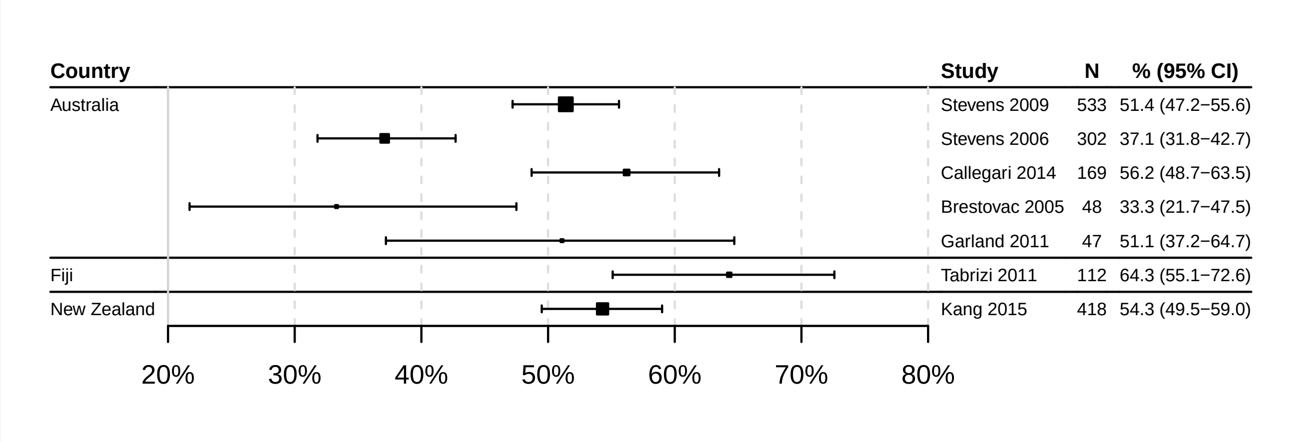
Figure 71: Prevalence of HPV 16 among women with high-grade cervical lesions in Europe by country and study (continued)



Data updated on 22 May 2023 (data as of 30 Jun 2015)

The samples for HPV testing come from cervical specimens (fresh/fixed biopsies or exfoliated cells)
[a] Number of women tested
Data Sources: See references in Section 9 References.

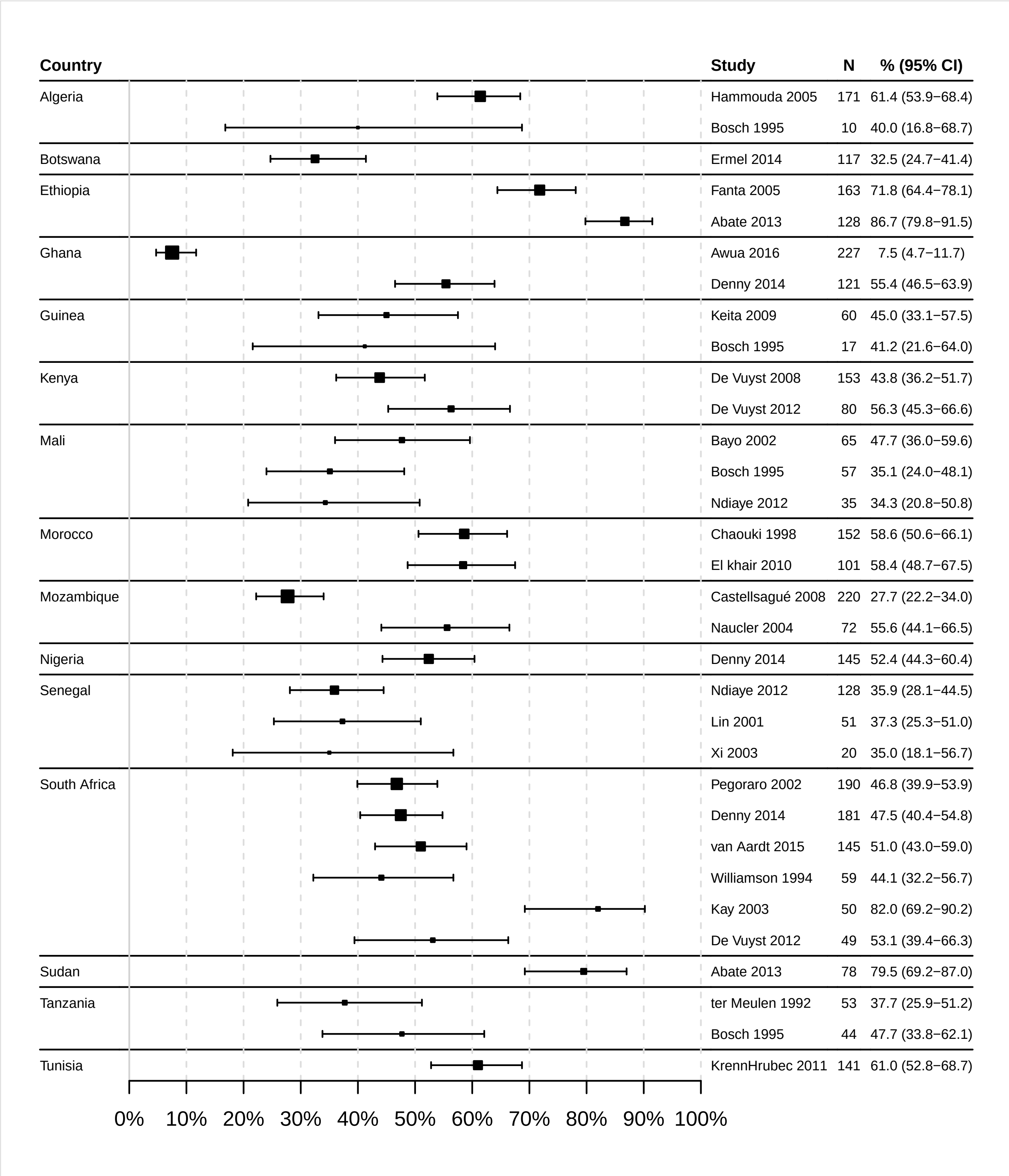
Figure 72: Prevalence of HPV 16 among women with high-grade cervical lesions in Oceania by country and study



Data updated on 22 May 2023 (data as of 30 Jun 2015)

The samples for HPV testing come from cervical specimens (fresh/fixed biopsies or exfoliated cells)
[a] Number of women tested
Data Sources: See references in Section 9 References.

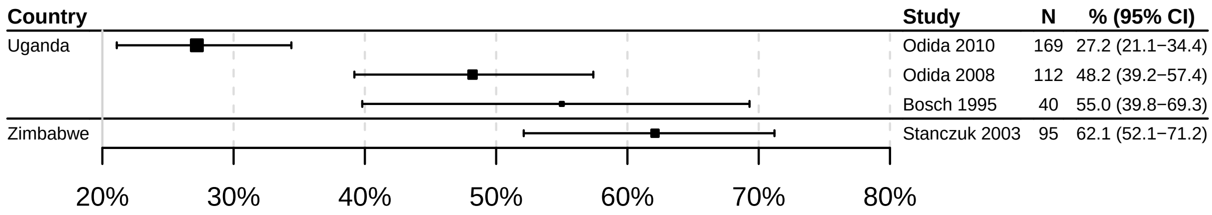
Figure 73: Prevalence of HPV 16 among women with invasive cervical cancer in Africa by country and study



Data updated on 22 May 2023 (data as of 30 Jun 2015)

The samples for HPV testing come from cervical specimens (fresh/fixed biopsies or exfoliated cells)
[a] Number of women tested
Data Sources: See references in Section 9 References.

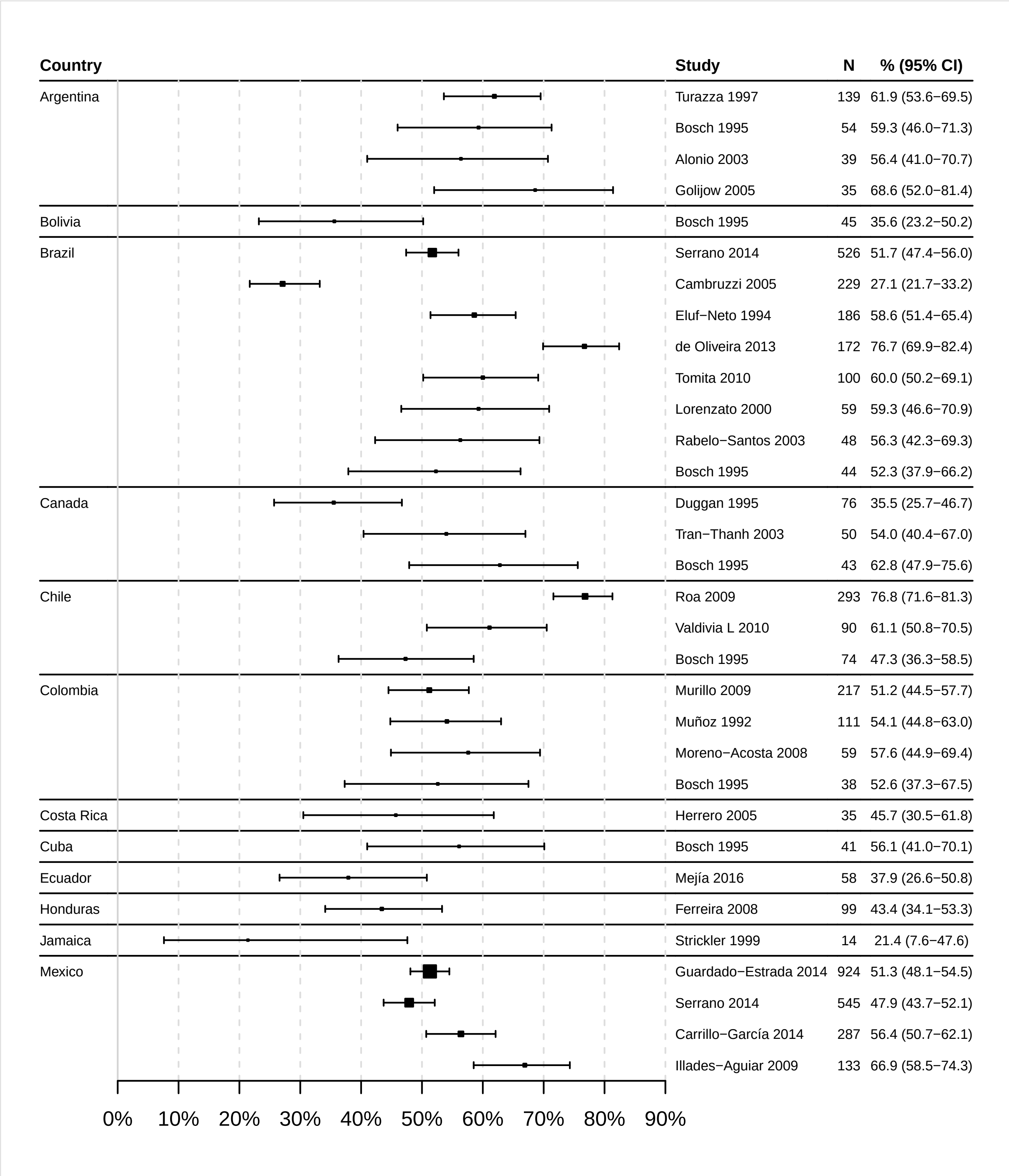
Figure 73: Prevalence of HPV 16 among women with invasive cervical cancer in Africa by country and study (continued)



Data updated on 22 May 2023 (data as of 30 Jun 2015)

The samples for HPV testing come from cervical specimens (fresh/fixed biopsies or exfoliated cells)
[a] Number of women tested
Data Sources: See references in Section 9 References.

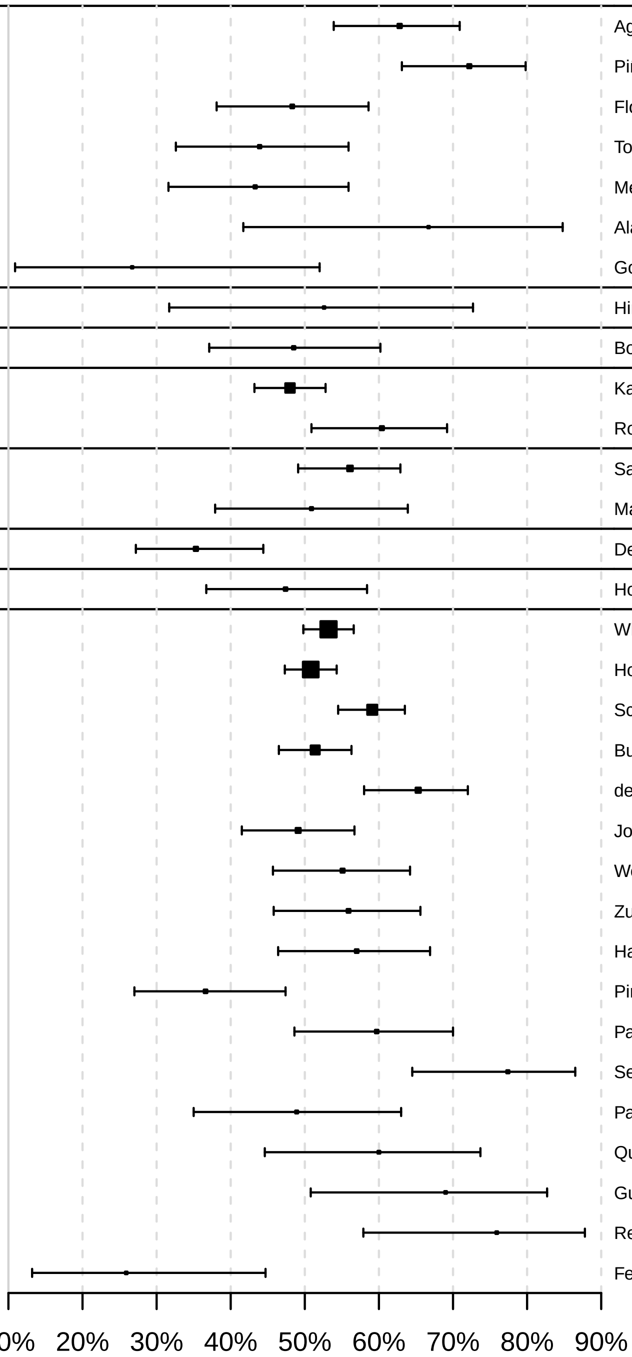
Figure 74: Prevalence of HPV 16 among women with invasive cervical cancer in the Americas by country and study



Data updated on 22 May 2023 (data as of 30 Jun 2015)

The samples for HPV testing come from cervical specimens (fresh/fixed biopsies or exfoliated cells)
[a] Number of women tested
Data Sources: See references in Section 9 References.

Figure 74: Prevalence of HPV 16 among women with invasive cervical cancer in the Americas by country and study (continued)

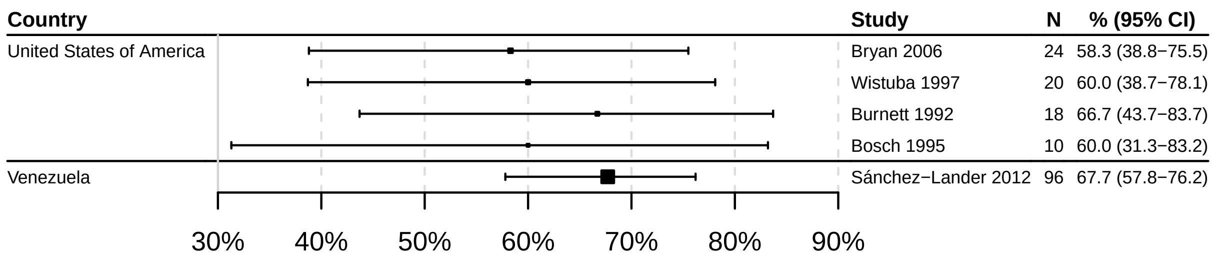


Country	Study	N	% (95% CI)
Mexico	Aguilar−Lemarroy 2015	121	62.8 (53.9−70.9)
	Piña−Sánchez 2006	108	72.2 (63.1−79.8)
	Flores−Miramontes 2015	87	48.3 (38.1−58.6)
	Torroella−Kouri 1998	66	43.9 (32.6−55.9)
	Meyer 1998	60	43.3 (31.6−55.9)
	Alarcón−Romero 2009	15	66.7 (41.7−84.8)
	González−Losa 2004	15	26.7 (10.9−52.0)
Nicaragua	Hindryckx 2006	19	52.6 (31.7−72.7)
Panama	Bosch 1995	68	48.5 (37.1−60.2)
Paraguay	Kasamatsu 2012	417	48.0 (43.2−52.8)
	Rolón 2000	106	60.4 (50.9−69.2)
Peru	Santos 2001	196	56.1 (49.1−62.9)
	Martorell 2012	53	50.9 (37.9−63.9)
Suriname	De Boer 2005	116	35.3 (27.2−44.4)
Trinidad and Tobago	Hosein 2013	78	47.4 (36.7−58.4)
United States of America	Wheeler 2009	808	53.2 (49.8−56.6)
	Hopenhayn 2014	777	50.8 (47.3−54.3)
	Schwartz 2001	452	59.1 (54.5−63.5)
	Burger 1996	393	51.4 (46.5−56.3)
	de Sanjose 2010	173	65.3 (58.0−72.0)
	Joste 2015	163	49.1 (41.5−56.7)
	Wentzensen 2009	107	55.1 (45.7−64.2)
	Zuna 2007	93	55.9 (45.8−65.6)
	Hariri 2012	86	57.0 (46.4−66.9)
	Pirog 2000	82	36.6 (27.0−47.4)
	Patel 2009	77	59.7 (48.6−70.0)
	Sebbelov 2000	53	77.4 (64.5−86.5)
	Paquette 1993	45	48.9 (35.0−63.0)
	Quint 2009	40	60.0 (44.6−73.7)
	Guo 2007	29	69.0 (50.8−82.7)
	Resnick 1990	29	75.9 (57.9−87.8)
	Ferguson 1998	27	25.9 (13.2−44.7)

Data updated on 22 May 2023 (data as of 30 Jun 2015)

The samples for HPV testing come from cervical specimens (fresh/fixed biopsies or exfoliated cells)
[a] Number of women tested
Data Sources: See references in Section 9 References.

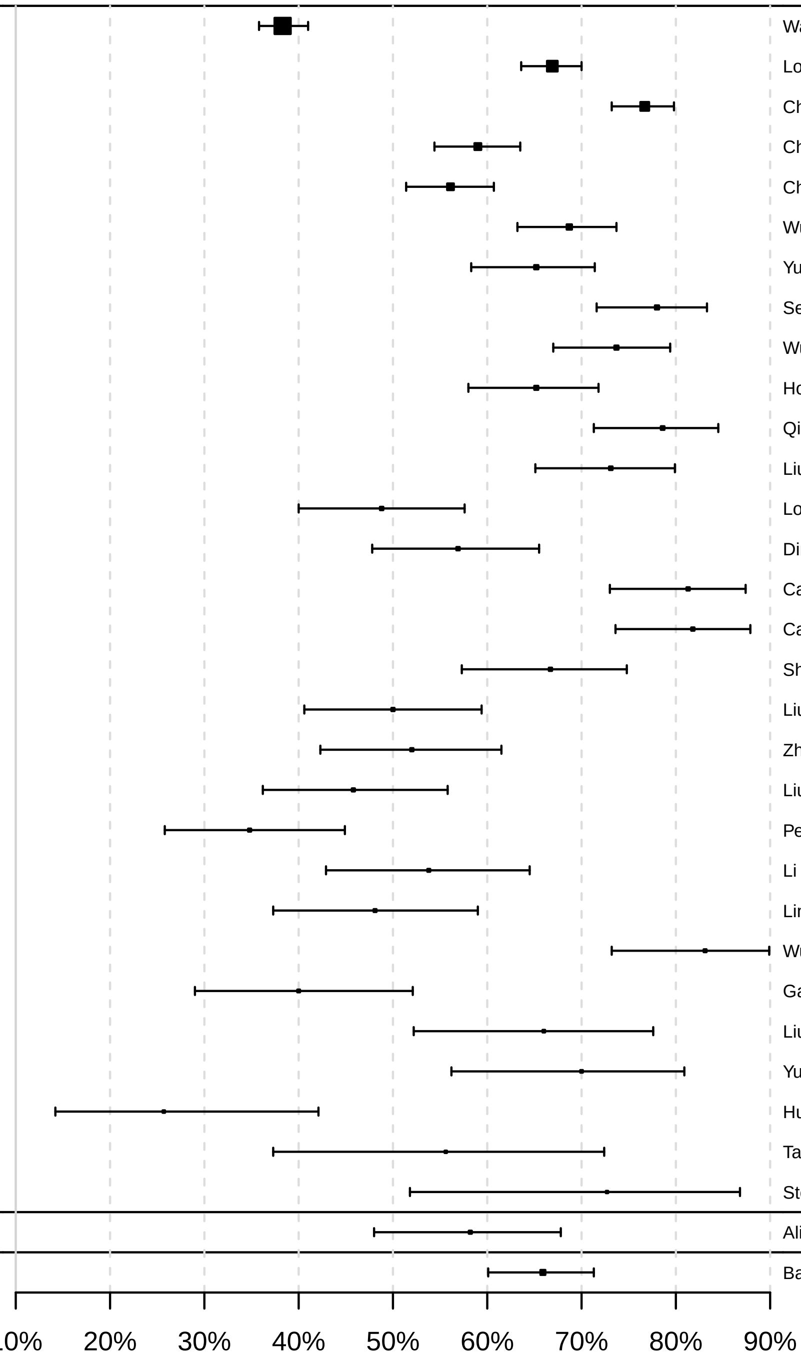
Figure 74: Prevalence of HPV 16 among women with invasive cervical cancer in the Americas by country and study (continued)



Data updated on 22 May 2023 (data as of 30 Jun 2015)

The samples for HPV testing come from cervical specimens (fresh/fixed biopsies or exfoliated cells)
[a] Number of women tested
Data Sources: See references in Section 9 References.

Figure 75: Prevalence of HPV 16 among women with invasive cervical cancer in Asia by country and study

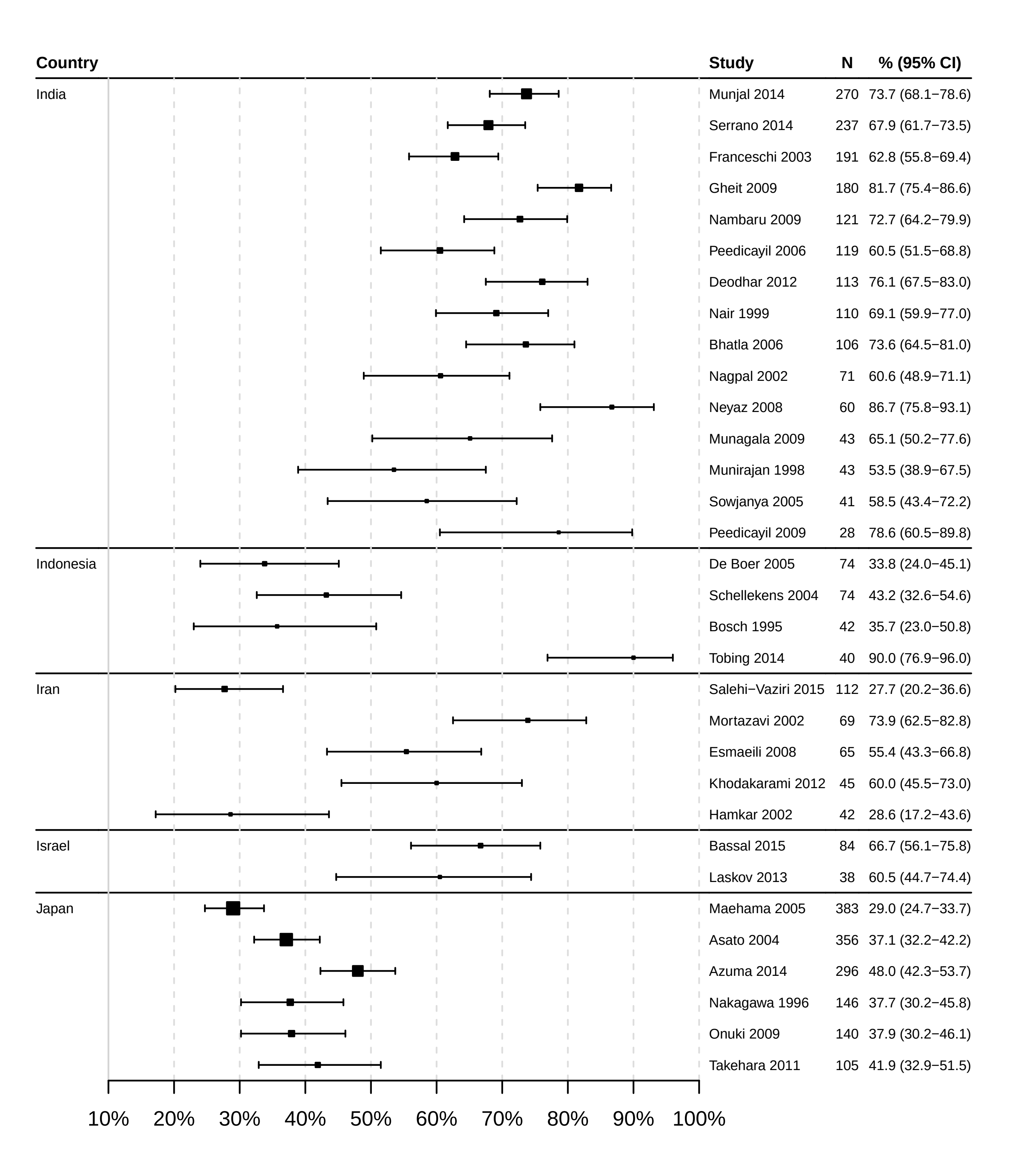


Country	Study	N	% (95% CI)
China	Wang 2015	1336	38.3 (35.8−41.0)
	Lo 2002	809	66.9 (63.6−70.0)
	Chen 2009	630	76.7 (73.2−79.8)
	Chan 2012	444	59.0 (54.4−63.5)
	Chan 2009	435	56.1 (51.4−60.7)
	Wu 2008	300	68.7 (63.2−73.7)
	Yuan 2011	198	65.2 (58.3−71.4)
	Serrano 2014	191	78.0 (71.6−83.3)
	Wu 2008	190	73.7 (67.0−79.4)
	Hong 2008	181	65.2 (58.0−71.8)
	Qiu 2007	145	78.6 (71.3−84.5)
	Liu 2010	134	73.1 (65.1−79.9)
	Lo 2001	121	48.8 (40.0−57.6)
	Ding 2014	116	56.9 (47.8−65.5)
	Cai 2009	112	81.3 (73.0−87.4)
	Cai 2008	110	81.8 (73.6−87.9)
	Shah 2009	108	66.7 (57.3−74.8)
	Liu 2004	106	50.0 (40.6−59.4)
	Zhao 2008	100	52.0 (42.3−61.5)
	Liu 2008	96	45.8 (36.2−55.8)
	Peng 1991	92	34.8 (25.8−44.9)
	Li 2013	78	53.8 (42.9−64.5)
	Lin 1998	77	48.1 (37.3−59.0)
	Wu 2009	77	83.1 (73.2−89.9)
	Gao 2003	65	40.0 (29.0−52.1)
	Liu 2005	50	66.0 (52.2−77.6)
	Yu 2003	50	70.0 (56.2−80.9)
	Huang 1997	35	25.7 (14.2−42.1)
	Tao 2006	27	55.6 (37.3−72.4)
	Stephen 2000	22	72.7 (51.8−86.8)
Georgia	Alibegashvili 2011	91	58.2 (48.0−67.8)
India	Basu 2009	273	65.9 (60.1−71.3)

Data updated on 22 May 2023 (data as of 30 Jun 2015)

The samples for HPV testing come from cervical specimens (fresh/fixed biopsies or exfoliated cells)
[a] Number of women tested
Data Sources: See references in Section 9 References.

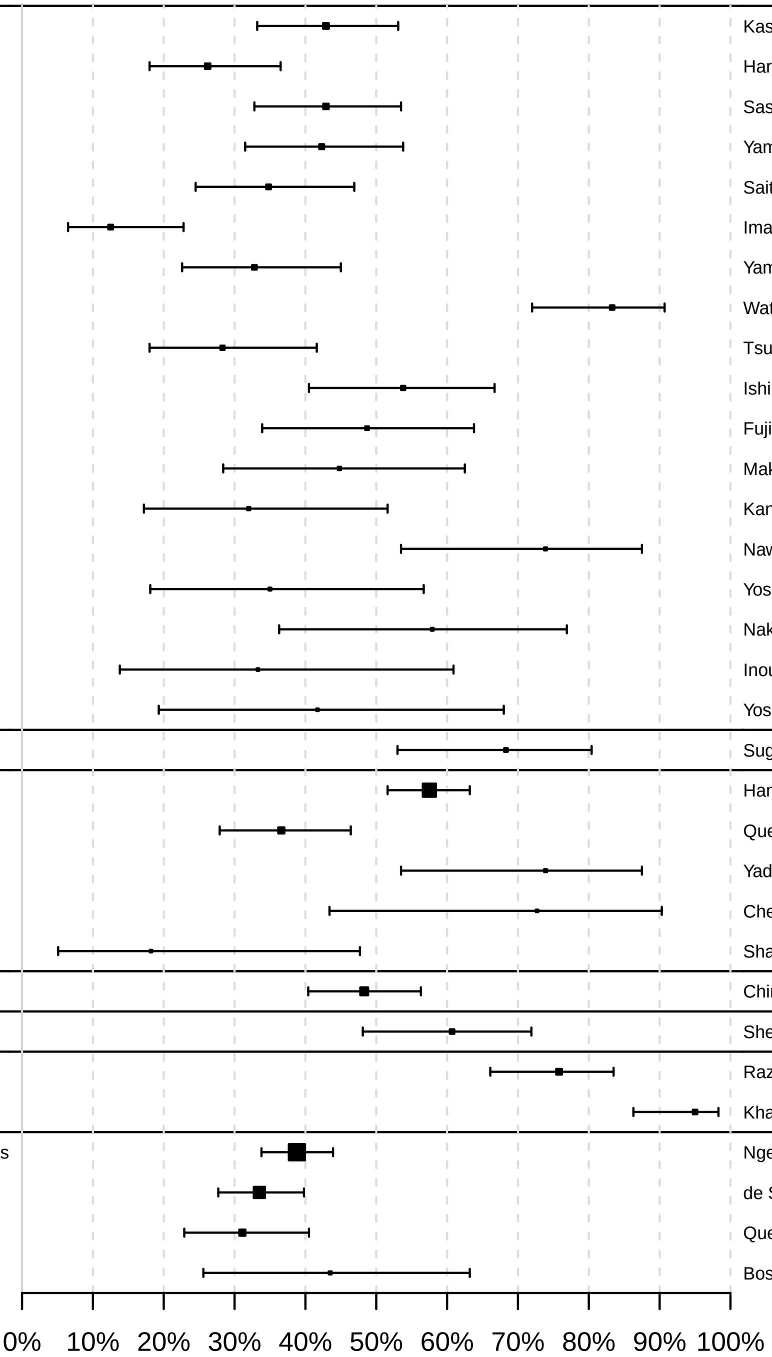
Figure 75: Prevalence of HPV 16 among women with invasive cervical cancer in Asia by country and study (continued)



Data updated on 22 May 2023 (data as of 30 Jun 2015)

The samples for HPV testing come from cervical specimens (fresh/fixed biopsies or exfoliated cells)
[a] Number of women tested
Data Sources: See references in Section 9 References.

Figure 75: Prevalence of HPV 16 among women with invasive cervical cancer in Asia by country and study (continued)

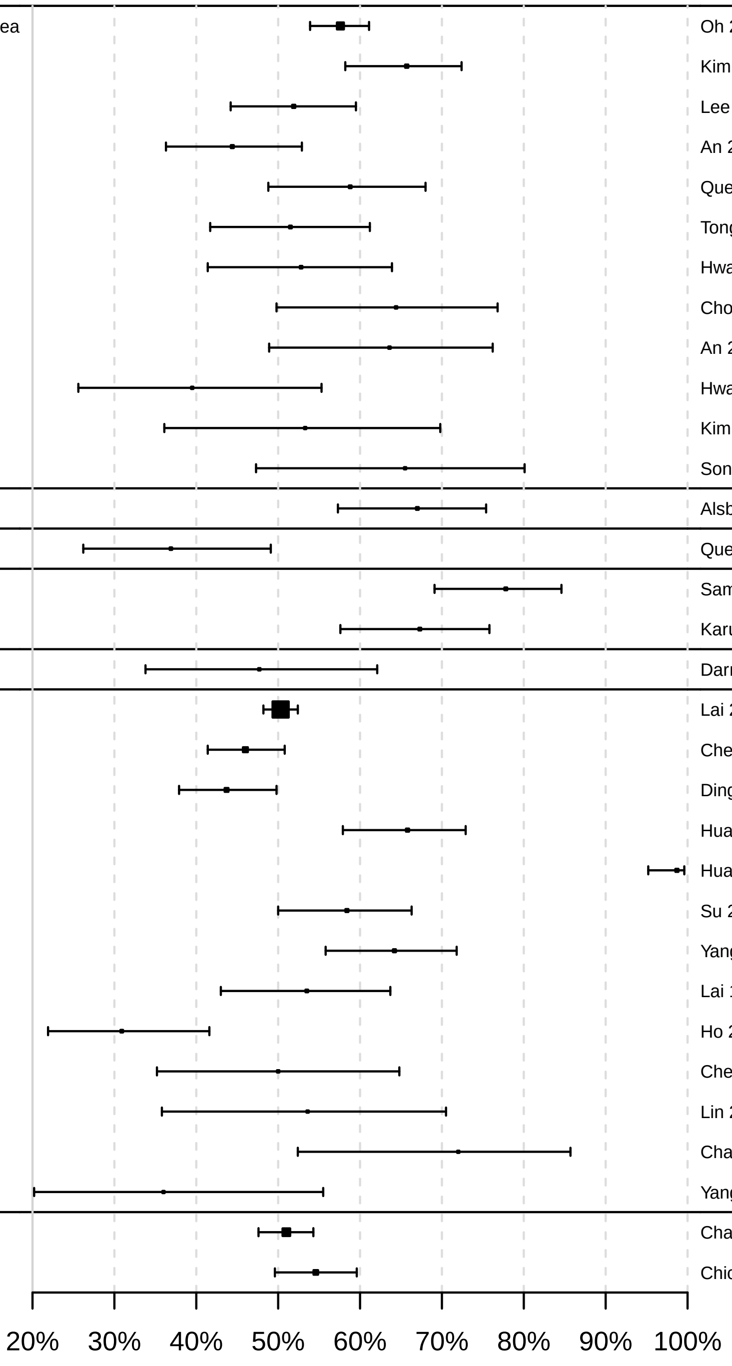


Country	Study	N	% (95% CI)
Japan	Kashiwabara 1992	91	42.9 (33.2−53.1)
	Harima 2002	84	26.2 (18.0−36.5)
	Sasagawa 2001	84	42.9 (32.8−53.5)
	Yamasaki 2011	71	42.3 (31.5−53.8)
	Saito 2000	66	34.8 (24.5−46.9)
	Imajoh 2012	64	12.5 (6.5−22.8)
	Yamakawa 1994	64	32.8 (22.6−45.0)
	Watari 2011	60	83.3 (72.0−90.7)
	Tsuda 2003	53	28.3 (18.0−41.6)
	Ishikawa 2001	52	53.8 (40.5−66.7)
	Fujinaga 1991	39	48.7 (33.9−63.8)
	Maki 1991	29	44.8 (28.4−62.5)
	Kanao 2004	25	32.0 (17.2−51.6)
	Nawa 1995	23	73.9 (53.5−87.5)
	Yoshida 2009	20	35.0 (18.1−56.7)
	Nakagawa 2002	19	57.9 (36.3−76.9)
	Inoue 2006	12	33.3 (13.8−60.9)
	Yoshida 2004	12	41.7 (19.3−68.0)
Jordan	Sughayer 2010	41	68.3 (53.0−80.4)
Malaysia	Hamzi Abdul Raub 2014	280	57.5 (51.6−63.2)
	Quek 2013	101	36.6 (27.9−46.4)
	Yadav 1995	23	73.9 (53.5−87.5)
	Cheah 2008	11	72.7 (43.4−90.3)
	Sharifah 2009	11	18.2 (5.1−47.7)
Mongolia	Chimeddorj 2008	147	48.3 (40.4−56.3)
Nepal	Sherpa 2010	61	60.7 (48.1−71.9)
Pakistan	Raza 2010	91	75.8 (66.1−83.5)
	Khan 2007	60	95.0 (86.3−98.3)
Philippines	Ngelangel 1998	356	38.8 (33.8−43.9)
	de Sanjose 2010	230	33.5 (27.7−39.8)
	Quek 2013	103	31.1 (22.9−40.5)
	Bosch 1995	23	43.5 (25.6−63.2)

Data updated on 22 May 2023 (data as of 30 Jun 2015)

The samples for HPV testing come from cervical specimens (fresh/fixed biopsies or exfoliated cells)
[a] Number of women tested
Data Sources: See references in Section 9 References.

Figure 75: Prevalence of HPV 16 among women with invasive cervical cancer in Asia by country and study (continued)

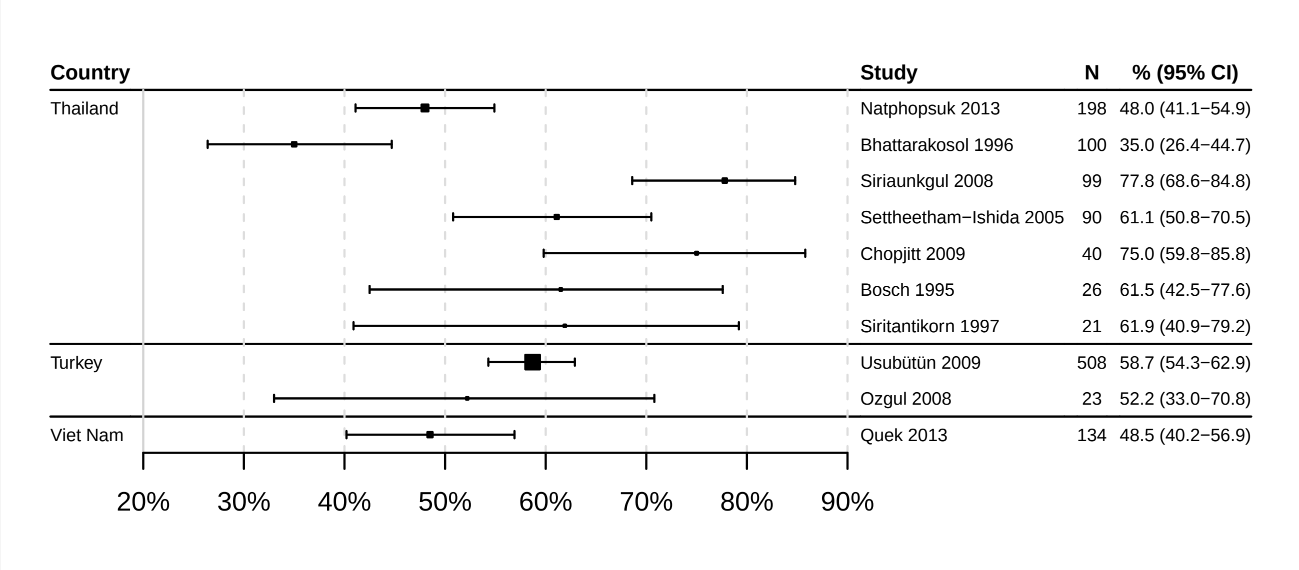


Country	Study	N	% (95% CI)
Republic of Korea	Oh 2010	735	57.6 (53.9−61.1)
	Kim 2009	169	65.7 (58.2−72.4)
	Lee 2007	160	51.9 (44.2−59.5)
	An 2005	135	44.4 (36.3−52.9)
	Quek 2013	97	58.8 (48.8−68.0)
	Tong 2007	97	51.5 (41.7−61.2)
	Hwang 2003	72	52.8 (41.4−63.9)
	Cho 2003	45	64.4 (49.8−76.8)
	An 2003	44	63.6 (48.9−76.2)
	Hwang 1999	38	39.5 (25.6−55.3)
	Kim 1995	30	53.3 (36.1−69.8)
	Song 2007	29	65.5 (47.3−80.1)
Saudi Arabia	Alsbeih 2011	100	67.0 (57.3−75.4)
Singapore	Quek 2013	65	36.9 (26.2−49.1)
Sri Lanka	Samarawickrema 2011	108	77.8 (69.1−84.6)
	Karunaratne 2014	98	67.3 (57.6−75.8)
Syria	Darnel 2010	44	47.7 (33.8−62.1)
Taiwan	Lai 2007	2106	50.3 (48.2−52.4)
	Chen 1994	430	46.0 (41.4−50.8)
	Ding 2008	263	43.7 (37.9−49.8)
	Huang 2004	152	65.8 (57.9−72.9)
	Huang 2004	149	98.7 (95.2−99.6)
	Su 2007	137	58.4 (50.0−66.3)
	Yang 1997	134	64.2 (55.8−71.8)
	Lai 1999	86	53.5 (43.0−63.7)
	Ho 2005	81	30.9 (21.9−41.6)
	Chen 1993	40	50.0 (35.2−64.8)
	Lin 2005	28	53.6 (35.8−70.5)
	Chao 2009	25	72.0 (52.4−85.7)
	Yang 2004	25	36.0 (20.2−55.5)
Thailand	Chansaenroj 2014	832	51.0 (47.6−54.3)
	Chichareon 1998	377	54.6 (49.6−59.6)

Data updated on 22 May 2023 (data as of 30 Jun 2015)

The samples for HPV testing come from cervical specimens (fresh/fixed biopsies or exfoliated cells)
[a] Number of women tested
Data Sources: See references in Section 9 References.

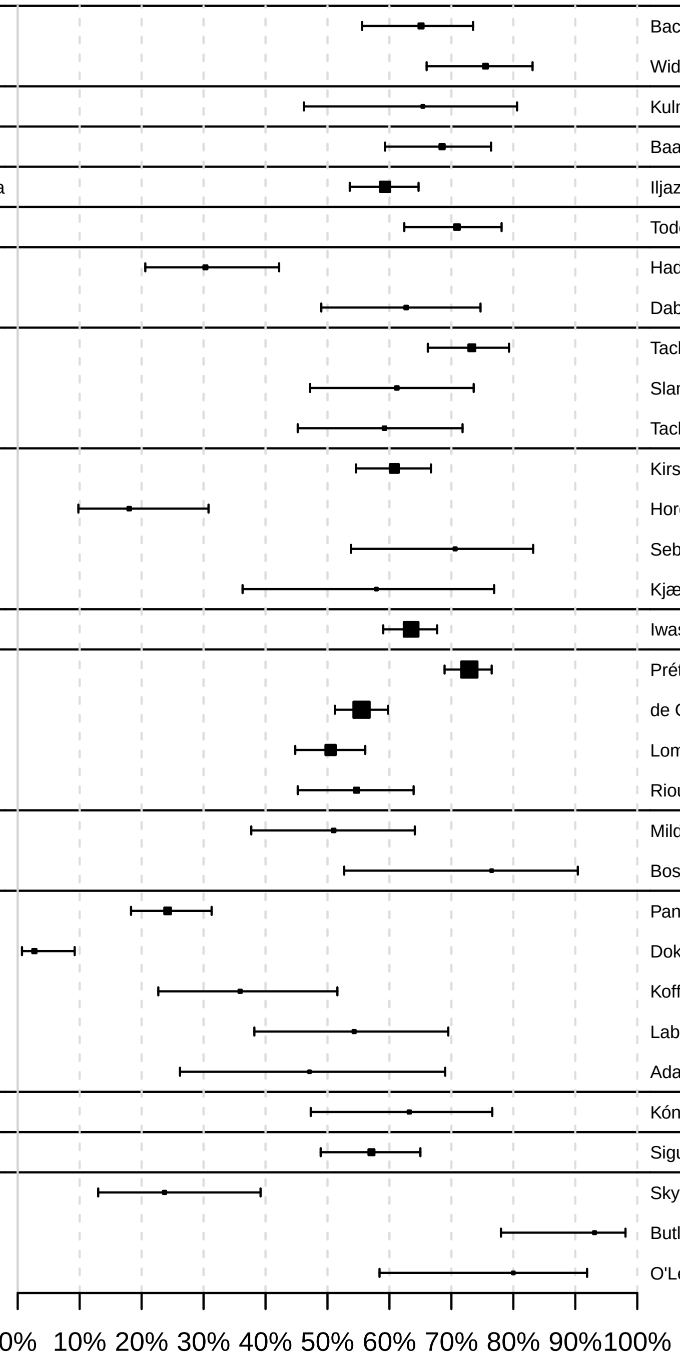
Figure 75: Prevalence of HPV 16 among women with invasive cervical cancer in Asia by country and study (continued)



Data updated on 22 May 2023 (data as of 30 Jun 2015)

The samples for HPV testing come from cervical specimens (fresh/fixed biopsies or exfoliated cells)
[a] Number of women tested
Data Sources: See references in Section 9 References.

Figure 76: Prevalence of HPV 16 among women with invasive cervical cancer in Europe by country and study

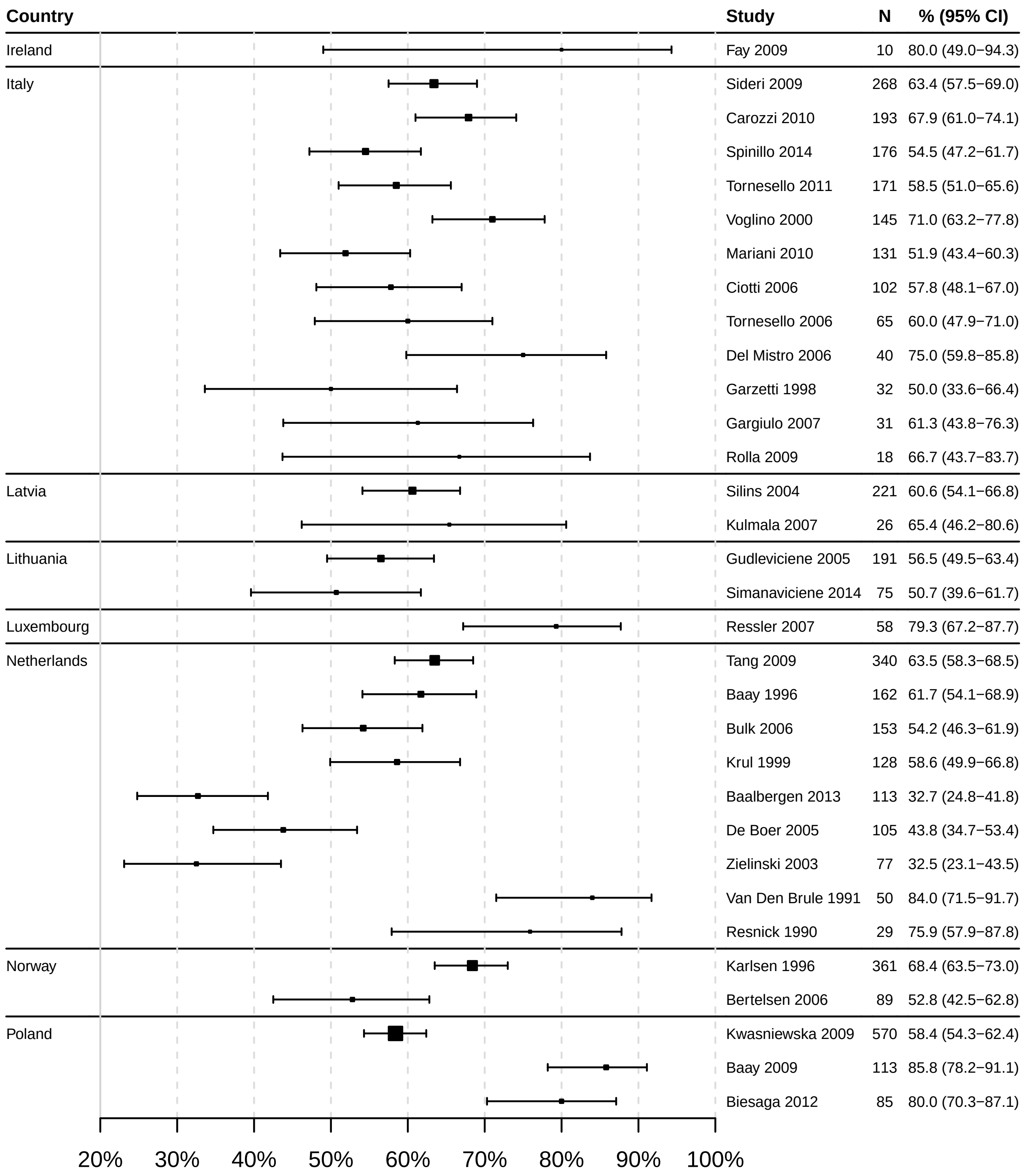


Country	Study	N	% (95% CI)
Austria	Bachtiary 2002	106	65.1 (55.6−73.5)
	Widschwendter 2003	94	75.5 (66.0−83.1)
Belarus	Kulmala 2007	26	65.4 (46.2−80.6)
Belgium	Baay 2001	111	68.5 (59.3−76.4)
Bosnia and Herzegovina	Iljazovic 2014	297	59.3 (53.6−64.7)
Bulgaria	Todorova 2010	127	70.9 (62.4−78.1)
Croatia	Hadzisejdic 2006	66	30.3 (20.6−42.2)
	Dabic 2008	51	62.7 (49.0−74.7)
Czechia	Tachezy 2011	172	73.3 (66.2−79.3)
	Slama 2009	49	61.2 (47.2−73.6)
	Tachezy 1999	49	59.2 (45.2−71.8)
Denmark	Kirschner 2013	245	60.8 (54.6−66.7)
	Hording 1997	50	18.0 (9.8−30.8)
	Sebbelov 2000	34	70.6 (53.8−83.2)
	Kjær 2014	19	57.9 (36.3−76.9)
Finland	Iwasawa 1996	460	63.5 (59.0−67.7)
France	Prétet 2008	516	72.9 (68.9−76.5)
	de Cremoux 2009	515	55.5 (51.2−59.8)
	Lombard 1998	297	50.5 (44.8−56.1)
	Riou 1990	106	54.7 (45.2−63.9)
Germany	Milde−Langosch 1995	51	51.0 (37.7−64.1)
	Bosch 1995	17	76.5 (52.7−90.4)
Greece	Panotopoulou 2007	165	24.2 (18.3−31.3)
	Dokianakis 1999	75	2.7 (0.7−9.2)
	Koffa 1994	39	35.9 (22.7−51.6)
	Labropoulou 1997	35	54.3 (38.2−69.5)
	Adamopoulou 2009	17	47.1 (26.2−69.0)
Hungary	Kónya 1995	38	63.2 (47.3−76.6)
Iceland	Sigurdsson 2007	140	57.1 (48.9−65.0)
Ireland	Skyldberg 1999	38	23.7 (13.0−39.2)
	Butler 2000	29	93.1 (78.0−98.1)
	O'Leary 1998	20	80.0 (58.4−91.9)

Data updated on 22 May 2023 (data as of 30 Jun 2015)

The samples for HPV testing come from cervical specimens (fresh/fixed biopsies or exfoliated cells)
[a] Number of women tested
Data Sources: See references in Section 9 References.

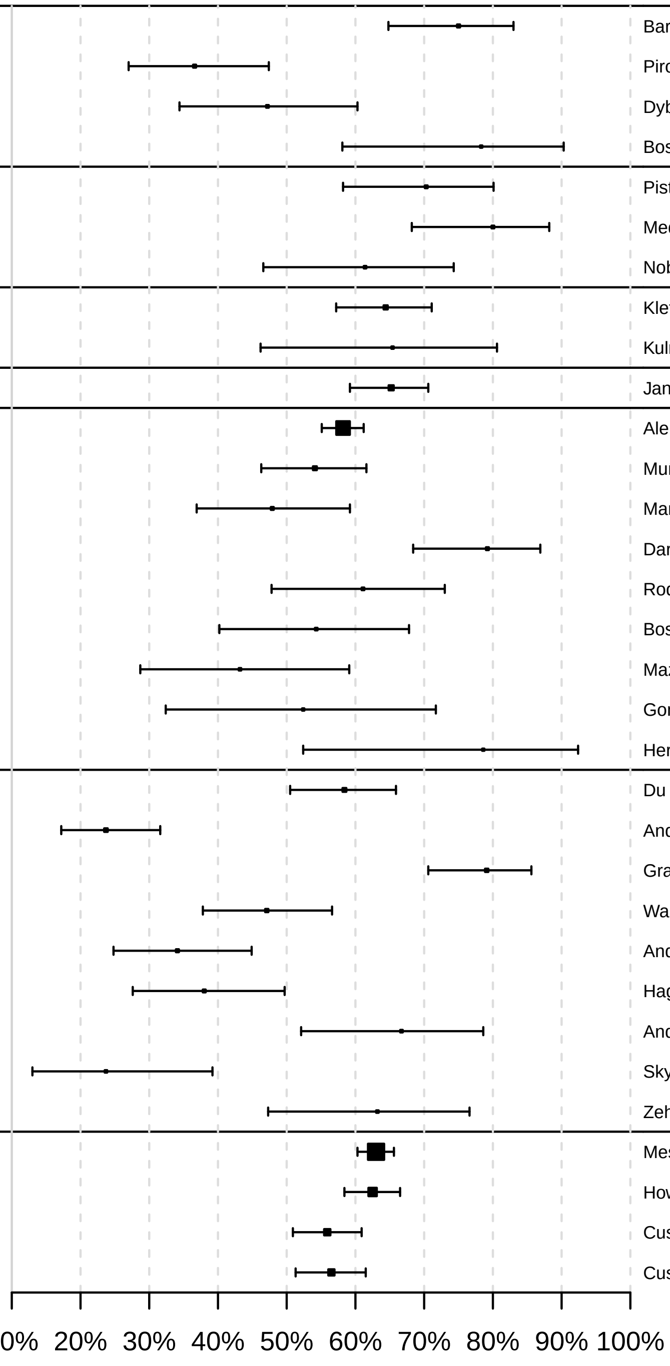
Figure 76: Prevalence of HPV 16 among women with invasive cervical cancer in Europe by country and study (continued)



Data updated on 22 May 2023 (data as of 30 Jun 2015)

The samples for HPV testing come from cervical specimens (fresh/fixed biopsies or exfoliated cells)
[a] Number of women tested
<u>Data Sources</u>: See references in Section 9 References.

Figure 76: Prevalence of HPV 16 among women with invasive cervical cancer in Europe by country and study (continued)

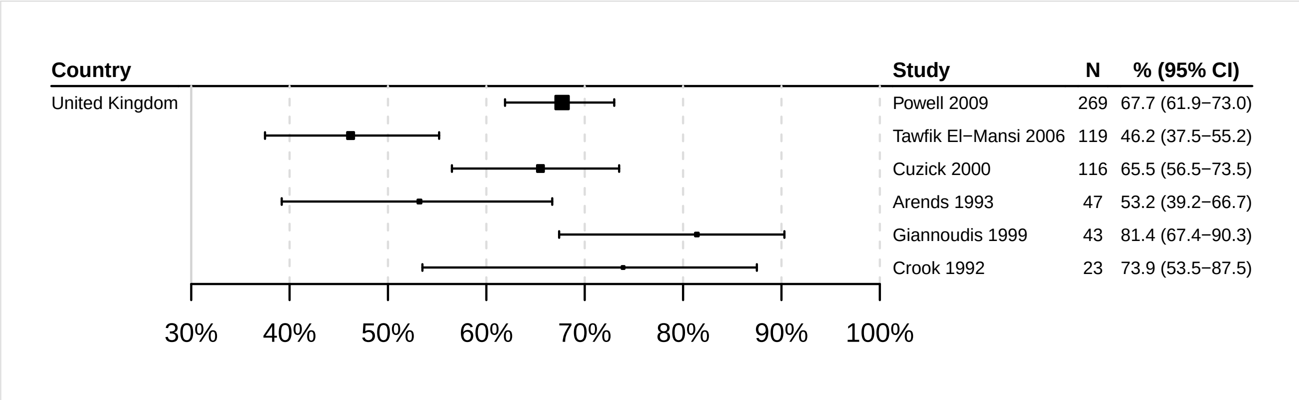


Country	Study	N	% (95% CI)
Poland	Bardin 2008	84	75.0 (64.8−83.0)
	Pirog 2000	82	36.6 (27.0−47.4)
	Dybikowska 2002	53	47.2 (34.4−60.3)
	Bosch 1995	23	78.3 (58.1−90.3)
Portugal	Pista 2013	64	70.3 (58.2−80.1)
	Medeiros 2005	60	80.0 (68.2−88.2)
	Nobre 2010	44	61.4 (46.6−74.3)
Russian Federation	Kleter 1999	180	64.4 (57.2−71.1)
	Kulmala 2007	26	65.4 (46.2−80.6)
Slovenia	Jancar 2009	264	65.2 (59.2−70.6)
Spain	Alemany 2012	1012	58.2 (55.1−61.2)
	Muñoz 1992	159	54.1 (46.3−61.6)
	Martró 2012	73	47.9 (36.9−59.2)
	Darwich 2011	72	79.2 (68.4−86.9)
	Rodriguez 1998	54	61.1 (47.8−73.0)
	Bosch 1995	46	54.3 (40.2−67.8)
	Mazarico 2012	37	43.2 (28.7−59.1)
	González−Bosquet 2008	21	52.4 (32.4−71.7)
	Herraez−Hernandez 2013	14	78.6 (52.4−92.4)
Sweden	Du 2011	154	58.4 (50.5−65.9)
	Andersson 2001	131	23.7 (17.2−31.6)
	Graflund 2004	110	79.1 (70.6−85.6)
	Wallin 1999	104	47.1 (37.8−56.6)
	Andersson 2003	82	34.1 (24.8−44.9)
	Hagmar 1992	71	38.0 (27.6−49.7)
	Andersson 2005	45	66.7 (52.1−78.6)
	Skyldberg 1999	38	23.7 (13.0−39.2)
	Zehbe 1997	38	63.2 (47.3−76.6)
United Kingdom	Mesher 2015	1235	63.0 (60.3−65.6)
	Howell−Jones 2010	555	62.5 (58.4−66.5)
	Cuschieri 2014	370	55.9 (50.9−60.9)
	Cuschieri 2010	363	56.5 (51.3−61.5)

Data updated on 22 May 2023 (data as of 30 Jun 2015)

The samples for HPV testing come from cervical specimens (fresh/fixed biopsies or exfoliated cells)
[a] Number of women tested
Data Sources: See references in Section 9 References.

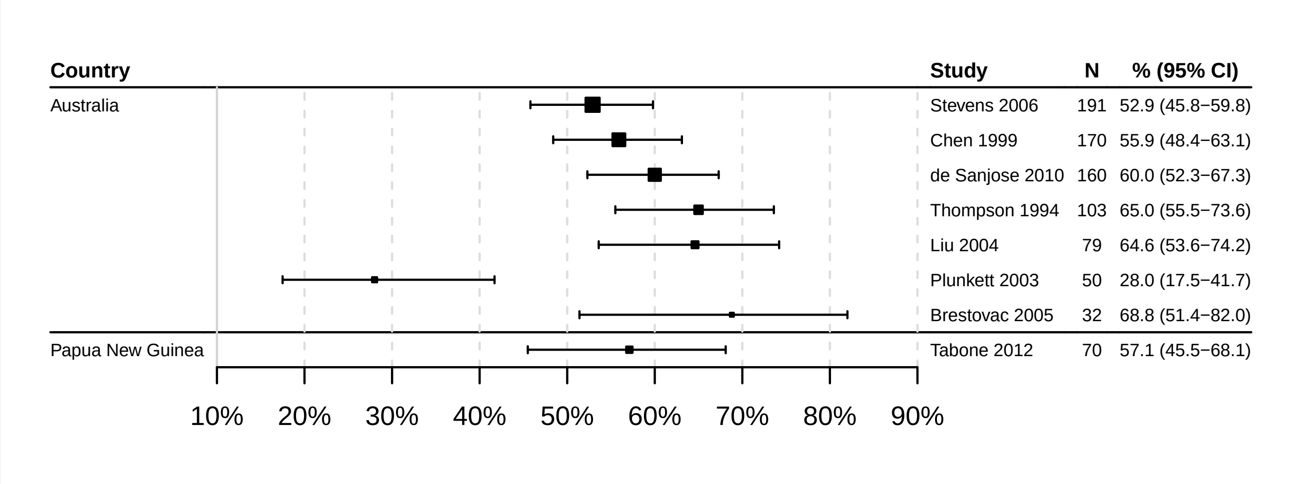
Figure 76: Prevalence of HPV 16 among women with invasive cervical cancer in Europe by country and study (continued)



Data updated on 22 May 2023 (data as of 30 Jun 2015)

The samples for HPV testing come from cervical specimens (fresh/fixed biopsies or exfoliated cells)
[a] Number of women tested
Data Sources: See references in Section 9 References.

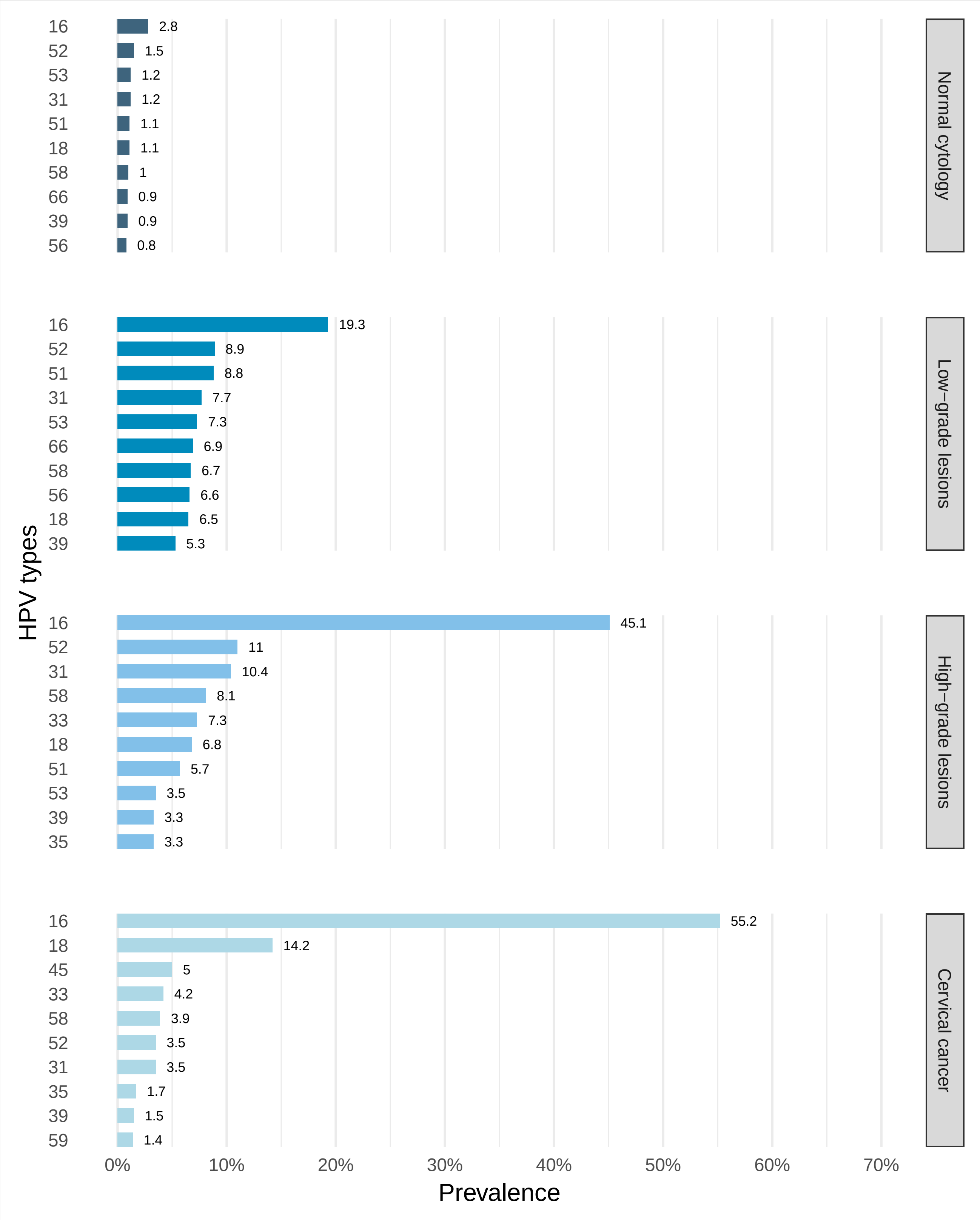
Figure 77: Prevalence of HPV 16 among women with invasive cervical cancer in Oceania by country and study



Data updated on 22 May 2023 (data as of 30 Jun 2015)

The samples for HPV testing come from cervical specimens (fresh/fixed biopsies or exfoliated cells)
[a] Number of women tested
Data Sources: See references in Section 9 References.

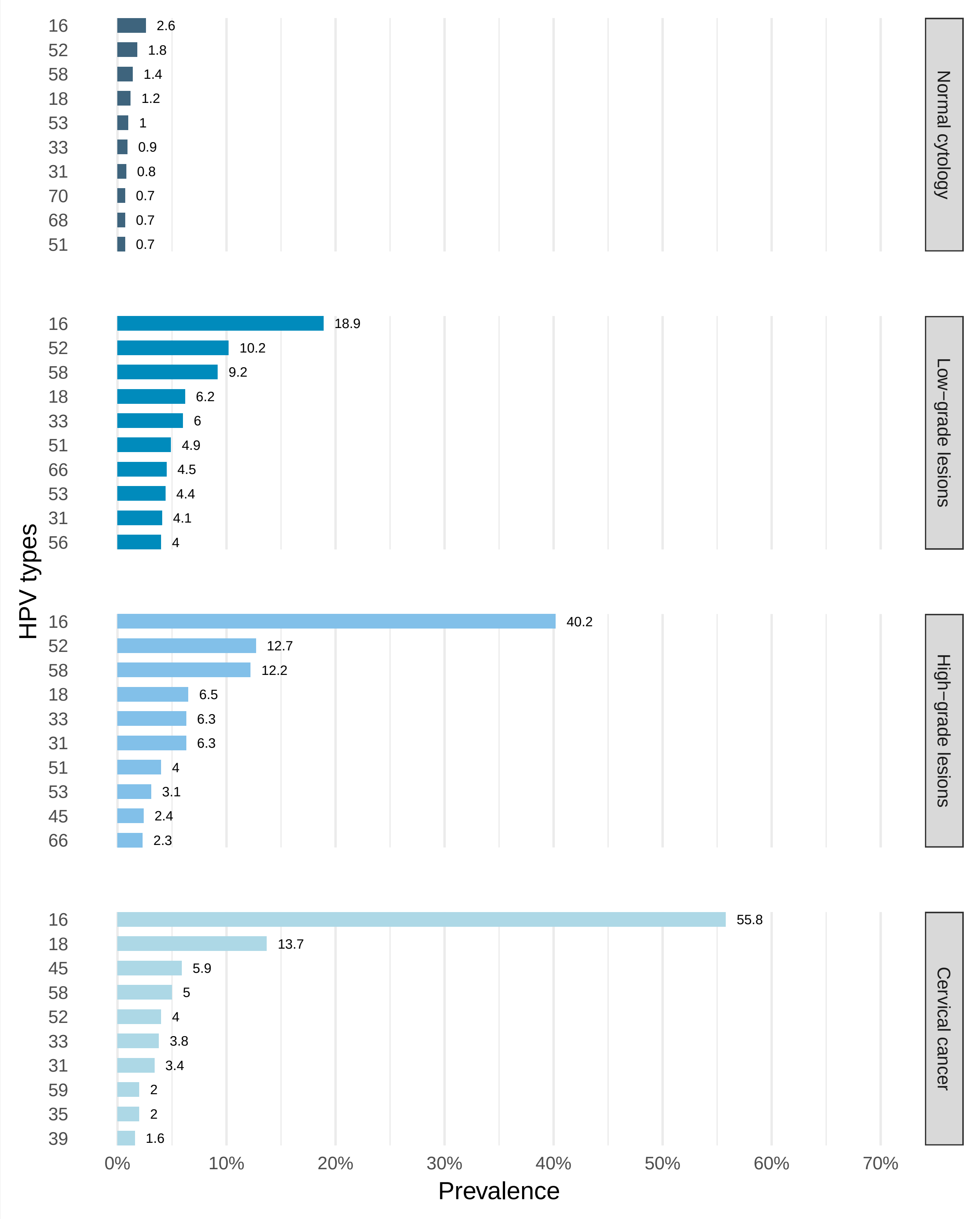
Figure 78: Comparison of the ten most frequent HPV oncogenic types in the **World** among women with and without cervical lesions



Data updated on 22 May 2023 (data as of 30 Jun 2015)

Data Sources: See references in Section 9 References.

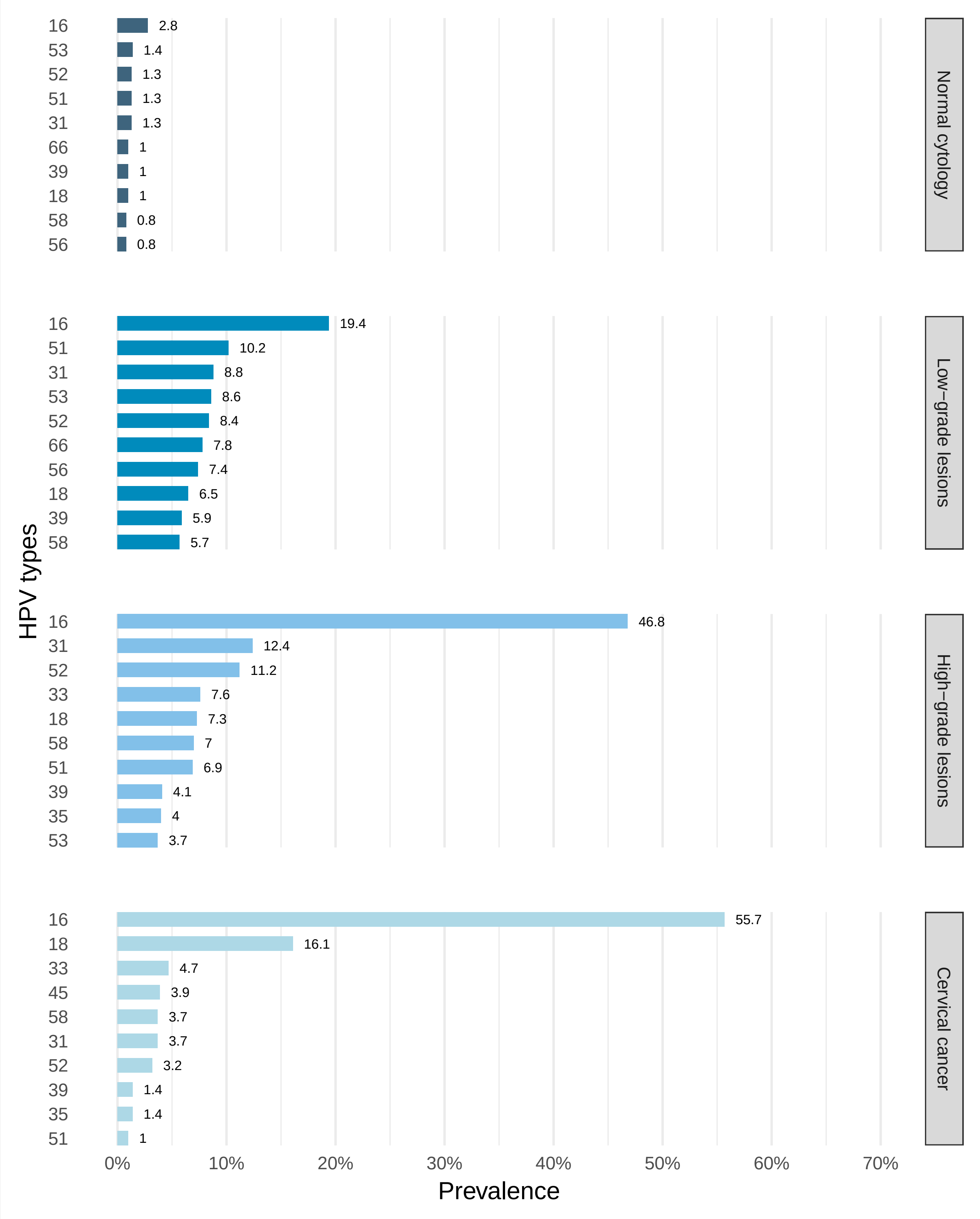
Figure 79: Comparison of the ten most frequent HPV oncogenic types in **less developed regions** among women with and without cervical lesions



Data updated on 22 May 2023 (data as of 30 Jun 2015)

Data Sources: See references in Section 9 References.

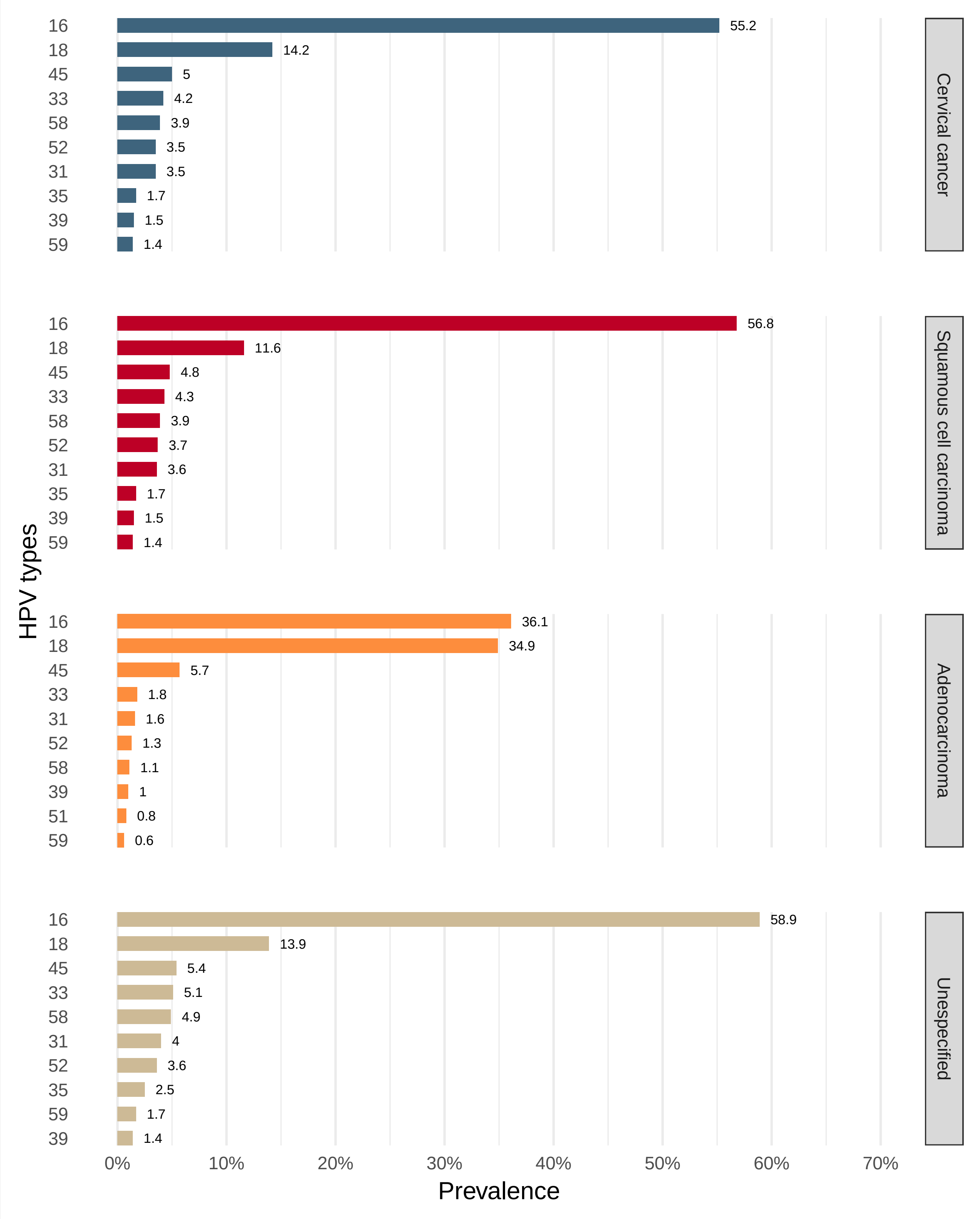
Figure 80: Comparison of the ten most frequent HPV oncogenic types in **more developed regions** among women with and without cervical lesions



Data updated on 22 May 2023 (data as of 30 Jun 2015)

Data Sources: See references in Section 9 References.

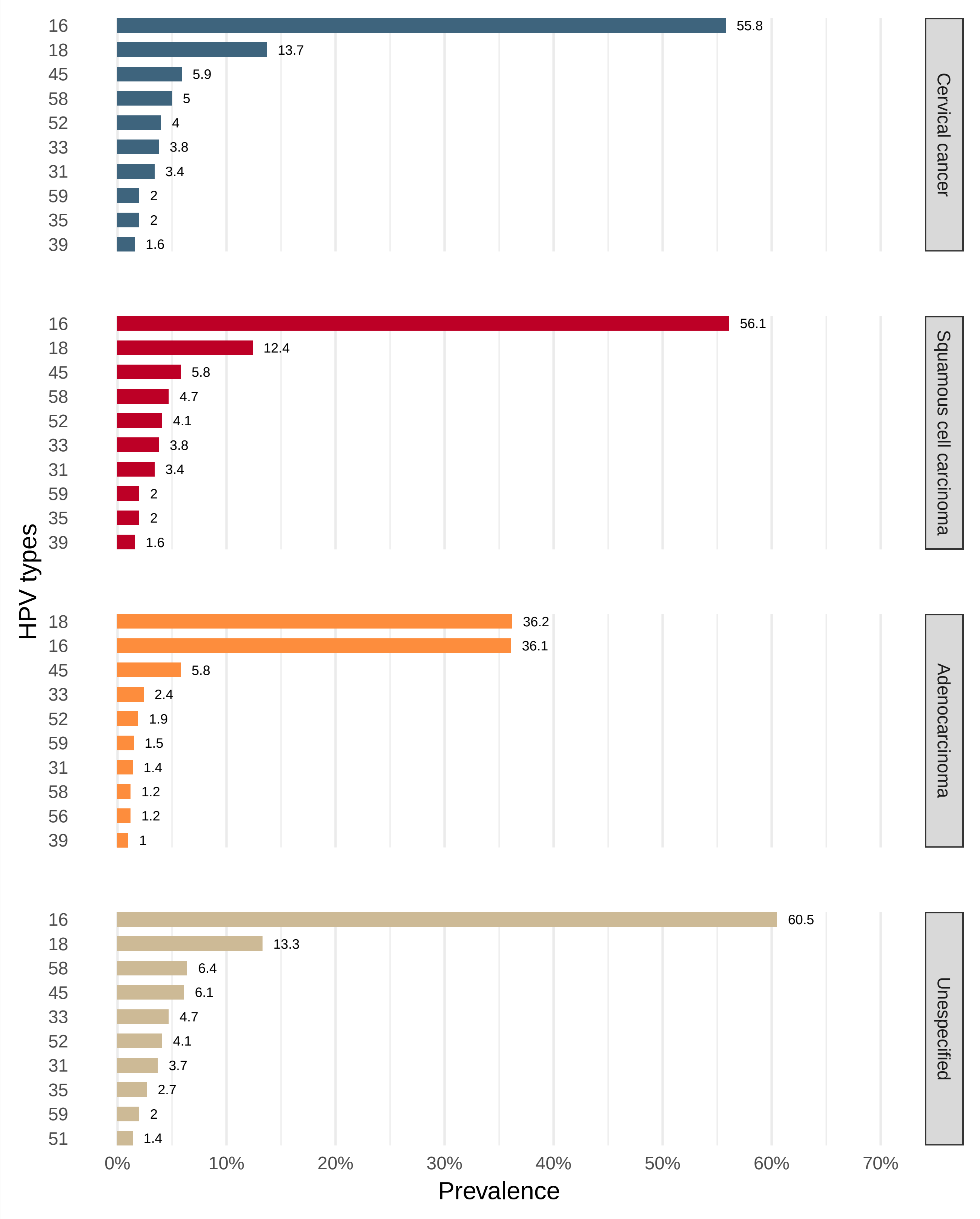
Figure 81: Comparison of the ten most frequent HPV oncogenic types in the **World** among women with invasive cervical cancer by histology



Data updated on 22 May 2023 (data as of 30 Jun 2015)

* No data available. No more types than shown were tested or were positive
Data Sources: See references in Section 9 References.

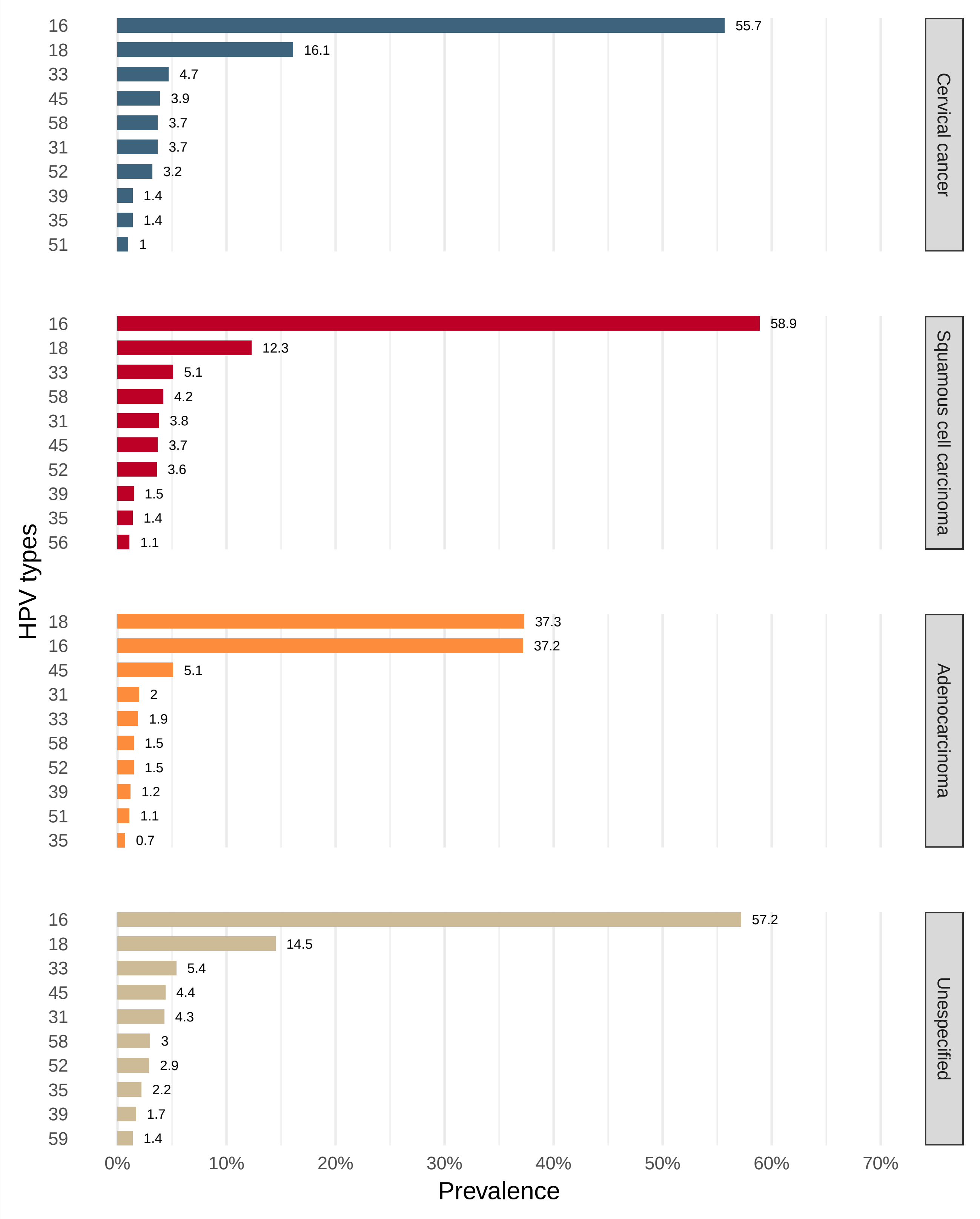
Figure 82: Comparison of the ten most frequent HPV oncogenic types in **less developed regions** among women with invasive cervical cancer by histology



Data updated on 22 May 2023 (data as of 30 Jun 2015)

* No data available. No more types than shown were tested or were positive
Data Sources: See references in Section 9 References.

Figure 83: Comparison of the ten most frequent HPV oncogenic types in **more developed regions** among women with invasive cervical cancer by histology



Data updated on 22 May 2023 (data as of 30 Jun 2015)

* No data available. No more types than shown were tested or were positive
Data Sources: See references in Section 9 References.

Table 29: Type-specific HPV prevalence in women with normal cervical cytology, precancerous cervical lesions and invasive cervical cancer in the World

HPV Type	Normal cytology		Low-grade lesions		High-grade lesions		Cervical cancer	
	No. tested	HPV Prev % (95% CI)	No. tested	HPV Prev % (95% CI)	No. tested	HPV Prev % (95% CI)	No. tested	HPV Prev % (95% CI)
ONCOGENIC HPV TYPES								
High-risk HPV types								
16	453,184	2.8 (2.8-2.9)	38,177	19.3 (18.9-19.7)	50,202	45.1 (44.6-45.5)	58,796	55.2 (54.8-55.6)
18	440,810	1.1 (1.1-1.1)	37,748	6.5 (6.2-6.7)	49,743	6.8 (6.6-7.0)	58,380	14.2 (13.9-14.4)
31	415,367	1.2 (1.2-1.2)	36,170	7.7 (7.4-7.9)	48,538	10.4 (10.2-10.7)	52,417	3.5 (3.4-3.7)
33	413,075	0.7 (0.7-0.7)	35,733	4.7 (4.5-4.9)	48,592	7.3 (7.1-7.6)	53,804	4.2 (4.0-4.3)
35	396,307	0.5 (0.5-0.5)	31,095	3.0 (2.8-3.2)	44,703	3.3 (3.2-3.5)	47,634	1.7 (1.6-1.8)
39	389,537	0.9 (0.8-0.9)	28,820	5.3 (5.0-5.5)	43,746	3.3 (3.2-3.5)	46,420	1.5 (1.3-1.6)
45	394,993	0.7 (0.7-0.7)	31,289	3.2 (3.0-3.4)	44,801	3.0 (2.8-3.2)	47,048	5.0 (4.8-5.2)
51	387,242	1.1 (1.1-1.1)	27,270	8.8 (8.4-9.1)	43,888	5.7 (5.5-6.0)	44,674	1.0 (0.9-1.1)
52	394,732	1.5 (1.4-1.5)	29,132	8.9 (8.6-9.2)	44,723	11.0 (10.7-11.3)	49,978	3.5 (3.3-3.6)
56	393,968	0.8 (0.7-0.8)	28,534	6.6 (6.3-6.9)	43,134	2.5 (2.3-2.6)	46,019	1.0 (0.9-1.1)
58	403,023	1.0 (1.0-1.0)	30,214	6.7 (6.4-7.0)	44,798	8.1 (7.9-8.4)	50,814	3.9 (3.8-4.1)
59	380,168	0.7 (0.7-0.7)	27,049	3.9 (3.6-4.1)	41,553	2.1 (1.9-2.2)	46,703	1.4 (1.3-1.5)
Probable/possible carcinogen								
26	172,084	0.1 (0.1-0.1)	13,939	0.5 (0.4-0.7)	22,694	0.6 (0.5-0.7)	29,492	0.3 (0.2-0.3)
30	56,013	0.2 (0.2-0.3)	3,812	0.5 (0.3-0.8)	2,645	0.3 (0.1-0.5)	14,830	0.3 (0.2-0.4)
34	127,467	0.1 (0.1-0.1)	8,069	0.3 (0.2-0.4)	12,671	0.1 (0.0-0.2)	21,808	0.1 (0.1-0.1)
53	252,159	1.2 (1.2-1.2)	23,411	7.3 (7.0-7.7)	33,241	3.5 (3.3-3.7)	33,940	0.5 (0.5-0.6)
66	311,898	0.9 (0.9-0.9)	26,939	6.9 (6.6-7.2)	39,439	2.6 (2.5-2.8)	40,132	0.4 (0.4-0.5)
67	147,847	0.4 (0.3-0.4)	11,095	1.7 (1.5-2.0)	18,527	0.9 (0.8-1.0)	22,752	0.3 (0.2-0.3)
68	377,775	0.6 (0.6-0.6)	25,619	2.8 (2.6-3.0)	37,760	1.9 (1.8-2.1)	40,197	0.8 (0.8-0.9)
69	146,851	0.1 (0.1-0.1)	11,362	0.3 (0.2-0.4)	19,768	0.3 (0.2-0.4)	20,369	0.2 (0.1-0.3)
70	219,134	0.8 (0.7-0.8)	17,375	2.0 (1.8-2.2)	25,627	1.3 (1.2-1.5)	33,062	0.2 (0.2-0.3)
73	167,487	0.4 (0.4-0.4)	16,732	2.2 (2.0-2.4)	23,450	1.6 (1.4-1.7)	28,944	0.5 (0.4-0.6)
82	190,793	0.2 (0.2-0.3)	16,470	1.5 (1.4-1.7)	25,864	1.9 (1.7-2.0)	30,216	0.2 (0.1-0.2)
85	74,475	0.1 (0.1-0.2)	3,801	0.3 (0.2-0.5)	7,905	0.2 (0.1-0.3)	-	-
97	1,751	0.1 (0.0-0.3)	-	-	-	-	781	0.1 (0.0-0.7)
LOW RISK HPV TYPES								
6	418,946	0.9 (0.8-0.9)	26,981	6.2 (5.9-6.5)	34,563	2.3 (2.2-2.5)	38,282	0.5 (0.4-0.5)
11	406,162	0.5 (0.4-0.5)	26,179	2.9 (2.7-3.1)	33,547	1.3 (1.2-1.5)	38,386	0.4 (0.4-0.5)
32	70,519	0.1 (0.1-0.2)	977	0.1 (0.0-0.6)	-	-	2,925	0.1 (0.0-0.2)
40	186,634	0.3 (0.3-0.3)	4,379	1.5 (1.2-1.9)	11,872	0.4 (0.3-0.5)	23,350	0.0 (0.0-0.0)
42	326,078	0.6 (0.5-0.6)	4,932	7.1 (6.4-7.8)	9,543	1.3 (1.1-1.6)	25,715	0.2 (0.2-0.3)
43	259,930	0.2 (0.2-0.2)	3,258	1.7 (1.3-2.2)	5,549	0.4 (0.3-0.6)	21,312	0.1 (0.0-0.1)
44	326,418	0.5 (0.5-0.5)	5,764	5.7 (5.1-6.3)	11,841	2.0 (1.7-2.2)	24,243	0.2 (0.2-0.3)
54	205,468	0.9 (0.8-0.9)	3,316	2.2 (1.8-2.8)	11,907	1.3 (1.1-1.5)	25,201	0.2 (0.2-0.3)
55	-	-	-	-	-	-	-	-
57	61,283	0.0 (0.0-0.0)	1,021	0.2 (0.1-0.7)	2,194	0.3 (0.2-0.7)	6,780	0.0 (0.0-0.1)
61	143,959	0.8 (0.8-0.9)	3,183	1.8 (1.4-2.3)	9,032	1.2 (1.0-1.5)	23,686	0.3 (0.2-0.3)
62	111,832	1.4 (1.4-1.5)	2,713	4.2 (3.5-5.0)	8,236	1.7 (1.4-1.9)	7,058	0.4 (0.3-0.5)
64	-	-	-	-	-	-	-	-
71	133,034	0.3 (0.3-0.3)	2,175	0.7 (0.5-1.2)	8,901	0.2 (0.2-0.4)	9,332	0.2 (0.1-0.3)
72	137,305	0.4 (0.4-0.4)	2,320	0.6 (0.3-1.0)	8,256	0.2 (0.2-0.4)	10,013	0.1 (0.1-0.2)
74	108,745	0.6 (0.6-0.7)	1,255	1.0 (0.6-1.8)	2,936	0.6 (0.4-1.0)	16,341	0.0 (0.0-0.1)
81	232,278	0.7 (0.7-0.8)	2,862	3.4 (2.8-4.1)	8,944	1.0 (0.8-1.2)	9,510	0.2 (0.1-0.3)
83	150,356	0.5 (0.5-0.6)	2,402	0.9 (0.6-1.3)	9,214	0.4 (0.3-0.6)	9,733	0.1 (0.1-0.2)
84	149,356	0.9 (0.8-0.9)	2,745	2.1 (1.7-2.8)	9,237	0.7 (0.6-0.9)	8,081	0.3 (0.2-0.5)
86	29,254	0.2 (0.1-0.2)	-	-	-	-	-	-
87	16,149	0.2 (0.2-0.3)	750	0.1 (0.0-0.8)	-	-	-	-
89	107,016	1.0 (0.9-1.0)	1,755	1.4 (0.9-2.0)	7,456	1.0 (0.8-1.2)	7,806	0.1 (0.1-0.3)
90	35,099	0.5 (0.4-0.6)	750	0.8 (0.4-1.7)	-	-	2,388	0.0 (0.0-0.2)
91	20,897	0.1 (0.1-0.2)	750	0.5 (0.2-1.4)	-	-	12,783	0.0 (0.0-0.1)

Data updated on 22 May 2023 (data as of 30 Jun 2015 / 30 Nov 2014)

The samples for HPV testing come from cervical specimens (fresh/fixed biopsies or exfoliated cells)
Data Sources: See references in Section 9 References.

Table 30: Type-specific HPV prevalence among invasive cervical cancer cases in the World by histology

HPV Type	Any Histology		Squamous cell carcinoma		Adenocarcinoma		Unespecified	
	No. tested	HPV Prev % (95% CI)	No. tested	HPV Prev % (95% CI)	No. tested	HPV Prev % (95% CI)	No. tested	HPV Prev % (95% CI)
ONCOGENIC HPV TYPES								
High-risk HPV types								
16	58,796	55.2 (54.8-55.6)	43,169	56.8 (56.4-57.3)	5,665	36.1 (34.8-37.3)	11,425	58.9 (58.0-59.8)
18	58,380	14.2 (13.9-14.4)	42,890	11.6 (11.3-11.9)	5,665	34.9 (33.7-36.1)	11,288	13.9 (13.2-14.5)
31	52,417	3.5 (3.4-3.7)	39,428	3.6 (3.4-3.8)	4,585	1.6 (1.3-2.0)	9,867	4.0 (3.6-4.4)
33	53,804	4.2 (4.0-4.3)	40,460	4.3 (4.1-4.5)	4,843	1.8 (1.5-2.2)	9,964	5.1 (4.7-5.5)
35	47,634	1.7 (1.6-1.8)	36,045	1.7 (1.5-1.8)	4,239	0.5 (0.3-0.8)	8,535	2.5 (2.2-2.9)
39	46,420	1.5 (1.3-1.6)	36,322	1.5 (1.4-1.7)	4,036	1.0 (0.7-1.3)	6,995	1.4 (1.2-1.8)
45	47,048	5.0 (4.8-5.2)	36,074	4.8 (4.6-5.0)	4,486	5.7 (5.1-6.4)	7,951	5.4 (4.9-5.9)
51	44,674	1.0 (0.9-1.1)	34,508	1.0 (0.9-1.1)	4,026	0.8 (0.6-1.1)	7,117	1.1 (0.9-1.4)
52	49,978	3.5 (3.3-3.6)	38,761	3.7 (3.5-3.9)	4,408	1.3 (1.0-1.7)	8,272	3.6 (3.2-4.0)
56	46,019	1.0 (0.9-1.1)	35,990	1.0 (0.9-1.1)	4,113	0.5 (0.3-0.7)	7,335	0.8 (0.7-1.1)
58	50,814	3.9 (3.8-4.1)	39,001	3.9 (3.8-4.1)	4,236	1.1 (0.9-1.5)	9,040	4.9 (4.5-5.3)
59	46,703	1.4 (1.3-1.5)	36,685	1.4 (1.3-1.5)	4,161	0.6 (0.4-0.9)	7,276	1.7 (1.5-2.1)
Probable/possible carcinogen								
26	29,492	0.3 (0.2-0.3)	-	-	-	-	-	-
30	14,830	0.3 (0.2-0.4)	12,564	0.3 (0.2-0.4)	1,072	0.1 (0.0-0.5)	1,255	0.1 (0.0-0.4)
34	21,808	0.1 (0.1-0.1)	17,035	0.1 (0.1-0.2)	1,912	0.1 (0.0-0.3)	2,996	0.1 (0.1-0.3)
53	33,940	0.5 (0.5-0.6)	-	-	-	-	-	-
66	40,132	0.4 (0.4-0.5)	31,190	0.4 (0.4-0.5)	3,714	0.2 (0.1-0.4)	6,021	0.6 (0.4-0.8)
67	22,752	0.3 (0.2-0.3)	18,225	0.3 (0.2-0.4)	1,750	0.1 (0.0-0.3)	3,231	0.2 (0.1-0.4)
68	40,197	0.8 (0.8-0.9)	30,913	0.8 (0.7-0.9)	3,694	0.3 (0.1-0.5)	5,723	0.8 (0.6-1.0)
69	20,369	0.2 (0.1-0.3)	-	-	-	-	-	-
70	33,062	0.2 (0.2-0.3)	-	-	-	-	-	-
73	28,944	0.5 (0.4-0.6)	-	-	-	-	-	-
82	30,216	0.2 (0.1-0.2)	22,855	0.2 (0.1-0.2)	2,226	0.0 (0.0-0.3)	4,912	0.3 (0.2-0.5)
85	-	-	-	-	-	-	-	-
97	781	0.1 (0.0-0.7)	781	0.1 (0.0-0.7)	-	-	-	-
LOW RISK HPV TYPES								
6	38,282	0.5 (0.4-0.5)	-	-	-	-	-	-
11	38,386	0.4 (0.4-0.5)	-	-	-	-	-	-
32	2,925	0.1 (0.0-0.2)	-	-	-	-	-	-
40	23,350	0.0 (0.0-0.0)	-	-	-	-	-	-
42	25,715	0.2 (0.2-0.3)	20,975	0.2 (0.1-0.2)	1,839	0.1 (0.0-0.3)	3,691	0.4 (0.2-0.6)
43	21,312	0.1 (0.0-0.1)	-	-	-	-	-	-
44	24,243	0.2 (0.2-0.3)	20,154	0.2 (0.1-0.3)	1,840	0.1 (0.0-0.4)	3,135	0.4 (0.2-0.7)
54	25,201	0.2 (0.2-0.3)	-	-	-	-	-	-
55	-	-	-	-	-	-	-	-
57	6,780	0.0 (0.0-0.1)	-	-	-	-	-	-
61	23,686	0.3 (0.2-0.3)	-	-	-	-	-	-
62	7,058	0.4 (0.3-0.5)	-	-	-	-	-	-
64	-	-	-	-	-	-	-	-
71	9,332	0.2 (0.1-0.3)	-	-	-	-	-	-
72	10,013	0.1 (0.1-0.2)	-	-	-	-	-	-
74	16,341	0.0 (0.0-0.1)	-	-	-	-	-	-
81	9,510	0.2 (0.1-0.3)	-	-	-	-	-	-
83	9,733	0.1 (0.1-0.2)	-	-	-	-	-	-
84	8,081	0.3 (0.2-0.5)	-	-	-	-	-	-
86	-	-	-	-	-	-	-	-
87	-	-	-	-	-	-	-	-
89	7,806	0.1 (0.1-0.3)	-	-	-	-	-	-
90	2,388	0.0 (0.0-0.2)	-	-	-	-	-	-
91	12,783	0.0 (0.0-0.1)	-	-	-	-	-	-

Data updated on 22 May 2023 (data as of 30 Jun 2015)

The samples for HPV testing come from cervical specimens (fresh/fixed biopsies or exfoliated cells)
[a] Number of women tested
[b] 95% Confidence Interval
Data Sources: See references in Section 9 References.

4.1.3 Terminology

Cytologically normal women
No abnormal cells are observed on the surface of their cervix upon cytology.

Cervical Intraepithelial Neoplasia (CIN) / Squamous Intraepithelial Lesions (SIL)
SIL and CIN are two commonly used terms to describe precancerous lesions or the abnormal growth of squamous cells observed in the cervix. SIL is an abnormal result derived from cervical cytological screening or Pap smear testing. CIN is a histological diagnosis made upon analysis of cervical tissue obtained by biopsy or surgical excision. The condition is graded as CIN 1, 2 or 3, according to the thickness of the abnormal epithelium (1/3, 2/3 or the entire thickness).

Low-grade cervical lesions (LSIL/CIN-1)
Low-grade cervical lesions are defined by early changes in size, shape, and number of abnormal cells formed on the surface of the cervix and may be referred to as mild dysplasia, LSIL, or CIN-1.

High-grade cervical lesions (HSIL/ CIN-2 / CIN-3 / CIS)
High-grade cervical lesions are defined by a large number of precancerous cells on the surface of the cervix that are distinctly different from normal cells. They have the potential to become cancerous cells and invade deeper tissues of the cervix. These lesions may be referred to as moderate or severe dysplasia, HSIL, CIN-2, CIN-3 or cervical carcinoma in situ (CIS).

Carcinoma in situ (CIS)
Preinvasive malignancy limited to the epithelium without invasion of the basement membrane. CIN 3 encompasses the squamous carcinoma in situ.

Invasive cervical cancer (ICC) / Cervical cancer
If the high-grade precancerous cells invade the basement membrane is called ICC. ICC stages range from stage I (cancer is in the cervix or uterus only) to stage IV (the cancer has spread to distant organs, such as the liver).

Invasive squamous cell carcinoma
Invasive carcinoma composed of cells resembling those of squamous epithelium.

Adenocarcinoma
Invasive tumour with glandular and squamous elements intermingled.

4.2 HPV burden in anogenital cancers other than cervix

Methods: Prevalence and type distribution of human papillomavirus in carcinoma of the vulva, vagina, anus and penis: systematic review and meta-analysis

A systematic review of the literature was conducted on the worldwide HPV-prevalence and type distribution for anogenital carcinomas other than cervix from January 1986 to 'data as of' indicated in each section. The search terms for the review were 'HPV' AND (anus OR anal) OR (penile) OR vagin* OR vulv* using Pubmed. There were no limits in publication language. References cited in selected articles were also investigated. Inclusion criteria were: HPV DNA detection by means of PCR, a minimum of 10 cases by lesion and a detailed description of HPV DNA detection and genotyping techniques used. The number of cases tested and HPV positive cases were extracted for each study to estimate the prevalence of HPV DNA and the HPV type distribution. Binomial 95% confidence intervals were calculated for each HPV prevalence.

4.2.1 Anal cancer and precancerous anal lesions

Anal cancer is similar to cervical cancer with respect to overall HPV DNA positivity, with approximately 100% of anal squamous cell carcinoma cases associated with HPV infection worldwide (de Martel C et al. Lancet Glob Health 2020;8(2):e180-e190). HPV16 is the most common type detected, representing 73% of all HPV-positive tumours. HPV18 is the second most common type detected and is found in approximately 5% of cases. HPV DNA is also detected in the majority of precancerous anal lesions (AIN) (91.5% in AIN1 and 93.9% in AIN2/3) (De Vuyst H et al. Int J Cancer 2009; 124: 1626-36). In this section, the burden of HPV among cases of anal cancers and precancerous anal lesions in the World are presented.

Table 31: Studies on HPV prevalence among anal cancer cases in the World (male and female)

Country	Study	HPV detection method and targeted HPV types	No. Tested	HPV Prevalence		Prevalence of 5 most frequent HPVs, HPV type (%)
				%	(95% CI)[a]	
France	Abramowitz 2011	PCR-SPF10, (HPV 6, 11, 16, 18, 26, 31, 33, 35, 39, 40, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 66, 68, 69, 70, 71, 73, 82)	728	96.7	(95.1-97.8)	HPV 16 (75.5), HPV 18 (5.9), HPV 11 (3.7), HPV 6 (3.0), HPV 52 (2.6)
Bangladesh	Alemany 2015	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 67, 68, 69, 70, 73, 74, 82, 83, 87, 89, 91)	52	80.8	(68.1-89.2)	HPV 16 (67.3), HPV 18 (3.8), HPV 35 (3.8), HPV 56 (1.9), HPV 58 (1.9)
Bosnia & Herzegovina	Alemany 2015	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 67, 68, 69, 70, 73, 74, 82, 83, 87, 89, 91)	169	87.6	(81.8-91.7)	HPV 16 (73.4), HPV 18 (3.6), HPV 6 (3.6), HPV 11 (3.0), HPV 33 (2.4)
Chile	Alemany 2015	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 67, 68, 69, 70, 73, 74, 82, 83, 87, 89, 91)	157	90.4	(84.8-94.1)	HPV 16 (70.1), HPV 33 (5.7), HPV 58 (3.2), HPV 18 (2.5), HPV 31 (1.9)
Colombia	Alemany 2015	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 67, 68, 69, 70, 73, 74, 82, 83, 87, 89, 91)	157	90.4	(84.8-94.1)	HPV 16 (70.1), HPV 33 (5.7), HPV 58 (3.2), HPV 18 (2.5), HPV 31 (1.9)
Czechia	Alemany 2015	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 67, 68, 69, 70, 73, 74, 82, 83, 87, 89, 91)	169	87.6	(81.8-91.7)	HPV 16 (73.4), HPV 18 (3.6), HPV 6 (3.6), HPV 11 (3.0), HPV 33 (2.4)

Continued on next page

Table 31 – continued from previous page

Country	Study	HPV detection method and targeted HPV types	No. Tested	HPV Prevalence %	(95% CI)[a]	Prevalence of 5 most frequent HPVs, HPV type (%)
Germany	Alemany 2015	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 67, 68, 69, 70, 73, 74, 82, 83, 87, 89, 91)	169	87.6	(81.8-91.7)	HPV 16 (73.4), HPV 18 (3.6), HPV 6 (3.6), HPV 11 (3.0), HPV 33 (2.4)
Ecuador	Alemany 2015	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 67, 68, 69, 70, 73, 74, 82, 83, 87, 89, 91)	157	90.4	(84.8-94.1)	HPV 16 (70.1), HPV 33 (5.7), HPV 58 (3.2), HPV 18 (2.5), HPV 31 (1.9)
Spain	Alemany 2015	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 67, 68, 69, 70, 73, 74, 82, 83, 87, 89, 91)	169	87.6	(81.8-91.7)	HPV 16 (73.4), HPV 18 (3.6), HPV 6 (3.6), HPV 11 (3.0), HPV 33 (2.4)
France	Alemany 2015	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 67, 68, 69, 70, 73, 74, 82, 83, 87, 89, 91)	169	87.6	(81.8-91.7)	HPV 16 (73.4), HPV 18 (3.6), HPV 6 (3.6), HPV 11 (3.0), HPV 33 (2.4)
United Kingdom	Alemany 2015	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 67, 68, 69, 70, 73, 74, 82, 83, 87, 89, 91)	169	87.6	(81.8-91.7)	HPV 16 (73.4), HPV 18 (3.6), HPV 6 (3.6), HPV 11 (3.0), HPV 33 (2.4)
Guatemala	Alemany 2015	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 67, 68, 69, 70, 73, 74, 82, 83, 87, 89, 91)	157	90.4	(84.8-94.1)	HPV 16 (70.1), HPV 33 (5.7), HPV 58 (3.2), HPV 18 (2.5), HPV 31 (1.9)
Honduras	Alemany 2015	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 67, 68, 69, 70, 73, 74, 82, 83, 87, 89, 91)	157	90.4	(84.8-94.1)	HPV 16 (70.1), HPV 33 (5.7), HPV 58 (3.2), HPV 18 (2.5), HPV 31 (1.9)
India	Alemany 2015	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 67, 68, 69, 70, 73, 74, 82, 83, 87, 89, 91)	52	80.8	(68.1-89.2)	HPV 16 (67.3), HPV 18 (3.8), HPV 35 (3.8), HPV 56 (1.9), HPV 58 (1.9)
Republic of Korea	Alemany 2015	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 67, 68, 69, 70, 73, 74, 82, 83, 87, 89, 91)	52	80.8	(68.1-89.2)	HPV 16 (67.3), HPV 18 (3.8), HPV 35 (3.8), HPV 56 (1.9), HPV 58 (1.9)
Mexico	Alemany 2015	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 67, 68, 69, 70, 73, 74, 82, 83, 87, 89, 91)	157	90.4	(84.8-94.1)	HPV 16 (70.1), HPV 33 (5.7), HPV 58 (3.2), HPV 18 (2.5), HPV 31 (1.9)
Mali	Alemany 2015	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 67, 68, 69, 70, 73, 74, 82, 83, 87, 89, 91)	21	61.9	(40.9-79.2)	HPV 16 (28.6), HPV 18 (9.5), HPV 6 (9.5), HPV 31 (4.8), HPV 35 (4.8)

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Table 31 – continued from previous page

Country	Study	HPV detection method and targeted HPV types	No. Tested	HPV Prevalence %	(95% CI)[a]	Prevalence of 5 most frequent HPVs, HPV type (%)
Nigeria	Alemany 2015	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 67, 68, 69, 70, 73, 74, 82, 83, 87, 89, 91)	21	61.9	(40.9-79.2)	HPV 16 (28.6), HPV 18 (9.5), HPV 6 (9.5), HPV 31 (4.8), HPV 35 (4.8)
Poland	Alemany 2015	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 67, 68, 69, 70, 73, 74, 82, 83, 87, 89, 91)	169	87.6	(81.8-91.7)	HPV 16 (73.4), HPV 18 (3.6), HPV 6 (3.6), HPV 11 (3.0), HPV 33 (2.4)
Portugal	Alemany 2015	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 67, 68, 69, 70, 73, 74, 82, 83, 87, 89, 91)	169	87.6	(81.8-91.7)	HPV 16 (73.4), HPV 18 (3.6), HPV 6 (3.6), HPV 11 (3.0), HPV 33 (2.4)
Paraguay	Alemany 2015	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 67, 68, 69, 70, 73, 74, 82, 83, 87, 89, 91)	157	90.4	(84.8-94.1)	HPV 16 (70.1), HPV 33 (5.7), HPV 58 (3.2), HPV 18 (2.5), HPV 31 (1.9)
Senegal	Alemany 2015	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 67, 68, 69, 70, 73, 74, 82, 83, 87, 89, 91)	21	61.9	(40.9-79.2)	HPV 16 (28.6), HPV 18 (9.5), HPV 6 (9.5), HPV 31 (4.8), HPV 35 (4.8)
Slovenia	Alemany 2015	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 67, 68, 69, 70, 73, 74, 82, 83, 87, 89, 91)	169	87.6	(81.8-91.7)	HPV 16 (73.4), HPV 18 (3.6), HPV 6 (3.6), HPV 11 (3.0), HPV 33 (2.4)
United States of America	Alemany 2015	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 67, 68, 69, 70, 73, 74, 82, 83, 87, 89, 91)	96	95.8	(89.8-98.4)	HPV 16 (81.3), HPV 18 (7.3), HPV 31 (4.2), HPV 39 (3.1), HPV 52 (3.1)
United Kingdom	Baricevic 2015	PCR-L1C1/C2, PCR L1-Consensus primer, PCR-E6, PCR-E7, PCR-MULTIPLEX (HPV 6, 11, 16, 18, 31, 33, 45, 52, 58)	151	95.4	(90.7-97.7)	HPV 16 (88.7), HPV 6 (11.9), HPV 33 (6.6), HPV 18 (4.6), HPV 58 (4.6)
United States of America	Daling 2004	PCR-MY09/11, PCR L1-Consensus primer, RFLP, TS (HPV 16, 18)	199	86.9	(81.5-90.9)	HPV 16 (69.8), HPV 18 (8.5)
Australia	Hillman 2014	PCR L1-Consensus primer, (HPV 6, 11, 16, 18, 26, 31, 33, 35, 39, 40, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 66, 68, 69, 70, 71, 73, 74, 82)	105	97.1	(91.9-99.0)	HPV 16 (77.1), HPV 52 (13.3), HPV 6 (10.5), HPV 54 (9.5), HPV 11 (5.7)
Italy	Indinnimeo 1999	PCR, TS (HPV 6, 11, 16, 18)	14	64.3	(38.8-83.7)	HPV 16 (42.9)
Sweden	Laytragoon-Lewin 2007	PCR-MY09/11, Sequencing (HPV 16, 18, 33)	72	90.3	(81.3-95.2)	HPV 16 (69.4), HPV 18 (34.7), HPV 33 (2.8)
Canada	Ouhoummane 2013	PCR L1-Consensus primer, LBA (HPV 6, 11, 16, 18, 26, 31, 33, 34, 35, 39, 40, 42, 45, 51, 52, 53, 54, 56, 58, 59, 61, 62, 66, 67, 68, 69, 70, 71, 72, 73, 81, 82, 83, 84, 89)	96	91.7	(84.4-95.7)	HPV 16 (82.3), HPV 33 (3.1), HPV 6 (3.1), HPV 18 (2.1), HPV 58 (2.1)
United States of America	Palefsky 1991	PCR-E6, TS (HPV 06/11, 16, 18, 31, 33)	13	84.6	(57.8-95.7)	HPV 16 (76.9), HPV 31 (23.1), HPV 6/11 (15.4), HPV 33 (7.7)

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Table 31 – continued from previous page

Country	Study	HPV detection method and targeted HPV types	No. Tested	HPV Prevalence %	HPV Prevalence (95% CI)[a]	Prevalence of 5 most frequent HPVs, HPV type (%)
Germany	Rödel 2015	PCR-SPF10, PCR-MULTIPLEX, (HPV 6, 11, 16, 18, 26, 31, 33, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 66, 68, 69, 70, 71, 73, 74, 81, 82)	91	100.0	(95.9-100.0)	HPV 16 (94.5), HPV 11 (2.2), HPV 31 (2.2), HPV 35 (2.2), HPV 18 (1.1)
Denmark	Serup-Hansen 2014	PCR-E6, PCR-E7, PCR-MULTIPLEX (HPV 16, 18, 31, 33, 45, 52, 58)	137	87.6	(81.0-92.1)	HPV 16 (81.0), HPV 33 (5.1), HPV 18 (2.2), HPV 58 (0.7)
Czechia	Tachezy 2011	PCR L1-Consensus primer, , Sequencing (HPV 6, 11, 16, 18, 20, 21, 22, 23, 26, 30, 31, 32, 33, 34, 35, 38, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 57, 58, 59, 60, 61, 62, 66, 67, 68, 69, 70, 71, 72, 73, 74, 80, 81, 82, 83, 84, 85, 86, 87, 89, 90, 91)	26	73.1	(53.9-86.3)	HPV 16 (73.1)
France	Valmary-Degano 2013	PCR-E6, (HPV 6, 11, 16, 18, 26, 31, 33, 35, 39, 40, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 66, 68, 69, 70, 71, 73, 74, 82)	73	98.6	(92.6-99.8)	HPV 16 (89.0), HPV 39 (4.1), HPV 33 (2.7), HPV 11 (1.4), HPV 18 (1.4)
Germany	Varnai 2006	PCR-MY09/11, TS, Sequencing (HPV 6, 11, 16, 18, 31, 33, 45, 58)	47	83.0	(69.9-91.1)	HPV 16 (74.5), HPV 33 (6.4), HPV 18 (2.1), HPV 31 (2.1), HPV 45 (2.1)
France	Vincent-Salomon 1996	PCR L1-Consensus primer, PCR-E6, TS (HPV 6, 11, 16, 18, 33)	27	74.1	(55.3-86.8)	HPV 16 (63.0), HPV 18 (7.4)
Republic of Korea	Yhim 2011	PCR, TS (HPV 6, 11, 16, 18, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 56, 58, 59, 66, 68, 69)	47	74.5	(60.5-84.7)	HPV 16 (66.0), HPV 58 (6.4), HPV 35 (2.1)
Republic of Korea	Youk 2001	PCR-MY09/11, PCR-L1C1/C2, PCR-E6, PCR-E7, TS (HPV 16, 18)	21	100.0	(84.5-100.0)	HPV 16 (100.0)
United States of America	Zaki 1992	PCR L1-Consensus primer, TS (HPV 6, 11, 16, 18, 16/18)	11	72.7	(43.4-90.3)	HPV 16 (18.2), HPV 11 (9.1), HPV 16/18 (9.1), HPV 6 (9.1)

Data updated on 22 May 2023 (data as of 30 Jun 2015)

DBH: Dot Blot Hybridization; EIA: Enzyme ImmunoAssay; HC2: Hybrid Capture 2; ISH: In Situ Hybridization; LBA: Line-Blot Assay; LiPA: Line Probe Assay; PCR: Polymerase Chain Reaction; RFLP: Restriction Fragment Length Polymorphism; RLBH: Reverse Line Blot Hybridization; RT-PCR: Real Time Polymerase Chain Reaction; SBH: Southern Blot Hybridization; SPF: Short Primer Fragment; TS: Type Specific;
[a] 95% Confidence Interval
Data Sources: See references in Section 9 References.

Table 32: Studies on HPV prevalence among cases of AIN2/3 in the World

Country	Study	HPV detection method and targeted HPV types	No. Tested	HPV Prevalence %	HPV Prevalence (95% CI)[a]	Prevalence of 5 most frequent HPVs, HPV type (%)
Bosnia & Herzegovina	Alemany 2015	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 67, 68, 69, 70, 73, 74, 82, 83, 87, 89, 91)	23	95.7	(79.0-99.2)	HPV 16 (65.2), HPV 18 (8.7), HPV 51 (8.7), HPV 6 (8.7), HPV 74 (8.7)
Chile	Alemany 2015	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 67, 68, 69, 70, 73, 74, 82, 83, 87, 89, 91)	12	100.0	(75.8-100.0)	HPV 16 (91.7), HPV 11 (8.3), HPV 6 (8.3)

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Table 32 – continued from previous page

Country	Study	HPV detection method and targeted HPV types	No. Tested	HPV Prevalence %	(95% CI)[a]	Prevalence of 5 most frequent HPVs, HPV type (%)
Colombia	Alemany 2015	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 67, 68, 69, 70, 73, 74, 82, 83, 87, 89, 91)	12	100.0	(75.8-100.0)	HPV 16 (91.7), HPV 11 (8.3), HPV 6 (8.3)
Czechia	Alemany 2015	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 67, 68, 69, 70, 73, 74, 82, 83, 87, 89, 91)	23	95.7	(79.0-99.2)	HPV 16 (65.2), HPV 18 (8.7), HPV 51 (8.7), HPV 6 (8.7), HPV 74 (8.7)
Germany	Alemany 2015	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 67, 68, 69, 70, 73, 74, 82, 83, 87, 89, 91)	23	95.7	(79.0-99.2)	HPV 16 (65.2), HPV 18 (8.7), HPV 51 (8.7), HPV 6 (8.7), HPV 74 (8.7)
Ecuador	Alemany 2015	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 67, 68, 69, 70, 73, 74, 82, 83, 87, 89, 91)	12	100.0	(75.8-100.0)	HPV 16 (91.7), HPV 11 (8.3), HPV 6 (8.3)
Spain	Alemany 2015	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 67, 68, 69, 70, 73, 74, 82, 83, 87, 89, 91)	23	95.7	(79.0-99.2)	HPV 16 (65.2), HPV 18 (8.7), HPV 51 (8.7), HPV 6 (8.7), HPV 74 (8.7)
France	Alemany 2015	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 67, 68, 69, 70, 73, 74, 82, 83, 87, 89, 91)	23	95.7	(79.0-99.2)	HPV 16 (65.2), HPV 18 (8.7), HPV 51 (8.7), HPV 6 (8.7), HPV 74 (8.7)
United Kingdom	Alemany 2015	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 67, 68, 69, 70, 73, 74, 82, 83, 87, 89, 91)	23	95.7	(79.0-99.2)	HPV 16 (65.2), HPV 18 (8.7), HPV 51 (8.7), HPV 6 (8.7), HPV 74 (8.7)
Guatemala	Alemany 2015	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 67, 68, 69, 70, 73, 74, 82, 83, 87, 89, 91)	12	100.0	(75.8-100.0)	HPV 16 (91.7), HPV 11 (8.3), HPV 6 (8.3)
Honduras	Alemany 2015	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 67, 68, 69, 70, 73, 74, 82, 83, 87, 89, 91)	12	100.0	(75.8-100.0)	HPV 16 (91.7), HPV 11 (8.3), HPV 6 (8.3)
Mexico	Alemany 2015	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 67, 68, 69, 70, 73, 74, 82, 83, 87, 89, 91)	12	100.0	(75.8-100.0)	HPV 16 (91.7), HPV 11 (8.3), HPV 6 (8.3)
Poland	Alemany 2015	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 67, 68, 69, 70, 73, 74, 82, 83, 87, 89, 91)	23	95.7	(79.0-99.2)	HPV 16 (65.2), HPV 18 (8.7), HPV 51 (8.7), HPV 6 (8.7), HPV 74 (8.7)

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Table 32 – continued from previous page

Country	Study	HPV detection method and targeted HPV types	No. Tested	HPV Prevalence %	HPV Prevalence (95% CI)[a]	Prevalence of 5 most frequent HPVs, HPV type (%)
Portugal	Alemany 2015	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 67, 68, 69, 70, 73, 74, 82, 83, 87, 89, 91)	23	95.7	(79.0-99.2)	HPV 16 (65.2), HPV 18 (8.7), HPV 51 (8.7), HPV 6 (8.7), HPV 74 (8.7)
Paraguay	Alemany 2015	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 67, 68, 69, 70, 73, 74, 82, 83, 87, 89, 91)	12	100.0	(75.8-100.0)	HPV 16 (91.7), HPV 11 (8.3), HPV 6 (8.3)
Slovenia	Alemany 2015	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 67, 68, 69, 70, 73, 74, 82, 83, 87, 89, 91)	23	95.7	(79.0-99.2)	HPV 16 (65.2), HPV 18 (8.7), HPV 51 (8.7), HPV 6 (8.7), HPV 74 (8.7)
United Kingdom	Fox 2005	, PCR-MY09/11, (HPV 16, 18, 31, 33, 35, 39, 45, 51, 52, 56, 58, 59)	74	97.3	(90.7-99.3)	HPV 16 (64.9), HPV 18 (25.7), HPV 33 (24.3), HPV 58 (21.6), HPV 31 (18.9)
Spain	García-Espinosa 2013	PCR-GP5/6, PCR L1-Consensus primer, DBH (HPV 6, 11, 16, 18, 26, 31, 33, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 57, 58, 59, 61, 66, 68, 70, 71, 72, 73, 81, 82, 84)	20	100.0	(83.9-100.0)	HPV 16 (50.0), HPV 58 (35.0), HPV 44 (35.0), HPV 31 (30.0), HPV 43 (30.0)
Canada	Gohy 2008	PCR-MY09/11, (HPV 6, 11, 16, 18, 26, 31, 33, 34, 35, 39, 40, 42, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 62, 66, 67, 68, 69, 70, 71, 72, 73, 81, 82, 83, 84, 89)	62	93.5	(84.6-97.5)	HPV 16 (35.5), HPV 58 (16.1), HPV 18 (16.1), HPV 42 (9.7), HPV 45 (9.7)
Germany	Hampl 2006	, PCR-MY09/11, Sequencing (HPV 6, 11, 20, 21, 22, 23, 26, 30, 32)	16	87.5	(64.0-96.5)	
Australia	Hillman 2012	HC2, LBA (HPV 16, 18, 31, 33)	21	95.2	(77.3-99.2)	HPV 16 (33.3), HPV 31 (19.0), HPV 18 (4.8)
Thailand	Phanuphak 2013	PCR L1-Consensus primer, PCR-E6, PCR-E7, LBA (HPV 6, 11, 16, 18, 26, 31, 33, 34, 35, 39, 40, 42, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 62, 66, 67, 68, 69, 70, 71, 72, 73, 81, 82, 83, 84)	41	82.9	(68.7-91.5)	HPV 40 (51.2), HPV 53 (26.8), HPV 16 (24.4), HPV 11 (19.5), HPV 58 (17.1)
Netherlands	Richel 2014	PCR L1-Consensus primer, PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 66, 67, 68, 69, 70, 73, 74)	17	100.0	(81.6-100.0)	HPV 16 (58.8), HPV 31 (17.6), HPV 18 (11.8), HPV 53 (11.8), HPV 58 (11.8)
United States of America	Sahasrabuddhe 2013	PCR-PGMY09/11, LBA (HPV 6, 11, 16, 18, 26, 31, 33, 34, 35, 39, 40, 42, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 62, 66, 67, 68, 69, 70, 71, 72, 73, 81, 82, 83, 84)	104	99.0	(94.8-99.8)	HPV 16 (54.8), HPV 6 (26.0), HPV 31 (22.1), HPV 42 (22.1), HPV 66 (21.2)
Canada	Salit 2009	PCR-PGMY09/11, PCR L1-Consensus primer, LBA (HPV 6, 11, 16, 18, 26, 31, 33, 35, 39, 40, 42, 44, 45, 51, 52, 53, 54, 56, 57, 58, 59, 66, 68)	74	100.0	(95.1-100.0)	HPV 16 (52.7), HPV 18 (32.4), HPV 31 (31.1), HPV 6 (28.4), HPV 52 (27.0)

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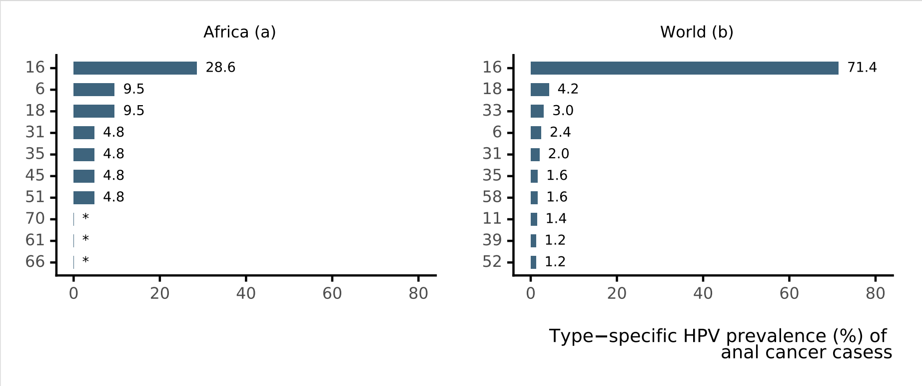
Table 32 – continued from previous page

Country	Study	HPV detection method and targeted HPV types	No. Tested	HPV Prevalence %	(95% CI)[a]	Prevalence of 5 most frequent HPVs, HPV type (%)
Germany	Silling 2012	PCR- MULTIPLEX (HPV 6, 11, 16, 18, 26, 30, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 57, 58, 59, 61, 66, 67, 68, 70, 71, 72, 73, 81, 82, 83, 84, 89)	42	100.0	(91.6-100.0)	HPV 16 (69.0), HPV 11 (23.8), HPV 18 (23.8), HPV 6 (19.0), HPV 67 (19.0)
Spain	Sirera 2013	PCR- MULTIPLEX (HPV 6, 11, 16, 18, 31, 33, 35, 39, 45, 51, 52, 56, 58, 59, 68)	69	84.1	(73.7-90.9)	HPV 16 (55.1), HPV 58 (34.8), HPV 33 (29.0), HPV 51 (23.2), HPV 18 (21.7)
Italy	Tanzi 2009	PCR-MY09/11, PCR L1-Consensus primer, RFLP (HPV 6, 11, 16, 18, 20, 21, 22, 23, 26, 30, 31, 32, 33, 34, 35, 38, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 57, 58, 59, 60, 61, 62, 66, 67, 68, 69, 70, 71, 72, 81, 83, 84)	62	91.9	(82.5-96.5)	HPV 6 (38.7), HPV 16 (37.1), HPV 11 (27.4), HPV 58 (8.1), HPV 18 (4.8)
Spain	Torres 2013	LBA (HPV 6, 11, 16, 18, 26, 31, 33, 34, 35, 39, 40, 42, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 62, 66, 67, 68, 69, 70, 71, 72, 73, 81, 82, 83, 84)	44	97.7	(88.2-99.6)	HPV 16 (59.1), HPV 6 (34.1), HPV 66 (31.8), HPV 52 (29.5), HPV 53 (29.5)
Germany	Varnai 2006	, PCR-MY09/11, TS, Sequencing (HPV 6, 11, 16, 18, 31, 33, 45, 58)	24	95.8	(79.8-99.3)	HPV 16 (70.8), HPV 11 (12.5), HPV 6 (8.3), HPV 58 (4.2)
Germany	Wieland 2006	PCR, EIA (HPV 6, 11, 16, 18, 31, 33, 34, 35, 42, 44, 45, 52, 53, 54, 56, 58, 59, 66, 68, 70, 72, 73, 81, 82, 83, 84, 89)	18	100.0	(82.4-100.0)	HPV 16 (88.9), HPV 18 (44.4), HPV 83 (38.9), HPV 52 (33.3), HPV 58 (27.8)

Data updated on 22 May 2023 (data as of 30 Jun 2015)

DBH: Dot Blot Hybridization; EIA: Enzyme ImmunoAssay; HC2: Hybrid Capture 2; ISH: In Situ Hybridization; LBA: Line-Blot Assay; LiPA: Line Probe Assay; PCR: Polymerase Chain Reaction; RFLP: Restriction Fragment Length Polymorphism; RLBH: Reverse Line Blot Hybridization; RT-PCR: Real Time Polymerase Chain Reaction; SBH: Southern Blot Hybridization; SPF: Short Primer Fragment; TS: Type Specific;
AIN 2/3: Anal intraepithelial neoplasia of grade 2/3
[a] 95% Confidence Interval
Data Sources: See references in Section 9 References.

Figure 84: Comparison of the ten most frequent HPV types in anal cancer cases in **Africa** and the World



Data updated on 22 May 2023 (data as of 30 Jun 2014)

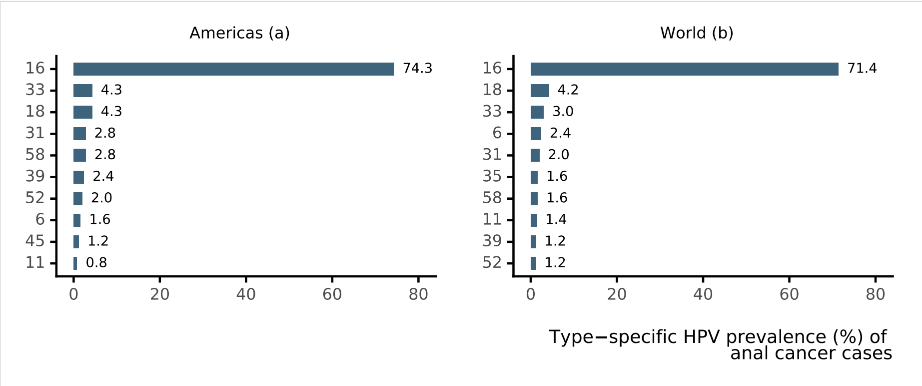
[a] Includes cases from Mali, Nigeria and Senegal

[b] Includes cases from Europe (Bosnia-Herzegovina, Czech Republic, France, Germany, Poland, Portugal, Slovenia, Spain and United Kingdom); America (Chile, Colombia, Ecuador, Guatemala, Honduras, Mexico, Paraguay and United States); Africa (Mali, Nigeria and Senegal); Asia (Bangladesh,India and South Korea)

[*] No data available. No more types than shown were tested or were positive.

Data Sources: See references in Section 9 References.

Figure 85: Comparison of the ten most frequent HPV types in anal cancer cases in **the Americas** and the World



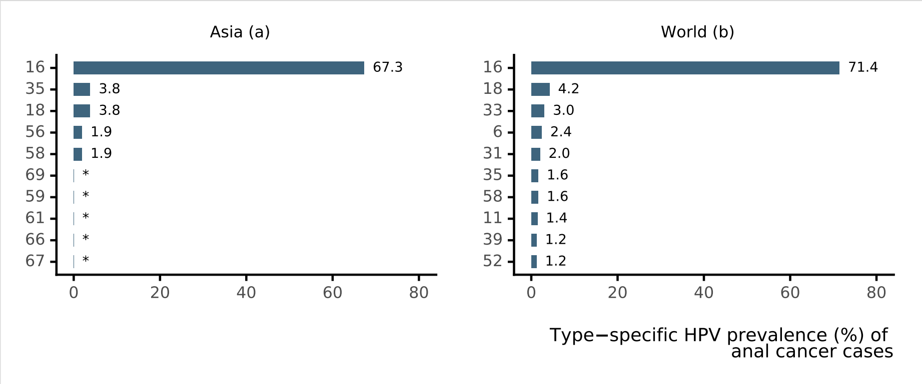
Data updated on 22 May 2023 (data as of 30 Jun 2014)

[a] Includes cases from Chile, Colombia, Ecuador, Guatemala, Honduras, Mexico, Paraguay and United States

[b] Includes cases from Europe (Bosnia-Herzegovina, Czech Republic, France, Germany, Poland, Portugal, Slovenia, Spain and United Kingdom); America (Chile, Colombia, Ecuador, Guatemala, Honduras, Mexico, Paraguay and United States); Africa (Mali, Nigeria and Senegal); Asia (Bangladesh,India and South Korea)

Data Sources: See references in Section 9 References.

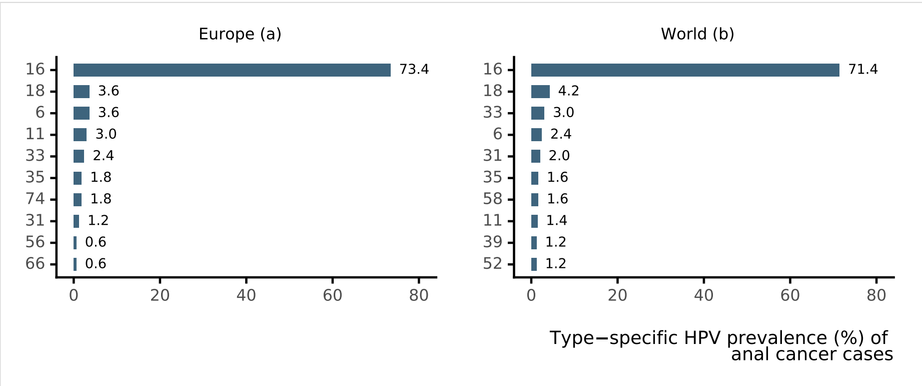
Figure 86: Comparison of the ten most frequent HPV types in anal cancer cases in **Asia** and the World



Data updated on 22 May 2023 (data as of 30 Jun 2014)

[a] Includes cases from Bangladesh,India and South Korea
[b] Includes cases from Europe (Bosnia-Herzegovina, Czech Republic, France, Germany, Poland, Portugal, Slovenia, Spain and United Kingdom); America (Chile, Colombia, Ecuador, Guatemala, Honduras, Mexico, Paraguay and United States); Africa (Mali, Nigeria and Senegal); Asia (Bangladesh,India and South Korea)
[*] No data available. No more types than shown were tested or were positive.
Data Sources: See references in Section 9 References.

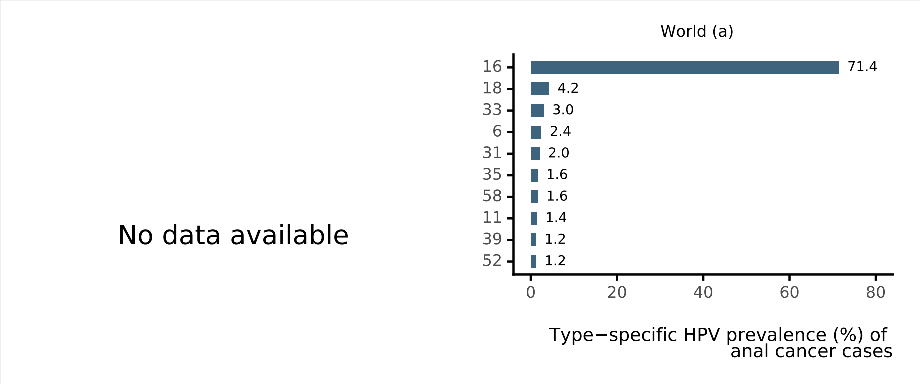
Figure 87: Comparison of the ten most frequent HPV types in anal cancer cases in **Europe** and the World



Data updated on 22 May 2023 (data as of 30 Jun 2014)

[a] Includes cases from Bosnia-Herzegovina, Czech Republic, France, Germany, Poland, Portugal, Slovenia, Spain and United Kingdom
[b] Includes cases from Europe (Bosnia-Herzegovina, Czech Republic, France, Germany, Poland, Portugal, Slovenia, Spain and United Kingdom); America (Chile, Colombia, Ecuador, Guatemala, Honduras, Mexico, Paraguay and United States); Africa (Mali, Nigeria and Senegal); Asia (Bangladesh,India and South Korea)
Data Sources: See references in Section 9 References.

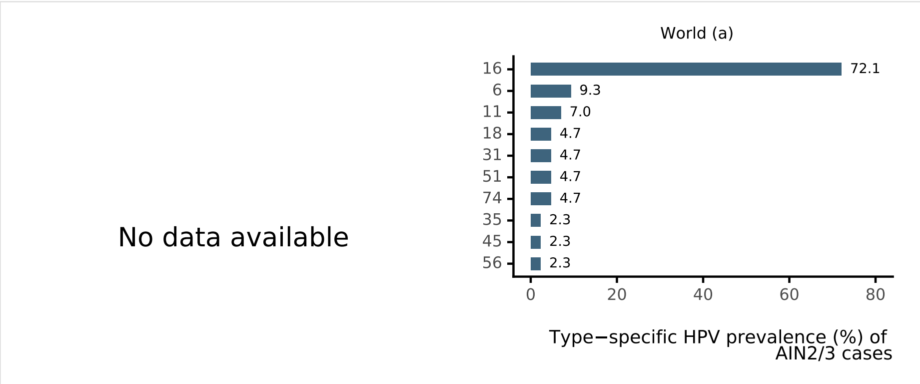
Figure 88: Comparison of the ten most frequent HPV types in anal cancer cases in **Oceania** and the World



Data updated on 22 May 2023 (data as of 30 Jun 2014)

[a] Includes cases from Europe (Bosnia-Herzegovina, Czech Republic, France, Germany, Poland, Portugal, Slovenia, Spain and United Kingdom); America (Chile, Colombia, Ecuador, Guatemala, Honduras, Mexico, Paraguay and United States); Africa (Mali, Nigeria and Senegal); Asia (Bangladesh,India and South Korea)
Data Sources: See references in Section 9 References.

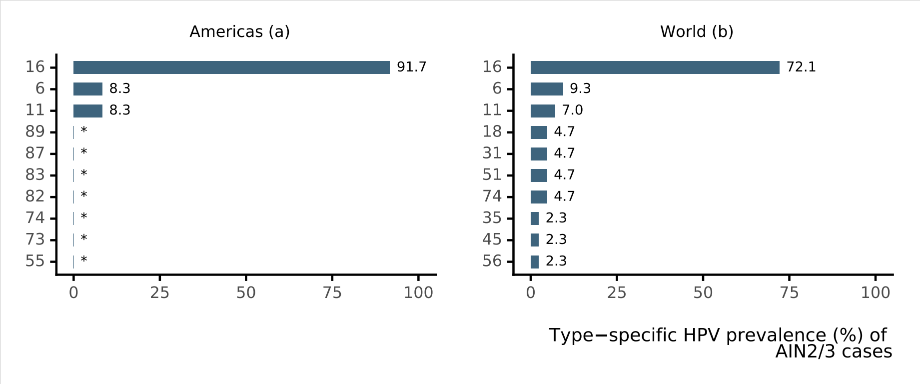
Figure 89: Comparison of the ten most frequent HPV types in AIN 2/3 cases in **Africa** and the World



Data updated on 22 May 2023 (data as of 30 Jun 2014)

AIN 2/3: Anal intraepithelial neoplasia of grade 2/3
[a] Includes cases from Europe (Bosnia-Herzegovina, Czech Republic, France, Germany, Poland, Portugal, Slovenia, Spain and United Kingdom); America (Chile, Colombia, Ecuador, Guatemala, Honduras, Mexico, Paraguay)
Data Sources: See references in Section 9 References.

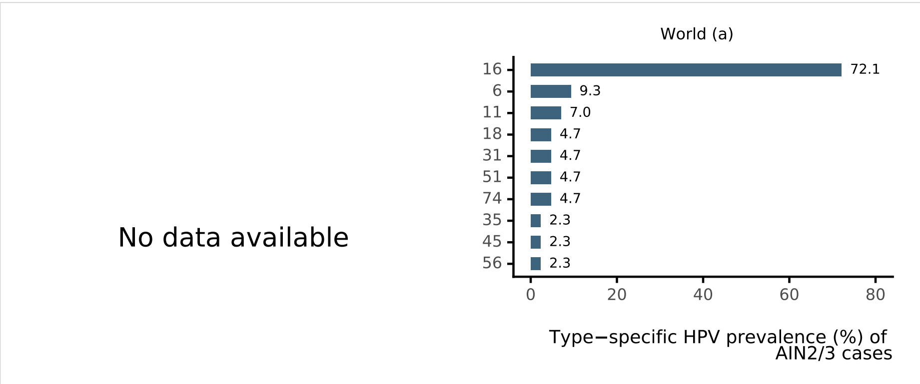
Figure 90: Comparison of the ten most frequent HPV types in AIN 2/3 cases in **the Americas** and the World



Data updated on 22 May 2023 (data as of 30 Jun 2014)

AIN 2/3: Anal intraepithelial neoplasia of grade 2/3
[a] Includes cases from Chile, Colombia, Ecuador, Guatemala, Honduras, Mexico, Paraguay
[b] Includes cases from Europe (Bosnia-Herzegovina, Czech Republic, France, Germany, Poland, Portugal, Slovenia, Spain and United Kingdom); America (Chile, Colombia, Ecuador, Guatemala, Honduras, Mexico, Paraguay)
[*] No data available. No more types than shown were tested or were positive.
Data Sources: See references in Section 9 References.

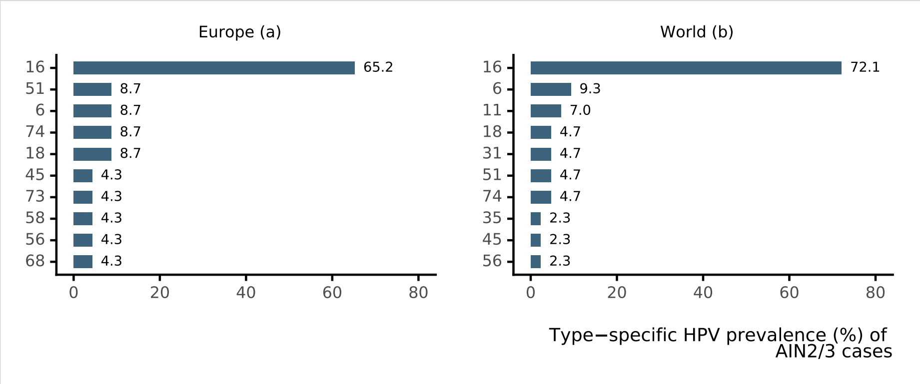
Figure 91: Comparison of the ten most frequent HPV types in AIN 2/3 cases in **Asia** and the World



Data updated on 22 May 2023 (data as of 30 Jun 2014)

AIN 2/3: Anal intraepithelial neoplasia of grade 2/3
[a] Includes cases from Europe (Bosnia-Herzegovina, Czech Republic, France, Germany, Poland, Portugal, Slovenia, Spain and United Kingdom); America (Chile, Colombia, Ecuador, Guatemala, Honduras, Mexico, Paraguay)
Data Sources: See references in Section 9 References.

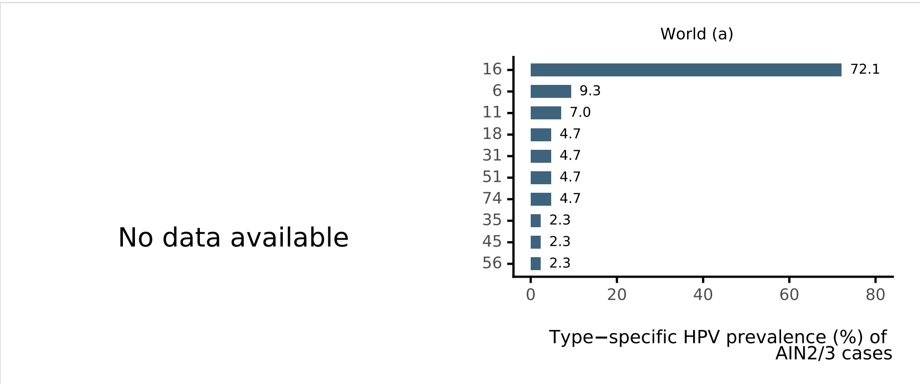
Figure 92: Comparison of the ten most frequent HPV types in AIN 2/3 cases in **Europe** and the World



Data updated on 22 May 2023 (data as of 30 Jun 2014)

AIN 2/3: Anal intraepithelial neoplasia of grade 2/3
[a] Includes cases from Bosnia-Herzegovina, Czech Republic, France, Germany, Poland, Portugal, Slovenia, Spain and United Kingdom
[b] Includes cases from Europe (Bosnia-Herzegovina, Czech Republic, France, Germany, Poland, Portugal, Slovenia, Spain and United Kingdom); America (Chile, Colombia, Ecuador, Guatemala, Honduras, Mexico, Paraguay)
Data Sources: See references in Section 9 References.

Figure 93: Comparison of the ten most frequent HPV types in AIN 2/3 cases in **Oceania** and the World



Data updated on 22 May 2023 (data as of 30 Jun 2014)

AIN 2/3: Anal intraepithelial neoplasia of grade 2/3
[a] Includes cases from Europe (Bosnia-Herzegovina, Czech Republic, France, Germany, Poland, Portugal, Slovenia, Spain and United Kingdom); America (Chile, Colombia, Ecuador, Guatemala, Honduras, Mexico, Paraguay)
Data Sources: See references in Section 9 References.

4.2.2 Vulvar cancer and precancerous vulvar lesions

HPV attribution for vulvar cancer is 48% among age 15-54 years, 28% among age 55-64 years, and 15% among age 65+ worldwide (de Martel C et al. Lancet Glob Health 2020;8(2):e180-e190). Vulvar cancer has two distinct histological patterns with two different risk factor profiles: (1) basaloid/warty types (2) keratinising types. Basaloid/warty lesions are more common in young women, are frequently found adjacent to VIN, are very often associated with HPV DNA detection (86%), and have a similar risk factor profile as cervical cancer. Keratinising vulvar carcinomas represent the majority of the vulvar lesions (>60%). These lesions develop from non HPV-related chronic vulvar dermatoses, especially lichen sclerosus and/or squamous hyperplasia, their immediate cancer precursor lesion is differentiated VIN, they occur more often in older women, and are rarely associated with HPV (6%) or with any of the other risk factors typical of cervical cancer. HPV prevalence is frequently detected among cases of high-grade VIN (VIN2/3) (85.3%). HPV 16 is the most common type detected followed by HPV 33 (De Vuyst H et al. Int J Cancer 2009; 124: 1626-36).In this section, the HPV burden among cases of vulvar cancer cases and precancerous vulvar lesions in the World are presented.

Table 33: Studies on HPV prevalence among vulvar cancer cases in the World

Country	Study	HPV detection method and targeted HPV types	No. Tested	HPV Prevalence		Prevalence of 5 most frequent HPVs, HPV type (%)
				%	(95% CI)[a]	
United Kingdom	Abdel-Hady 2001	TS (HPV 6, 11, 16, 18, 31, 33)	11	27.3	(9.7-56.6)	HPV 16 (27.3), HPV 33 (18.2), HPV 18 (9.1)
Spain	Alonso 2011	PCR-SPF10, (HPV 6, 11, 16, 18, 31, 33, 35, 42, 45, 51, 52, 53, 54, 56, 58, 66)	98	19.4	(12.8-28.3)	HPV 16 (14.3), HPV 33 (2.0), HPV 31 (1.0), HPV 51 (1.0), HPV 52 (1.0)
Italy	Bonvicini 2005	PCR-MY09/11 (HPV 16, 18, 31, 33, 35, 45, 52, 58)	16	0	(0.0-19.4)	
Denmark	Bryndorf 2004	PCR-SPF10, (HPV 6, 11, 16, 18, 31, 33, 35, 42, 44, 45, 51, 52, 56, 58)	10	60	(31.3-83.2)	HPV 16 (40.0), HPV 33 (20.0), HPV 56 (10.0)
Poland	Bujko 2012	PCR, LBA (HPV 6, 11, 16, 18, 26, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 57, 58, 59, 61, 66, 68, 70, 71, 72, 73, 81, 82, 83, 84)	44	34.1	(21.9-48.9)	HPV 16 (20.5), HPV 11 (11.4), HPV 44 (4.5), HPV 52 (4.5), HPV 58 (4.5)
Germany	Choschzick 2011	PCR-MY09/11, Sequencing (HPV 6, 11, 16, 18, 33)	39	46.2	(31.6-61.4)	HPV 16 (43.6), HPV 33 (2.6)
Argentina	de Sanjosé 2013	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 67, 68, 69, 70, 73, 74, 82, 83, 87, 89, 91)	324	40.1	(34.9-45.5)	HPV 16 (25.3), HPV 18 (2.8), HPV 45 (2.5), HPV 33 (2.2), HPV 6 (1.2)
Australia	de Sanjosé 2013	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 67, 68, 69, 70, 73, 74, 82, 83, 87, 89, 91)	220	40	(33.8-46.6)	HPV 16 (27.3), HPV 33 (3.6), HPV 18 (2.7), HPV 39 (1.4), HPV 6 (1.4)
Austria	de Sanjosé 2013	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 67, 68, 69, 70, 73, 74, 82, 83, 87, 89, 91)	903	19.3	(16.8-22.0)	HPV 16 (13.8), HPV 33 (1.2), HPV 18 (0.6), HPV 31 (0.6), HPV 44 (0.4)
Bangladesh	de Sanjosé 2013	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 67, 68, 69, 70, 73, 74, 82, 83, 87, 89, 91)	188	28.7	(22.7-35.6)	HPV 16 (18.1), HPV 18 (1.6), HPV 44 (1.6), HPV 45 (1.1), HPV 52 (1.1)

Continued on next page

Table 33 – continued from previous page

Country	Study	HPV detection method and targeted HPV types	No. Tested	HPV Prevalence		Prevalence of 5 most frequent HPVs, HPV type (%)
				%	(95% CI)[a]	
Bosnia & Herzegovina	de Sanjosé 2013	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 67, 68, 69, 70, 73, 74, 82, 83, 87, 89, 91)	903	19.3	(16.8-22.0)	HPV 16 (13.8), HPV 33 (1.2), HPV 18 (0.6), HPV 31 (0.6), HPV 44 (0.4)
Belarus	de Sanjosé 2013	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 67, 68, 69, 70, 73, 74, 82, 83, 87, 89, 91)	903	19.3	(16.8-22.0)	HPV 16 (13.8), HPV 33 (1.2), HPV 18 (0.6), HPV 31 (0.6), HPV 44 (0.4)
Brazil	de Sanjosé 2013	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 67, 68, 69, 70, 73, 74, 82, 83, 87, 89, 91)	324	40.1	(34.9-45.5)	HPV 16 (25.3), HPV 18 (2.8), HPV 45 (2.5), HPV 33 (2.2), HPV 6 (1.2)
Chile	de Sanjosé 2013	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 67, 68, 69, 70, 73, 74, 82, 83, 87, 89, 91)	324	40.1	(34.9-45.5)	HPV 16 (25.3), HPV 18 (2.8), HPV 45 (2.5), HPV 33 (2.2), HPV 6 (1.2)
Colombia	de Sanjosé 2013	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 67, 68, 69, 70, 73, 74, 82, 83, 87, 89, 91)	324	40.1	(34.9-45.5)	HPV 16 (25.3), HPV 18 (2.8), HPV 45 (2.5), HPV 33 (2.2), HPV 6 (1.2)
Czechia	de Sanjosé 2013	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 67, 68, 69, 70, 73, 74, 82, 83, 87, 89, 91)	903	19.3	(16.8-22.0)	HPV 16 (13.8), HPV 33 (1.2), HPV 18 (0.6), HPV 31 (0.6), HPV 44 (0.4)
Germany	de Sanjosé 2013	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 67, 68, 69, 70, 73, 74, 82, 83, 87, 89, 91)	903	19.3	(16.8-22.0)	HPV 16 (13.8), HPV 33 (1.2), HPV 18 (0.6), HPV 31 (0.6), HPV 44 (0.4)
Ecuador	de Sanjosé 2013	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 67, 68, 69, 70, 73, 74, 82, 83, 87, 89, 91)	324	40.1	(34.9-45.5)	HPV 16 (25.3), HPV 18 (2.8), HPV 45 (2.5), HPV 33 (2.2), HPV 6 (1.2)
Spain	de Sanjosé 2013	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 67, 68, 69, 70, 73, 74, 82, 83, 87, 89, 91)	903	19.3	(16.8-22.0)	HPV 16 (13.8), HPV 33 (1.2), HPV 18 (0.6), HPV 31 (0.6), HPV 44 (0.4)
France	de Sanjosé 2013	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 67, 68, 69, 70, 73, 74, 82, 83, 87, 89, 91)	903	19.3	(16.8-22.0)	HPV 16 (13.8), HPV 33 (1.2), HPV 18 (0.6), HPV 31 (0.6), HPV 44 (0.4)
United Kingdom	de Sanjosé 2013	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 67, 68, 69, 70, 73, 74, 82, 83, 87, 89, 91)	903	19.3	(16.8-22.0)	HPV 16 (13.8), HPV 33 (1.2), HPV 18 (0.6), HPV 31 (0.6), HPV 44 (0.4)

Continued on next page

Table 33 – continued from previous page

Country	Study	HPV detection method and targeted HPV types	No. Tested	HPV Prevalence %	(95% CI)[a]	Prevalence of 5 most frequent HPVs, HPV type (%)
Greece	de Sanjosé 2013	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 67, 68, 69, 70, 73, 74, 82, 83, 87, 89, 91)	903	19.3	(16.8-22.0)	HPV 16 (13.8), HPV 33 (1.2), HPV 18 (0.6), HPV 31 (0.6), HPV 44 (0.4)
Guatemala	de Sanjosé 2013	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 67, 68, 69, 70, 73, 74, 82, 83, 87, 89, 91)	324	40.1	(34.9-45.5)	HPV 16 (25.3), HPV 18 (2.8), HPV 45 (2.5), HPV 33 (2.2), HPV 6 (1.2)
Honduras	de Sanjosé 2013	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 67, 68, 69, 70, 73, 74, 82, 83, 87, 89, 91)	324	40.1	(34.9-45.5)	HPV 16 (25.3), HPV 18 (2.8), HPV 45 (2.5), HPV 33 (2.2), HPV 6 (1.2)
India	de Sanjosé 2013	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 67, 68, 69, 70, 73, 74, 82, 83, 87, 89, 91)	188	28.7	(22.7-35.6)	HPV 16 (18.1), HPV 18 (1.6), HPV 44 (1.6), HPV 45 (1.1), HPV 52 (1.1)
Israel	de Sanjosé 2013	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 67, 68, 69, 70, 73, 74, 82, 83, 87, 89, 91)	188	28.7	(22.7-35.6)	HPV 16 (18.1), HPV 18 (1.6), HPV 44 (1.6), HPV 45 (1.1), HPV 52 (1.1)
Italy	de Sanjosé 2013	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 67, 68, 69, 70, 73, 74, 82, 83, 87, 89, 91)	903	19.3	(16.8-22.0)	HPV 16 (13.8), HPV 33 (1.2), HPV 18 (0.6), HPV 31 (0.6), HPV 44 (0.4)
Republic of Korea	de Sanjosé 2013	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 67, 68, 69, 70, 73, 74, 82, 83, 87, 89, 91)	188	28.7	(22.7-35.6)	HPV 16 (18.1), HPV 18 (1.6), HPV 44 (1.6), HPV 45 (1.1), HPV 52 (1.1)
Kuwait	de Sanjosé 2013	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 67, 68, 69, 70, 73, 74, 82, 83, 87, 89, 91)	188	28.7	(22.7-35.6)	HPV 16 (18.1), HPV 18 (1.6), HPV 44 (1.6), HPV 45 (1.1), HPV 52 (1.1)
Lebanon	de Sanjosé 2013	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 67, 68, 69, 70, 73, 74, 82, 83, 87, 89, 91)	188	28.7	(22.7-35.6)	HPV 16 (18.1), HPV 18 (1.6), HPV 44 (1.6), HPV 45 (1.1), HPV 52 (1.1)
Mexico	de Sanjosé 2013	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 67, 68, 69, 70, 73, 74, 82, 83, 87, 89, 91)	324	40.1	(34.9-45.5)	HPV 16 (25.3), HPV 18 (2.8), HPV 45 (2.5), HPV 33 (2.2), HPV 6 (1.2)
Mali	de Sanjosé 2013	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 67, 68, 69, 70, 73, 74, 82, 83, 87, 89, 91)	24	70.8	(50.8-85.1)	HPV 16 (58.3), HPV 18 (4.2), HPV 45 (4.2), HPV 52 (4.2)

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Table 33 – continued from previous page

Country	Study	HPV detection method and targeted HPV types	No. Tested	HPV Prevalence %	(95% CI)[a]	Prevalence of 5 most frequent HPVs, HPV type (%)
Mozambique	de Sanjosé 2013	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 67, 68, 69, 70, 73, 74, 82, 83, 87, 89, 91)	24	70.8	(50.8-85.1)	HPV 16 (58.3), HPV 18 (4.2), HPV 45 (4.2), HPV 52 (4.2)
Nigeria	de Sanjosé 2013	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 67, 68, 69, 70, 73, 74, 82, 83, 87, 89, 91)	24	70.8	(50.8-85.1)	HPV 16 (58.3), HPV 18 (4.2), HPV 45 (4.2), HPV 52 (4.2)
New Zealand	de Sanjosé 2013	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 67, 68, 69, 70, 73, 74, 82, 83, 87, 89, 91)	220	40	(33.8-46.6)	HPV 16 (27.3), HPV 33 (3.6), HPV 18 (2.7), HPV 39 (1.4), HPV 6 (1.4)
Philippines	de Sanjosé 2013	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 67, 68, 69, 70, 73, 74, 82, 83, 87, 89, 91)	188	28.7	(22.7-35.6)	HPV 16 (18.1), HPV 18 (1.6), HPV 44 (1.6), HPV 45 (1.1), HPV 52 (1.1)
Poland	de Sanjosé 2013	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 67, 68, 69, 70, 73, 74, 82, 83, 87, 89, 91)	903	19.3	(16.8-22.0)	HPV 16 (13.8), HPV 33 (1.2), HPV 18 (0.6), HPV 31 (0.6), HPV 44 (0.4)
Portugal	de Sanjosé 2013	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 67, 68, 69, 70, 73, 74, 82, 83, 87, 89, 91)	903	19.3	(16.8-22.0)	HPV 16 (13.8), HPV 33 (1.2), HPV 18 (0.6), HPV 31 (0.6), HPV 44 (0.4)
Paraguay	de Sanjosé 2013	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 67, 68, 69, 70, 73, 74, 82, 83, 87, 89, 91)	324	40.1	(34.9-45.5)	HPV 16 (25.3), HPV 18 (2.8), HPV 45 (2.5), HPV 33 (2.2), HPV 6 (1.2)
Senegal	de Sanjosé 2013	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 67, 68, 69, 70, 73, 74, 82, 83, 87, 89, 91)	24	70.8	(50.8-85.1)	HPV 16 (58.3), HPV 18 (4.2), HPV 45 (4.2), HPV 52 (4.2)
Turkey	de Sanjosé 2013	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 67, 68, 69, 70, 73, 74, 82, 83, 87, 89, 91)	188	28.7	(22.7-35.6)	HPV 16 (18.1), HPV 18 (1.6), HPV 44 (1.6), HPV 45 (1.1), HPV 52 (1.1)
Taiwan	de Sanjosé 2013	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 67, 68, 69, 70, 73, 74, 82, 83, 87, 89, 91)	188	28.7	(22.7-35.6)	HPV 16 (18.1), HPV 18 (1.6), HPV 44 (1.6), HPV 45 (1.1), HPV 52 (1.1)
Uruguay	de Sanjosé 2013	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 67, 68, 69, 70, 73, 74, 82, 83, 87, 89, 91)	324	40.1	(34.9-45.5)	HPV 16 (25.3), HPV 18 (2.8), HPV 45 (2.5), HPV 33 (2.2), HPV 6 (1.2)

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Table 33 – continued from previous page

Country	Study	HPV detection method and targeted HPV types	No. Tested	HPV Prevalence %	(95% CI)[a]	Prevalence of 5 most frequent HPVs, HPV type (%)
United States of America	de Sanjosé 2013	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 67, 68, 69, 70, 73, 74, 82, 83, 87, 89, 91)	50	50	(36.6-63.4)	HPV 16 (34.0), HPV 33 (8.0), HPV 18 (2.0), HPV 44 (2.0), HPV 58 (2.0)
Venezuela	de Sanjosé 2013	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 67, 68, 69, 70, 73, 74, 82, 83, 87, 89, 91)	324	40.1	(34.9-45.5)	HPV 16 (25.3), HPV 18 (2.8), HPV 45 (2.5), HPV 33 (2.2), HPV 6 (1.2)
United States of America	Gargano 2012	PCR-SPF10, LBA, (HPV 6, 11, 16, 18, 26, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 62, 66, 67, 68, 69, 70, 71, 72, 73, 74, 81, 82, 83, 84)	176	68.8	(61.6-75.1)	HPV 16 (48.3), HPV 33 (10.2), HPV 52 (2.8), HPV 18 (1.7), HPV 31 (1.1)
Spain	Guerrero 2011	PCR L1-Consensus primer, (HPV 6, 11, 16, 18, 26, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 57, 58, 59, 61, 66, 68, 70, 71, 72, 73, 81, 82, 83, 84)	30	16.7	(7.3-33.6)	HPV 59 (10.0), HPV 16 (3.3), HPV 18 (3.3), HPV 6 (3.3)
Germany	Hampl 2006	PCR-MY09/11, Sequencing (HPV 16, 18, 20, 21, 22, 23, 26, 30, 31, 32, 33, 35, 42, 44, 45, 51, 52, 56, 58, 61, 67, 73, 91)	48	60.4	(46.3-73.0)	HPV 16 (39.6), HPV 33 (8.3), HPV 31 (4.2), HPV 18 (2.1)
Denmark	Hørding 1993	PCR-E6, PCR-E7, TS (HPV 6, 11, 16, 18, 33)	62	30.6	(20.6-43.0)	HPV 16 (21.0), HPV 18 (4.8), HPV 33 (4.8)
Denmark	Hørding 1994	PCR-E6, PCR-E7, TS (HPV 6, 11, 16, 18, 33)	78	30.8	(21.6-41.7)	HPV 16 (28.2), HPV 33 (3.8)
Finland	Iwasawa 1997	PCR-MY09/11, PCR L1-Consensus primer, PCR-E6, TS (HPV 6, 11, 16, 18, 33)	74	36.5	(26.4-47.9)	HPV 16 (25.7), HPV 18 (12.2), HPV 33 (1.4)
Netherlands	Kagie 1997	PCR-CPI/CPIIG, Sequencing (HPV 6, 11, 16, 31, 33, 45)	66	19.7	(11.9-30.8)	HPV 16 (16.7), HPV 33 (1.5), HPV 45 (1.5)
United States of America	Kim 1996	PCR-MY09/11, PCR L1-Consensus primer, TS, Sequencing (HPV 16, 18)	18	38.9	(20.3-61.4)	HPV 16 (27.8), HPV 18 (5.6)
Sweden	Larsson 2012	PCR-E6, (HPV 6, 11, 16, 18, 31, 33, 39, 45, 51, 52, 56, 58, 59)	130	30.8	(23.5-39.2)	HPV 16 (23.8), HPV 33 (3.8), HPV 18 (1.5), HPV 56 (0.8), HPV 59 (0.8)
Spain	Lerma 1999	PCR L1-Consensus primer, TS (HPV 16, 18)	57	12.3	(6.1-23.2)	HPV 16 (12.3)
Sweden	Lindell 2010	PCR-CPI/CPIIG, TS, Sequencing (HPV 6, 11, 16, 18, 33, 52)	75	30.7	(21.4-41.8)	HPV 16 (21.3), HPV 18 (2.7), HPV 33 (2.7), HPV 52 (1.3)
Poland	Liss 1998	PCR-MY09/11, PCR L1-Consensus primer, PCR-E6, PCR-E7, RFLP (HPV 6, 11, 16, 18, 31, 33, 35, 45, 52, 58)	18	16.7	(5.8-39.2)	HPV 16 (16.7)
United States of America	Madeleine 1997	PCR-MY09/11, PCR L1-Consensus primer, PCR-E6, RFLP (HPV 16)	55	50.9	(38.1-63.6)	HPV 16 (43.6)
Denmark	Madsen 2008	EIA, (HPV 6, 11, 16, 18, 31, 33, 35, 42, 44, 45, 51, 52, 56, 58, 61, 67, 73)	60	51.7	(39.3-63.8)	HPV 16 (36.7), HPV 33 (11.7), HPV 73 (3.3), HPV 51 (1.7), HPV 6 (1.7)
Germany	Milde-Langosch 1995	PCR-MY09/11, TS (HPV 6, 11, 16, 18, 31, 33, 35)	40	27.5	(16.1-42.8)	HPV 16 (25.0)

Continued on next page

Table 33 – continued from previous page

Country	Study	HPV detection method and targeted HPV types	No. Tested	HPV Prevalence %	(95% CI)[a]	Prevalence of 5 most frequent HPVs, HPV type (%)
Japan	Nagano 1996	PCR-L1C1/C2, RFLP (HPV 6, 11, 16, 18, 30, 31, 33, 34, 35, 39, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 68, 70)	11	72.7	(43.4-90.3)	HPV 16 (36.4), HPV 18 (9.1), HPV 51 (9.1), HPV 56 (9.1), HPV 6 (9.1)
Thailand	Ngamkham 2013	EIA (HPV 6, 11, 16, 18, 26, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 57, 58, 59, 66, 68, 70, 71, 72, 73, 81, 82, 83, 84, 89)	25	44	(26.7-62.9)	HPV 16 (36.0), HPV 33 (8.0), HPV 35 (8.0), HPV 18 (4.0), HPV 58 (4.0)
Japan	Osakabe 2007	PCR-L1C1/C2, RFLP (HPV 6, 11, 16, 18, 31, 33, 42, 52, 58)	21	23.8	(10.6-45.1)	HPV 16 (14.3), HPV 52 (4.8), HPV 6 (4.8)
Brazil	Pinto 1999	PCR L1-Consensus primer, PCR-E6, TS (HPV 06/11, 16, 18, 40, 42, 43, 44, 45, 51, 52, 54, 56, 58)	158	24.1	(18.1-31.3)	HPV 16 (16.5), HPV 18 (9.5), HPV 6/11 (1.3), HPV 45 (0.6)
Germany	Reuschenbach 2013	PCR- MULTIPLEX (HPV 6, 11, 16, 18, 31, 33, 35, 39, 42, 43, 44, 45, 51, 52, 56, 58, 59, 68, 70, 71, 73, 82)	183	43.7	(36.7-51.0)	HPV 16 (36.1), HPV 18 (2.7), HPV 33 (1.1), HPV 11 (0.5), HPV 31 (0.5)
Germany	Riethdorf 2004	PCR L1-Consensus primer, TS (HPV 16)	71	87.3	(77.6-93.2)	HPV 16 (87.3)
United States of America	Riethdorf 2004	PCR L1-Consensus primer, TS (HPV 16)	71	87.3	(77.6-93.2)	HPV 16 (87.3)
United States of America	Sutton 2008	PCR L1-Consensus primer, LBA (HPV 6, 11, 16, 18, 26, 31, 33, 34, 35, 39, 40, 42, 45, 51, 52, 53, 54, 56, 58, 59, 61, 62, 66, 67, 68, 70, 71, 72, 73, 81, 82, 83, 84)	116	69.8	(60.9-77.4)	HPV 16 (56.0), HPV 33 (10.3), HPV 45 (3.4), HPV 52 (2.6), HPV 6 (2.6)
Czechia	Tachezy 2011	PCR L1-Consensus primer, , Sequencing (HPV 6, 11, 16, 18, 20, 21, 22, 23, 26, 30, 31, 32, 33, 34, 35, 38, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 57, 58, 59, 60, 61, 62, 66, 67, 68, 69, 70, 71, 72, 73, 74, 80, 81, 82, 83, 84, 85, 86, 87, 89, 90, 91)	46	41.3	(28.3-55.7)	HPV 16 (23.9), HPV 33 (8.7), HPV 42 (2.2), HPV 45 (2.2), HPV 6 (2.2)
Australia	Tan 2013	PCR L1-Consensus primer, (HPV 6, 11, 16, 18, 26, 31, 33, 35, 39, 40, 42, 44, 45, 51, 52, 53, 54, 56, 58, 59, 66, 68, 69, 70, 71, 73, 74, 82)	20	90	(69.9-97.2)	HPV 16 (80.0), HPV 33 (5.0), HPV 35 (5.0), HPV 52 (5.0), HPV 54 (5.0)
United States of America	Tate 1994	PCR-MY09/11, PCR L1-Consensus primer, RFLP (HPV 16, 33)	13	53.8	(29.1-76.8)	HPV 16 (46.2), HPV 33 (7.7)
Netherlands	Trietsch 2013	PCR, (HPV 6, 11, 16, 18, 26, 31, 33, 35, 39, 40, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 66, 68, 69, 70, 71, 73, 74, 82)	108	16.7	(10.8-24.8)	HPV 16 (10.2), HPV 33 (5.6), HPV 18 (1.9)
Netherlands	van de Nieuwenhof 2009	PCR L1-Consensus primer, (HPV 6, 11, 16, 18, 31, 33, 35, 42, 45, 51, 52, 53, 54, 56, 58, 66, 73)	130	34.6	(27.0-43.1)	HPV 16 (15.4), HPV 33 (5.4), HPV 18 (2.3), HPV 52 (1.5), HPV 54 (1.5)
Netherlands	van der Avoort 2006	PCR L1-Consensus primer, PCR-SPF10, (HPV 6, 11, 16, 18, 31, 33, 35, 42, 44, 45, 51, 52, 56, 58)	16	0	(0.0-19.4)	

Data updated on 22 May 2023 (data as of 30 Jun 2015)

DBH: Dot Blot Hybridization; EIA: Enzyme ImmunoAssay; HC2: Hybrid Capture 2; ISH: In Situ Hybridization; LBA: Line-Blot Assay; LiPA: Line Probe Assay; PCR: Polymerase Chain Reaction; RFLP: Restriction Fragment Length Polymorphism; RLBH: Reverse Line Blot Hybridization; RT-PCR: Real Time Polymerase Chain Reaction; SBH: Southern Blot Hybridization; SPF: Short Primer Fragment; TS: Type Specific;
[a] 95% Confidence Interval
Data Sources: See references in Section 9 References.

Table 34: Studies on HPV prevalence among VIN 2/3 cases in the World

Country	Study	HPV detection method and targeted HPV types	No. Tested	HPV Prevalence %	(95% CI)[a]	Prevalence of 5 most frequent HPVs, HPV type (%)
United Kingdom	Abdel-Hady 2001	TS (HPV 06/11, 16, 18, 31, 33)	32	71.9	(54.6-84.4)	HPV 16 (62.5), HPV 6/11 (18.8), HPV 31 (3.1), HPV 33 (3.1)
United Kingdom	Baldwin 2003	PCR L1-Consensus primer, Sequencing (HPV 6, 11, 16, 18, 31, 33)	11	100	(74.1-100.0)	HPV 16 (90.9), HPV 33 (9.1)
Italy	Bonvicini 2005	PCR-MY09/11 (HPV 16, 18, 31, 33, 35, 45, 52, 58)	25	44	(26.7-62.9)	HPV 16 (36.0), HPV 35 (8.0), HPV 33 (4.0), HPV 52 (4.0)
United Kingdom	Bryant 2011	PCR- MULTIPLEX (HPV 6, 11, 16, 18, 31, 33, 35, 40, 42, 43, 44, 45, 51, 52, 53, 56, 58, 59, 66, 73)	49	81.6	(68.6-90.0)	HPV 16 (67.3), HPV 33 (16.3), HPV 6 (10.2), HPV 18 (2.0), HPV 31 (2.0)
United Kingdom	Daayana 2010	EIA, (HPV 6, 11, 16, 26, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 57, 58, 59, 61, 66, 68, 70, 71, 72, 73, 81, 82, 83, 84)	19	78.9	(56.7-91.5)	HPV 16 (73.7), HPV 33 (5.3), HPV 42 (5.3), HPV 84 (5.3)
Argentina	de Sanjosé 2013	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 67, 68, 69, 70, 73, 74, 82, 83, 87, 89, 91)	126	77.8	(69.8-84.2)	HPV 16 (57.1), HPV 33 (8.7), HPV 6 (4.8), HPV 31 (4.0), HPV 11 (1.6)
Australia	de Sanjosé 2013	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 67, 68, 69, 70, 73, 74, 82, 83, 87, 89, 91)	125	94.4	(88.9-97.3)	HPV 16 (71.2), HPV 33 (10.4), HPV 18 (4.0), HPV 31 (3.2), HPV 51 (1.6)
Austria	de Sanjosé 2013	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 67, 68, 69, 70, 73, 74, 82, 83, 87, 89, 91)	312	86.9	(82.7-90.2)	HPV 16 (69.6), HPV 33 (11.2), HPV 18 (2.2), HPV 6 (1.6), HPV 52 (1.3)
Bangladesh	de Sanjosé 2013	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 67, 68, 69, 70, 73, 74, 82, 83, 87, 89, 91)	20	100	(83.9-100.0)	HPV 16 (80.0), HPV 18 (5.0), HPV 33 (5.0), HPV 35 (5.0), HPV 54 (5.0)
Bosnia & Herzegovina	de Sanjosé 2013	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 67, 68, 69, 70, 73, 74, 82, 83, 87, 89, 91)	312	86.9	(82.7-90.2)	HPV 16 (69.6), HPV 33 (11.2), HPV 18 (2.2), HPV 6 (1.6), HPV 52 (1.3)
Belarus	de Sanjosé 2013	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 67, 68, 69, 70, 73, 74, 82, 83, 87, 89, 91)	312	86.9	(82.7-90.2)	HPV 16 (69.6), HPV 33 (11.2), HPV 18 (2.2), HPV 6 (1.6), HPV 52 (1.3)
Brazil	de Sanjosé 2013	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 67, 68, 69, 70, 73, 74, 82, 83, 87, 89, 91)	126	77.8	(69.8-84.2)	HPV 16 (57.1), HPV 33 (8.7), HPV 6 (4.8), HPV 31 (4.0), HPV 11 (1.6)
Chile	de Sanjosé 2013	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 67, 68, 69, 70, 73, 74, 82, 83, 87, 89, 91)	126	77.8	(69.8-84.2)	HPV 16 (57.1), HPV 33 (8.7), HPV 6 (4.8), HPV 31 (4.0), HPV 11 (1.6)

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Table 34 – continued from previous page

Country	Study	HPV detection method and targeted HPV types	No. Tested	HPV Prevalence %	HPV Prevalence (95% CI)[a]	Prevalence of 5 most frequent HPVs, HPV type (%)
Colombia	de Sanjosé 2013	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 67, 68, 69, 70, 73, 74, 82, 83, 87, 89, 91)	126	77.8	(69.8-84.2)	HPV 16 (57.1), HPV 33 (8.7), HPV 6 (4.8), HPV 31 (4.0), HPV 11 (1.6)
Czechia	de Sanjosé 2013	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 67, 68, 69, 70, 73, 74, 82, 83, 87, 89, 91)	312	86.9	(82.7-90.2)	HPV 16 (69.6), HPV 33 (11.2), HPV 18 (2.2), HPV 6 (1.6), HPV 52 (1.3)
Germany	de Sanjosé 2013	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 67, 68, 69, 70, 73, 74, 82, 83, 87, 89, 91)	312	86.9	(82.7-90.2)	HPV 16 (69.6), HPV 33 (11.2), HPV 18 (2.2), HPV 6 (1.6), HPV 52 (1.3)
Ecuador	de Sanjosé 2013	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 67, 68, 69, 70, 73, 74, 82, 83, 87, 89, 91)	126	77.8	(69.8-84.2)	HPV 16 (57.1), HPV 33 (8.7), HPV 6 (4.8), HPV 31 (4.0), HPV 11 (1.6)
Spain	de Sanjosé 2013	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 67, 68, 69, 70, 73, 74, 82, 83, 87, 89, 91)	312	86.9	(82.7-90.2)	HPV 16 (69.6), HPV 33 (11.2), HPV 18 (2.2), HPV 6 (1.6), HPV 52 (1.3)
France	de Sanjosé 2013	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 67, 68, 69, 70, 73, 74, 82, 83, 87, 89, 91)	312	86.9	(82.7-90.2)	HPV 16 (69.6), HPV 33 (11.2), HPV 18 (2.2), HPV 6 (1.6), HPV 52 (1.3)
United Kingdom	de Sanjosé 2013	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 67, 68, 69, 70, 73, 74, 82, 83, 87, 89, 91)	312	86.9	(82.7-90.2)	HPV 16 (69.6), HPV 33 (11.2), HPV 18 (2.2), HPV 6 (1.6), HPV 52 (1.3)
Greece	de Sanjosé 2013	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 67, 68, 69, 70, 73, 74, 82, 83, 87, 89, 91)	312	86.9	(82.7-90.2)	HPV 16 (69.6), HPV 33 (11.2), HPV 18 (2.2), HPV 6 (1.6), HPV 52 (1.3)
Guatemala	de Sanjosé 2013	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 67, 68, 69, 70, 73, 74, 82, 83, 87, 89, 91)	126	77.8	(69.8-84.2)	HPV 16 (57.1), HPV 33 (8.7), HPV 6 (4.8), HPV 31 (4.0), HPV 11 (1.6)
Honduras	de Sanjosé 2013	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 67, 68, 69, 70, 73, 74, 82, 83, 87, 89, 91)	126	77.8	(69.8-84.2)	HPV 16 (57.1), HPV 33 (8.7), HPV 6 (4.8), HPV 31 (4.0), HPV 11 (1.6)
India	de Sanjosé 2013	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 67, 68, 69, 70, 73, 74, 82, 83, 87, 89, 91)	20	100	(83.9-100.0)	HPV 16 (80.0), HPV 18 (5.0), HPV 33 (5.0), HPV 35 (5.0), HPV 54 (5.0)

Continued on next page

Table 34 – continued from previous page

Country	Study	HPV detection method and targeted HPV types	No. Tested	HPV Prevalence %	(95% CI)[a]	Prevalence of 5 most frequent HPVs, HPV type (%)
Israel	de Sanjosé 2013	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 67, 68, 69, 70, 73, 74, 82, 83, 87, 89, 91)	20	100	(83.9-100.0)	HPV 16 (80.0), HPV 18 (5.0), HPV 33 (5.0), HPV 35 (5.0), HPV 54 (5.0)
Italy	de Sanjosé 2013	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 67, 68, 69, 70, 73, 74, 82, 83, 87, 89, 91)	312	86.9	(82.7-90.2)	HPV 16 (69.6), HPV 33 (11.2), HPV 18 (2.2), HPV 6 (1.6), HPV 52 (1.3)
Republic of Korea	de Sanjosé 2013	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 67, 68, 69, 70, 73, 74, 82, 83, 87, 89, 91)	20	100	(83.9-100.0)	HPV 16 (80.0), HPV 18 (5.0), HPV 33 (5.0), HPV 35 (5.0), HPV 54 (5.0)
Kuwait	de Sanjosé 2013	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 67, 68, 69, 70, 73, 74, 82, 83, 87, 89, 91)	20	100	(83.9-100.0)	HPV 16 (80.0), HPV 18 (5.0), HPV 33 (5.0), HPV 35 (5.0), HPV 54 (5.0)
Lebanon	de Sanjosé 2013	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 67, 68, 69, 70, 73, 74, 82, 83, 87, 89, 91)	20	100	(83.9-100.0)	HPV 16 (80.0), HPV 18 (5.0), HPV 33 (5.0), HPV 35 (5.0), HPV 54 (5.0)
Mexico	de Sanjosé 2013	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 67, 68, 69, 70, 73, 74, 82, 83, 87, 89, 91)	126	77.8	(69.8-84.2)	HPV 16 (57.1), HPV 33 (8.7), HPV 6 (4.8), HPV 31 (4.0), HPV 11 (1.6)
New Zealand	de Sanjosé 2013	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 67, 68, 69, 70, 73, 74, 82, 83, 87, 89, 91)	125	94.4	(88.9-97.3)	HPV 16 (71.2), HPV 33 (10.4), HPV 18 (4.0), HPV 31 (3.2), HPV 51 (1.6)
Philippines	de Sanjosé 2013	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 67, 68, 69, 70, 73, 74, 82, 83, 87, 89, 91)	20	100	(83.9-100.0)	HPV 16 (80.0), HPV 18 (5.0), HPV 33 (5.0), HPV 35 (5.0), HPV 54 (5.0)
Poland	de Sanjosé 2013	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 67, 68, 69, 70, 73, 74, 82, 83, 87, 89, 91)	312	86.9	(82.7-90.2)	HPV 16 (69.6), HPV 33 (11.2), HPV 18 (2.2), HPV 6 (1.6), HPV 52 (1.3)
Portugal	de Sanjosé 2013	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 67, 68, 69, 70, 73, 74, 82, 83, 87, 89, 91)	312	86.9	(82.7-90.2)	HPV 16 (69.6), HPV 33 (11.2), HPV 18 (2.2), HPV 6 (1.6), HPV 52 (1.3)
Paraguay	de Sanjosé 2013	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 67, 68, 69, 70, 73, 74, 82, 83, 87, 89, 91)	126	77.8	(69.8-84.2)	HPV 16 (57.1), HPV 33 (8.7), HPV 6 (4.8), HPV 31 (4.0), HPV 11 (1.6)

Continued on next page

Table 34 – continued from previous page

Country	Study	HPV detection method and targeted HPV types	No. Tested	HPV Prevalence %	HPV Prevalence (95% CI)[a]	Prevalence of 5 most frequent HPVs, HPV type (%)
Turkey	de Sanjosé 2013	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 67, 68, 69, 70, 73, 74, 82, 83, 87, 89, 91)	20	100	(83.9-100.0)	HPV 16 (80.0), HPV 18 (5.0), HPV 33 (5.0), HPV 35 (5.0), HPV 54 (5.0)
Taiwan	de Sanjosé 2013	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 67, 68, 69, 70, 73, 74, 82, 83, 87, 89, 91)	20	100	(83.9-100.0)	HPV 16 (80.0), HPV 18 (5.0), HPV 33 (5.0), HPV 35 (5.0), HPV 54 (5.0)
Uruguay	de Sanjosé 2013	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 67, 68, 69, 70, 73, 74, 82, 83, 87, 89, 91)	126	77.8	(69.8-84.2)	HPV 16 (57.1), HPV 33 (8.7), HPV 6 (4.8), HPV 31 (4.0), HPV 11 (1.6)
Venezuela	de Sanjosé 2013	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 66, 67, 68, 69, 70, 73, 74, 82, 83, 87, 89, 91)	126	77.8	(69.8-84.2)	HPV 16 (57.1), HPV 33 (8.7), HPV 6 (4.8), HPV 31 (4.0), HPV 11 (1.6)
United States of America	Gargano 2012	PCR-SPF10, LBA, (HPV 16, 18, 33, 52, 59)	68	97.1	(89.9-99.2)	HPV 16 (80.9), HPV 33 (8.8), HPV 59 (2.9), HPV 18 (1.5)
Germany	Hampl 2006	PCR-MY09/11, Sequencing (HPV 6, 11, 16, 18, 20, 21, 22, 23, 26, 30, 31, 32, 33, 35, 42, 44, 45, 51, 52, 56, 58, 61, 67, 73, 74, 91)	168	100	(97.8-100.0)	HPV 16 (79.8), HPV 33 (10.7), HPV 31 (4.2), HPV 18 (3.0)
Denmark	Junge 1995	PCR-E6, PCR-E7, TS (HPV 6, 11, 16, 18, 31, 33)	58	87.9	(77.1-94.0)	HPV 16 (77.6), HPV 33 (10.3)
Spain	Lerma 1999	PCR L1-Consensus primer, TS (HPV 16, 18)	18	27.8	(12.5-50.9)	HPV 16 (27.8)
United States of America	Madeleine 1997	PCR-MY09/11, PCR L1-Consensus primer, PCR-E6, RFLP (HPV 16)	253	71.5	(65.7-76.7)	HPV 16 (61.7)
Germany	Riethdorf 2004	PCR L1-Consensus primer, TS (HPV 16)	60	68.3	(55.8-78.7)	HPV 16 (68.3)
United States of America	Riethdorf 2004	PCR L1-Consensus primer, TS (HPV 16)	60	68.3	(55.8-78.7)	HPV 16 (68.3)
United States of America	Srodon 2006	PCR-MY09/11, PCR-SPF10, , Sequencing (HPV 6, 11, 16, 18, 20, 21, 22, 23, 26, 30, 31, 32, 33, 34, 35, 38, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 57, 58, 59, 60, 61, 62, 66, 67, 68, 69, 70, 71, 72, 73, 74, 80, 81, 82, 83, 84, 85, 86, 87, 89, 90, 91)	34	100	(89.8-100.0)	HPV 16 (91.2), HPV 18 (5.9), HPV 35 (5.9), HPV 11 (2.9), HPV 33 (2.9)
Czechia	Tachezy 2011	PCR L1-Consensus primer, , Sequencing (HPV 6, 11, 16, 18, 20, 21, 22, 23, 26, 30, 31, 32, 33, 34, 35, 38, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 57, 58, 59, 60, 61, 62, 66, 67, 68, 69, 70, 71, 72, 73, 74, 80, 81, 82, 83, 84, 85, 86, 87, 89, 90, 91)	94	94.7	(88.1-97.7)	HPV 16 (71.3), HPV 33 (8.5), HPV 18 (5.3), HPV 6 (4.3), HPV 11 (2.1)
Australia	Tan 2013	PCR L1-Consensus primer, (HPV 6, 11, 16, 18, 26, 31, 33, 35, 39, 40, 42, 44, 45, 51, 52, 53, 54, 56, 58, 59, 66, 68, 69, 70, 71, 73, 74, 82)	44	90.9	(78.8-96.4)	HPV 16 (68.2), HPV 26 (4.5), HPV 33 (4.5), HPV 52 (4.5), HPV 82 (4.5)

Continued on next page

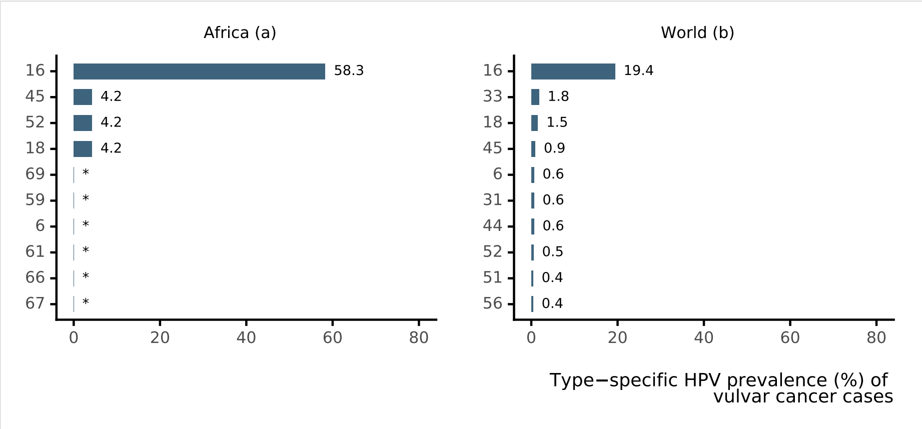
Table 34 – continued from previous page

Country	Study	HPV detection method and targeted HPV types	No. Tested	HPV Prevalence		Prevalence of 5 most frequent HPVs, HPV type (%)
				%	(95% CI)[a]	
Greece	Tsimplaki 2012	(HPV 6, 11, 16, 18, 31, 33, 35, 40, 42, 43, 44, 45, 51, 52, 53, 56, 58, 59, 66, 73)	14	78.6	(52.4-92.4)	HPV 16 (64.3), HPV 18 (7.1), HPV 51 (7.1), HPV 52 (7.1), HPV 53 (7.1)
Netherlands	van Beurden 1995	PCR-CPI/CPIIG, Sequencing (HPV 6, 11, 16, 18, 20, 21, 22, 23, 26, 30, 31, 32, 33, 45)	46	95.7	(85.5-98.8)	HPV 16 (89.1), HPV 33 (2.2), HPV 45 (2.2)
Netherlands	van der Avoort 2006	PCR L1-Consensus primer, PCR-SPF10, (HPV 6, 11, 16, 18, 31, 33, 35, 42, 43, 44, 45, 51, 52, 56, 58, 59, 74)	32	56.3	(39.3-71.8)	HPV 16 (40.6), HPV 31 (6.3), HPV 6 (6.3), HPV 33 (3.1)
Netherlands	van Esch 2014	TS (HPV 16, 18, 33, 73)	43	100	(91.8-100.0)	HPV 16 (81.4), HPV 33 (14.0), HPV 73 (2.3)
United Kingdom	Winters 2008	EIA, (HPV 6, 11, 16, 18, 26, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 57, 58, 59, 61, 66, 68, 70, 71, 72, 73, 81, 82, 83, 84)	20	85	(64.0-94.8)	HPV 16 (75.0), HPV 18 (5.0), HPV 33 (5.0)

Data updated on 22 May 2023 (data as of 30 Jun 2015)

DBH: Dot Blot Hybridization; EIA: Enzyme ImmunoAssay; HC2: Hybrid Capture 2; ISH: In Situ Hybridization; LBA: Line-Blot Assay; LiPA: Line Probe Assay; PCR: Polymerase Chain Reaction; RFLP: Restriction Fragment Length Polymorphism; RLBH: Reverse Line Blot Hybridization; RT-PCR: Real Time Polymerase Chain Reaction; SBH: Southern Blot Hybridization; SPF: Short Primer Fragment; TS: Type Specific;
VIN 2/3: Vulvar intraepithelial neoplasia of grade 2/3
[a] 95% Confidence Interval
Data Sources: See references in Section 9 References.

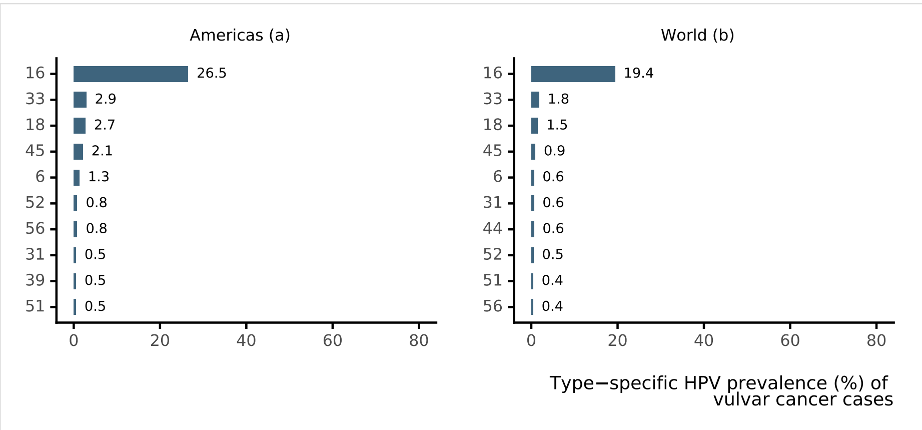
Figure 94: Comparison of the ten most frequent HPV types in cases of vulvar cancer in **Africa** and the World



Data updated on 22 May 2023 (data as of 30 Jun 2015)

[a] Includes cases from Mali, Mozambique, Nigeria, and Senegal.
[b] Includes cases from America (Argentina, Brazil, Chile, Colombia, Ecuador, Guatemala, Honduras, Mexico, Paraguay, Uruguay, United States of America and Venezuela); Africa (Mali, Mozambique, Nigeria, and Senegal); Oceania (Australia and New Zealand); Europe (Austria, Belarus, Bosnia-Herzegovina, Czech Republic, France, Germany, Greece, Italy, Poland, Portugal, Spain and United Kingdom); and in Asia (Bangladesh, India, Israel, South Korea, Kuwait, Lebanon, Philippines, Taiwan and Turkey)
[*] No data available. No more types than shown were tested or were positive.
Data Sources: See references in Section 9 References.

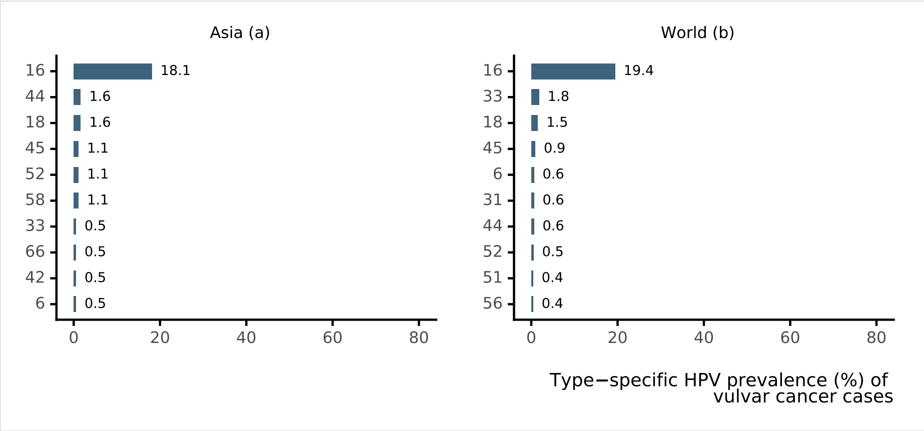
Figure 95: Comparison of the ten most frequent HPV types in cases of vulvar cancer in **the Americas** and the World



Data updated on 22 May 2023 (data as of 30 Jun 2015)

[a] Includes cases from Argentina, Brazil, Chile, Colombia, Ecuador, Guatemala, Honduras, Mexico, Paraguay, Uruguay, United States of America and Venezuela
[b] Includes cases from America (Argentina, Brazil, Chile, Colombia, Ecuador, Guatemala, Honduras, Mexico, Paraguay, Uruguay, United States of America and Venezuela); Africa (Mali, Mozambique, Nigeria, and Senegal); Oceania (Australia and New Zealand); Europe (Austria, Belarus, Bosnia-Herzegovina, Czech Republic, France, Germany, Greece, Italy, Poland, Portugal, Spain and United Kingdom); and in Asia (Bangladesh, India, Israel, South Korea, Kuwait, Lebanon, Philippines, Taiwan and Turkey)
Data Sources: See references in Section 9 References.

Figure 96: Comparison of the ten most frequent HPV types in cases of vulvar cancer in **Asia** and the World



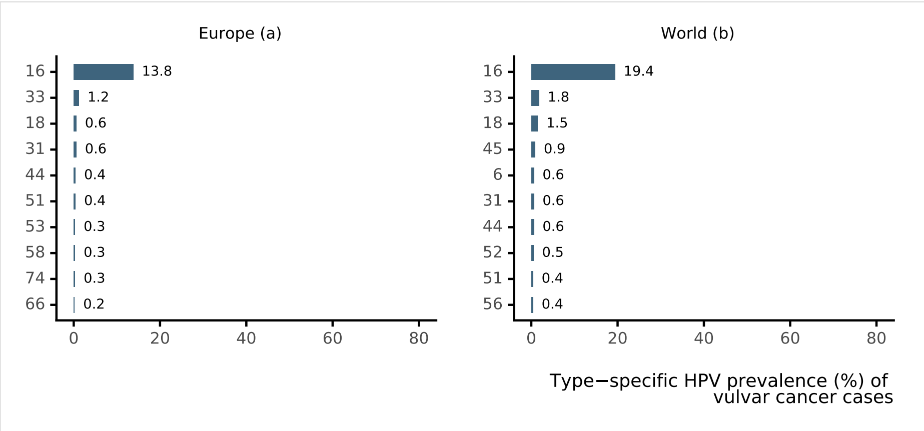
Data updated on 22 May 2023 (data as of 30 Jun 2015)

[a] Includes cases from Bangladesh, India, Israel, South Korea, Kuwait, Lebanon, Philippines, Taiwan and Turkey.

[b] Includes cases from America (Argentina, Brazil, Chile, Colombia, Ecuador, Guatemala, Honduras, Mexico, Paraguay, Uruguay, United States of America and Venezuela); Africa (Mali, Mozambique, Nigeria, and Senegal); Oceania (Australia and New Zealand); Europe (Austria, Belarus, Bosnia-Herzegovina, Czech Republic, France, Germany, Greece, Italy, Poland, Portugal, Spain and United Kingdom); and in Asia (Bangladesh, India, Israel, South Korea, Kuwait, Lebanon, Philippines, Taiwan and Turkey)

Data Sources: See references in Section 9 References.

Figure 97: Comparison of the ten most frequent HPV types in cases of vulvar cancer in **Europe** and the World



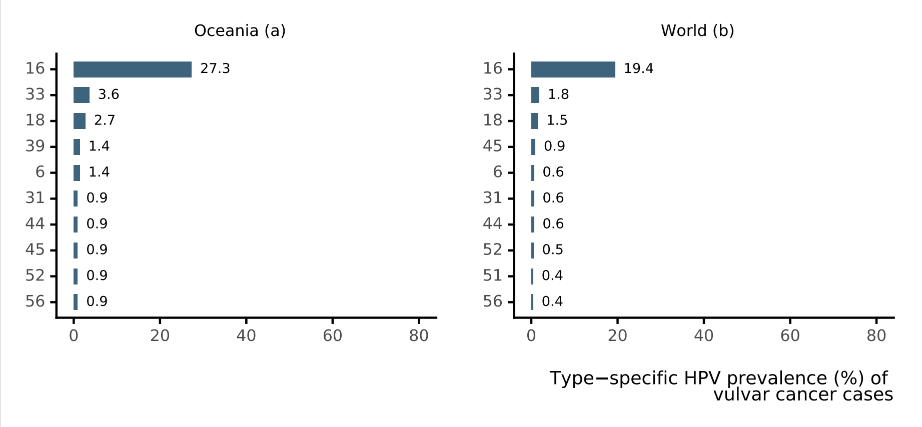
Data updated on 22 May 2023 (data as of 30 Jun 2015)

[a] Includes cases from Austria, Belarus, Bosnia-Herzegovina, Czech Republic, France, Germany, Greece, Italy, Poland, Portugal, Spain and United Kingdom.

[b] Includes cases from America (Argentina, Brazil, Chile, Colombia, Ecuador, Guatemala, Honduras, Mexico, Paraguay, Uruguay, United States of America and Venezuela); Africa (Mali, Mozambique, Nigeria, and Senegal); Oceania (Australia and New Zealand); Europe (Austria, Belarus, Bosnia-Herzegovina, Czech Republic, France, Germany, Greece, Italy, Poland, Portugal, Spain and United Kingdom); and in Asia (Bangladesh, India, Israel, South Korea, Kuwait, Lebanon, Philippines, Taiwan and Turkey)

Data Sources: See references in Section 9 References.

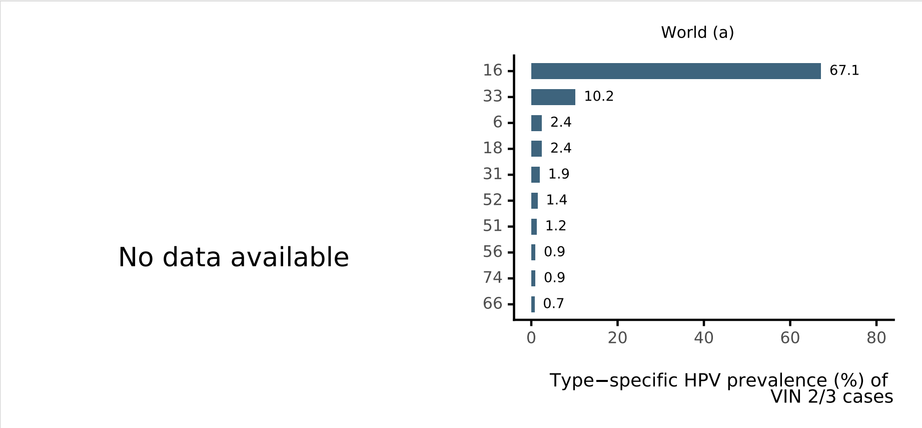
Figure 98: Comparison of the ten most frequent HPV types in cases of vulvar cancer in **Oceania** and the World



Data updated on 22 May 2023 (data as of 30 Jun 2015)

[a] Includes cases from Australia and New Zealand.
[b] Includes cases from America (Argentina, Brazil, Chile, Colombia, Ecuador, Guatemala, Honduras, Mexico, Paraguay, Uruguay, United States of America and Venezuela); Africa (Mali, Mozambique, Nigeria, and Senegal); Oceania (Australia and New Zealand); Europe (Austria, Belarus, Bosnia-Herzegovina, Czech Republic, France, Germany, Greece, Italy, Poland, Portugal, Spain and United Kingdom); and in Asia (Bangladesh, India, Israel, South Korea, Kuwait, Lebanon, Philippines, Taiwan and Turkey)
Data Sources: See references in Section 9 References.

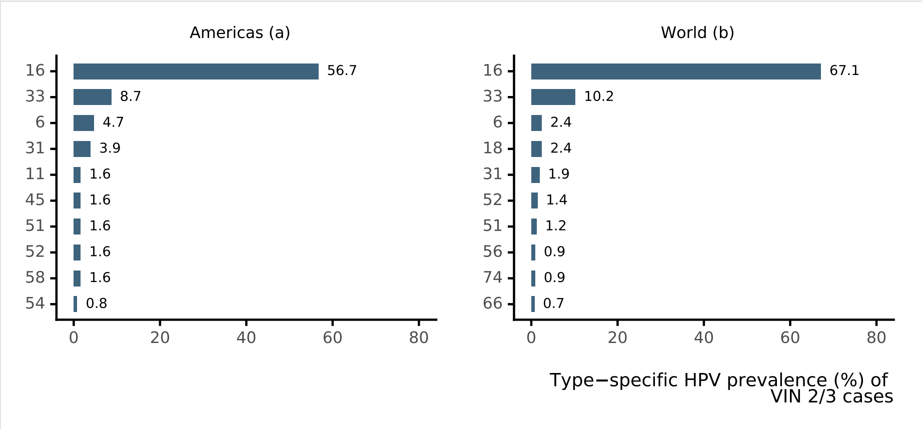
Figure 99: Comparison of the ten most frequent HPV types in VIN 2/3 cases in **Africa** and the World



Data updated on 22 May 2023 (data as of 30 Jun 2014)

VIN 2/3: Vulvar intraepithelial neoplasia of grade 2/3
[a] Includes cases from America (Argentina, Brazil, Chile, Colombia, Ecuador, Guatemala, Honduras, Mexico, Paraguay, Uruguay and Venezuela); Oceania (Australia and New Zealand); Europe (Austria, Belarus, Bosnia-Herzegovina, Czech Republic, France, Germany, Greece, Italy, Poland, Portugal, Spain and United Kingdom); and in Asia (Bangladesh, India, Israel, South Korea, Kuwait, Lebanon, Philippines, Taiwan and Turkey)
Data Sources: See references in Section 9 References.

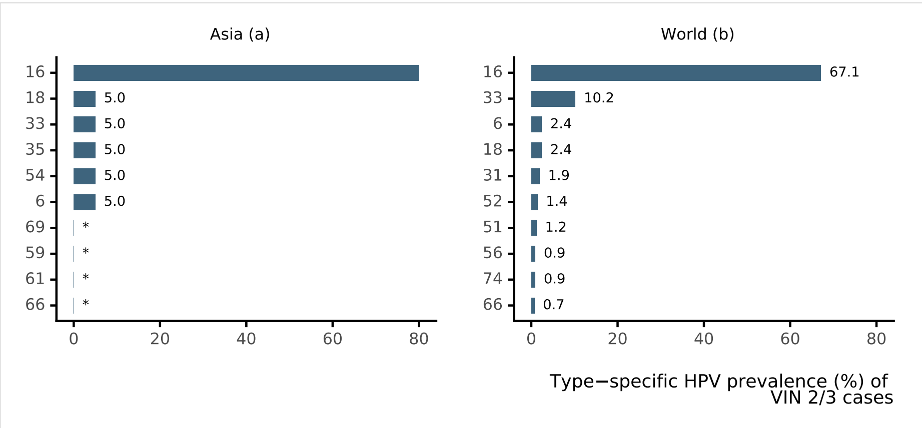
Figure 100: Comparison of the ten most frequent HPV types in VIN 2/3 cases in **the Americas** and the World



Data updated on 22 May 2023 (data as of 30 Jun 2014)

VIN 2/3: Vulvar intraepithelial neoplasia of grade 2/3
[a] Includes cases from Argentina, Brazil, Chile, Colombia, Ecuador, Guatemala, Honduras, Mexico, Paraguay, Uruguay, and Venezuela.
[b] Includes cases from America (Argentina, Brazil, Chile, Colombia, Ecuador, Guatemala, Honduras, Mexico, Paraguay, Uruguay and Venezuela); Oceania (Australia and New Zealand); Europe (Austria, Belarus, Bosnia-Herzegovina, Czech Republic, France, Germany, Greece, Italy, Poland, Portugal, Spain and United Kingdom); and in Asia (Bangladesh, India, Israel, South Korea, Kuwait, Lebanon, Philippines, Taiwan and Turkey)
Data Sources: See references in Section 9 References.

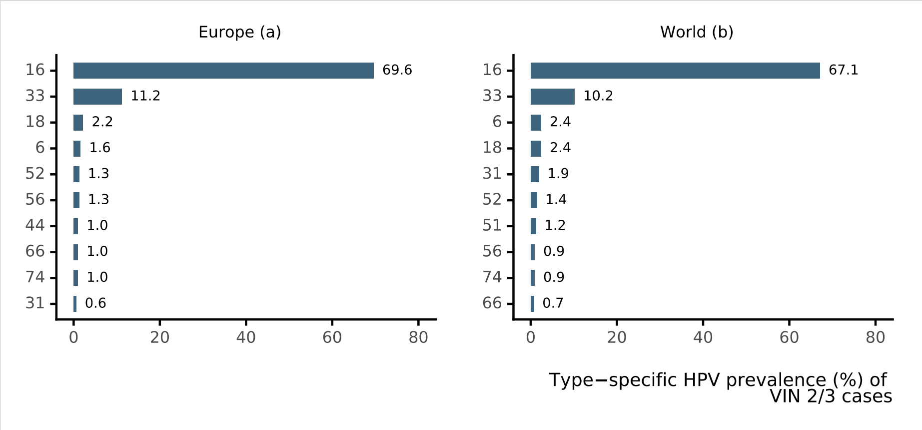
Figure 101: Comparison of the ten most frequent HPV types in VIN 2/3 cases in **Asia** and the World



Data updated on 22 May 2023 (data as of 30 Jun 2014)

VIN 2/3: Vulvar intraepithelial neoplasia of grade 2/3
[a] Includes cases from Bangladesh, India, Israel, South Korea, Kuwait, Lebanon, Philippines, Taiwan and Turkey.
[b] Includes cases from America (Argentina, Brazil, Chile, Colombia, Ecuador, Guatemala, Honduras, Mexico, Paraguay, Uruguay and Venezuela); Oceania (Australia and New Zealand); Europe (Austria, Belarus, Bosnia-Herzegovina, Czech Republic, France, Germany, Greece, Italy, Poland, Portugal, Spain and United Kingdom); and in Asia (Bangladesh, India, Israel, South Korea, Kuwait, Lebanon, Philippines, Taiwan and Turkey)
[*] No data available. No more types than shown were tested or were positive.
Data Sources: See references in Section 9 References.

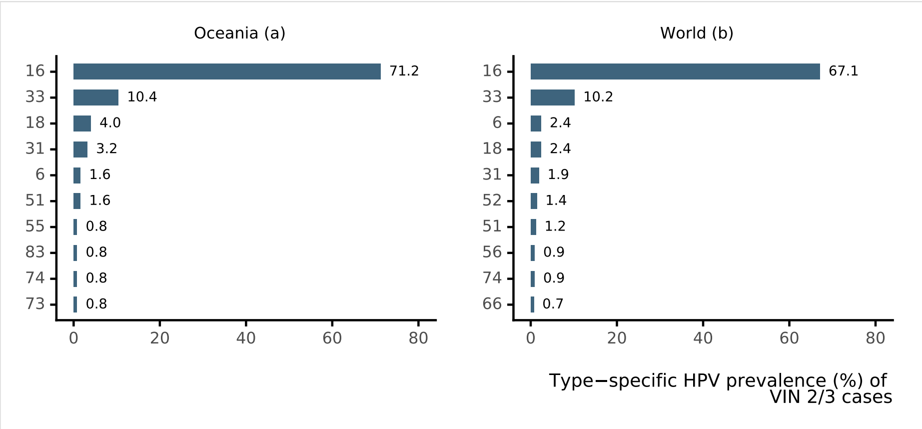
Figure 102: Comparison of the ten most frequent HPV types in VIN 2/3 cases in **Europe** and the World



Data updated on 22 May 2023 (data as of 30 Jun 2014)

VIN 2/3: Vulvar intraepithelial neoplasia of grade 2/3
[a] Includes cases from Austria, Belarus, Bosnia-Herzegovina, Czech Republic, France, Germany, Greece, Italy, Poland, Portugal, Spain and United Kingdom.
[b] Includes cases from America (Argentina, Brazil, Chile, Colombia, Ecuador, Guatemala, Honduras, Mexico, Paraguay, Uruguay and Venezuela); Oceania (Australia and New Zealand); Europe (Austria, Belarus, Bosnia-Herzegovina, Czech Republic, France, Germany, Greece, Italy, Poland, Portugal, Spain and United Kingdom); and in Asia (Bangladesh, India, Israel, South Korea, Kuwait, Lebanon, Philippines, Taiwan and Turkey)
Data Sources: See references in Section 9 References.

Figure 103: Comparison of the ten most frequent HPV types in VIN 2/3 cases in **Oceania** and the World



Data updated on 22 May 2023 (data as of 30 Jun 2014)

VIN 2/3: Vulvar intraepithelial neoplasia of grade 2/3
[a] Includes cases from Australia and New Zealand.
[b] Includes cases from America (Argentina, Brazil, Chile, Colombia, Ecuador, Guatemala, Honduras, Mexico, Paraguay, Uruguay and Venezuela); Oceania (Australia and New Zealand); Europe (Austria, Belarus, Bosnia-Herzegovina, Czech Republic, France, Germany, Greece, Italy, Poland, Portugal, Spain and United Kingdom); and in Asia (Bangladesh, India, Israel, South Korea, Kuwait, Lebanon, Philippines, Taiwan and Turkey)
Data Sources: See references in Section 9 References.

4.2.3 Vaginal cancer and precancerous vaginal lesions

Vaginal and cervical cancers share similar risk factors and it is generally accepted that both carcinomas share the same aetiology of HPV infection although there is limited evidence available. Women with vaginal cancer are more likely to have a history of other ano-genital cancers, particularly of the cervix, and these two carcinomas are frequently diagnosed simultaneously. HPV DNA is detected among 78% of invasive vaginal carcinomas and 91% of high-grade vaginal neoplasias (VaIN2/3). HPV16 is the most common type in high-grade vaginal neoplasias and it is detected in at least 78% of HPV-positive carcinomas (de Martel C et al. Lancet Glob Health 2020;8(2):e180-e190; De Vuyst H et al. Int J Cancer 2009; 124:1626-36). In this section, the HPV burden among cases of vaginal cancer cases and precancerous vaginal lesions in the World are presented.

Table 35: Studies on HPV prevalence among vaginal cancer cases in the World

Country	Study	HPV detection method and targeted HPV types	No. Tested	HPV Prevalence		
				%	(95% CI)[a]	Prevalence of 5 most frequent HPVs, HPV type (%)
Argentina	Alemany 2014	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 35, 39, 42, 45, 51, 52, 53, 56, 58, 59, 66, 67, 68, 69, 73, 82)	191	78	(71.6-83.3)	HPV 16 (42.4), HPV 31 (5.8), HPV 18 (4.2), HPV 33 (4.2), HPV 52 (3.1)
Australia	Alemany 2014	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 35, 39, 42, 45, 51, 52, 53, 56, 58, 59, 66, 67, 68, 69, 73, 82)	46	71.7	(57.5-82.7)	HPV 16 (41.3), HPV 33 (4.3), HPV 68 (4.3), HPV 18 (2.2), HPV 26 (2.2)
Austria	Alemany 2014	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 35, 39, 42, 45, 51, 52, 53, 56, 58, 59, 66, 67, 68, 69, 73, 82)	152	71.1	(63.4-77.7)	HPV 16 (47.4), HPV 18 (3.3), HPV 73 (3.3), HPV 33 (2.6), HPV 56 (2.6)
Bangladesh	Alemany 2014	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 35, 39, 42, 45, 51, 52, 53, 56, 58, 59, 66, 67, 68, 69, 73, 82)	46	71.7	(57.5-82.7)	HPV 16 (41.3), HPV 33 (4.3), HPV 68 (4.3), HPV 18 (2.2), HPV 26 (2.2)
Belarus	Alemany 2014	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 35, 39, 42, 45, 51, 52, 53, 56, 58, 59, 66, 67, 68, 69, 73, 82)	152	71.1	(63.4-77.7)	HPV 16 (47.4), HPV 18 (3.3), HPV 73 (3.3), HPV 33 (2.6), HPV 56 (2.6)
Brazil	Alemany 2014	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 35, 39, 42, 45, 51, 52, 53, 56, 58, 59, 66, 67, 68, 69, 73, 82)	191	78	(71.6-83.3)	HPV 16 (42.4), HPV 31 (5.8), HPV 18 (4.2), HPV 33 (4.2), HPV 52 (3.1)
Chile	Alemany 2014	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 35, 39, 42, 45, 51, 52, 53, 56, 58, 59, 66, 67, 68, 69, 73, 82)	191	78	(71.6-83.3)	HPV 16 (42.4), HPV 31 (5.8), HPV 18 (4.2), HPV 33 (4.2), HPV 52 (3.1)
Colombia	Alemany 2014	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 35, 39, 42, 45, 51, 52, 53, 56, 58, 59, 66, 67, 68, 69, 73, 82)	191	78	(71.6-83.3)	HPV 16 (42.4), HPV 31 (5.8), HPV 18 (4.2), HPV 33 (4.2), HPV 52 (3.1)
Czechia	Alemany 2014	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 35, 39, 42, 45, 51, 52, 53, 56, 58, 59, 66, 67, 68, 69, 73, 82)	152	71.1	(63.4-77.7)	HPV 16 (47.4), HPV 18 (3.3), HPV 73 (3.3), HPV 33 (2.6), HPV 56 (2.6)
Germany	Alemany 2014	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 35, 39, 42, 45, 51, 52, 53, 56, 58, 59, 66, 67, 68, 69, 73, 82)	152	71.1	(63.4-77.7)	HPV 16 (47.4), HPV 18 (3.3), HPV 73 (3.3), HPV 33 (2.6), HPV 56 (2.6)
Ecuador	Alemany 2014	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 35, 39, 42, 45, 51, 52, 53, 56, 58, 59, 66, 67, 68, 69, 73, 82)	191	78	(71.6-83.3)	HPV 16 (42.4), HPV 31 (5.8), HPV 18 (4.2), HPV 33 (4.2), HPV 52 (3.1)
Spain	Alemany 2014	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 35, 39, 42, 45, 51, 52, 53, 56, 58, 59, 66, 67, 68, 69, 73, 82)	152	71.1	(63.4-77.7)	HPV 16 (47.4), HPV 18 (3.3), HPV 73 (3.3), HPV 33 (2.6), HPV 56 (2.6)
France	Alemany 2014	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 35, 39, 42, 45, 51, 52, 53, 56, 58, 59, 66, 67, 68, 69, 73, 82)	152	71.1	(63.4-77.7)	HPV 16 (47.4), HPV 18 (3.3), HPV 73 (3.3), HPV 33 (2.6), HPV 56 (2.6)

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Table 35 – continued from previous page

Country	Study	HPV detection method and targeted HPV types	No. Tested	HPV Prevalence %	HPV Prevalence (95% CI)[a]	Prevalence of 5 most frequent HPVs, HPV type (%)
United Kingdom	Alemany 2014	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 35, 39, 42, 45, 51, 52, 53, 56, 58, 59, 66, 67, 68, 69, 73, 82)	152	71.1	(63.4-77.7)	HPV 16 (47.4), HPV 18 (3.3), HPV 73 (3.3), HPV 33 (2.6), HPV 56 (2.6)
Greece	Alemany 2014	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 35, 39, 42, 45, 51, 52, 53, 56, 58, 59, 66, 67, 68, 69, 73, 82)	152	71.1	(63.4-77.7)	HPV 16 (47.4), HPV 18 (3.3), HPV 73 (3.3), HPV 33 (2.6), HPV 56 (2.6)
Guatemala	Alemany 2014	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 35, 39, 42, 45, 51, 52, 53, 56, 58, 59, 66, 67, 68, 69, 73, 82)	191	78	(71.6-83.3)	HPV 16 (42.4), HPV 31 (5.8), HPV 18 (4.2), HPV 33 (4.2), HPV 52 (3.1)
India	Alemany 2014	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 35, 39, 42, 45, 51, 52, 53, 56, 58, 59, 66, 67, 68, 69, 73, 82)	46	71.7	(57.5-82.7)	HPV 16 (41.3), HPV 33 (4.3), HPV 68 (4.3), HPV 18 (2.2), HPV 26 (2.2)
Israel	Alemany 2014	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 35, 39, 42, 45, 51, 52, 53, 56, 58, 59, 66, 67, 68, 69, 73, 82)	46	71.7	(57.5-82.7)	HPV 16 (41.3), HPV 33 (4.3), HPV 68 (4.3), HPV 18 (2.2), HPV 26 (2.2)
Republic of Korea	Alemany 2014	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 35, 39, 42, 45, 51, 52, 53, 56, 58, 59, 66, 67, 68, 69, 73, 82)	46	71.7	(57.5-82.7)	HPV 16 (41.3), HPV 33 (4.3), HPV 68 (4.3), HPV 18 (2.2), HPV 26 (2.2)
Kuwait	Alemany 2014	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 35, 39, 42, 45, 51, 52, 53, 56, 58, 59, 66, 67, 68, 69, 73, 82)	46	71.7	(57.5-82.7)	HPV 16 (41.3), HPV 33 (4.3), HPV 68 (4.3), HPV 18 (2.2), HPV 26 (2.2)
Lebanon	Alemany 2014	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 35, 39, 42, 45, 51, 52, 53, 56, 58, 59, 66, 67, 68, 69, 73, 82)	46	71.7	(57.5-82.7)	HPV 16 (41.3), HPV 33 (4.3), HPV 68 (4.3), HPV 18 (2.2), HPV 26 (2.2)
Mexico	Alemany 2014	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 35, 39, 42, 45, 51, 52, 53, 56, 58, 59, 66, 67, 68, 69, 73, 82)	191	78	(71.6-83.3)	HPV 16 (42.4), HPV 31 (5.8), HPV 18 (4.2), HPV 33 (4.2), HPV 52 (3.1)
Mozambique	Alemany 2014	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 35, 39, 42, 45, 51, 52, 53, 56, 58, 59, 66, 67, 68, 69, 73, 82)	19	68.4	(46.0-84.6)	HPV 16 (31.6), HPV 45 (10.5), HPV 18 (5.3), HPV 31 (5.3), HPV 33 (5.3)
Nigeria	Alemany 2014	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 35, 39, 42, 45, 51, 52, 53, 56, 58, 59, 66, 67, 68, 69, 73, 82)	19	68.4	(46.0-84.6)	HPV 16 (31.6), HPV 45 (10.5), HPV 18 (5.3), HPV 31 (5.3), HPV 33 (5.3)
Philippines	Alemany 2014	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 35, 39, 42, 45, 51, 52, 53, 56, 58, 59, 66, 67, 68, 69, 73, 82)	46	71.7	(57.5-82.7)	HPV 16 (41.3), HPV 33 (4.3), HPV 68 (4.3), HPV 18 (2.2), HPV 26 (2.2)
Poland	Alemany 2014	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 35, 39, 42, 45, 51, 52, 53, 56, 58, 59, 66, 67, 68, 69, 73, 82)	152	71.1	(63.4-77.7)	HPV 16 (47.4), HPV 18 (3.3), HPV 73 (3.3), HPV 33 (2.6), HPV 56 (2.6)
Paraguay	Alemany 2014	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 35, 39, 42, 45, 51, 52, 53, 56, 58, 59, 66, 67, 68, 69, 73, 82)	191	78	(71.6-83.3)	HPV 16 (42.4), HPV 31 (5.8), HPV 18 (4.2), HPV 33 (4.2), HPV 52 (3.1)
Turkey	Alemany 2014	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 35, 39, 42, 45, 51, 52, 53, 56, 58, 59, 66, 67, 68, 69, 73, 82)	46	71.7	(57.5-82.7)	HPV 16 (41.3), HPV 33 (4.3), HPV 68 (4.3), HPV 18 (2.2), HPV 26 (2.2)
Taiwan	Alemany 2014	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 35, 39, 42, 45, 51, 52, 53, 56, 58, 59, 66, 67, 68, 69, 73, 82)	46	71.7	(57.5-82.7)	HPV 16 (41.3), HPV 33 (4.3), HPV 68 (4.3), HPV 18 (2.2), HPV 26 (2.2)

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Table 35 – continued from previous page

Country	Study	HPV detection method and targeted HPV types	No. Tested	HPV Prevalence %	(95% CI)[a]	Prevalence of 5 most frequent HPVs, HPV type (%)
Uruguay	Alemany 2014	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 35, 39, 42, 45, 51, 52, 53, 56, 58, 59, 66, 67, 68, 69, 73, 82)	191	78	(71.6-83.3)	HPV 16 (42.4), HPV 31 (5.8), HPV 18 (4.2), HPV 33 (4.2), HPV 52 (3.1)
United States of America	Alemany 2014	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 35, 39, 42, 45, 51, 52, 53, 56, 58, 59, 66, 67, 68, 69, 73, 82)	191	78	(71.6-83.3)	HPV 16 (42.4), HPV 31 (5.8), HPV 18 (4.2), HPV 33 (4.2), HPV 52 (3.1)
Venezuela	Alemany 2014	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 35, 39, 42, 45, 51, 52, 53, 56, 58, 59, 66, 67, 68, 69, 73, 82)	191	78	(71.6-83.3)	HPV 16 (42.4), HPV 31 (5.8), HPV 18 (4.2), HPV 33 (4.2), HPV 52 (3.1)
Portugal	Ferreira 2008	PCR, (HPV 6, 11, 16, 18, 31, 33, 35, 40, 42, 44, 45, 51, 52, 56, 58)	21	81	(60.0-92.3)	HPV 16 (33.3), HPV 31 (28.6), HPV 40 (14.3), HPV 18 (9.5), HPV 33 (9.5)
Spain	Fuste 2010	PCR-SPF10, (HPV 6, 11, 16, 18, 31, 33, 35, 39, 40, 42, 45, 51, 52, 56, 58, 59, 68)	32	78.1	(61.2-89.0)	HPV 16 (56.3), HPV 52 (6.3), HPV 35 (3.1), HPV 51 (3.1), HPV 58 (3.1)
Sweden	Larsson 2013	PCR-E6, (HPV 6, 11, 16, 18, 31, 33, 35, 39, 45, 51, 52, 56, 58, 59)	69	53.6	(42.0-64.9)	HPV 16 (37.7), HPV 18 (2.9), HPV 31 (2.9), HPV 33 (2.9), HPV 52 (2.9)
Denmark	Madsen 2008	EIA, (HPV 6, 11, 16, 18, 31, 33, 35, 39, 40, 42, 44, 45, 51, 52, 56, 58)	27	88.9	(71.9-96.1)	HPV 16 (77.8), HPV 33 (7.4), HPV 18 (3.7), HPV 39 (3.7), HPV 45 (3.7)

Data updated on 22 May 2023 (data as of 30 Jun 2015)

DBH: Dot Blot Hybridization; EIA: Enzyme ImmunoAssay; HC2: Hybrid Capture 2; ISH: In Situ Hybridization; LBA: Line-Blot Assay; LiPA: Line Probe Assay; PCR: Polymerase Chain Reaction; RFLP: Restriction Fragment Length Polymorphism; RLBH: Reverse Line Blot Hybridization; RT-PCR: Real Time Polymerase Chain Reaction; SBH: Southern Blot Hybridization; SPF: Short Primer Fragment; TS: Type Specific;
[a] 95% Confidence Interval
Data Sources: See references in Section 9 References.

Table 36: Studies on HPV prevalence among VaIN 2/3 cases in the World

Country	Study	HPV detection method and targeted HPV types	No. Tested	HPV Prevalence %	(95% CI)[a]	Prevalence of 5 most frequent HPVs, HPV type (%)
Argentina	Alemany 2014	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 35, 39, 42, 45, 51, 52, 53, 56, 58, 59, 66, 67, 68, 69, 73, 82, 89)	80	92.5	(84.6-96.5)	HPV 16 (46.3), HPV 52 (6.3), HPV 73 (6.3), HPV 18 (6.3), HPV 51 (3.8)
Australia	Alemany 2014	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 35, 39, 42, 45, 51, 52, 53, 56, 58, 59, 66, 67, 68, 69, 73, 82, 89)	13	100	(77.2-100.0)	HPV 16 (53.8), HPV 52 (15.4), HPV 59 (15.4), HPV 45 (7.7), HPV 73 (7.7)
Austria	Alemany 2014	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 35, 39, 42, 45, 51, 52, 53, 56, 58, 59, 66, 67, 68, 69, 73, 82)	96	97.9	(92.7-99.4)	HPV 16 (65.6), HPV 33 (7.3), HPV 18 (5.2), HPV 52 (3.1), HPV 73 (3.1)
Bangladesh	Alemany 2014	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 35, 39, 42, 45, 51, 52, 53, 56, 58, 59, 66, 67, 68, 69, 73, 82, 89)	13	100	(77.2-100.0)	HPV 16 (53.8), HPV 52 (15.4), HPV 59 (15.4), HPV 45 (7.7), HPV 73 (7.7)
Belarus	Alemany 2014	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 35, 39, 42, 45, 51, 52, 53, 56, 58, 59, 66, 67, 68, 69, 73, 82)	96	97.9	(92.7-99.4)	HPV 16 (65.6), HPV 33 (7.3), HPV 18 (5.2), HPV 52 (3.1), HPV 73 (3.1)
Brazil	Alemany 2014	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 35, 39, 42, 45, 51, 52, 53, 56, 58, 59, 66, 67, 68, 69, 73, 82, 89)	80	92.5	(84.6-96.5)	HPV 16 (46.3), HPV 52 (6.3), HPV 73 (6.3), HPV 18 (6.3), HPV 51 (3.8)

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Table 36 – continued from previous page

Country	Study	HPV detection method and targeted HPV types	No. Tested	HPV Prevalence %	(95% CI)[a]	Prevalence of 5 most frequent HPVs, HPV type (%)
Chile	Alemany 2014	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 35, 39, 42, 45, 51, 52, 53, 56, 58, 59, 66, 67, 68, 69, 73, 82, 89)	80	92.5	(84.6-96.5)	HPV 16 (46.3), HPV 52 (6.3), HPV 73 (6.3), HPV 18 (6.3), HPV 51 (3.8)
Colombia	Alemany 2014	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 35, 39, 42, 45, 51, 52, 53, 56, 58, 59, 66, 67, 68, 69, 73, 82, 89)	80	92.5	(84.6-96.5)	HPV 16 (46.3), HPV 52 (6.3), HPV 73 (6.3), HPV 18 (6.3), HPV 51 (3.8)
Czechia	Alemany 2014	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 35, 39, 42, 45, 51, 52, 53, 56, 58, 59, 66, 67, 68, 69, 73, 82)	96	97.9	(92.7-99.4)	HPV 16 (65.6), HPV 33 (7.3), HPV 18 (5.2), HPV 52 (3.1), HPV 73 (3.1)
Germany	Alemany 2014	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 35, 39, 42, 45, 51, 52, 53, 56, 58, 59, 66, 67, 68, 69, 73, 82)	96	97.9	(92.7-99.4)	HPV 16 (65.6), HPV 33 (7.3), HPV 18 (5.2), HPV 52 (3.1), HPV 73 (3.1)
Ecuador	Alemany 2014	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 35, 39, 42, 45, 51, 52, 53, 56, 58, 59, 66, 67, 68, 69, 73, 82, 89)	80	92.5	(84.6-96.5)	HPV 16 (46.3), HPV 52 (6.3), HPV 73 (6.3), HPV 18 (6.3), HPV 51 (3.8)
Spain	Alemany 2014	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 35, 39, 42, 45, 51, 52, 53, 56, 58, 59, 66, 67, 68, 69, 73, 82)	96	97.9	(92.7-99.4)	HPV 16 (65.6), HPV 33 (7.3), HPV 18 (5.2), HPV 52 (3.1), HPV 73 (3.1)
France	Alemany 2014	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 35, 39, 42, 45, 51, 52, 53, 56, 58, 59, 66, 67, 68, 69, 73, 82)	96	97.9	(92.7-99.4)	HPV 16 (65.6), HPV 33 (7.3), HPV 18 (5.2), HPV 52 (3.1), HPV 73 (3.1)
United Kingdom	Alemany 2014	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 35, 39, 42, 45, 51, 52, 53, 56, 58, 59, 66, 67, 68, 69, 73, 82)	96	97.9	(92.7-99.4)	HPV 16 (65.6), HPV 33 (7.3), HPV 18 (5.2), HPV 52 (3.1), HPV 73 (3.1)
Greece	Alemany 2014	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 35, 39, 42, 45, 51, 52, 53, 56, 58, 59, 66, 67, 68, 69, 73, 82)	96	97.9	(92.7-99.4)	HPV 16 (65.6), HPV 33 (7.3), HPV 18 (5.2), HPV 52 (3.1), HPV 73 (3.1)
Guatemala	Alemany 2014	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 35, 39, 42, 45, 51, 52, 53, 56, 58, 59, 66, 67, 68, 69, 73, 82, 89)	80	92.5	(84.6-96.5)	HPV 16 (46.3), HPV 52 (6.3), HPV 73 (6.3), HPV 18 (6.3), HPV 51 (3.8)
India	Alemany 2014	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 35, 39, 42, 45, 51, 52, 53, 56, 58, 59, 66, 67, 68, 69, 73, 82, 89)	13	100	(77.2-100.0)	HPV 16 (53.8), HPV 52 (15.4), HPV 59 (15.4), HPV 45 (7.7), HPV 73 (7.7)
Israel	Alemany 2014	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 35, 39, 42, 45, 51, 52, 53, 56, 58, 59, 66, 67, 68, 69, 73, 82, 89)	13	100	(77.2-100.0)	HPV 16 (53.8), HPV 52 (15.4), HPV 59 (15.4), HPV 45 (7.7), HPV 73 (7.7)
Republic of Korea	Alemany 2014	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 35, 39, 42, 45, 51, 52, 53, 56, 58, 59, 66, 67, 68, 69, 73, 82, 89)	13	100	(77.2-100.0)	HPV 16 (53.8), HPV 52 (15.4), HPV 59 (15.4), HPV 45 (7.7), HPV 73 (7.7)
Kuwait	Alemany 2014	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 35, 39, 42, 45, 51, 52, 53, 56, 58, 59, 66, 67, 68, 69, 73, 82, 89)	13	100	(77.2-100.0)	HPV 16 (53.8), HPV 52 (15.4), HPV 59 (15.4), HPV 45 (7.7), HPV 73 (7.7)
Lebanon	Alemany 2014	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 35, 39, 42, 45, 51, 52, 53, 56, 58, 59, 66, 67, 68, 69, 73, 82, 89)	13	100	(77.2-100.0)	HPV 16 (53.8), HPV 52 (15.4), HPV 59 (15.4), HPV 45 (7.7), HPV 73 (7.7)
Mexico	Alemany 2014	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 35, 39, 42, 45, 51, 52, 53, 56, 58, 59, 66, 67, 68, 69, 73, 82, 89)	80	92.5	(84.6-96.5)	HPV 16 (46.3), HPV 52 (6.3), HPV 73 (6.3), HPV 18 (6.3), HPV 51 (3.8)

Continued on next page

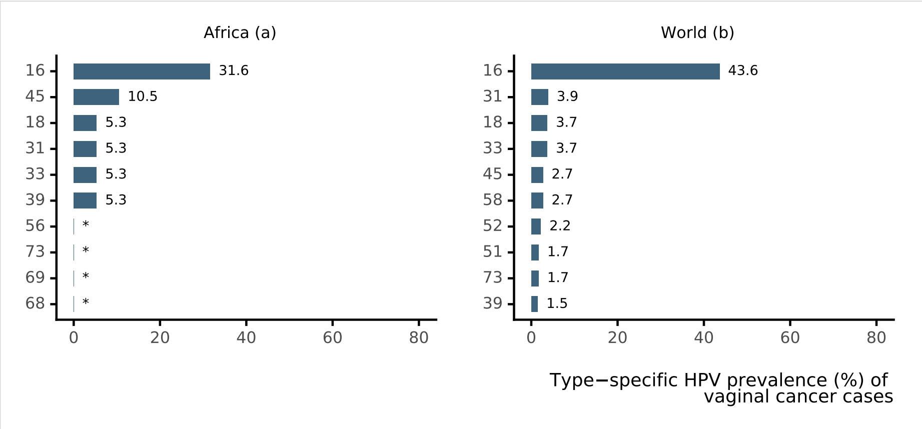
Table 36 – continued from previous page

Country	Study	HPV detection method and targeted HPV types	No. Tested	HPV Prevalence %	HPV Prevalence (95% CI)[a]	Prevalence of 5 most frequent HPVs, HPV type (%)
Philippines	Alemany 2014	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 35, 39, 42, 45, 51, 52, 53, 56, 58, 59, 66, 67, 68, 69, 73, 82, 89)	13	100	(77.2-100.0)	HPV 16 (53.8), HPV 52 (15.4), HPV 59 (15.4), HPV 45 (7.7), HPV 73 (7.7)
Poland	Alemany 2014	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 35, 39, 42, 45, 51, 52, 53, 56, 58, 59, 66, 67, 68, 69, 73, 82)	96	97.9	(92.7-99.4)	HPV 16 (65.6), HPV 33 (7.3), HPV 18 (5.2), HPV 52 (3.1), HPV 73 (3.1)
Paraguay	Alemany 2014	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 35, 39, 42, 45, 51, 52, 53, 56, 58, 59, 66, 67, 68, 69, 73, 82, 89)	80	92.5	(84.6-96.5)	HPV 16 (46.3), HPV 52 (6.3), HPV 73 (6.3), HPV 18 (6.3), HPV 51 (3.8)
Turkey	Alemany 2014	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 35, 39, 42, 45, 51, 52, 53, 56, 58, 59, 66, 67, 68, 69, 73, 82, 89)	13	100	(77.2-100.0)	HPV 16 (53.8), HPV 52 (15.4), HPV 59 (15.4), HPV 45 (7.7), HPV 73 (7.7)
Taiwan	Alemany 2014	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 35, 39, 42, 45, 51, 52, 53, 56, 58, 59, 66, 67, 68, 69, 73, 82, 89)	13	100	(77.2-100.0)	HPV 16 (53.8), HPV 52 (15.4), HPV 59 (15.4), HPV 45 (7.7), HPV 73 (7.7)
Uruguay	Alemany 2014	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 35, 39, 42, 45, 51, 52, 53, 56, 58, 59, 66, 67, 68, 69, 73, 82, 89)	80	92.5	(84.6-96.5)	HPV 16 (46.3), HPV 52 (6.3), HPV 73 (6.3), HPV 18 (6.3), HPV 51 (3.8)
United States of America	Alemany 2014	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 35, 39, 42, 45, 51, 52, 53, 56, 58, 59, 66, 67, 68, 69, 73, 82, 89)	80	92.5	(84.6-96.5)	HPV 16 (46.3), HPV 52 (6.3), HPV 73 (6.3), HPV 18 (6.3), HPV 51 (3.8)
Venezuela	Alemany 2014	PCR-SPF10, EIA, (HPV 6, 11, 16, 18, 26, 30, 31, 33, 35, 39, 42, 45, 51, 52, 53, 56, 58, 59, 66, 67, 68, 69, 73, 82, 89)	80	92.5	(84.6-96.5)	HPV 16 (46.3), HPV 52 (6.3), HPV 73 (6.3), HPV 18 (6.3), HPV 51 (3.8)
United States of America	Daling 2002	PCR-MY09/11, PCR L1-Consensus primer, RFLP, TS (HPV 16, 31, 33, 35, 58, 66, 73)	99	77.8	(68.6-84.8)	HPV 16 (54.5), HPV 58 (1.0), HPV 66 (1.0), HPV 73 (1.0)
Italy	Frega 2007	PCR, TS (HPV 16, 18)	30	100	(88.6-100.0)	HPV 16 (86.7), HPV 18 (13.3)
Germany	Hampl 2006	PCR-MY09/11, Sequencing (HPV 6, 11, 16, 18, 20, 21, 22, 23, 26, 30, 31, 32, 33, 35, 40, 44, 52, 56, 58)	11	90.9	(62.3-98.4)	HPV 16 (63.6)
United States of America	Srodon 2006	PCR-MY09/11, PCR-SPF10, , Sequencing (HPV 6, 11, 16, 18, 20, 21, 22, 23, 26, 30, 31, 32, 33, 34, 35, 38, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 57, 58, 59, 60, 61, 62, 66, 67, 68, 69, 70, 71, 72, 73, 74, 80, 81, 82, 83, 84, 85, 86, 87, 89, 90, 91)	16	93.8	(71.7-98.9)	HPV 16 (50.0), HPV 58 (18.8), HPV 31 (12.5), HPV 35 (6.3), HPV 51 (6.3)
Japan	Sugase 1997	PCR, TS, Sequencing (HPV 6, 11, 16, 18, 20, 21, 22, 23, 26, 30, 31, 32, 33, 34, 35, 38, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 57, 58, 59, 60, 61, 62, 66, 67, 68, 69, 70, 71, 72, 73, 74, 80, 81, 82, 83, 84, 85, 86, 87, 89, 90, 91)	18	100	(82.4-100.0)	HPV 16 (16.7), HPV 58 (16.7), HPV 53 (11.1), HPV 67 (11.1), HPV 35 (5.6)
Greece	Tsimplaki 2012	(HPV 6, 11, 16, 18, 31, 33, 35, 39, 40, 42, 44, 45, 51, 52, 53, 56, 58, 66, 70)	10	40	(16.8-68.7)	HPV 16 (20.0), HPV 33 (20.0)

Data updated on 22 May 2023 (data as of 30 Jun 2015)

DBH: Dot Blot Hybridization; EIA: Enzyme ImmunoAssay; HC2: Hybrid Capture 2; ISH: In Situ Hybridization; LBA: Line-Blot Assay; LiPA: Line Probe Assay; PCR: Polymerase Chain Reaction; RFLP: Restriction Fragment Length Polymorphism; RLBH: Reverse Line Blot Hybridization; RT-PCR: Real Time Polymerase Chain Reaction; SBH: Southern Blot Hybridization; SPF: Short Primer Fragment; TS: Type Specific;
VAIN 2/3: Vaginal intraepithelial neoplasia of grade 2/3
[a] 95% Confidence Interval
Data Sources: See references in Section 9 References.

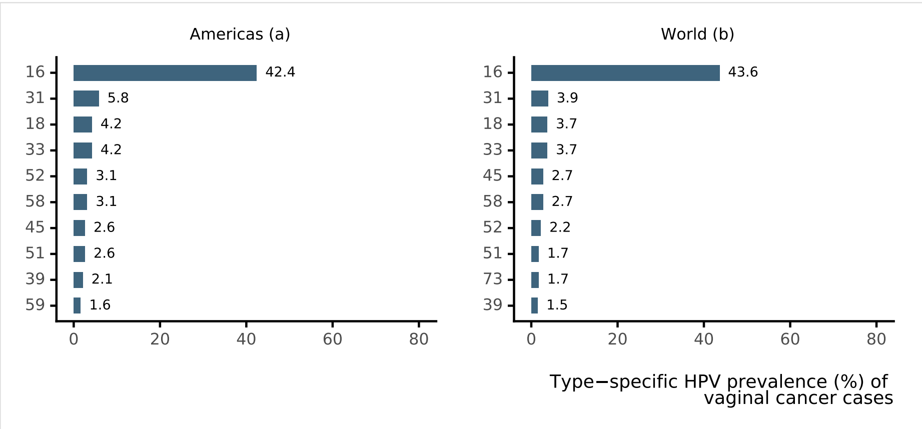
Figure 104: Comparison of the ten most frequent HPV types in cases of vaginal cancer in **Africa** and the World



Data updated on 22 May 2023 (data as of 30 Jun 2015)

[a] Includes cases from Mozambique, Nigeria.
[b] Includes cases from Europe (Austria, Belarus, Czech Republic, France, Germany, Greece, Poland, Spain and United Kingdom); America (Argentina, Brazil, Chile, Colombia, Ecuador, Guatemala, Mexico, Paraguay, Uruguay, United states of America and Venezuela); Africa (Mozambique, Nigeria); Asia (Bangladesh, India, Israel, South Korea, Kuwait, Philippines, Taiwan and Turkey); and Oceania (Australia)
[*] No data available. No more types than shown were tested or were positive.
Data Sources: See references in Section 9 References.

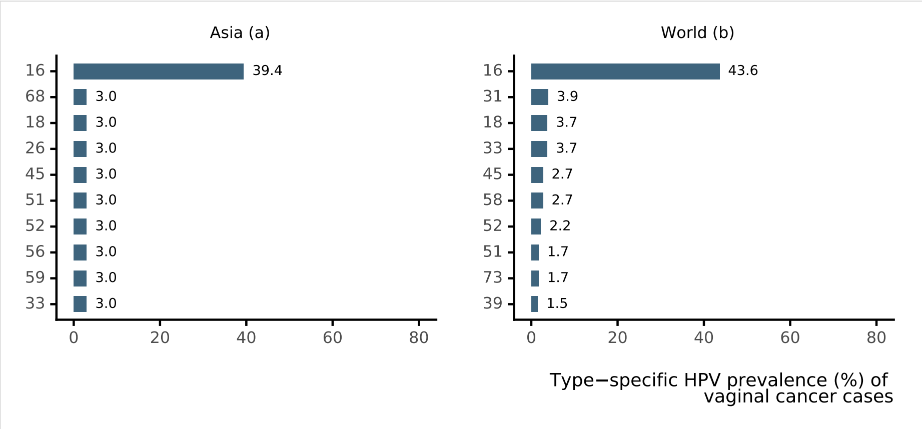
Figure 105: Comparison of the ten most frequent HPV types in cases of vaginal cancer in **the Americas** and the World



Data updated on 22 May 2023 (data as of 30 Jun 2015)

[a] Includes cases from Argentina, Brazil, Chile, Colombia, Ecuador, Guatemala, Mexico, Paraguay, Uruguay, United States of America and Venezuela.
[b] Includes cases from Europe (Austria, Belarus, Czech Republic, France, Germany, Greece, Poland, Spain and United Kingdom); America (Argentina, Brazil, Chile, Colombia, Ecuador, Guatemala, Mexico, Paraguay, Uruguay, United states of America and Venezuela); Africa (Mozambique, Nigeria); Asia (Bangladesh, India, Israel, South Korea, Kuwait, Philippines, Taiwan and Turkey); and Oceania (Australia)
Data Sources: See references in Section 9 References.

Figure 106: Comparison of the ten most frequent HPV types in cases of vaginal cancer in **Asia** and the World



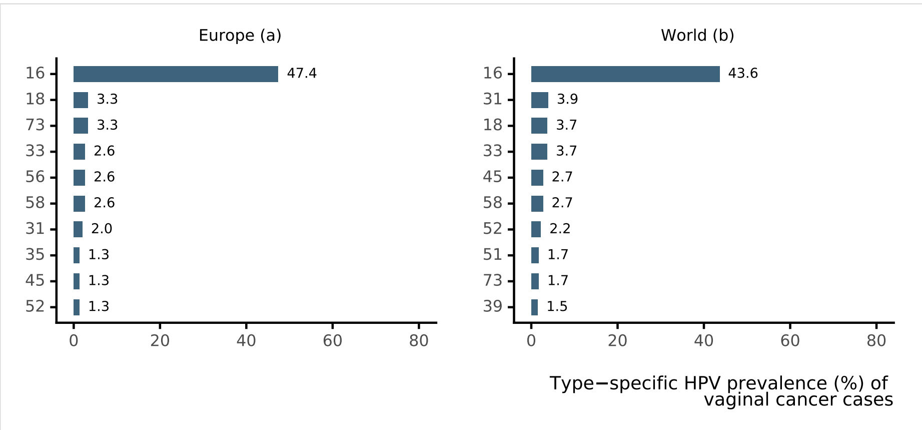
Data updated on 22 May 2023 (data as of 30 Jun 2015)

[a] Includes cases from Bangladesh, India, Israel, South Korea, Kuwait, Philippines, Taiwan and Turkey

[b] Includes cases from Europe (Austria, Belarus, Czech Republic, France, Germany, Greece, Poland, Spain and United Kingdom); America (Argentina, Brazil, Chile, Colombia, Ecuador, Guatemala, Mexico, Paraguay, Uruguay, United states of America and Venezuela); Africa (Mozambique, Nigeria); Asia (Bangladesh, India, Israel, South Korea, Kuwait, Philippines, Taiwan and Turkey); and Oceania (Australia)

Data Sources: See references in Section 9 References.

Figure 107: Comparison of the ten most frequent HPV types in cases of vaginal cancer in **Europe** and the World



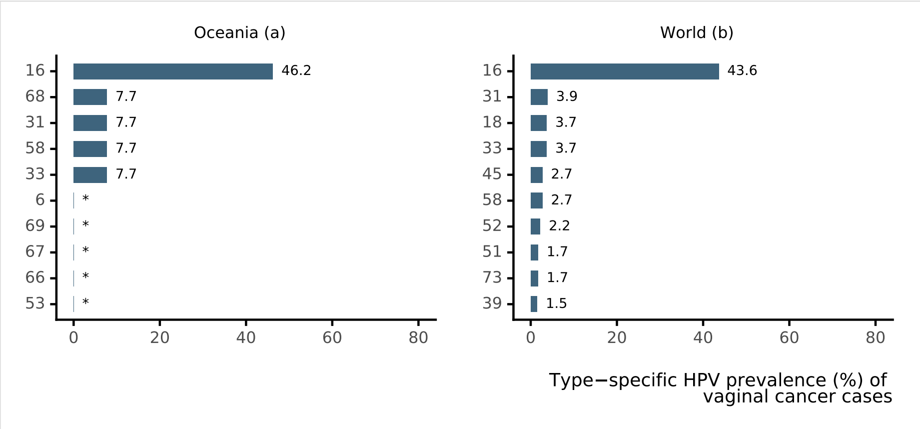
Data updated on 22 May 2023 (data as of 30 Jun 2015)

[a] Includes cases from Austria, Belarus, Czech Republic, France, Germany, Greece, Poland, Spain and United Kingdom.

[b] Includes cases from Europe (Austria, Belarus, Czech Republic, France, Germany, Greece, Poland, Spain and United Kingdom); America (Argentina, Brazil, Chile, Colombia, Ecuador, Guatemala, Mexico, Paraguay, Uruguay, United states of America and Venezuela); Africa (Mozambique, Nigeria); Asia (Bangladesh, India, Israel, South Korea, Kuwait, Philippines, Taiwan and Turkey); and Oceania (Australia)

Data Sources: See references in Section 9 References.

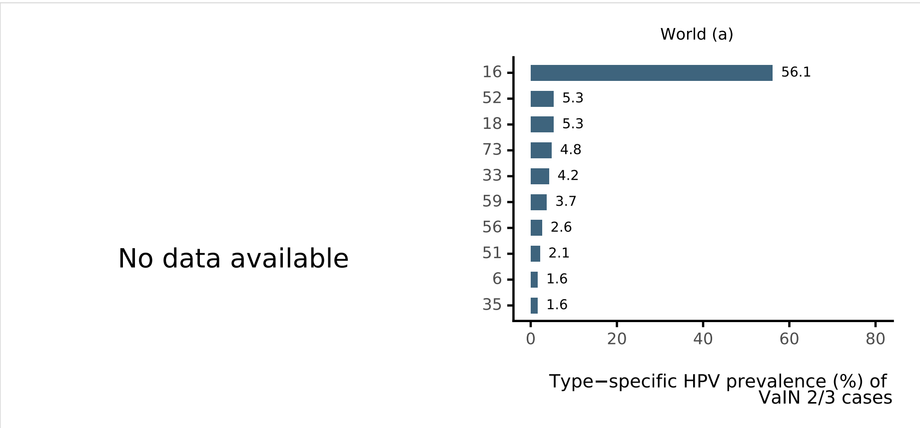
Figure 108: Comparison of the ten most frequent HPV types in cases of vaginal cancer in **Oceania** and the World



Data updated on 22 May 2023 (data as of 30 Jun 2015)

[a] Includes cases from Australia
[b] Includes cases from Europe (Austria, Belarus, Czech Republic, France, Germany, Greece, Poland, Spain and United Kingdom); America (Argentina, Brazil, Chile, Colombia, Ecuador, Guatemala, Mexico, Paraguay, Uruguay, United states of America and Venezuela); Africa (Mozambique, Nigeria); Asia (Bangladesh, India, Israel, South Korea, Kuwait, Philippines, Taiwan and Turkey); and Oceania (Australia)
[*] No data available. No more types than shown were tested or were positive.
Data Sources: See references in Section 9 References.

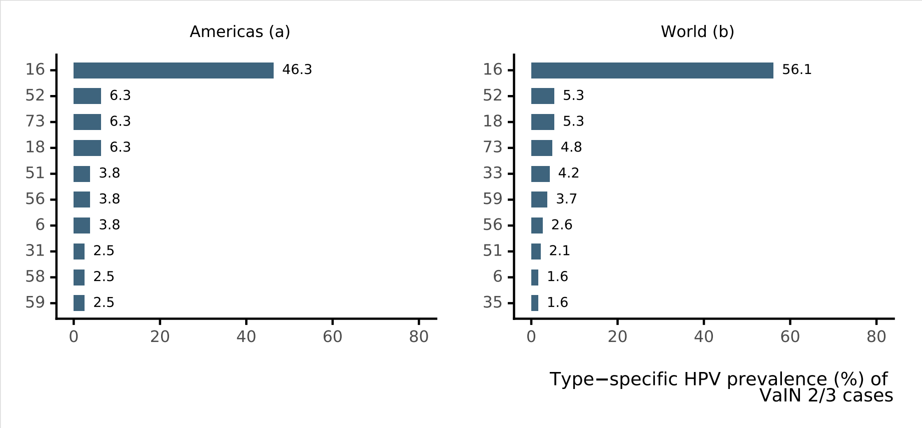
Figure 109: Comparison of the ten most frequent HPV types in VaIN 2/3 cases in **Africa** and the World



Data updated on 22 May 2023 (data as of 30 Jun 2014)

VAIN 2/3: Vaginal intraepithelial neoplasia of grade 2/3
[a] Includes cases from Europe (Austria, Belarus, Czech Republic, France, Germany, Greece, Poland, Spain and United Kingdom); America (Argentina, Brazil, Chile, Colombia, Ecuador, Guatemala, Mexico, Paraguay, Uruguay, United states of America and Venezuela); Asia (Bangladesh, India, Israel, South Korea, Kuwait, Philippines, Taiwan and Turkey); and Oceania (Australia)
Data Sources: See references in Section 9 References.

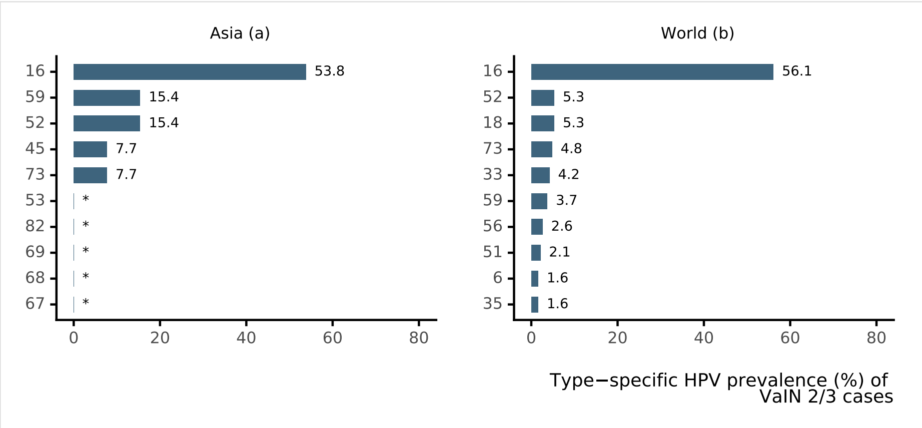
Figure 110: Comparison of the ten most frequent HPV types in VaIN 2/3 cases in **the Americas** and the World



Data updated on 22 May 2023 (data as of 30 Jun 2014)

VAIN 2/3: Vaginal intraepithelial neoplasia of grade 2/3
[a] Includes cases from Argentina, Brazil, Chile, Colombia, Ecuador, Guatemala, Mexico, Paraguay, Uruguay, United States of America and Venezuela.
[b] Includes cases from Europe (Austria, Belarus, Czech Republic, France, Germany, Greece, Poland, Spain and United Kingdom); America (Argentina, Brazil, Chile, Colombia, Ecuador, Guatemala, Mexico, Paraguay, Uruguay, United states of America and Venezuela); Asia (Bangladesh, India, Israel, South Korea, Kuwait, Philippines, Taiwan and Turkey); and Oceania (Australia)
Data Sources: See references in Section 9 References.

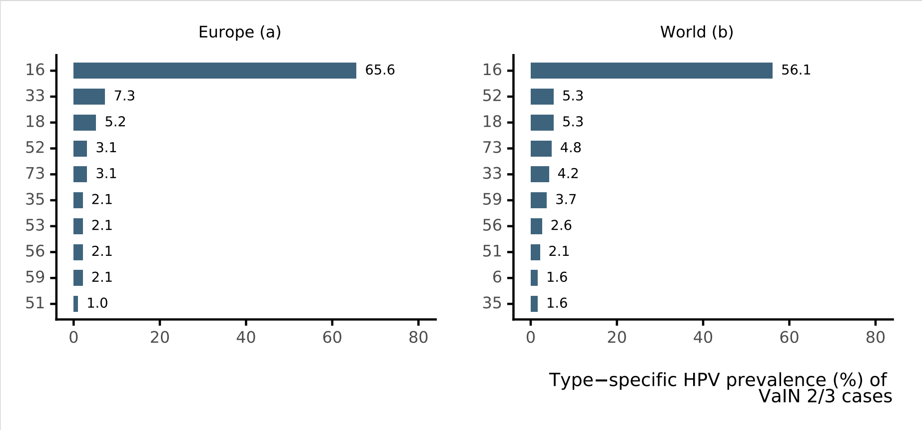
Figure 111: Comparison of the ten most frequent HPV types in VaIN 2/3 cases in **Asia** and the World



Data updated on 22 May 2023 (data as of 30 Jun 2014)

VAIN 2/3: Vaginal intraepithelial neoplasia of grade 2/3
[a] Includes cases from Australia, Bangladesh, India, Israel, South Korea, Kuwait, Philippines, Taiwan and Turkey.
[b] Includes cases from Europe (Austria, Belarus, Czech Republic, France, Germany, Greece, Poland, Spain and United Kingdom); America (Argentina, Brazil, Chile, Colombia, Ecuador, Guatemala, Mexico, Paraguay, Uruguay, United states of America and Venezuela); Asia (Bangladesh, India, Israel, South Korea, Kuwait, Philippines, Taiwan and Turkey); and Oceania (Australia)
* No data available. No more types than shown were tested or were positive.
Data Sources: See references in Section 9 References.

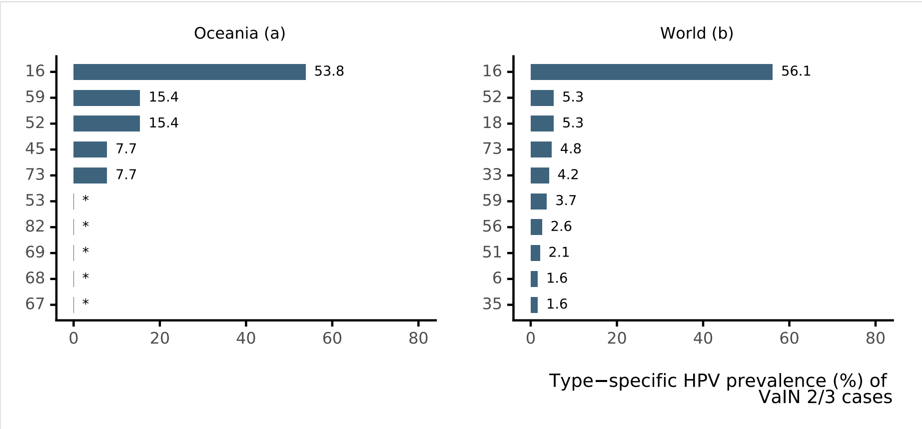
Figure 112: Comparison of the ten most frequent HPV types in VaIN 2/3 cases in **Europe** and the World



Data updated on 22 May 2023 (data as of 30 Jun 2014)

VAIN 2/3: Vaginal intraepithelial neoplasia of grade 2/3
[a] Includes cases from Austria, Belarus, Czech Republic, France, Germany, Greece, Poland, Spain and United Kingdom.
[b] Includes cases from Europe (Austria, Belarus, Czech Republic, France, Germany, Greece, Poland, Spain and United Kingdom); America (Argentina, Brazil, Chile, Colombia, Ecuador, Guatemala, Mexico, Paraguay, Uruguay, United states of America and Venezuela); Asia (Bangladesh, India, Israel, South Korea, Kuwait, Philippines, Taiwan and Turkey); and Oceania (Australia)
Data Sources: See references in Section 9 References.

Figure 113: Comparison of the ten most frequent HPV types in VaIN 2/3 cases in **Oceania** and the World



Data updated on 22 May 2023 (data as of 30 Jun 2014)

VAIN 2/3: Vaginal intraepithelial neoplasia of grade 2/3
[a] Includes cases from Australia, Bangladesh, India, Israel, South Korea, Kuwait, Philippines, Taiwan and Turkey.
[b] Includes cases from Europe (Austria, Belarus, Czech Republic, France, Germany, Greece, Poland, Spain and United Kingdom); America (Argentina, Brazil, Chile, Colombia, Ecuador, Guatemala, Mexico, Paraguay, Uruguay, United states of America and Venezuela); Asia (Bangladesh, India, Israel, South Korea, Kuwait, Philippines, Taiwan and Turkey); and Oceania (Australia)
[*] No data available. No more types than shown were tested or were positive.
Data Sources: See references in Section 9 References.

4.2.4 Penile cancer and precancerous penile lesions

DNA is detectable in approximately 51% of all penile cancers (de Martel C et al. Lancet Glob Health 2020;8(2):e180-e190). Among HPV-related penile tumours, HPV16 is the most common type detected, followed by HPV18 and HPV types 6/11 (Miralles C et al. J Clin Pathol 2009;62:870-8). Over 95% of invasive penile cancers are SCC and the most common penile SCC histologic sub-types are keratinising (49%), mixed warty-basaloid (17%), verrucous (8%), warty (6%), and basaloid (4%). HPV is commonly detected in basaloid and warty tumours but is less common in keratinising and verrucous tumours. In this section, the HPV burden among cases of penile cancer cases and precancerous penile lesions in the World are presented.

Table 37: Studies on HPV prevalence among penile cancer cases in the World

Country	Study	HPV detection method and targeted HPV types	No. Tested	HPV Prevalence %	(95% CI)[a]	Prevalence of 5 most frequent HPVs, HPV type (%)
Brazil	Afonso 2012	PCR-MY09/11, PCR L1-Consensus primer, PCR-E6, RFLP (HPV 6, 11, 16, 18, 26, 31, 33, 35, 45, 53, 62, 70, 71, 73)	133	56.4	(47.9-64.5)	HPV 16 (17.3), HPV 45 (12.8), HPV 6 (6.8), HPV 18 (3.8), HPV 31 (3.0)
Austria	Aumayr 2013	PCR-GP5+/6+, PCR L1-Consensus primer, TS (HPV 16, 18, 31, 33)	26	69.2	(50.0-83.5)	
Brazil	Bezerra 2001	PCR consensus primers and probing forHPV types: 6, 11, 16, 18, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 54, 56 and 58	82	30.5	(21.6-41.1)	
Brazil	Calmon 2013	PCR-GP5+/6+, PCR L1-Consensus primer, qPCR, LiPA (HPV 6, 11, 16, 18, 26, 31, 33, 35, 39, 40, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 66, 68, 69, 70, 71, 73, 74, 82)	47	48.9	(35.3-62.8)	HPV 16 (40.4), HPV 11 (10.6), HPV 35 (2.1)
China	Chan 1994	PCR Type specific for HPV16/18	41	19.5	(10.2-34.0)	HPV 16 (9.8), HPV 18 (9.8)
Paraguay	Cubilla 2010	PCR-SPF10, LiPA (HPV 6, 11, 16, 18, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 66, 68, 70, 73, 74)	202	31.7	(25.7-38.4)	HPV 16 (22.8), HPV 6 (3.0), HPV 18 (2.0), HPV 11 (1.5), HPV 35 (1.5)
United States of America	Cupp 1995	PCR L1-Consensus primer, PCR-E6, TS (HPV 16, 18)	42	54.8	(39.9-68.8)	HPV 16 (40.5), HPV 18 (4.8)
Belgium	D'Hauwers 2012	PCR-E6, PCR-E7, qPCR (HPV 6, 11, 16, 18, 31, 33, 35, 39, 45, 51, 52, 53, 56, 58, 59, 66, 67, 68)	36	61.1	(44.9-75.2)	HPV 16 (47.2), HPV 59 (5.6), HPV 11 (2.8), HPV 33 (2.8), HPV 39 (2.8)
United States of America	Daling 2005	PCR MY09/11	94	79.8	(70.6-86.7)	HPV 16 (69.1), HPV 6 (4.3), HPV 33 (2.1), HPV 18 (1.1), HPV 31 (1.1)
Viet Nam	Do 2013	PCR-SPF10, PCR-E6, qPCR, LiPA (HPV 6, 11, 16, 18, 26, 31, 33, 35, 39, 40, 43, 44, 45, 51, 52, 54, 56, 58, 59, 66, 68, 69, 70, 71, 73, 74, 82)	120	22.5	(15.9-30.8)	HPV 16 (20.0), HPV 11 (0.8), HPV 18 (0.8), HPV 33 (0.8), HPV 58 (0.8)
Spain	Ferrándiz-Pulido 2013	PCR-SPF10, EIA, LiPA (HPV 6, 11, 16, 18, 31, 33, 34, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 66, 68, 70, 73, 74)	78	37.2	(27.3-48.3)	HPV 16 (26.9), HPV 58 (3.8), HPV 6 (2.6), HPV 33 (1.3), HPV 45 (1.3)
Brazil	Fonseca 2013	PCR-GP5+/6+, Sequencing (HPV 6, 11, 16, 18, 33, 45, 51, 52, 53, 58, 68)	82	61.0	(50.2-70.8)	HPV 11 (39.0), HPV 6 (19.5), HPV 16 (18.3), HPV 53 (11.0), HPV 33 (2.4)

Continued on next page

Table 37 – continued from previous page

Country	Study	HPV detection method and targeted HPV types	No. Tested	HPV Prevalence %	(95% CI)[a]	Prevalence of 5 most frequent HPVs, HPV type (%)
Italy	Gentile 2006	PCR-(MY09/11, GP5+/6+), sequencing	11	72.7	(43.4-90.3)	HPV 16 (45.5), HPV 18 (18.2), HPV 53 (9.1)
Paraguay	Gregoire 1995	PCR Type specific for: 6,11,16 and 18 + Primers for wide range including 16,18,31,33,35,52	109	23.9	(16.8-32.7)	
United States of America	Gregoire 1995	PCR Type specific for: 6,11,16 and 18 + Primers for wide range including 16,18,31,33,35,52	109	23.9	(16.8-32.7)	
Spain	Guerrero 2008	PCR-GP5+/6+, RLBM, (HPV 6, 11, 16, 18, 26, 31, 33-35, 39, 40, 42-45, 51-59, 61, 66, 68, 70-73, 81(CP8304), 82/MM4, 82/IS39, 83(MM7), 84(MM8), CP6108)	24	45.8	(27.9-64.9)	HPV 16 (45.8), HPV 39 (4.2)
Netherlands	Heideman 2007	PCR-GP5+/6+, EIA, RLBM, (HPV 6, 11, 16, 18, 26, 31, 33-35, 39, 40, 42-45, 51-59, 61, 66, 68, 70-73, 81(CP8304), 82/MM4, 82/IS39, 83(MM7), 84(MM8), CP6108)	83	55.4	(44.7-65.6)	HPV 16 (22.8), HPV 18 (2.3), HPV 45 (1.8), HPV 33 (1.2), HPV 56 (0.6)
France	Humbey 2003	PCR-(MY09/MY11, FAP59/FAP64), TS (HPV 5, 6, 8, 11, 16, 18, 31, 33, 35, 45, 51, 52, 58, 68), sequencing	36	66.7	(50.3-79.8)	HPV 16 (25.0)
Japan	Iwasawa 1993	PCR type specific for HPV 16,18 and 33	111	63.1	(53.8-71.5)	HPV 16 (61.3), HPV 18 (1.8)
Sweden	Kirrander 2011	PCR-(HPV 6,11, 16,18,31,33,35,39,45,51,52,56,58,59), sequencing	151	80.8	(73.8-86.3)	
Denmark	Krustrup 2009	PCR-GP5+/6+, EIA, RLBM, (HPV 6, 11, 16, 18, 26, 31, 33-35, 39, 40, 42-45, 51-59, 61, 66, 68, 70-73, 81(CP8304), 82/MM4, 82/IS39, 83(MM7), 84(MM8), CP6108)	145	61.4	(53.3-68.9)	
South Africa	Lebelo 2014	PCR L1-Consensus primer, PCR-E6, PCR-E7, qPCR (HPV 6, 11, 16, 18, 31, 33, 35, 39, 45, 51, 52, 53, 56, 58, 59, 66, 67, 68)	40	87.5	(73.9-94.5)	HPV 16 (55.0), HPV 11 (30.0), HPV 18 (10.0), HPV 45 (5.0), HPV 33 (2.5)
Brazil	Levi 1998	PCR MY09/11 and probing for 6,11,16,18,31	50	56.0	(42.3-68.8)	
Netherlands	Lont 2006	PCR-GP5+/6+, RLBM, (HPV 6, 11, 16, 18, 26, 31, 33-35, 39, 40, 42-45, 51-59, 61, 66, 68, 70-73, 81(CP8304), 82/MM4, 82/IS39, 83(MM7), 84(MM8), CP6108)	171	29.2	(22.9-36.5)	
Mexico	López-Romero 2013	PCR-E6, RT-PCR, Sequencing (HPV 11, 16, 18, 31, 33, 58, 59)	76	75.0	(64.2-83.4)	HPV 16 (61.8), HPV 11 (3.9), HPV 31 (3.9), HPV 18 (1.3), HPV 33 (1.3)
Canada	Maden 1993	PCR E6/E7 for HPV6,16 and 18	67	49.3	(37.7-60.9)	HPV 16 (34.3)
Austria	Mannweiler 2013	PCR L1-Consensus primer, PCR-SPF10, LiPA (HPV 6, 11, 16, 18, 26, 31, 33, 35, 39, 40, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 66, 68, 69, 70, 71, 72, 73, 74, 82)	123	58.5	(49.7-66.9)	HPV 16 (45.5), HPV 33 (4.9), HPV 18 (4.1), HPV 45 (3.3), HPV 56 (0.8)

Continued on next page

Table 37 – continued from previous page

Country	Study	HPV detection method and targeted HPV types	No. Tested	HPV Prevalence %	(95% CI)[a]	Prevalence of 5 most frequent HPVs, HPV type (%)
Spain	Pascual 2007	PCR-(MY09/11, GP5+/6+), sequencing	49	77.6	(64.1-87.0)	HPV 16 (65.3), HPV 18 (8.2)
Germany	Perceau 2003	PCR-GP5+/6+, TS (HPV 16, 18, 31, 33)	17	35.3	(17.3-58.7)	
Argentina	Picconi 2000	PCR GP5+/6+ and typing by PCR-SSCP	38	71.1	(55.2-83.0)	HPV 18 (28.9), HPV 16 (21.1), HPV 6 (5.3)
Germany	Poetsch 2011	PCR-,TS (HPV 6/11, 16, 18)	52	38.5	(26.5-52.0)	HPV 16 (32.7), HPV 6/11 (3.8), HPV 18 (1.9)
United Kingdom	Prowse 2008	PCR-SPF10, LIPA, (HPV 6, 11, 16, 18, 26, 31, 33-35, 39, 40, 42-45, 51-54, 56, 58, 59, 66, 68-71, 73, 74)	26	53.8	(35.5-71.2)	
Paraguay	Rubin 2001	PCR SPF10 + INO-LIPA	142	42.3	(34.4-50.5)	HPV 16 (25.4), HPV 6 (3.5), HPV 45 (2.8), HPV 52 (2.8), HPV 35 (2.1)
United States of America	Rubin 2001	PCR SPF10 + INO-LIPA	142	42.3	(34.4-50.5)	HPV 16 (25.4), HPV 6 (3.5), HPV 45 (2.8), HPV 52 (2.8), HPV 35 (2.1)
Mexico	Salazar 2005	PCR Specific for HPV16	57	59.6	(46.7-71.4)	
United States of America	Sarkar 1992	PCR type specific for 6b/11, 16 and 18 + Southern Blot	27	59.3	(40.7-75.5)	
Brazil	Scheiner 2008	PCR-GP5+/6+, PCR-MY09/11, RFLP (HPV 6, 16, 18, 31, 33, 45, 71)	80	72.5	(61.9-81.1)	HPV 16 (15.0), HPV 6 (5.0), HPV 18 (1.3), HPV 31 (1.3), HPV 33 (1.3)
Thailand	Senba 2006	PCR SPF10, ISH	65	81.5	(70.4-89.1)	HPV 18 (55.4), HPV 6 (40.0), HPV 34 (3.1), HPV 11 (1.5), HPV 22 (1.5)
United Kingdom	Stankiewicz 2011	PCR-SPF10, LIPA, (HPV 6, 11, 16, 18, 26, 31, 33-35, 39, 40, 42-45, 51-54, 56, 58, 59, 66, 68-71, 73, 74)	102	55.9	(46.2-65.1)	HPV 16 (45.1), HPV 11 (9.8), HPV 45 (5.9), HPV 6 (5.9), HPV 31 (4.9)
Japan	Suzuki 1994	PCR consensus primers on L1 and E6 (6,11,16,18,31,33,42,52,58	13	53.8	(29.1-76.8)	HPV 16 (30.8), HPV 33 (15.4), HPV 31 (7.7)
Italy	Tornesello 2008	PCR-GP5+/6+, PCR-MY09/11, PCR-L1C1/C2, PCR-E6, PCR-E7, Sequencing (HPV 6, 16, 18, 33, 35)	61	47.5	(35.5-59.8)	HPV 16 (42.6), HPV 18 (3.3), HPV 35 (1.6)
Uganda	Tornesello 2008	PCR-GP5+/6+, PCR-MY09/11, PCR-L1C1/C2, PCR-E6, PCR-E7, Sequencing (HPV 6, 16, 18, 33, 35)	17	64.7	(41.3-82.7)	HPV 16 (58.8), HPV 18 (11.8), HPV 6 (11.8), HPV 33 (5.9)
United States of America	Varma 1991	PCR Type specific for HPV 6/11 and 16 and ISH for 6,11,16,18,31,33 and 35	30	66.7	(48.8-80.8)	
Japan	Yanagawa 2008	PCR-L1C1/C2, RFLP (HPV 6, 11, 16, 18, 31, 33, 42, 52, 58)	26	11.5	(4.0-29.0)	HPV 16 (11.5)

Data updated on 22 May 2023 (data as of 30 Jun 2014)

DBH: Dot Blot Hybridization; EIA: Enzyme ImmunoAssay; HC2: Hybrid Capture 2; ISH: In Situ Hybridization; LBA: Line-Blot Assay; LiPA: Line Probe Assay; PCR: Polymerase Chain Reaction; RFLP: Restriction Fragment Length Polymorphism; RLBH: Reverse Line Blot Hybridization; RT-PCR: Real Time Polymerase Chain Reaction; SBH: Southern Blot Hybridization; SPF: Short Primer Fragment; TS: Type Specific;
[a] 95% Confidence Interval
Data Sources: See references in Section 9 References.

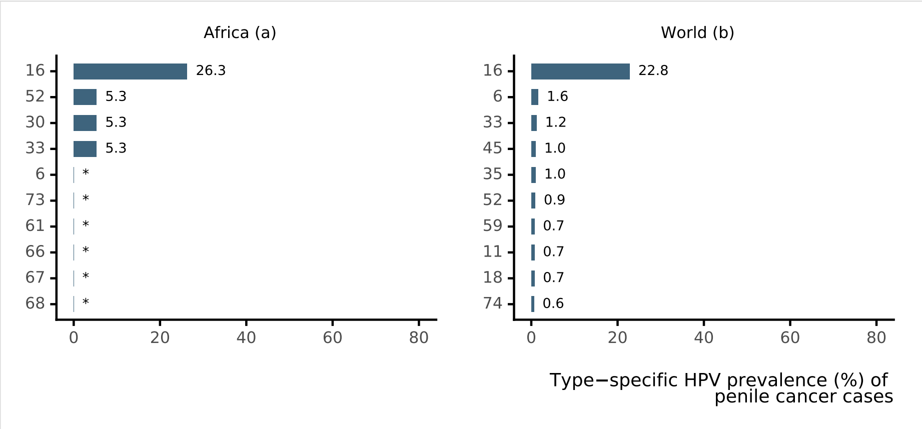
Table 38: Studies on HPV prevalence among PeIN 2/3 cases in the World

Country	Study	HPV detection method and targeted HPV types	No. Tested	HPV Prevalence		Prevalence of 5 most frequent HPVs, HPV type (%)
				%	(95% CI)[a]	
United States of America	Cupp 1995	PCR L1-Consensus primer, PCR-E6, TS (HPV 16, 18)	25	92.0	(75.0-97.8)	HPV 16 (80.0), HPV 18 (8.0)
Belgium	D'Hauwers 2012	PCR-E6, PCR-E7, qPCR (HPV 6, 11, 16, 18, 31, 33, 35, 39, 45, 51, 52, 53, 56, 58, 59, 66, 67, 68)	13	84.6	(57.8-95.7)	HPV 16 (61.5), HPV 18 (23.1), HPV 11 (15.4), HPV 53 (15.4), HPV 56 (15.4)
Sweden	Kirrander 2011	PCR-(HPV 6, 11, 16, 18, 31, 33, 35, 39, 45, 51, 52, 56, 58, 59), sequencing	62	88.7	(78.5-94.4)	
Mexico	López-Romero 2013	PCR-E6, RT-PCR, Sequencing (HPV 16)	10	100.0	(72.2-100.0)	HPV 16 (100.0)
Austria	Mannweiler 2013	PCR L1-Consensus primer, PCR-SPF10, LiPA (HPV 6, 11, 16, 18, 26, 31, 33, 35, 39, 40, 43, 44, 45, 51, 52, 53, 54, 56, 58, 66, 68, 69, 70, 71, 72, 73, 74, 82)	43	76.7	(62.3-86.8)	HPV 16 (62.8), HPV 18 (9.3), HPV 33 (2.3), HPV 73 (2.3)
Sweden	Wikström 2012	PCR-GP5+/6+, PCR-MY09/11, PCR L1-Consensus primer (HPV 6, 11, 16, 18, 31, 33, 42, 45, 52, 58, 70, 73)	28	85.7	(68.5-94.3)	HPV 16 (39.3), HPV 6 (21.4), HPV 31 (7.1), HPV 33 (7.1), HPV 45 (7.1)

Data updated on 22 May 2023 (data as of 30 Jun 2014)

PeIN 2/3: Penile intraepithelial neoplasia of grade 2/3
DBH: Dot Blot Hybridization; EIA: Enzyme ImmunoAssay; HC2: Hybrid Capture 2; ISH: In Situ Hybridization; LBA: Line-Blot Assay; LiPA: Line Probe Assay; PCR: Polymerase Chain Reaction; RFLP: Restriction Fragment Length Polymorphism; RLBH: Reverse Line Blot Hybridization; RT-PCR: Real Time Polymerase Chain Reaction; SBH: Southern Blot Hybridization; SPF: Short Primer Fragment; TS: Type Specific;
[a] 95% Confidence Interval
Data Sources: See references in Section 9 References.

Figure 114: Comparison of the ten most frequent HPV types in cases of penile cancer in **Africa** and the World



Data updated on 22 May 2023 (data as of 30 Jun 2015)

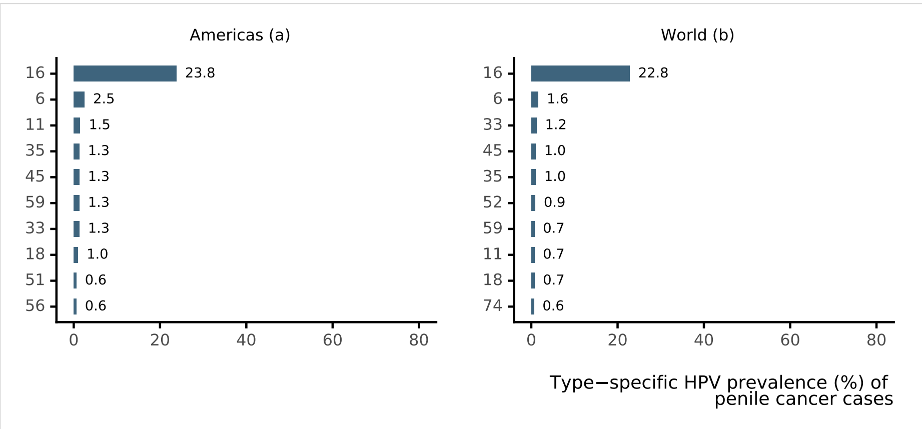
[a] Includes cases from Mozambique, Nigeria, Senegal

[b] Includes cases from Australia, Bangladesh, India, South Korea, Lebanon, Philippines, Chile, Colombia, Ecuador, Guatemala, Honduras, Mexico, Paraguay, Venezuela and United States, Mozambique, Nigeria, Senegal, Czech Republic, France, Greece, Poland, Portugal, Spain and United Kingdom.

[*] No data available. No more types than shown were tested or were positive.

Data Sources: See references in Section 9 References.

Figure 115: Comparison of the ten most frequent HPV types in cases of penile cancer in **the Americas** and the World



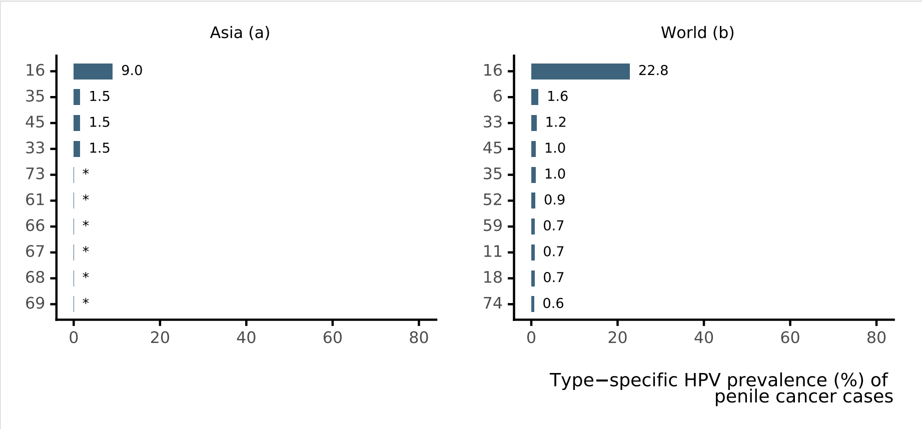
Data updated on 22 May 2023 (data as of 30 Jun 2015)

[a] Includes cases from Chile, Colombia, Ecuador, Guatemala, Honduras, Mexico, Paraguay, Venezuela and United States

[b] Includes cases from Australia, Bangladesh, India, South Korea, Lebanon, Philippines, Chile, Colombia, Ecuador, Guatemala, Honduras, Mexico, Paraguay, Venezuela and United States, Mozambique, Nigeria, Senegal, Czech Republic, France, Greece, Poland, Portugal, Spain and United Kingdom.

Data Sources: See references in Section 9 References.

Figure 116: Comparison of the ten most frequent HPV types in cases of penile cancer in **Asia** and the World



Data updated on 22 May 2023 (data as of 30 Jun 2015)

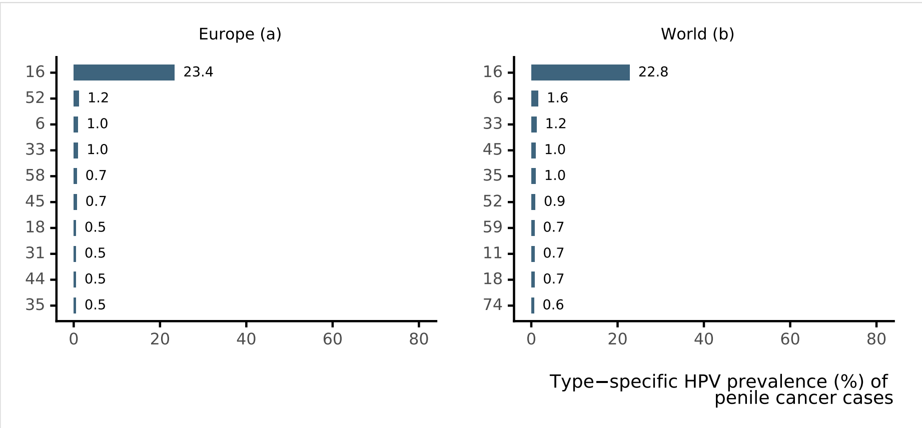
[a] Includes cases from Bangladesh, India, South Korea, Lebanon, Philippinesy

[b] Includes cases from Australia, Bangladesh, India, South Korea, Lebanon, Philippines, Chile, Colombia, Ecuador, Guatemala, Honduras, Mexico, Paraguay, Venezuela and United States, Mozambique, Nigeria, Senegal, Czech Republic, France, Greece, Poland, Portugal, Spain and United Kingdom.

[*] No data available. No more types than shown were tested or were positive.

Data Sources: See references in Section 9 References.

Figure 117: Comparison of the ten most frequent HPV types in cases of penile cancer in **Europe** and the World



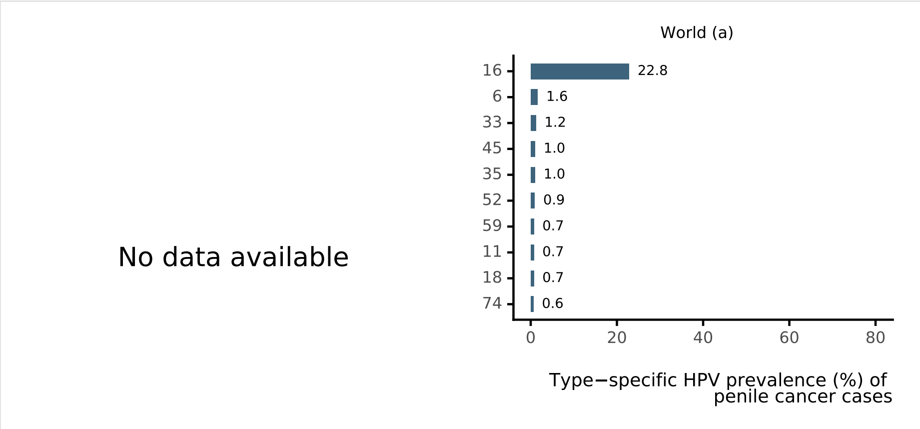
Data updated on 22 May 2023 (data as of 30 Jun 2015)

[a] Includes cases from Czech Republic, France, Greece, Poland, Portugal, Spain and United Kingdom

[b] Includes cases from Australia, Bangladesh, India, South Korea, Lebanon, Philippines, Chile, Colombia, Ecuador, Guatemala, Honduras, Mexico, Paraguay, Venezuela and United States, Mozambique, Nigeria, Senegal, Czech Republic, France, Greece, Poland, Portugal, Spain and United Kingdom.

Data Sources: See references in Section 9 References.

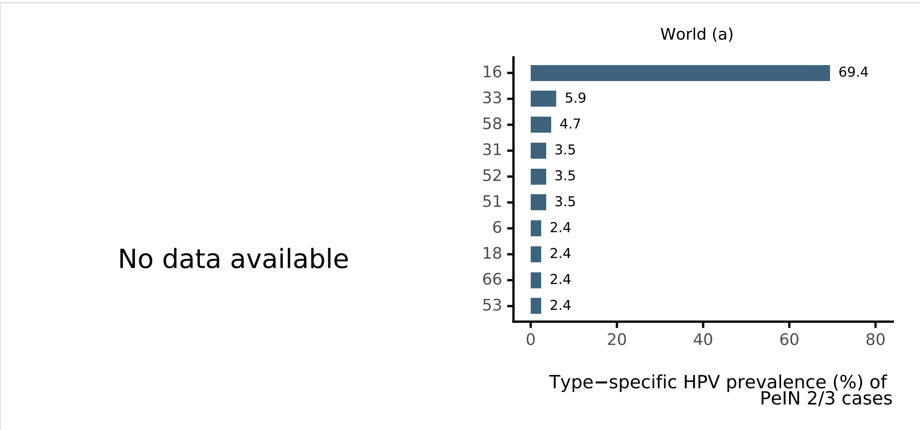
Figure 118: Comparison of the ten most frequent HPV types in cases of penile cancer in **Oceania** and the World



Data updated on 22 May 2023 (data as of 30 Jun 2015)

[a] Includes cases from Australia, Bangladesh, India, South Korea, Lebanon, Philippines, Chile, Colombia, Ecuador, Guatemala, Honduras, Mexico, Paraguay, Venezuela and United States, Mozambique, Nigeria, Senegal, Czech Republic, France, Greece, Poland, Portugal, Spain and United Kingdom.
Data Sources: See references in Section 9 References.

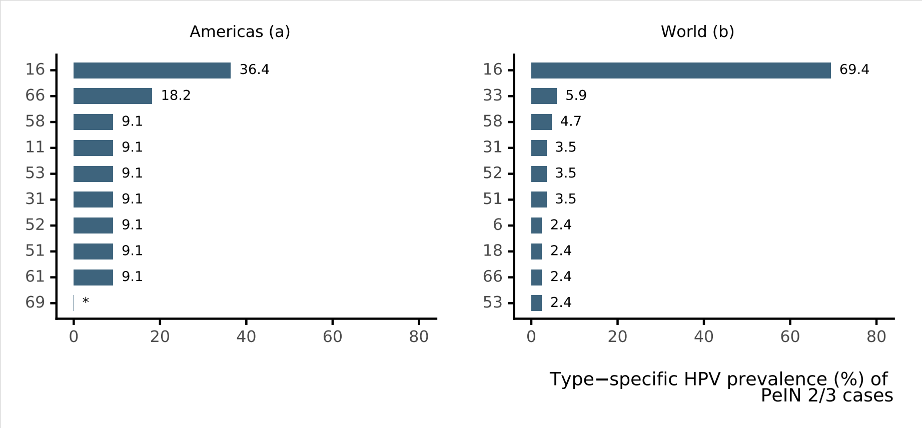
Figure 119: Comparison of the ten most frequent HPV types in PeIN 2/3 cases in **Africa** and the World



Data updated on 22 May 2023 (data as of 30 Jun 2015)

PeIN 2/3: Penile intraepithelial neoplasia of grade 2/3
[a] Includes cases from Australia, Bangladesh, India, South Korea, Lebanon, Philippines, Chile, Colombia, Ecuador, Guatemala, Honduras, Mexico, Paraguay, Venezuela, Mozambique, Nigeria, Senegal, Czech Republic, France, Greece, Poland, Portugal, Spain and United Kingdom.
Data Sources: See references in Section 9 References.

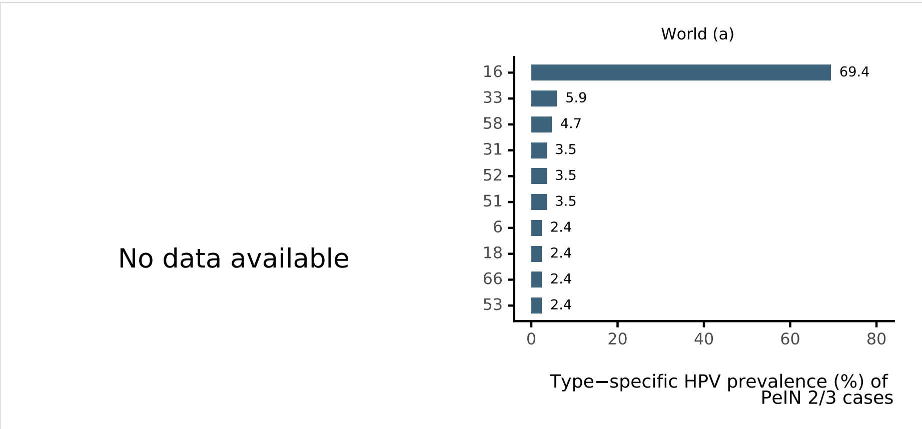
Figure 120: Comparison of the ten most frequent HPV types in PeIN 2/3 cases in **the Americas** and the World



Data updated on 22 May 2023 (data as of 30 Jun 2015)

PeIN 2/3: Penile intraepithelial neoplasia of grade 2/3
[a] Includes cases from Chile, Colombia, Ecuador, Guatemala, Honduras, Mexico, Paraguay, Venezuela.
[b] Includes cases from Australia, Bangladesh, India, South Korea, Lebanon, Philippines, Chile, Colombia, Ecuador, Guatemala, Honduras, Mexico, Paraguay, Venezuela, Mozambique, Nigeria, Senegal, Czech Republic, France, Greece, Poland, Portugal, Spain and United Kingdom.
[*] No data available. No more types than shown were tested or were positive.
Data Sources: See references in Section 9 References.

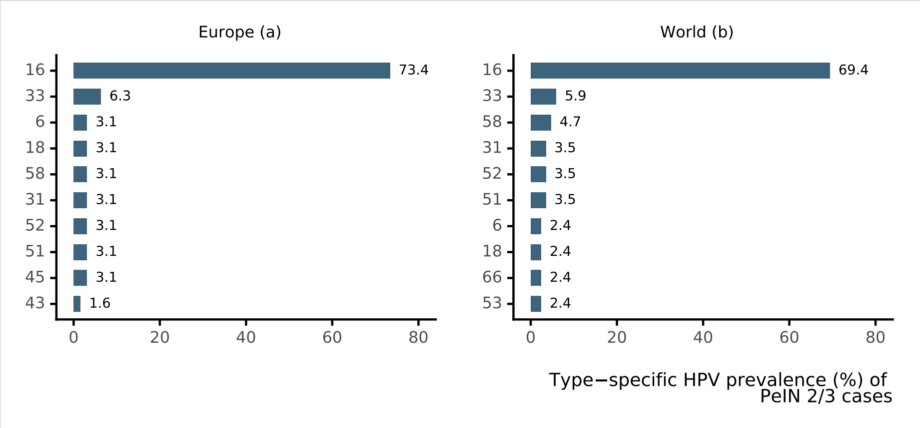
Figure 121: Comparison of the ten most frequent HPV types in PeIN 2/3 cases in **Asia** and the World



Data updated on 22 May 2023 (data as of 30 Jun 2015)

PeIN 2/3: Penile intraepithelial neoplasia of grade 2/3
[a] Includes cases from Australia, Bangladesh, India, South Korea, Lebanon, Philippines, Chile, Colombia, Ecuador, Guatemala, Honduras, Mexico, Paraguay, Venezuela, Mozambique, Nigeria, Senegal, Czech Republic, France, Greece, Poland, Portugal, Spain and United Kingdom.
Data Sources: See references in Section 9 References.

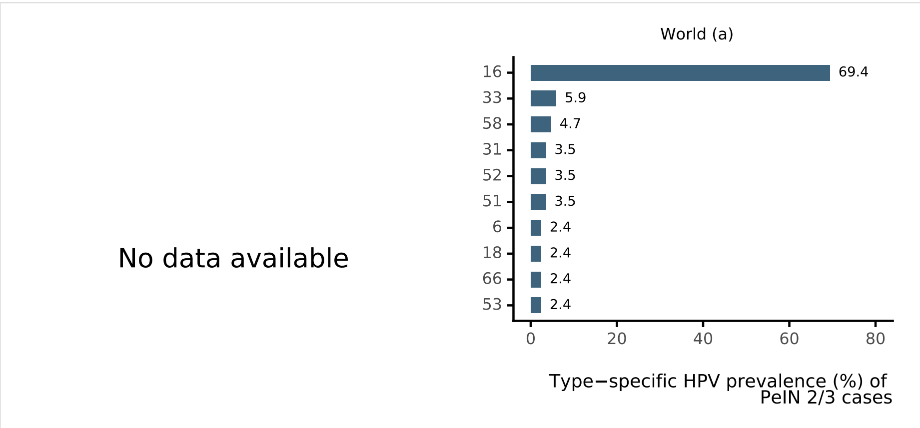
Figure 122: Comparison of the ten most frequent HPV types in PeIN 2/3 cases in **Europe** and the World



Data updated on 22 May 2023 (data as of 30 Jun 2015)

PeIN 2/3: Penile intraepithelial neoplasia of grade 2/3
[a] Includes cases from Czech Republic, France, Greece, Poland, Portugal, Spain and United Kingdom
[b] Includes cases from Australia, Bangladesh, India, South Korea, Lebanon, Philippines, Chile, Colombia, Ecuador, Guatemala, Honduras, Mexico, Paraguay, Venezuela, Mozambique, Nigeria, Senegal, Czech Republic, France, Greece, Poland, Portugal, Spain and United Kingdom.
Data Sources: See references in Section 9 References.

Figure 123: Comparison of the ten most frequent HPV types in PeIN 2/3 cases in **Oceania** and the World



Data updated on 22 May 2023 (data as of 30 Jun 2015)

PeIN 2/3: Penile intraepithelial neoplasia of grade 2/3
[a] Includes cases from Australia, Bangladesh, India, South Korea, Lebanon, Philippines, Chile, Colombia, Ecuador, Guatemala, Honduras, Mexico, Paraguay, Venezuela, Mozambique, Nigeria, Senegal, Czech Republic, France, Greece, Poland, Portugal, Spain and United Kingdom.
Data Sources: See references in Section 9 References.

4.3 HPV burden in men

The information to date regarding anogenital HPV infection is primarily derived from cross-sectional studies of selected populations such as general population, university students, military recruits, and studies that examined husbands of control women, as well as from prospective studies. Special sub-groups include mainly studies that examined STD (sexually transmitted diseases) clinic attendees, MSM (men who have sex with men), HIV positive men, and partners of women with HPV lesions, CIN (cervical intraepithelial neoplasia), cervical cancer or cervical carcinoma in situ. Globally, prevalence of external genital HPV infection in men is higher than cervical HPV infection in women, but persistence is less likely. As with genital HPV prevalence, high numbers of sexual partners increase the acquisition of oncogenic HPV infections (Vaccine 2012, Vol. 30, Suppl 5). In this section, the HPV burden among men in the World is presented.

Methods

HPV burden in men was based on published systematic reviews and meta-analyses (Dunne EF, J Infect Dis 2006; 194: 1044, Smith JS, J Adolesc Health 2011; 48: 540, Olesen TB, Sex Transm Infect 2014; 90: 455, and Hebnes JB, J Sex Med 2014; 11: 2630) up to October 31, 2015. The search terms for the review were human papillomavirus, men, polymerase chain reaction (PCR), hybrid capture (HC), and viral DNA. References cited in selected articles were also investigated. Inclusion criteria were: HPV DNA detection by means of PCR or HC (ISH if data are not available for the country), and a detailed description of HPV DNA detection and genotyping techniques used. The number of cases tested and HPV positive cases were extracted for each study to estimate the anogenital prevalence of HPV DNA. Binomial 95% confidence intervals were calculated for each anogenital HPV prevalence.

Table 39: Studies on HPV prevalence among men in the World

Country	Study	Anatomic sites samples	HPV detection method	Population	Age (years)	No. Tested	HPV Prevalence	
							%	(95% CI)[a]
Australia	Vardas 2011[b]	Penis	RT-PCR-Multiplex or Biplex	Heterosexual men enrolled in a HPV vaccine trial	Median 20 (15-24)	3132	21.2	(19.8-22.7)
Brazil	Franceschi 2002	Glans, corona, urethra	PCR-GP5+/6+	Husbands of control women	24-81	56	39.3	(26.5-53.2)
	Giuliano 2008	Corona sulcus, glans, shaft and scrotum	PCR-PGMY09/11 and GP5/6+	General population	18-70	382	72.3	(67.5-76.7)
	Nyitray 2011	Anal canal	PCR-PGMY09/11	HIV- MSW from general population and population from a STD clinic	18-70	1305	12.2	(10.5-14.1)
	Nyitray 2011	Anal canal	PCR-PGMY09/11	HIV- MSM from general population and population from a STD clinic	18-70	176	47.2	(39.6-54.8)
	Rosenblatt 2004	Shaft, dorsal and prebalanic area, prepuce, urethral meatus	HC2 HR	Partners of women without CIN	-	60	15.0	(7.1-26.6)
	Vardas 2011[b]	Penis	RT-PCR-Multiplex or Biplex	Heterosexual men enrolled in a HPV vaccine trial	Median 20 (15-24)	3132	21.2	(19.8-22.7)
Canada	Vardas 2011[b]	Penis	RT-PCR-Multiplex or Biplex	Heterosexual men enrolled in a HPV vaccine trial	Median 20 (15-24)	3132	21.2	(19.8-22.7)
Chile	Guzmán 2008	Corona and shaft	PCR-GP5+/6+	University students	20-51	61	83.6	(71.9-91.8)

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Table 39 – continued from previous page

Country	Study	Anatomic sites samples	HPV detection method	Population	Age (years)	No. Tested	HPV Prevalence	
							%	(95% CI)[a]
China	Liu 2015	Coronal sulcus, shaft, glans, and scrotum	PCR-SPF1/GP6+	Population-based esophageal cancer cohort study	25-65	2228	16.9	(15.3-18.5)
Colombia	Franceschi 2002	Glans, corona, urethra	PCR-GP5+/6+	Husbands of control women	23-82	128	18.8	(12.4-26.6)
Croatia	Vardas 2011[b]	Penis	RT-PCR-Multiplex or Biplex	Heterosexual men enrolled in a HPV vaccine trial	Median 20 (15-24)	3132	21.2	(19.8-22.7)
	Grce 1996	Urethra	Filter hybridization (slot-blot, TS 6,11,16,18)	Family planning clinic attendees	-	79	26.6	(17.3-37.7)
Denmark	Hebnes 2015	Coronal sulcus, glans, preputial cavity, scrotum, shaft and perineum	HC2	Male employees and conscripts at military barracks	Mean 23 (18-65)	2436	22.2	(20.6-24.0)
	Hebnes 2015	Coronal sulcus, glans, preputial cavity, scrotum, shaft and perineum	PCR-LIPAv2	Male employees and conscripts at military barracks	Mean 23 (18-65)	2436	41.8	(39.9-43.8)
	Kjaer 2005	Glans and corona sulcus	PCR-GP5+/6+ TS oligoprobes	Military conscripts	18-29	337	33.8	(28.8-39.2)
Finland	Kero 2011	Urethra	PCR-MY09/11 and GP5+/6+	Sexual partners of pregnant women	19-46	128	22.7	(15.7-30.9)
	Hippeläinen 1993	Glans, prepuce, corona sulcus, urethral meatus	PCR-MY09/11 TS 6,11,16,18,31,33	Voluntary conscripts	Mean 20	285	16.5	(12.4-21.3)
Germany	Vardas 2011[b]	Penis	RT-PCR-Multiplex or Biplex	Heterosexual men enrolled in a HPV vaccine trial	Median 20 (15-24)	3132	21.2	(19.8-22.7)
	Grussendorf-Conen 1987	Coronal sulcus and glans	ISH	Blood donors or patients from department of dermatology	16-79	530	5.8	(4.0-8.2)
India	Gupta 2006	Coronal sulcus, distal and intrameatal urethra and glans	PCR-L1 and TS 16,18	Partners of women with normal cytology	Mean 46.9	30	26.7	(12.3-45.9)
Italy	Lorenzon 2014	Coronal sulcus, shaft, prepuce, and urethral	PCR-Roche Linear Array HPV Genotyping test	Heterosexual men for routine HPV testing	18-68	378	40.5	(35.5-45.6)
	Nasca 2006	Penis	PCR-MY09/11 and GP5+/6+	Hospital based controls attending clinic for nongenital complaints	27-79	46	8.7	(2.4-20.8)
Japan	Takahashi 2003	Glans, corona, prepuce	HC2 HR, LR	University students	18-35	75	1.3	(0.0-7.2)
Kenya	Ng'ayo 2008	Glans, corona sulcus, shaft of the penis, scrotum and the perianal region	PCR-PGMY09/MY11 and HMB01	Men working in the fishing industry	18-63	250	57.6	(51.2-63.8)
	Smith 2010	Shaft, glans, coronal sulcus, and inner and external foreskin tissue	PCR-GP5+/6+	Men screened to participate in an RCT of male circumcision	17-28	2705	51.1	(49.2-53.0)
Mexico	Giuliano 2008	Corona sulcus, glans, shaft and scrotum	PCR-PGMY09/11 and GP5/6+	General population and organized health care systems	18-70	362	61.9	(56.7-66.9)

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Table 39 – continued from previous page

Country	Study	Anatomic sites samples	HPV detection method	Population	Age (years)	No. Tested	HPV Prevalence	
							%	(95% CI)[a]
	Lajous 2005	Corona, shaft, upper third of the scrotum, urethral meatus, urethra	PCR-BGH 20 and BPCO4	Military conscripts	16-40	1030	44.6	(41.5-47.7)
	Lazcano-Ponce 2001	Corona, urethra	PCR-GP5+/6+	Sexually active college students and industry workers	14-55	96	42.7	(32.7-53.2)
	Nyitray 2011	Anal canal	PCR-PGMY09/11	HIV- MSW from organized health care systems, factories and military	18-70	1305	12.2	(10.5-14.1)
	Nyitray 2011	Anal canal	PCR-PGMY09/11	HIV- MSM from organized health care systems, factories and military	18-70	176	47.2	(39.6-54.8)
	Sánchez-Alemán 2002	Glans and prepuce	HC2 HR	University students	>=18	71	8.5	(3.2-17.5)
	Vaccarella 2006	Scrotum, coronal sulcus, the glans and the opening of the meatus	PCR-PGMY09/11	Men who requested a vasectomy	Mean 34	779	8.7	(6.8-10.9)
	Vardas 2011[b]	Penis	RT-PCR-Multiplex or Biplex	Heterosexual men enrolled in a HPV vaccine trial	Median 20 (15-24)	3132	21.2	(19.8-22.7)
Philippines	Franceschi 2002	Glans, corona, urethra	PCR-GP5+/6+	Husbands of control women	19-71	106	4.7	(1.5-10.7)
Republic of Korea	Shin 2004	Glans, corona, scrotum, prepuce, urethra	PCR-SPF10	Male students	Median 22	381	8.7	(6.0-11.9)
Rwanda	Veldhuijzen 2012	Shaft, scrotum, glans/sulcus corona, and foreskin in uncircumcised men	PCR-Roche Linear Array HPV Genotyping test (HR-HPV types)	Men participating in a case–control study assessing risk factors for infertility	Median 31 (IQR=27-38)	166	26.5	(20.0-33.9)
	Veldhuijzen 2012	Shaft, scrotum, glans/sulcus corona, and foreskin in uncircumcised men	PCR-Roche Linear Array HPV Genotyping test (LR-HPV types)	Men participating in a case–control study assessing risk factors for infertility	Median 31 (IQR=27-38)	166	31.3	(24.4-39.0)
South Africa	Mbulawa 2010	Shaft and glans, and the foreskin in uncircumcised men	PCR-Roche Linear Array HPV Genotyping test	HIV- heterosexual men recruited for investigations of genital HPV transmission	18-66	313	50.8	(45.1-56.5)
	Auvert 2010	Urethra	PCR-Roche Amplicor HPV test	Men recruited from the general population for an RCT of male circumcision	IQR=19-22	1683	19.1	(17.2-21.0)
Spain	Franceschi 2002	Glans, corona, urethra	PCR-GP5+/6+	Husbands of control women	24-78	168	3.6	(1.3-7.6)
	Vardas 2011[b]	Penis	RT-PCR-Multiplex or Biplex	Heterosexual men enrolled in a HPV vaccine trial	Median 20 (15-24)	3132	21.2	(19.8-22.7)

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Table 39 – continued from previous page

Country	Study	Anatomic sites samples	HPV detection method	Population	Age (years)	No. Tested	HPV Prevalence %	(95% CI)[a]
Sweden	Kataoka 1991	Urethra	PCR-TS 6,11,16,18,33	Army conscripts with normal epithelium	18-23	66	12.1	(5.4-22.5)
	Forslund 1993	Urethra	PCR-TS (6,11,16,18,31,33,35) and unespecified consensus primer	Military conscripts	20-23	138	8.7	(4.6-14.7)
Tanzania	Olesen 2013	Glans, preputial cavity (uncircumcised men), coronal sulcus (circumcised men), shaft, corpus	PCR-LIPA and HC2	Men from the general population	Mean 34.2	1813	20.5	(18.7-22.5)
Thailand	Franceschi 2002	Glans, corona, urethra	PCR-GP5+/6+	Husbands of control women	28-78	75	17.3	(9.6-27.8)
Uganda	Tobian 2013	Coronal sulcus and glans	PCR-PGMY09/11	HIV-heterosexual men	15-49	978	60.9	(57.8-64.0)
United States of America	Giuliano 2008	Corona sulcus, glans, shaft and scrotum	PCR-PGMY09/11	General population	18-44	290	30.0	(24.8-35.6)
	Giuliano 2008	Corona sulcus, glans, shaft and scrotum	PCR-PGMY09/11 and GP5/6+	General population and population from University	18-70	416	61.3	(56.4-66.0)
	Hernandez 2008	Glans, corona sulcus, penile shaft, scrotum	PCR-PGMY09/11	University population	Mean 29	300	35.3	(29.9-41.0)
	Nielson 2007	Glans, corona sulcus, penile shaft and scrotum, perianal area, anus	PCR-PGMY09/11	General population volunteers and STD clinic attendees	18-40	463	65.4	(60.9-69.8)
	Nyitray 2011	Anal canal	PCR-PGMY09/11	HIV- MSW from general population and population from University	18-70	1305	12.2	(10.5-14.1)
	Nyitray 2011	Anal canal	PCR-PGMY09/11	HIV- MSM from general population and population from University	18-70	176	47.2	(39.6-54.8)
	Partridge 2007	Glans, urethral meatus, penile shaft and scrotum	PCR-MY09/11 HMB 01	Heterosexual university students	18-20	240	25.8	(20.4-31.9)
	Vardas 2011[b]	Penis	RT-PCR-Multiplex or Biplex	Heterosexual men enrolled in a HPV vaccine trial	Median 20 (15-24)	3132	21.2	(19.8-22.7)
	Weaver 2004	Glans, prepuce, shaft, scrotum	PCR-MY09/11 HMB 01	University students	18-25	283	35.0	(29.4-40.9)

Data updated on 22 May 2023 (data as of 31 Oct 2015)

HC2: Hybrid Capture 2; ISH: In Situ Hybridization; PCR: Polymerase Chain Reaction; RT-PCR: Real Time Polymerase Chain Reaction; SPF: Short Primer Fragment; TS: Type Specific; MSM: Men who have sex with men; MSW:Men who have sex with women; STD: sexually transmitted diseases
[a] 95% Confidence Interval
[b] Includes cases from Australia, Brazil, Canada, Croatia, Germany, Mexico, Spain, and USA.
Data Sources: See references in Section 9 References.

Table 40: Studies on HPV prevalence among men from special subgroups in the World

Country	Study	Anatomic sites samples	HPV detection method	Population	Age (years)	No. Tested	HPV Prevalence %	(95% CI)[a]
Argentina	Pando 2012	Anus	GP-PCR Reverse line blot hybridization	HIV- MSM	Mean/Median 31 years	69	79.7	(68.3-88.4)

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Country	Study	Anatomic sites samples	HPV detection method	Population	Age (years)	No. Tested	HPV Prevalence %	(95% CI)[a]
	Pando 2012	Anus	GP-PCR Reverse line blot hybridization	HIV+ MSM	Mean/Median 31 years	39	92.3	(79.1-98.4)
Australia	Vajdic 2009	Anal canal	HC2	HIV- MSM	IQR=36-48	193	69.9	(62.9-76.3)
	Anderson 2008	Anal canal	HC2 HR	HIV+ MSM	Median 45 (28-59)	123	86.2	(78.8-91.7)
	Goldstone 2011[b]	Penis	RT-PCR-Multiplex or Biplex	HIV- MSM	Median 22 (16-27)	602	18.4	(15.4-21.8)
	Goldstone 2011[b]	Anus	RT-PCR-Multiplex or Biplex	HIV- MSM	Median 22 (16-27)	602	42.4	(38.4-46.4)
	Ong 2016	Anus	PCR-Linear Array	HIV+ MSM	Mean 51 (35-82)	281	79.7	(74.5-84.3)
	Vajdic 2009	Anal canal	HC2	HIV+ MSM	IQR=37-49	123	94.3	(88.6-97.7)
Brazil	Nyitray 2011	Anal canal	PCR-PGMY09/11	HIV- MSM from general population and population from a STD clinic	18-70	176	47.2	(39.6-54.8)
	de Lima Rocha 2012	Coronal sulcus, glans, and prepuce	PCR-GP5+/6+	Sexual partners of women with cervical HPV infection	18-60	43	51.2	(35.5-66.7)
	Franceschi 2002	Glans, corona, urethra	PCR-GP5+/6+	Husbands of women with invasive cervical cancer	27-79	53	35.8	(23.1-50.2)
	Freire 2014	Shaft, glans, balanopreputial sulcus and urethral	PCR-Papillocheck	Men referred to the Urological Division	18-81	355	72.1	(67.1-76.7)
	Goldstone 2011[b]	Anus	RT-PCR-Multiplex or Biplex	HIV- MSM	Median 22 (16-27)	602	42.4	(38.4-46.4)
	Goldstone 2011[b]	Penis	RT-PCR-Multiplex or Biplex	HIV- MSM	Median 22 (16-27)	602	18.4	(15.4-21.8)
	Guimarães 2011	Anus	PCR-DBH	HIV+	>=18	445	65.6	(61.0-70.0)
	Rosenblatt 2004	Shaft, dorsal and prebalanic area, prepuce, urethral meatus	HC2 HR	Partners of women with CIN	-	30	76.7	(57.7-90.1)
	Rombaldi 2006	Prepuce, preglans, shaft, urethral canal	PCR-L1, MY09/11	Partners of women with CIN	18-56	99	54.5	(44.2-64.6)
	Nicolau 2005	Glans, urethra, internal and external prepuce, scrotum, anus	HC2 HR, LR	Partners of women with HPV	19-53	50	70.0	(55.4-82.1)
Canada	de Pokomandy 2009	Anal canal	PCR-PGMY09/11	HIV+ MSM	Median 43 (21-66)	241	97.9	(95.2-99.3)
	Goldstone 2011[b]	Penis	RT-PCR-Multiplex or Biplex	HIV- MSM	Median 22 (16-27)	602	18.4	(15.4-21.8)
	Goldstone 2011[b]	Anus	RT-PCR-Multiplex or Biplex	HIV- MSM	Median 22 (16-27)	602	42.4	(38.4-46.4)
	Ogilvie 2009	Shaft, scrotum	PCR-Roche Amplicor HPV test	Heterosexual men attending provincial STD clinic	16-69	262	69.8	(63.9-75.3)
	Salit 2009	Anus	PCR-PGMY09/11	HIV+ MSM participants in TRACE study	38-50	224	93.3	(89.2-96.2)

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Country	Study	Anatomic sites samples	HPV detection method	Population	Age (years)	No. Tested	HPV Prevalence %	(95% CI)[a]
	Salit 2010	Anal canal	HC2	HIV+ MSM	Median 44.4 (IQR=39.4-50.6)	400	93.0	(90.0-95.3)
China	Gao 2010	Anal canal	PCR-TellgenplexTM HPV DNA Test	HIV+ MSM	>=18 (70% <30 years)	50	96.0	(86.3-99.5)
	Gao 2010	Anal canal	PCR-TellgenplexTM HPV DNA Test	HIV- MSM	>=18 (70% <30 years)	528	58.9	(54.6-63.1)
	Li 2015	Anus	PCR-GenoArray	HIV+ MSM	18-60	193	99.0	(96.3-99.9)
	Yang 2012	Anus	PCR-TellgenplexTM HPV DNA Test	HIV+ MSM	>=18	91	70.3	(59.8-79.5)
	Zhang 2014	Anus	PCR-GenoArray	HIV- MSM, STD clinic attendees	IQR=25-34.8	380	33.7	(28.9-38.7)
	Zhang 2014	Anus	PCR-GenoArray	HIV+ MSM STD clinic attendees	IQR=25-34.8	28	71.4	(51.3-86.8)
	Tang 2006	Urethral meatus	PCR-MY09/11	STD clinic attendees	18-70	305	13.8	(10.1-18.2)
Colombia	Franceschi 2002	Glans, corona, urethra	PCR-GP5+/6+	Husbands of women with invasive cervical cancer	24-79	50	32.0	(19.5-46.7)
	Franceschi 2002	Glans, corona, urethra	PCR-GP5+/6+	Husbands of women with cervical carcinoma in situ	23-76	63	20.6	(11.5-32.7)
Croatia	Goldstone 2011[b]	Anus	RT-PCR-Multiplex or Biplex	HIV- MSM	Median 22 (16-27)	602	42.4	(38.4-46.4)
	Goldstone 2011[b]	Penis	RT-PCR-Multiplex or Biplex	HIV- MSM	Median 22 (16-27)	602	18.4	(15.4-21.8)
Denmark	Svare 2002	Coronal sulcus, glans, perianal area, scrotum, and shaft	PCR-GP5+/6+ and TS 6,11,16,18,31,33	STD clinic attendees	>=18	198	44.9	(37.9-52.2)
France	Aynaud 2003	Meatal urethra	PCR-TS 6,11,42,16,18,33	Men with penile and urethral lesions whose female partners have genital HPV lesions	Mean 29	55	87.3	(75.5-94.7)
	Aynaud 2003	Meatal urethra	PCR-TS 6,11,42,16,18,33	Men with normal peniscopy whose female partners have genital HPV lesions	Mean 30	34	2.9	(0.1-15.3)
	Philibert 2014	Anus	PCR-Cobas HR-HPV	HIV+ MSM	Mean 46.4 (SD=9.4)	82	76.8	(66.2-85.4)
	Piketty 2004	Anal canal	PCR-MY09/11	HIV+ MSM	27-62	45	80.0	(65.4-90.4)
	Damay 2010	Anal canal	PCR-PapilloCheck®	HIV+ MSM	Median 45 (39-49.5)	67	74.6	(62.5-84.5)
	Philibert 2014	Anus	PCR-Cobas HR-HPV	HIV- MSM	Mean 46.4 (SD=9.4)	16	75.0	(47.6-92.7)
Germany	Schneider 1988	Glans, prepuce, fossa navicularis, shaft	Filter hybridization DNA/DNA	Sexual partners of women with HPV associated lesions of the cervix	Mean 36.5	156	39.1	(31.4-47.2)
	Goldstone 2011[b]	Anus	RT-PCR-Multiplex or Biplex	HIV- MSM	Median 22 (16-27)	602	42.4	(38.4-46.4)

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Country	Study	Anatomic sites samples	HPV detection method	Population	Age (years)	No. Tested	HPV Prevalence %	(95% CI)[a]
	Goldstone 2011[b]	Penis	RT-PCR-Multiplex or Biplex	HIV- MSM	Median 22 (16-27)	602	18.4	(15.4-21.8)
	Wieland 2015	Anus	PCR-Multiplex and hybridization	HIV+ MSM	18-80	801	91.5	(89.4-93.3)
Greece	Hadjivassiliou 2007	Urethra	HC2 HR, LR	HIV- STD clinic attendees without genital warts and sexual partners of women with genital warts	15-65	64	20.3	(11.3-32.2)
India	Gupta 2006	Coronal sulcus, distal and intrameatal urethra and glans	PCR-L1 and TS 16,18	Partners of women with cervical cancer	Mean 46.4	30	66.7	(47.2-82.7)
Ireland	Sadlier 2014	Anus	PCR-TS 16,18,31	HIV+ MSM	Mean 40 (SD=10)	83	77.1	(66.6-85.6)
	Sadlier 2014	Anus	PCR-TS 16,18,31	HIV- MSM	Mean 32 (SD=8)	80	61.3	(49.7-71.9)
Italy	Giovannelli 2007	Coronal sulcus, frenulum, glans, prepuce, shaft	PCR-LiPA, GP5+/6+ and MY09/11	Partners of women with HPV	23-58	47	68.1	(52.9-80.9)
	Benevolo 2008	Coronal sulcus, urethra, prepuce, shaft	PCR-L1	Male partners of women with CIN and/or positive HPV	20-61	71	35.2	(24.2-47.5)
	Chiarini 1998	Urethra	PCR-Generic primers in E1	Men with symptoms of nongonococcal urethritis	-	247	31.2	(25.5-37.4)
	Della Torre 1992	Urethra	PCR-TS 6,11,16,18	Partners of women with HPV	-	64	21.9	(12.5-34.0)
	Dona 2015	Anus	PCR-Linear Array	HIV+ MSM	Median 41 (IQR=33-47)	172	93.0	(88.1-96.3)
	Dona 2015	Anus	PCR-Linear Array	HIV- MSM	Median 32 (IQR=27-39)	437	72.1	(67.6-76.2)
	Garbuglia 2015	Anus	PCR-MY09/11	HIV+ MSM	Median 39 (IQR=33-44)	220	88.6	(83.7-92.5)
	Orlando 2008	Anus	HC2	HIV+	Median 34 (IQR=30-42)	233	87.1	(82.1-91.1)
	Barzon 2010	Glans, corona, shaft, perianal area, urethra, and semen	PCR-General primers for L1 (MY09/11, GP5 + /6+)	Men referred for HPV testing. Indications for testing: STD screening, HPV suspected lesions, HPV-positive partners	20-72	947	41.7	(38.5-44.9)
	Pierangeli 2008	Anal canal	PCR-MY09/11	HIV- MSM	28-62	9	88.9	(51.8-99.7)
	Sammarco 2016	Coronal sulcus	PCR-Multiplex and RFLP and sequencing	HIV+ MSM	Mean 38 (IQR=20-53)	50	22.0	(11.5-36.0)
	Sammarco 2016	Urethra	PCR-Multiplex and RFLP and sequencing	HIV+ MSM	Mean 38 (IQR=20-53)	50	10.0	(3.3-21.8)
	Sammarco 2016	Anus	PCR-Multiplex and RFLP and sequencing	HIV+ MSM	Mean 38 (IQR=20-53)	50	56.0	(41.3-70.0)
	Pierangeli 2008	Anal canal	PCR-MY09/11	HIV+ MSM	25-65	18	94.4	(72.7-99.9)

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Country	Study	Anatomic sites samples	HPV detection method	Population	Age (years)	No. Tested	HPV Prevalence %	(95% CI)[a]
Japan	Nagata 2015	Anus	PCR-Invader	HIV+ heterosexual men	Median 44 (IQR=39-55)	34	20.6	(8.7-37.9)
	Nagata 2015	Anus	PCR-Invader	HIV+ MSM	Median 44 (IQR=39-55)	361	75.9	(71.1-80.2)
	Shigehara 2010	Coronal sulcus, glans, prepuce, urethra, and urine	PCR-HPV GenoArray	Men with urethritis	Mean 35.2 (19-62)	142	47.9	(39.4-56.4)
	Takahashi 2003	Coronal sulcus, glans, prepuce	HC2 HR, LR	Patients with urethritis	17-49	130	18.5	(12.2-26.2)
	Takahashi 2005	Glans, corona, inner surface of prepuce	HC2 HR, LR	STD clinic attendees	18-35	204	5.9	(3.1-10.0)
Mexico	Torres-Ibarra 2014	Anus	PCR-PGMY09/11	HIV+ MSM	18-69	446	93.0	(90.3-95.2)
	Nyitray 2011	Anal canal	PCR-PGMY09/11	HIV- MSM from organized health care systems, factories and military	18-70	176	47.2	(39.6-54.8)
	Goldstone 2011[b]	Anus	RT-PCR-Multiplex or Biplex	HIV- MSM	Median 22 (16-27)	602	42.4	(38.4-46.4)
	Goldstone 2011[b]	Penis	RT-PCR-Multiplex or Biplex	HIV- MSM	Median 22 (16-27)	602	18.4	(15.4-21.8)
	Leyva-López 2003	Urethral meatus	PCR-L1	Partners of women with CIN	17-64	187	2.1	(0.6-5.4)
	Mendez-Martinez 2014	Anus	PCR-INNO-LIPA	HIV+ MSM	Median 39 (IQR=33-45)	324	86.1	(81.9-89.7)
Netherlands	Van Doornum 1994	Corona, urethra, anus, rectum	PCR-TS 6/11,16,18,33	STD clinic attendees	Mean 37	85	28.2	(19.0-39.0)
	van der Snoek 2003	Perianal area	PCR-TS primers and LiPA	HIV+ MSM	29-59	17	64.7	(38.3-85.8)
	Bleeker 2005	Corona, frenulum, glans, inner prepuce	PCR-GP5+/6+	Partners of women with dyskaryosis and/or CIN	22.5-57.7	181	72.9	(65.8-79.3)
	van der Snoek 2003	Coronal sulcus	PCR-TS primers and LiPA	HIV+ MSM	29-59	17	23.5	(6.8-49.9)
	Bleeker 2005	Corona, frenulum, glans, inner prepuce	PCR-GP5+/6+	Men visiting department of dermatology for non-STI complaints	22.8-73.2	83	25.3	(16.4-36.0)
	Bleeker 2002	Glans, corona, frenulum, prepuce	PCR-GP5+/6+	Partners of women with CIN	24-58	119	58.8	(49.4-67.8)
	van der Snoek 2003	Perianal area	PCR-TS primers and LiPA	HIV- MSM	19-76	241	32.8	(26.9-39.1)
	van Rijn 2014	Anal canal	PCR-LIPA TS 16,18,31,33,45,52,58	HIV+ MSM	Median 45.6 (IQR=39.4-52.5)	306	56.9	(51.1-62.5)
	van der Snoek 2003	Coronal sulcus	PCR-TS primers and LiPA	HIV- MSM	19-76	241	15.8	(11.4-21.0)
	van Rijn 2014	Penile shaft	PCR-LIPA TS 16,18,31,33,45,52,58	HIV+ MSM	Median 45.6 (IQR=39.4-52.5)	306	23.2	(18.6-28.3)

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Country	Study	Anatomic sites samples	HPV detection method	Population	Age (years)	No. Tested	HPV Prevalence %	(95% CI)[a]
	Welling 2015	Penis	PCR-SPF DEIA LIPA	HIV- MSM	Median 38 (IQR=33-42)	461	29.5	(25.4-33.9)
	Welling 2015	Anus	PCR-SPF DEIA LIPA	HIV- MSM	Median 38 (IQR=33-42)	461	60.1	(55.5-64.6)
	Welling 2015	Anus	PCR-SPF DEIA LIPA	HIV+ MSM	Median 46 (IQR=39-53)	317	78.2	(73.3-82.7)
	Welling 2015	Penis	PCR-SPF DEIA LIPA	HIV+ MSM	Median 46 (IQR=39-53)	317	49.5	(43.9-55.2)
	Vriend 2013	Anal canal	PCR-LIPA	MSW STD clinic attendees	Median 22 (16-24)	124	33.1	(24.9-42.1)
	Vriend 2013	Penis	PCR-LIPA	MSW STD clinic attendees	Median 22 (16-24)	124	16.1	(10.1-23.8)
	Vriend 2013	Anal canal	PCR-LIPA	MSM STD clinic attendees	Median 22 (16-24)	56	3.6	(0.4-12.3)
	Vriend 2013	Penis	PCR-LIPA	MSM STD clinic attendees	Median 22 (16-24)	56	26.8	(15.8-40.3)
	van Rijn 2014	Penile shaft	PCR-LIPA TS 16,18,31,33,45,52,58	HIV- MSM	Median 37.6 (IQR=33.6-42.2)	441	11.1	(8.3-14.4)
	van Rijn 2014	Anal canal	PCR-LIPA TS 16,18,31,33,45,52,58	HIV- MSM	Median 37.6 (IQR=33.6-42.2)	441	33.6	(29.2-38.2)
Peru	Blas 2015	Coronal sulcus, glans, penis shaft, and scrotum	PCR-Linear Array	HIV- MSM	Mean 34 (18-59)	101	40.6	(30.9-50.8)
	Blas 2015	Anal canal	PCR-Linear Array	HIV- MSM	Mean 34 (18-59)	101	76.2	(66.7-84.1)
	Quinn 2012	Anus	PCR-Line blot	MSM	Mean 33 (SD=10.1)	105	77.1	(67.9-84.8)
Philippines	Franceschi 2002	Glans, corona, urethra	PCR-GP5+/6+	Husbands of women with invasive cervical cancer	22-77	149	6.0	(2.8-11.2)
Russian Federation	Wirtz 2015	Anus	PCR-TS 6,11,16,18,31,33	HIV+ MSM	Median 29 (19-50)	58	50.0	(36.6-63.4)
	Wirtz 2015	Anus	PCR-TS 6,11,16,18,31,33	HIV- MSM	Median 29 (19-50)	65	30.8	(19.9-43.4)
Slovenia	Golob 2014	Penis	PCR-Linear Array	Men from infertile couples	Mean 33	299	37.1	(31.6-42.9)
	Milosevic 2010	Anal canal	PCR-Linear Array	HIV- MSM	16-80	116	75.0	(66.1-82.6)
	Milosevic 2010	Anal canal	PCR-Linear Array	HIV+ MSM	20-57	20	95.0	(75.1-99.9)
South Africa	Müller 2010	Glans penis, coronal sulcus, penile shaft and anogenital warts	PCR-Roche Linear Array HPV Genotyping test	Men with anogenital wart attending a sexual health clinic	Mean 29.8	108	100.0	(96.6-100.0)
	Müller 2010	Glans penis, coronal sulcus and penile shaft	PCR-Roche Linear Array HPV Genotyping test	Asymptomatic men attending for HIV voluntary counselling and testing a sexual health clinic	Mean 29.8	50	62.0	(47.2-75.3)
	Müller 2010	Glans penis, coronal sulcus and penile shaft	PCR-Roche Linear Array HPV Genotyping test	Men with urethritis syndrome attending a sexual health clinic	Mean 29.8	56	48.2	(34.7-62.0)

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Table 40 – continued from previous page

Country	Study	Anatomic sites samples	HPV detection method	Population	Age (years)	No. Tested	HPV Prevalence %	(95% CI)[a]
	Firnhaber 2011	Prepuce, penile shaft and genital wart areas of the penis	PCR-Roche Linear Array HPV Genotyping test	Men with penile warts attending a public sector antiretroviral treatment clinic	Mean 36.0	73	100.0	(95.1-100.0)
	Vogt 2013	Coronal sulcus, glans and shaft	PCR-PGMY09/11	Heterosexual men attending an HIV testing centre	IQR=29-37	34	58.8	(40.7-75.4)
	Mbulawa 2010	Shaft and glans, and the foreskin in uncircumcised men	PCR-Roche Linear Array HPV Genotyping test	HIV+ heterosexual men recruited for investigations of genital HPV transmission	19-67	158	77.2	(69.9-83.5)
Spain	Goldstone 2011[b]	Penis	RT-PCR-Multiplex or Biplex	HIV- MSM	Median 22 (16-27)	602	18.4	(15.4-21.8)
	Franceschi 2002	Glans, corona, urethra	PCR-GP5+/6+	Husbands of women with cervical carcinoma in situ	22-76	102	21.6	(14.0-30.8)
	Hidalgo-Tenorio 2015	Anus	PCR-GeneAmp HR-HPV	HIV+ MSM	Mean 37.4 (SD=9.5)	197	80.2	(73.9-85.5)
	Sendagorta 2014	Anus	PCR-Genomic amplification	HIV+ MSM/bisexual men	>=18	298	93.0	(89.4-95.6)
	Sendagorta 2015	Anus	PCR-HR Clart HPV2	HIV+ MSM	Median 42 (IQR=33-50)	101	82.2	(73.3-89.1)
	Torres 2013	Anus	PCR-Roche Linear Array HPV Genotyping test	HIV+ MSM	IQR=28.2-40.1	1439	95.8	(94.6-96.7)
	Videla 2013	Anus	PCR-TS primers in E6/E7 F-HPVTM typing (Molgentix SL, Spain)	HIV+ Heterosexual men attending an outpatient HIV clinic	40-48	195	41.5	(34.5-48.8)
	Videla 2013	Coronal sulcus, glans, urethra, shaft	PCR-TS primers in E6/E7 F-HPVTM typing (Molgentix SL, Spain)	HIV+ Heterosexual men attending an outpatient HIV clinic	40-48	191	27.2	(21.0-34.1)
	Goldstone 2011[b]	Anus	RT-PCR-Multiplex or Biplex	HIV- MSM	Median 22 (16-27)	602	42.4	(38.4-46.4)
	Franceschi 2002	Glans, corona, urethra	PCR-GP5+/6+	Husbands of women with invasive cervical cancer	25-74	84	11.9	(5.9-20.8)
	Videla 2013	Anus	PCR-TS primers in E6/E7 F-HPVTM typing (Molgentix SL, Spain)	HIV+ MSM attending an outpatient HIV clinic	36-47	538	84.2	(80.8-87.2)

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Country	Study	Anatomic sites samples	HPV detection method	Population	Age (years)	No. Tested	HPV Prevalence	
							%	(95% CI)[a]
	Álvarez-Argüelles 2013	Balanopreputial	PCR-General primers in L1 (MY09/11, GP5 + /6+), PCR with TS primers in E6/E7 for typing	STD clinic attendees	17-87	1318	36.9	(34.3-39.5)
	Álvarez-Argüelles 2013	Anus	PCR-General primers in L1 (MY09/11, GP5 + /6+), PCR with TS primers in E6/E7 for typing	STD clinic attendees	17-87	123	49.6	(40.5-58.8)
	Videla 2013	Coronal sulcus, glans, urethra, shaft	PCR-TS primers in E6/E7 F-HPVTM typing (Molgentix SL, Spain)	HIV+ MSM attending an outpatient HIV clinic	36-47	457	24.9	(21.0-29.2)
Sweden	Kataoka 1991	Urethra	PCR-TS 6,11,16,18,33	Army conscripts with aceto-white epithelium	18-23	39	25.6	(13.0-42.1)
	Löwhagen 1999	Anus	PCR-MY09/11	HIV- MSM	26-62	13	53.8	(25.1-80.8)
	Strand 1993	Coronal sulcus, glans, preputium, and shaft	PCR-MY09/11 and GP5+/6+	STD clinic attendees	20-53	65	29.2	(18.6-41.8)
	Löwhagen 1999	Anus	PCR-MY09/11	HIV+ MSM	27-54	17	94.1	(71.3-99.9)
	Wikström 1991	Coronal sulcus, inner part of the prepuce, urethra	PCR-TS primers followed by dot blot	STD clinic attendees	17-58	228	53.9	(47.2-60.5)
	Wikström 2000	Corona, glans, and prepuce	PCR-GP5+/6+	STD clinic attendees	18-54	235	13.2	(9.1-18.2)
	Voog 1997	Glans and prepuce	PCR-MY09/11 and GP5+/6+	STD clinic attendees	19-67	20	25.0	(8.7-49.1)
Thailand	Supindham 2015	Anus	PCR-Linear Array	MSM-Gay men who self-identify as men and prefer insertive and/or receptive anal sex with other men	18-54	85	89.4	(80.8-95.0)
	Leaungwutiwong 2015	Anus	Nested-PCR and sequencing	HIV- MSM sex worker	Median 26	50	30.0	(17.9-44.6)
	Leaungwutiwong 2015	Anus	Nested-PCR and sequencing	HIV- MSM	Median 33	50	30.0	(17.9-44.6)
	Phanuphak 2013	Anus	PCR-Roche Linear Array HPV Genotyping test	HIV- MSM	>=18	123	58.5	(49.3-67.3)
	Supindham 2015	Anus	PCR-Linear Array	MSM-Bisexual men who self-identify as men and engage in insertive and/or receptive anal sex with men and women	18-36	29	48.3	(29.4-67.5)

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Table 40 – continued from previous page

Country	Study	Anatomic sites samples	HPV detection method	Population	Age (years)	No. Tested	HPV Prevalence %	(95% CI)[a]
	Supindham 2015	Anus	PCR-Linear Array	MSM-Transgender women who are born as anatomical males (and who may or may not have undergone genital surgery), but who self-identify as women and prefer receptive anal sex with men	18-48	83	80.7	(70.6-88.6)
	Franceschi 2002	Glans, corona, urethra	PCR-GP5+/6+	Husbands of women with invasive cervical cancer	25-77	109	22.0	(14.6-31.0)
	Phanuphak 2013	Anus	PCR-Roche Linear Array HPV Genotyping test	HIV+ MSM	>=18	123	85.4	(77.9-91.1)
Uganda	Tobian 2013	Coronal sulcus and glans	PCR-PGMY09/11	HIV+ heterosexual men	15-49	421	90.7	(87.6-93.3)
United Kingdom	Cuschieri 2011	Shaft	PCR-INNO-LiPA	Drop-in sexual health service attendees	16-25	117	29.1	(21.0-38.2)
	Hillman 1993	Urethra	PCR-GP5+/6+	Men infected with gonorrhea	17-55.6	100	18.0	(11.0-26.9)
	Jalal 2007	Urethra	PCR-General primers for L1 (MY09/11, GP5 + /6+) and RLH	Genitourinary clinic attendees	15-77	437	20.8	(17.1-24.9)
	King 2015	Anus	PCR-Multiplex and Bio-Plex Any nonavalent vaccine HPV types	MSM	Median 30 (IQR=25-35)	454	40.1	(35.5-44.8)
	King 2015	Coronal sulcus, glans, penis shaft, scrotum and perianal area	PCR-Multiplex and Bio-Plex Any nonavalent vaccine HPV types	MSM	Median 30 (IQR=25-35)	446	36.1	(31.6-40.7)
	Lacey 1999	Anal canal	PCR-GP5+/6+	HIV+ MSM	19-62	57	84.2	(72.1-92.5)
	Bissett 2011	Glans, prepuce, shaft, scrotum	PCR-General primers (GP5 + /6+), Bio-Plex array technology for typing	Genitourinary clinic attendees with multiple sexual partners or diagnosis of genital warts within 6 months	-	87	49.4	(38.5-60.4)
United States of America	Wiley 2013	Anus	PCR-PGMY09/11	HIV+ MSM	Mean 55	579	90.7	(88.0-92.9)
	Wiley 2013	Anus	PCR-PGMY09/11	HIV- MSM	Mean 55	683	70.3	(66.7-73.7)
	Baken 1995	Penis	PCR-MY09/11	Heterosexual partners of STD clinic attendees	>17	48	62.5	(47.4-76.0)
	Baldwin 2003	Glans, corona, urethra	PCR-PGMY09/11	STD clinic attendees	18-70	393	28.2	(23.8-33.0)
	Berry 2009	Anal canal	PCR-MY09/11	HIV+ MSM	26-75	32	90.6	(75.0-98.0)
	Berry 2009	Anal canal	PCR-MY09/11	HIV- MSM	26-75	81	56.8	(45.3-67.8)
	Caussy 1990	Anus	PCR-TS 6,11,16,18,31,33,35	HIV+ and HIV- homosexual men	Mean 40.6	105	39.0	(29.7-49.1)

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Table 40 – continued from previous page

Country	Study	Anatomic sites samples	HPV detection method	Population	Age (years)	No. Tested	HPV Prevalence %	(95% CI)[a]
	Chin-Hong 2004	Anus	PCR-MY09/11	HIV- MSM in EXPLORE cohort	18-89	1218	56.8	(54.0-59.6)
	Chin-Hong 2008	Anus	PCR- generic probe set by DBH	HIV- homosexual or bisexual men	24-73	87	57.5	(46.4-68.0)
	Chin-Hong 2008	Anus	PCR- generic probe set by DBH	HIV+ homosexual or bisexual men	24-73	38	86.8	(71.9-95.6)
	Colón-López 2014	Anus	PCR-MY09/11	STD clinic attendees (29.8% MSM)	>=18	192	57.8	(50.5-64.9)
	Conley 2010	Anal canal	PCR-Linear Array	HIV+ MSW	Median 42 (IQR=38-48)	92	58.7	(47.9-68.9)
	Conley 2010	Anal canal	PCR-Linear Array	HIV+ MSM	Median 42 (IQR=36-48)	379	95.8	(93.2-97.6)
	Critchlow 1998	Anus	PCR-MY09/11	HIV+ homosexual men	Mean 34	322	91.6	(88.0-94.4)
	Wilkin 2004	Anal canal	HC2	HIV+ MSM	90% > 30 years	55	78.2	(65.0-88.2)
	Fife 2003	Glans, corona, shaft, inguinal skin, scrotum, perineum, perianal, urine	PCR-TS 6,11	STD clinic attendees	18-50	20	10.0	(1.2-31.7)
	Friedman 1998	Anal canal	PCR-MY09/11, HMB01, and HC	HIV- MSM	<40 years	46	69.6	(54.2-82.3)
	Critchlow 1998	Anus	PCR-MY09/11	HIV- homosexual men	Mean 34	284	66.5	(60.7-72.0)
	Gandra 2015	Anus	HC2	HIV+ heterosexual men	Median 55 (IQR=49-60)	40	27.5	(14.6-43.9)
	Palefsky 2005	Anal canal	PCR-L1 consensus primers	HIV+ MSM	-	323	95.4	(92.5-97.4)
	Palefsky 1998	Anus	PCR-MY09/11	HIV- homosexual or bisexual men	26-73	200	61.0	(53.9-67.8)
	Friedman 1998	Anal canal	PCR-MY09/11, HMB01, and HC	HIV+ MSM	<40 years	135	90.4	(84.1-94.8)
	Palefsky 1998	Anus	PCR-MY09/11	HIV+ homosexual or bisexual men	24-64	289	93.1	(89.5-95.7)
	Palefsky 1997	Anus	PCR-MY09/11	HIV+ homosexual or bisexual men	24-66	118	93.2	(87.1-97.0)
	Nyitray 2011	Anal canal	PCR-PGMY09/11	HIV- MSM from general population and population from University	18-70	176	47.2	(39.6-54.8)
	Palefsky 1998	Anus	PCR-MY09/11	HIV+ and HIV- homosexual or bisexual men	24-73	489	80.0	(76.1-83.4)
	Kiviat 1993	Anal canal	PCR-MY09/11	HIV+ MSM/bisexual men	16-50	241	91.7	(87.5-94.9)
	Kiviat 1993	Anal canal	PCR-MY09/11	HIV- MSM/bisexual men	16-50	152	78.3	(70.9-84.6)
	Hood 2016	Anus	PCR-MY09/11	HIV+ MSM	Mean 39.5 (SD=7.8)	309	92.6	(89.0-95.2)

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Table 40 – continued from previous page

Country	Study	Anatomic sites samples	HPV detection method	Population	Age (years)	No. Tested	HPV Prevalence %	(95% CI)[a]
	Goldstone 2011[b]	Anus	RT-PCR-Multiplex or Biplex	HIV- MSM	Median 22 (16-27)	602	42.4	(38.4-46.4)
	Goldstone 2011[b]	Penis	RT-PCR-Multiplex or Biplex	HIV- MSM	Median 22 (16-27)	602	18.4	(15.4-21.8)
	Gandra 2015	Anus	HC2	HIV+ MSM	Median 49 (IQR=41-57)	107	54.2	(44.3-63.9)
	Moscicki 2003	Anus	PCR-MY09/11 and HMB01	High-risk adolescent boys in REACH cohort	13-18	83	44.6	(33.7-55.9)

Data updated on 22 May 2023 (data as of 31 Oct 2015)

DBH: Dot Blot Hybridization; EIA: Enzyme ImmunoAssay; HC2: Hybrid Capture 2; LiPA: Line Probe Assay; PCR: Polymerase Chain Reaction; RFLP: Restriction Fragment Length Polymorphism; RLH: Reverse Line Hybridisation; RT-PCR: Real Time Polymerase Chain Reaction; SPF: Short Primer Fragment; TS: Type Specific; MSM: Men who have sex with men; MSW:Men who have sex with women; STD: sexually transmitted diseases
[a] 95% Confidence Interval
[b] Includes cases from Australia, Brazil, Canada, Croatia, Germany, Mexico, Spain, and USA.
Data Sources: See references in Section 9 References.

4.4 HPV burden in the head and neck

The last evaluation of the International Agency for Research in Cancer (IARC) on the carcinogenicity of HPV in humans concluded that (a) there is enough evidence for the carcinogenicity of HPV type 16 in the oral cavity, oropharynx (including tonsil cancer, base of tongue cancer and other oropharyngeal cancer sites), and (b) limited evidence for laryngeal cancer (IARC Monograph Vol 100B). There is increasing evidence that HPV-related oropharyngeal cancers constitute an epidemiological, molecular and clinical distinct form as compared to non HPV-related ones. Some studies indicate that the most likely explanation for the origin of this distinct form of head and neck cancers associated with HPV is a sexually acquired oral HPV infection that is not cleared, persists and evolves into a neoplastic lesion. Around 30% of oropharyngeal cancers (which mainly comprises the tonsils and base of tongue sites) are caused by HPV with HPV16 being the most frequent type (de Martel C et al. Int J Cancer 2017;141(4):664-670). Attributable fraction varies greatly worldwide, being highest in more developed countries (60% in Republic of Korea, 51% in North America, 50% in Eastern Europe, 46% in Japan, 42% in North-Western Europe, 41% in Australia/New Zealand, 24% in South Europe, 23% in China, 22% in India, and 13% in elsewhere) (de Martel C et al. Lancet Glob Health 2020;8(2):e180-e190). In this section, the HPV burden in the head and neck in the World is presented.

4.4.1 Burden of oral HPV infection in healthy population

Table 41: Studies on oral HPV prevalence among healthy in the World

Study	Specimen collection method / anatomic site	HPV detection method[a]	Population	% males	Age (years)[b]	No. tested[c]	HPV prevalence % (95% CI)	High-Risk HPV prevalence % (95% CI)	5 most frequent HPVs, HPV type (n)[d]
Eike 1995	Brush/swab / Most parts of mouth	PCR-MY09/11	Convenient samples from out-patients	0	20-79	61	0 (0.0-5.9)	-	-
Leimola-Virtanen 1996	Brush/swab / Most parts of mouth	PCR-GP5/6	Convenient samples from general population	0	55	131	10.7 (6.5-17.1)	-	-
Lambropoulos 1997	Brush/swab / Most parts of mouth	PCR-MY09/11	Convenient samples from out-patients	50	14-85	169	9.5 (9.5-14.8)	-	HPV6 (6); X (5); 16 (4); 11 (1)
Schwartz 1998	Brush/swab & oral rinse / Oral mucosa	PCR-MY09/11 TS-E6	Age-matched controls	63	18-65	435	9.19 (6.8-12.3)	-	-
Summersgill 2001	Oral rinse / Oral mucosa	PCR-MY09/11 GP5+	Convenient samples from out-patients	40	0-20	268	6 (3.7-9.5)	3.4 (1.8-6.3)	HPV16 (8); X (4); 6 (2); 17 (1); 18 (1)
Winer 2003	Brush / swab / Oral mucosa	PCR-MY09/11 HMB01	General population	0	18-20	318	1.9 (0.9-4.1)	-	HPVX (6)
Herrero 2003	Brush/swab & oral rinse & gargle / Oral mucosa and throat	PCR-GP5+/6+	Age-matched controls	56.9	17-78	364	4.1 (2.5-6.7)	-	-
Herrero 2003	Brush/swab & oral rinse & gargle / Oral mucosa and throat	PCR-GP5+/6+	Age-matched controls	86	20-85	114	12.3 (7.5-19.6)	-	-
Herrero 2003	Brush/swab & oral rinse & gargle / Oral & oropharyngeal mucosa	PCR-GP5+/6+	Age-matched controls	50	28-73	50	6 (2.1-16.2)	-	-

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Table 41 – continued from previous page

Study	Specimen collection method / anatomic site	HPV detection method[a]	Population	% males	Age (years)[b]	No. tested[c]	HPV prevalence % (95% CI)	High-Risk HPV prevalence % (95% CI)	5 most frequent HPVs, HPV type (n)[d]
Smith 2004	Oral rinse / Oral mucosa	PCR-MY09/11 TS-E6	Convenient samples from general population	100	-	68	5.9 (2.3-14.2)	4.4 (1.5-12.2)	HPV31 (2); 13 (1); 39 (1)
Smith 2004	Oral rinse / Oral mucosa	PCR-GP5+/6+ MY09/11	Age-matched controls	59	-	333	18.3 (14.5-22.8)	10.8 (7.9-14.6)	HPV16 (33)
Kurose 2004	Brush/swab / Oral mucosa	PCR-MY09/11	Convenient samples from out-patients	42	3-85	662	0.3 (0.1-1.1)	0.2 (0.0-0.9)	HPV12 (1); 16 (1); 53 (1); 71 (1)
Koppikar 2005	Oral rinse / Oral mucosa	PCR-CP FAP	Age-matched controls	80	-	102	0 (0.0-3.6)	0 (0.0-3.6)	HPV20 (2); 12 (1); 48 (1); 23 (1)
Hansson 2005	Brush/swab / Tonsillar fossa	PCR-GP5+/6+ MY09/11	Age-matched controls	67	33-89	320	2.5 (1.3-4.9)	0.3 (0.1-1.7)	HPV76 (3); 75 (2); 13 (2); 16 (1); 25 (1); 54 (1); 44 (1); 62 (1); 67 (1); 68 (1); 87 (1); X (1)
do 2006	Brush/swab / Most parts of Oropharynx	PCR-MY09/11	Convenient samples from out-patients	57.9	16-52	50	10 (4.3-21.4)	6 (2.1-16.2)	HPV61 (2); X (2); 16 (1); 18 (1); 52 (1)
Marais 2006	Brush/swab /Oral mucosa	PCR-L1 consensus	Convenient samples from out-patients	45	1-61	307	4.6 (2.7-7.5)	0.7 (0.2-2.3)	HPV13 (6); 32 (4); 11 (2); 72 (2); 16 (1)
Rose 2006	Brush/swab / Oral mucosa	PCR-MY09/11 FAP59/64	Age-matched controls	44	22-85	88	1.1 (0.2-6.2)	-	-
Pintos 2008	Brush/swab & oral rinse & gargle / Oral mucosa and throat	PCR-PGMY09/11	Age-matched controls	71	26-84	129	4.7 (2.1-9.8)	3.1 (1.2-7.7)	HPV58 (3); 11 (1); 44 (1); 56 (1); 66 (1)
Montaldo 2007	Saliva / Oral mucosa	GP5 + N/MY09	Convenient samples from out-patients	42	4-77	164	18.3 (13.1-24.9)	18.3 (13.1-24.9)	HPV16 (23); 31 (7)
Ragin 2007	Oral rinse and gargle / Oral mucosa and throat	PCR-GP5+/6+ PGMY09/11 HMB01	General population	0	18-65	212	5.7 (3.3-9.6)	1.4 (0.5-4.1)	HPV70 (8); 16 (2); 62 (2); 31 (1); 32 (1); 66 (1)
Smith 2007	Oral rinse / Oral mucosa	PCR-MY09/11 GP5+	Convenient samples from out-patients	45	0-20	1235	5.9 (2.3-14.2)	-	-
Anaya-Saavedra 2008	Brush/swab / Oral mucosa	PCR-GP5+/6+ MY09/11	Age-matched controls	53	27-86	248	16.1 (12.1-21.2)	9.6999999999999 (6.6-14.0)	HPV16 (15); 11 (7); 18 (5); 6 (4); 13 (4)
D'Souza 2009	Oral rinse / Oral mucosa	PCR-PGMY09/11	Convenient samples from general population	100	18-23	210	2.9 (1.3-6.1)	1.9 (0.7-4.8)	HPV16 (1); 35 (1); 39 (1); 51 (1); 66 (1); 84 (1)

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Table 41 – continued from previous page

Study	Specimen collection method / anatomic site	HPV detection method[a]	Population	% males	Age (years)[b]	No. tested[c]	HPV prevalence % (95% CI)	High-Risk HPV prevalence % (95% CI)	5 most frequent HPVs, HPV type (n)[d]
D'Souza 2009	Oral rinse / Oral mucosa	PCR-PGMY09/11	Age-matched controls	76	25-87	332	4.8 (3.0-7.7)	2.1 (1.0-4.3)	HPV62 (3); 58 (2); 6 (1); 11 (1); 16 (1); 42 (1); 51 (1); 52 (1); 56 (1); 58 (1); 59 (1); 61 (1); 62 (1); 66 (1); 68 (1); 73 (1); 83 (1); 89 (1)
Szarka 2009	Brush/swab / Oral mucosa	PCR-GP5+/6+ MY09/11	Age-matched controls	26	22-77	72	4.2 (1.4-11.5)	2.8 (0.8-9.6)	HPV16 (2); 11 (1)
Esquenazi 2010	Brush/swab / Oral mucosa and mastication sites	PCR-GP5+/6+ MY09/11	Convenient samples from general population	40	20-31	100	0 (0.0-3.7)	-	-
Kreimer 2011	Oral rinse / Oral mucosa	PCR-PGMY09/11	Convenient samples from general population	100	18-74	499	2.8 (1.7-4.7)	1.4 (0.7-2.9)	HPV16 (4); 51 (2); 61 (2); 6 (1); 58 (1) 62(1); 66 (1); 70 (1); 83 (1); 84 (1)
Kreimer 2011	Oral rinse / Oral mucosa	PCR-PGMY09/11	Convenient samples from general population	100	18-74	570	4.2 (2.8-6.2)	1.4 (0.7-2.7)	HPV16 (3); 6 (3); 66 (3); 72 (3); 84 (3)
Kreimer 2011	Oral rinse / Oral mucosa	PCR-PGMY09/11	Convenient samples from general population	100	18-74	557	5.9 (4.2-8.2)	1.3 (0.3-2.6)	HPV44 (15); 16 (3); 61 (3); 11 (2); 62 (2); 71 (2); 82 (2)
Ribeiro 2011	Brush/swab & oral rinse & gargle / Oral mucosa and throat	PCR-PGMY09/11	Age-matched controls	-	-	898	0.2 (0.1-0.8)	-	-
Ribeiro 2011	Brush/swab & oral rinse & gargle / Oral mucosa and throat	PCR-PGMY09/11	Age-matched controls	-	-	898	0.2 (0.1-0.8)	-	-
Ribeiro 2011	Brush/swab & oral rinse & gargle / Oral mucosa and throat	PCR-PGMY09/11	Age-matched controls	-	-	898	0.2 (0.1-0.8)	-	-
Ragin 2011	Brush/swab & oral rinse / Oral mucosa and tonsil	PCR-PGMY09/11	General population	0	24-78	118	10.2 (5.9-16.9)	2.1 (0.9-4.9)	HPV84 (3); 83 (2); 52 (1); 54 (1); 61 (1); 82 (1); 16 (1); 33 (1); 35 (1); 52 (1); 66 (1); 70 (1)

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Table 41 – continued from previous page

Study	Specimen collection method / anatomic site	HPV detection method[a]	Population	% males	Age (years)[b]	No. tested[c]	HPV prevalence % (95% CI)	High-Risk HPV prevalence % (95% CI)	5 most frequent HPVs, HPV type (n)[d]
Migaldi 2012	Brush/swab / Oral mucosa	PCR-MY09/11 TS-E6/E7	Convenient samples from out-patients	50	49-77	81	0 (0.0-4.5)	0 (0.0-4.5)	HPV90 (1)
Pickard 2012	Oral rinse / Oral mucosa	PCR-PGMY09/11	Convenient samples from general population	60	18-30	766	2.6 (1.7-4.0)	-	-
Kero 2012	Brush/swab / Most parts of mouth	PCR-GP5+/6+ MY09/11	Convenient samples from general population	100	19-46	131	18.3 (12.6-25.8)	13 (8.3-19.8)	HPV16 (12); 33 (3); 82 (3); 6 (1); 11 (1); 18 (1); 31 (1); 43 (1); 70 (1)
Edelstein 2012	Brush/swab & oral rinse & gargle / Oral mucosa and throat	PCR-PGMY09/11 HMB01	General population	100	18-25	212	7.5 (4.7-11.9)	13.2 (9.3-18.4)	HPV16 (6); 18 (5); 33 (4); 39 (4); 31 (3)
Gonzalez-Ramirez 2013	Brush/swab / Oral mucosa	PCR-GP5+/6+ MY09/11 L1C1/L1C2	Age-matched controls	43	21-NS	320	2.5 (1.3-4.9)	2.5 (1.3-4.9)	HPV18 (6); 16 (2)
Seifi 2013	Saliva / Oral mucosa	PCR-GP5+/6+ MY09/11	Convenient samples from out-patients	46	16-61	114	6.1 (3.0-12.1)	4.4 (1.9-9.9)	HPV18 (5); 6 (1); 66 (1)
Nordfors 2013	Oral rinse and gargle / Oral mucosa and throat	PCR-Multiplex	Convenient samples from general population	52	17-21	335	1.8 (0.8-3.9)	1.8 (0.8-3.9)	HPV16 (4); 56 (1); 58
Lang 2013	Oral rinse and gargle / Oral mucosa and throat	PCR-SPF10 TS 16/18	Age-matched controls	0	22-29	2926	5.4 (4.6-6.2)	1.5 (1.1-2.0)	HPVX (102); 16 (12); 51 (10); 52 (7); 66 (6)
Morbini 2013	Brush/swab / Cheeks	PCR-SPF10	Age-matched controls	84	31-NS	51	15.7 (8.2-28.0)	2 (0.3-10.3)	HPVX (7); 16 (1)
Cavenaghi 2013	Oral rinse and gargle / Oral mucosa and throat	PCR-MY09/11	Convenient samples from general population	39	4-89	145	2.1 (0.7-5.9)	0.7 (0.1-3.8)	HPV44 (2); 58 (1)
Meyer 2014	Brush/swab & oral rinse / Oral mucosa and tonsils	PCR-A5/A10 A6/A8	General population	0	-	129	5.4 (2.7-10.8)	-	-
Machado 2014	Brush/swab / Most parts of mouth	PCR-PGMY09/11	Convenient samples from out-patients	100	18-68	514	1.2 (0.5-2.5)	0.2 (0.0-1.1)	HPVX (2); 6 (1); 11 (1); 52 (1); 53 (1); 89 (1)
Antonsson 2014	Oral rinse / Oral mucosa	PCR-GP5+/6+	Convenient samples from general population	-	18-35	199	3.5 (1.7-7.1)	-	-

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Table 41 – continued from previous page

Study	Specimen collection method / anatomic site	HPV detection method[a]	Population	% males	Age (years)[b]	No. tested[c]	HPV prevalence % (95% CI)	High-Risk HPV prevalence % (95% CI)	5 most frequent HPVs, HPV type (n)[d]
Araujo 2014	Brush/swab / Most parts of mouth	PCR-MY09/11	Convenient samples from out-patients	38	18-79	166	24.1 (18.2-31.1)	-	HPV18 (5); 6 (3); 58 (1)
Cook 2014	Oral rinse and gargle / Oral mucosa and throat	PCR-PGMY09/11	Convenient samples from general population	0	18-54	475	2.5 (1.5-4.4)	0.8 (0.3-2.1)	HPVX (7); 16 (2); 51 (1); 59 (1); 84 (1)
Hang 2014	Brush/swab / Oral mucosa	PCR-SPF1 GP6+	General population	47	25-65	5351	0.7 (0.4-1.1)	0.6 (0.4-1.0)	HPV3 (223); 10 (23); 57 (25); 16 (23); 75 (6)
Davidson 2014	Oral rinse & gargle / Oral & oropharyngeal mucosa	PCR-PGMY09/11	Convenient samples from general population	100	15-65	125	3.2 (1.3-7.9)	0.8 (0.1-4.4)	HPV72 (2); 16 (1); 44 (1); 62 (1)
Dahlstrom 2014	Brush/swab & oral rinse & gargle / Oral mucosa and throat	PCR-PGMY09/11	Convenient samples from general population	50	18-50	442	4.1 (2.1-7.5)	4.1 (2.1-7.5)	HPV16 (5); 66 (5); 89 (5); 39 (2); 51 (2) 56 (2); 84 (2)
Saini 2011	Brush/swab / Oral mucosa	PCR-GP5+/6+ MY09/11	Convenient samples from out-patients	56.9	30-NS	72	23.6 (15.3-34.6)	5.6 (2.2-13.4)	-
Tatar 2015	Brush/swab / Most parts of mouth	PCR-GP5+/6+ MY09/11	Convenient samples from out-patients	21	10-82	209	5.7 (3.3-9.8)	2.4 (1.0-5.5)	HPVX (4); 16 (3); 44 (2); 11 (1); 33 (1); 35 (1); 66 (1)
Sauter 2015	Brush/swab & oral rinse & gargle / Oral mucosa and throat	PCR-PGMY09/11	Convenient samples from general population	35	0-79	153	2.6 (1.0-6.5)	-	-
Chaturvedi 2015	Oral rinse and gargle / Oral mucosa and throat	PCR-PGMY09/11	General population	51	14-69	9480	6.9 (6.4-7.4)	-	-

Data updated on 19 Oct 2021 (data as of 19 May 2015)

(95% CI): 95% Confidence Interval
[a] TS: type-specific; RT-PCR: real-time PCR; qPCR: quantitative PCR
[b] NS: not specified
[c] number of cases tested for HPV DNA
[d] number of cases positive for the specific HPV-type

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4.4.2 HPV burden in head and neck cancers

Table 42: Studies on HPV prevalence among cases of oral cavity cancer in the World

Country	Study	HPV detection method and targeted HPV types	No. Tested	HPV Prevalence		Prevalence of 5 most frequent HPVs, HPV type (%)
				%	(95% CI)[a]	
MEN						
Brazil	Oliveira 2009	GP5+/GP6+ (L1) DBH (6. 11. 16. 18. 31. 33. 34. 35. 39. 40. 42. 43. 44. 45. 51. 52. 54. 56. 58)	57	31.6	(21.0-44.5)	-
Canada	Herrero 2003	GP5+/GP6+ (L1) Hybridization with EIA oligonucleotide probes (2. 6. 11. 16. 18. 31. 33. 35. 39. 40. 42. 43. 44. 45. 51. 52. 56. 58. 59. 66. 68)	17	11.8	(3.3-34.3)	HPV 16 (11.8)
Canada	Noble-Topham 1993	TS-PCR E6/E7 for 6b/11/16/18 Amplification with TS primers (6b/11. 16. 18)	7	57.1	(25.0-84.2)	HPV 18 (57.1) HPV 16 (14.3)
China	Zhang 2004	TS-PCR E6 for 16/18 Amplification with TS primers (16. 18)	48	81.3	(68.1-89.8)	-
Cuba	Herrero 2003	GP5+/GP6+ (L1) Hybridization with EIA oligonucleotide probes (2. 6. 11. 16. 18. 31. 33. 35. 39. 40. 42. 43. 44. 45. 51. 52. 56. 58. 59. 66. 68)	53	0	-	-
Germany	Krüger 2014	PCR L1-Consensus primer, PCR-SPF10, LiPA (HPV 6, 11, 16, 18, 16/18, 26, 31, 33, 35, 39, 40, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 66, 68, 69, 70, 71, 73, 74, 81)	56	8.9	(3.9-19.3)	-
Hungary	Nemes 2006	MY09/MY11 (L1) Hybridization with TS probes (16. 18. 31. 33. 45. 51. 52. 58)	67	44.8	(33.5-56.6)	-
India	Balaram 1995	MY09/MY11 (L1). GP5+/GP6+ (L1)/GP17+/GP18+ (L1). Y1/Y2 and TS-PCR for 6/11/16/18 Sequencing	50	74	(60.4-84.1)	-
India	Chaudhary 2010	MY09/MY11 (L1) Amplification with TS primers (16)	146	33.6	(26.4-41.6)	HPV 16 (33.6)
India	D'Costa 1998	MY09/MY11 (L1) SBH (6. 11. 16. 18. 33)	71	12.7	(6.8-22.4)	HPV 16 (12.7)
India	Herrero 2003	GP5+/GP6+ (L1) Hybridization with EIA oligonucleotide probes (2. 6. 11. 16. 18. 31. 33. 35. 39. 40. 42. 43. 44. 45. 51. 52. 56. 58. 59. 66. 68)	127	4.7	(2.2-9.9)	HPV 16 (3.9) HPV 18 (0.8) HPV 35 (0.8)
India	Laprise 2016	PCR-PGMY09/11, LBA (HPV 6, 11, 16, 18, 26, 31, 33, 35, 39, 40, 42, 44, 51, 53, 54, 56, 58, 59, 61, 62, 66, 67, 68, 69, 70, 71, 72, 73, 81, 82, 83, 84, 89)	196	0	-	-
Iran	Saghravanian 2011	GP5+/GP6+ (L1) Amplification with TS primers HPV E6/7 (16. 18. 31. 33)	8	0	-	-
Ireland	Herrero 2003	GP5+/GP6+ (L1) Hybridization with EIA oligonucleotide probes (2. 6. 11. 16. 18. 31. 33. 35. 39. 40. 42. 43. 44. 45. 51. 52. 56. 58. 59. 66. 68)	22	4.5	(0.8-21.8)	HPV 16 (4.5)
Italy	Herrero 2003	GP5+/GP6+ (L1) Hybridization with EIA oligonucleotide probes (2. 6. 11. 16. 18. 31. 33. 35. 39. 40. 42. 43. 44. 45. 51. 52. 56. 58. 59. 66. 68)	32	0	-	-
Japan	Bhawal 2008	TS-PCR E6 for 16 Electrophoretic analysis using SiHa DNA as positive control for HPV-16	19	26.3	(11.8-48.8)	HPV 16 (26.3)
Japan	Chiba 1996	TS-PCR E6/E7 for 6/11/16/18/31/33/52b/58 Restriction enzyme digestion (6. 11. 16. 18. 31. 33. 52b. 58)	22	27.3	(13.2-48.2)	HPV 16 (27.3)
Japan	Shimizu 2004	TS-PCR L1 for 16/18/31/33/35/39/45/51/52/56/58/59/68/73/75 76/82 Sequencing	13	15.4	(4.3-42.2)	HPV 120 (7.7) HPV 58 (7.7)
Japan	Tsuhako 2000	TS-PCR E6/E7 for 16/18 and E6 for 6/11 Amplification with TS primers (6.11.16.18)	51	52.9	(39.5-65.9)	HPV 16 (33.3) HPV 18 (33.3) HPV 6 (11.8) HPV 11 (2.0)
Mexico	Ibieta 2005	MY09/MY11 (L1) and GP5/GP6 (L1) Amplification with TS primers (16. 18)	36	41.7	(27.1-57.8)	-
Netherlands	Cruz 1996	GP5+/GP6+ (L1) and CPI/CPII (L1) Amplification with TS primers and hybridization with TS probes (2. 4. 6. 10. 11. 13. 16. 18. 25. 31. 33. 46. 51. 52)	22	63.6	(43.0-80.3)	HPV 16 (54.5) HPV 6 (4.5)
Poland	Herrero 2003	GP5+/GP6+ (L1) Hybridization with EIA oligonucleotide probes (2. 6. 11. 16. 18. 31. 33. 35. 39. 40. 42. 43. 44. 45. 51. 52. 56. 58. 59. 66. 68)	53	0	-	-
Republic of Korea	Shin 2002	TS-PCR E6 for 16/18/33 Amplification with TS primers (16. 18. 33)	76	9.2	(4.5-17.8)	HPV 18 (6.6) HPV 16 (1.3) HPV 33 (1.3)
Serbia	Kozomara 2005	TS-PCR E6 for 16. L1 for 18. E4 for 31 and E1 for 33 Amplification with TS primers (16. 18. 31. 33)	42	61.9	(46.8-75.0)	-
Slovenia	Kansky 2003	PGMY09/11 (L1). GP5+/GP6+ (L1) and WD72/76/66/67/154 (E6) RFLP	48	4.2	(1.2-14.0)	HPV 33 (2.1) HPV 58 (2.1)
South Africa	Boy 2006	TS-PCR E1 for 16 and E7 for 18 Hybridization with TS probes (16. 18)	22	9.1	(2.5-27.8)	HPV 18 (9.1)
Spain	Herrero 2003	GP5+/GP6+ (L1) Hybridization with EIA oligonucleotide probes (2. 6. 11. 16. 18. 31. 33. 35. 39. 40. 42. 43. 44. 45. 51. 52. 56. 58. 59. 66. 68)	140	5.7	(2.9-10.9)	HPV 16 (5.7)
Spain	Llamas-Martínez 2008	WD-66/67/72/76/154 (E6) RFLP (6.11.16.18.31.33.39.42.45.52)	19	47.4	(27.3-68.3)	-
Sudan	Herrero 2003	GP5+/GP6+ (L1) Hybridization with EIA oligonucleotide probes (2. 6. 11. 16. 18. 31. 33. 35. 39. 40. 42. 43. 44. 45. 51. 52. 56. 58. 59. 66. 68)	28	3.6	(0.6-17.7)	HPV 16 (3.6)

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Table 42 – continued from previous page

Country	Study	HPV detection method and targeted HPV types	No. Tested	%	(95% CI)[a]	Prevalence of 5 most frequent HPVs, HPV type (%)
Sweden	Dahlgren 2004	GP5+/GP6+ (L1) and CPI/CPII (L1) Amplification with TS primers (16. 18. 33) and sequencing	51	3.9	(1.1-13.2)	-
United States of America	Lohavanichbutr 2009	MY09/MY11 (L1) and GP5+/GP6+ (L1) Hybridization with Roche LBA (6. 11. 16. 18. 26. 31. 33. 35. 39. 40. 42. 45. 51. 52. 53. 54. 55. 56. 58. 59. 61. 62. 64. 66. 67. 68. 69. 70. 71. 72. 73. 81. 82. 83. 84. 89)	56	19.6	(11.3-31.8)	-
Venezuela	Miller 1994	TS-PCR E6 for 16/18 Hybridization with TS probes (16. 18)	14	78.6	(52.4-92.4)	HPV 16 (71.4) HPV 18 (42.9)
WOMEN						
Brazil	Oliveira 2009	GP5+/GP6+ (L1) DBH (6. 11. 16. 18. 31. 33. 34. 35. 39. 40. 42. 43. 44. 45. 51. 52. 54. 56. 58)	31	25.8	(13.7-43.2)	-
Canada	Herrero 2003	GP5+/GP6+ (L1) Hybridization with EIA oligonucleotide probes (2. 6. 11. 16. 18. 31. 33. 35. 39. 40. 42. 43. 44. 45. 51. 52. 56. 58. 59. 66. 68)	11	9.1	(1.6-37.7)	HPV 16 (9.1)
Canada	Noble-Topham 1993	TS-PCR E6/E7 for 6b/11/16/18 Amplification with TS primers (6b/11. 16. 18)	13	46.2	(23.2-70.9)	HPV 18 (30.8) HPV 16 (7.7)
China	Zhang 2004	TS-PCR E6 for 16/18 Amplification with TS primers (16. 18)	25	60	(40.7-76.6)	-
Cuba	Herrero 2003	GP5+/GP6+ (L1) Hybridization with EIA oligonucleotide probes (2. 6. 11. 16. 18. 31. 33. 35. 39. 40. 42. 43. 44. 45. 51. 52. 56. 58. 59. 66. 68)	25	4	(0.7-19.5)	HPV 16 (4.0)
Germany	Krüger 2014	PCR L1-Consensus primer, PCR-SPF10, LiPA (HPV 6, 11, 16, 18, 16/18, 26, 31, 33, 35, 39, 40, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 66, 68, 69, 70, 71, 73, 74, 81)	32	0	-	-
Hungary	Nemes 2006	MY09/MY11 (L1) Hybridization with TS probes (16. 18. 31. 33. 45. 51. 52. 58)	12	25	(8.9-53.2)	-
India	Balaram 1995	MY09/MY11 (L1). GP5+/GP6+ (L1)/GP17+/GP18+ (L1). Y1/Y2 and TS-PCR for 6/11/16/18 Sequencing	41	68.3	(53.0-80.4)	-
India	Chaudhary 2010	MY09/MY11 (L1) Amplification with TS primers (16)	76	30.3	(21.1-41.3)	HPV 16 (30.3)
India	D'Costa 1998	MY09/MY11 (L1) SBH (6. 11. 16. 18. 33)	5	20	(3.6-62.4)	-
India	Herrero 2003	GP5+/GP6+ (L1) Hybridization with EIA oligonucleotide probes (2. 6. 11. 16. 18. 31. 33. 35. 39. 40. 42. 43. 44. 45. 51. 52. 56. 58. 59. 66. 68)	135	1.5	(0.4-5.2)	HPV 16 (1.5) HPV 18 (0.7)
India	Laprise 2016	PCR-PGMY09/11, LBA (HPV 6, 11, 16, 18, 26, 31, 33, 35, 39, 40, 42, 44, 51, 53, 54, 56, 58, 59, 61, 62, 66, 67, 68, 69, 70, 71, 72, 73, 81, 82, 83, 84, 89)	154	0	-	-
Iran	Saghravanian 2011	GP5+/GP6+ (L1) Amplification with TS primers HPV E6/7 (16. 18. 31. 33)	13	23.1	(8.2-50.3)	HPV 16 (23.1) HPV 18 (23.1)
Ireland	Herrero 2003	GP5+/GP6+ (L1) Hybridization with EIA oligonucleotide probes (2. 6. 11. 16. 18. 31. 33. 35. 39. 40. 42. 43. 44. 45. 51. 52. 56. 58. 59. 66. 68)	8	25	(7.1-59.1)	HPV 16 (25.0)
Italy	Herrero 2003	GP5+/GP6+ (L1) Hybridization with EIA oligonucleotide probes (2. 6. 11. 16. 18. 31. 33. 35. 39. 40. 42. 43. 44. 45. 51. 52. 56. 58. 59. 66. 68)	21	9.5	(2.7-28.9)	HPV 16 (9.5)
Japan	Bhawal 2008	TS-PCR E6 for 16 Electrophoretic analysis using SiHa DNA as positive control for HPV-16	9	55.6	(26.7-81.1)	HPV 16 (55.6)
Japan	Chiba 1996	TS-PCR E6/E7 for 6/11/16/18/31/33/52b/58 Restriction enzyme digestion (6. 11. 16. 18. 31. 33. 52b. 58)	1	0	-	-
Japan	Shimizu 2004	TS-PCR L1 for 16/18/31/33/35/39/45/51/52/56/58/59/68/73/75/76/82 Sequencing	11	18.2	(5.1-47.7)	HPV 75 (9.1) HPV 76 (9.1)
Japan	Tsuhako 2000	TS-PCR E6/E7 for 16/18 and E6 for 6/11 Amplification with TS primers (6.11.16.18)	21	66.7	(45.4-82.8)	HPV 18 (52.4) HPV 16 (28.6) HPV 6 (19.0)
Mexico	Ibieta 2005	MY09/MY11 (L1) and GP5/GP6 (L1) Amplification with TS primers (16. 18)	14	42.9	(21.4-67.4)	-
Netherlands	Cruz 1996	GP5+/GP6+ (L1) and CPI/CPII (L1) Amplification with TS primers and hybridization with TS probes (2. 4. 6. 10. 11. 13. 16. 18. 25. 31. 33. 46. 51. 52)	13	38.5	(17.7-64.5)	HPV 16 (23.1)
Poland	Herrero 2003	GP5+/GP6+ (L1) Hybridization with EIA oligonucleotide probes (2. 6. 11. 16. 18. 31. 33. 35. 39. 40. 42. 43. 44. 45. 51. 52. 56. 58. 59. 66. 68)	30	0	-	-
Republic of Korea	Shin 2002	TS-PCR E6 for 16/18/33 Amplification with TS primers (16. 18. 33)	76	5.3	(2.1-12.8)	HPV 16 (3.9) HPV 18 (3.9) HPV 33 (1.3)
Serbia	Kozomara 2005	TS-PCR E6 for 16. L1 for 18. E4 for 31 and E1 for 33 Amplification with TS primers (16. 18. 31. 33)	8	75	(40.9-92.9)	-
Slovenia	Kansky 2003	PGMY09/11 (L1). GP5+/GP6+ (L1) and WD72/76/66/67/154 (E6) RFLP	7	14.3	(2.6-51.3)	HPV 16 (14.3)
South Africa	Boy 2006	TS-PCR E1 for 16 and E7 for 18 Hybridization with TS probes (16. 18)	37	13.5	(5.9-28.0)	HPV 18 (13.5)
Spain	Herrero 2003	GP5+/GP6+ (L1) Hybridization with EIA oligonucleotide probes (2. 6. 11. 16. 18. 31. 33. 35. 39. 40. 42. 43. 44. 45. 51. 52. 56. 58. 59. 66. 68)	32	6.3	(1.7-20.1)	HPV 16 (6.3)
Spain	Llamas-Martínez 2008	WD-66/67/72/76/154 (E6) RFLP (6.11.16.18.31.33.39.42.45.52)	14	35.7	(16.3-61.2)	-

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Table 42 – continued from previous page

Country	Study	HPV detection method and targeted HPV types	No. Tested	%	(95% CI)[a]	Prevalence of 5 most frequent HPVs, HPV type (%)
Sudan	Herrero 2003	GP5+/GP6+ (L1) Hybridization with EIA oligonucleotide probes (2. 6. 11. 16. 18. 31. 33. 35. 39. 40. 42. 43. 44. 45. 51. 52. 56. 58. 59. 66. 68)	15	0	-	-
Sweden	Dahlgren 2004	GP5+/GP6+ (L1) and CPI/CPII (L1) Amplification with TS primers (16. 18. 33) and sequencing	34	0	-	-
United States of America	Lohavanichbutr 2009	MY09/MY11 (L1) and GP5+/GP6+ (L1) Hybridization with Roche LBA (6. 11. 16. 18. 26. 31. 33. 35. 39. 40. 42. 45. 51. 52. 53. 54. 55. 56. 58. 59. 61. 62. 64. 66. 67. 68. 69. 70. 71. 72. 73. 81. 82. 83. 84. 89)	32	21.9	(11.0-38.8)	-
Venezuela	Miller 1994	TS-PCR E6 for 16/18 Hybridization with TS probes (16. 18)	13	53.8	(29.1-76.8)	HPV 16 (46.2) HPV 18 (7.7)
Venezuela	Premoli-De-Percoco 2001	TS-PCR for 6/11/16/18 Hybridization with TS probes (6. 11. 16. 18)	50	60	(46.2-72.4)	HPV 16 (50.0) HPV 18 (16.0)
BOTH OR UNSPECIFIED						
Argentina	González 2007	MY09/MY11 (L1) and GP5+/GP6+ (L1) RFLP and DBH	25	60	(40.7-76.6)	HPV 16 (48.0) HPV 11 (28.0) HPV 6 (8.0) HPV 18 (4.0)
Argentina	Ribeiro 2011	PGMY09/11 (L1) Amplification with TS primers (16)	132	0	-	-
Belarus	Gudleviciene 2014	PCR-GP5+/6+, PCR-PGMY09/11, PCR L1-Consensus primer, PCR-E6, PCR-MULTIPLEX (HPV 6, 11, 16, 18, 31, 33, 35, 39, 45, 51, 52, 56, 58, 59, 66, 68, 73, 82)	55	18.2	(10.2-30.3)	-
Belgium	Duray 2012	PCR-GP5+/6+, PCR L1-Consensus primer, PCR-E6, PCR-E7, qPCR, TS (HPV 6, 11, 16, 18, 31, 33, 35, 39, 45, 51, 52, 53, 56, 58, 59, 66, 67, 68)	147	44.2	(36.4-52.3)	-
Brazil	Oliveira 2009	GP5+/GP6+ (L1) DBH (6. 11. 16. 18. 31. 33. 34. 35. 39. 40. 42. 43. 44. 45. 51. 52. 54. 56. 58)	88	29.5	(21.0-39.8)	HPV 18 (28.4) HPV 16 (5.7)
Brazil	Ribeiro 2011	PGMY09/11 (L1) Amplification with TS primers (16)	132	0	-	-
Brazil	Rivero 2006	GP5+/GP6+ (L1) CSA-ISH (DAKO) (6. 11. 16. 18)	40	0	-	-
Canada	Herrero 2003	GP5+/GP6+ (L1) Hybridization with EIA oligonucleotide probes (2. 6. 11. 16. 18. 31. 33. 35. 39. 40. 42. 43. 44. 45. 51. 52. 56. 58. 59. 66. 68)	28	10.7	(3.7-27.2)	HPV 16 (10.7)
Canada	Lingen 2013	PCR L1-Consensus primer, PCR-SPF10, LiPA (HPV 6, 11, 16, 18, 26, 31, 33, 35, 39, 40, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 66, 68, 69, 70, 71, 73, 74, 81)	409	5.9	(4.0-8.6)	-
Canada	Noble-Topham 1993	TS-PCR E6/E7 for 6b/11/16/18 Amplification with TS primers (6b/11. 16. 18)	23	43.5	(25.6-63.2)	HPV 18 (34.8) HPV 16 (8.7)
China	Gan 2014	PCR-GP5+/6+, PCR L1-Consensus primer (HPV 6, 16, 18)	200	27.5	(21.8-34.1)	-
China	Lee 2015	PCR-GP5+/6+, PCR-MY09/11, PCR L1-Consensus primer, (HPV 6, 11, 16, 18, 26, 31, 32, 33, 35, 39, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 62, 66, 67, 68, 69, 70, 71, 72, 74, 81, 82, 83, 84)	1002	19.4	(17.0-21.9)	-
China	Tang 2003	TS-PCR E6 for 16/18/33 Sequencing	30	46.7	(30.2-63.9)	HPV 16 (36.7) HPV 18 (16.7)
China	Wen 1997	TS-PCR E6 for 16/18 Hybridization with TS probes (HPV16.18 E6)	45	31.1	(19.5-45.7)	HPV 18 (24.4) HPV 16 (20.0)
China	Zhang 2004	TS-PCR E6 for 16/18 Amplification with TS primers (16. 18)	73	74	(62.9-82.7)	HPV 16 (58.9) HPV 18 (24.7)
Cuba	Herrero 2003	GP5+/GP6+ (L1) Hybridization with EIA oligonucleotide probes (2. 6. 11. 16. 18. 31. 33. 35. 39. 40. 42. 43. 44. 45. 51. 52. 56. 58. 59. 66. 68)	78	1.3	(0.2-6.9)	HPV 16 (1.3) HPV 18 (1.3)
Cuba	Ribeiro 2011	PGMY09/11 (L1) Amplification with TS primers (16)	132	0	-	-
Czechia	Ribeiro 2011	PGMY09/11 (L1) Amplification with TS primers (16)	132	0	-	-
Finland	Koskinen 2003	SPF10 (L1) LiPA 25	28	64.3	(45.8-79.3)	HPV 16 (46.4) HPV 33 (21.4)
Finland	Mork 2001	GP5+/GP6+ (L1) and CPI/CPII (L1) Amplification with TS primers (6. 11. 16. 18. 33)	91	7.7	(3.8-15.0)	HPV 16 (4.4) HPV 11 (1.1) HPV 33 (1.1) HPV 6 (1.1)
Germany	Klussmann 2001	A10/A5-A6/A8 (L1) and CP62/70-CP65/69a (L1) Sequencing	22	18.2	(7.3-38.5)	HPV 16 (13.6) HPV 19 (4.5)
Germany	Krüger 2014	PCR L1-Consensus primer, PCR-SPF10, LiPA (HPV 6, 11, 16, 18, 16/18, 26, 31, 33, 35, 39, 40, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 66, 68, 69, 70, 71, 73, 74, 81)	88	5.7	(2.5-12.6)	-
Germany	Ostwald 2003	TS-PCR E6 for 6/11/16/18 Hybridization with TS probes (6/11. 16. 18)	118	43.2	(34.6-52.2)	HPV 16 (29.7) HPV 18 (13.6)
Germany	Weiss 2011	RT-PCR E6/E7 for 16 Hybridization with TS probes (16)	34	2.9	(0.5-14.9)	HPV 16 (2.9)
Greece	Aggelopoulou 1999	L1 consensus primers and TS-PCR E7 for 16/18 Amplification with TS primers (16. 18)	81	49.4	(38.8-60.0)	HPV 18 (27.2) HPV 16 (6.2)
Greece	Blioumi 2014	PCR-GP5+/6+, PCR-MY09/11, PCR L1-Consensus primer, Sequencing (HPV 16, 56, 66)	63	22.2	(13.7-33.9)	-
Greece	Romanitan 2008	GP5+/GP6+ (L1). CPI/CPIIG (E1) and TS-PCR E6/E7 for 16 Amplification with TS primers (16)	75	1.3	(0.2-7.2)	-
Hungary	Nemes 2006	MY09/MY11 (L1) Hybridization with TS probes (16. 18. 31. 33. 45. 51. 52. 58)	79	41.8	(31.5-52.8)	HPV 16 (34.2) HPV 18 (6.3) HPV 31 (3.8) HPV 33 (2.5)
Hungary	Szarka 2009	MY09/MY11 (L1) and GP5+/GP6+ (L1) RFLP	65	47.7	(36.0-59.6)	HPV 16 (27.7) HPV 11 (6.2) HPV 18 (6.2) HPV 33 (3.1) HPV 31 (1.5)

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Table 42 – continued from previous page

Country	Study	HPV detection method and targeted HPV types	No. Tested	%	(95% CI)[a]	Prevalence of 5 most frequent HPVs, HPV type (%)
India	Balaram 1995	MY09/MY11 (L1). GP5+/GP6+ (L1)/GP17+/GP18+ (L1). Y1/Y2 and TS-PCR for 6/11/16/18 Sequencing	91	73.6	(63.7-81.6)	HPV 18 (47.3) HPV 16 (41.8) HPV 11 (19.8) HPV 6 (14.3)
India	Bhattacharya 2009	MY09/MY11 (L1) Amplification with TS primers (16. 18)	193	62.2	(55.2-68.7)	HPV 16 (60.1) HPV 18 (5.2)
India	Chaudhary 2010	MY09/MY11 (L1) Amplification with TS primers (16)	222	32.4	(26.6-38.8)	HPV 16 (32.4)
India	D'Costa 1998	MY09/MY11 (L1) SBH (6. 11. 16. 18. 33)	99	15.2	(9.4-23.5)	HPV 16 (15.2)
India	Herrero 2003	GP5+/GP6+ (L1) Hybridization with EIA oligonucleotide probes (2. 6. 11. 16. 18. 31. 33. 35. 39. 40. 42. 43. 44. 45. 51. 52. 56. 58. 59. 66. 68)	262	3.1	(1.6-5.9)	HPV 16 (2.7) HPV 18 (0.8) HPV 35 (0.4)
India	Laprise 2016	PCR-PGMY09/11, LBA (HPV 6, 11, 16, 18, 26, 31, 33, 35, 39, 40, 42, 44, 51, 53, 54, 56, 58, 59, 61, 62, 66, 67, 68, 69, 70, 71, 72, 73, 81, 82, 83, 84, 89)	350	0	-	-
India	Mishra 2006	MY09/MY11 (L1) Amplification with TS primers (16. 18)	66	27.3	(18.0-39.0)	HPV 16 (27.3)
India	Sebastian 2014	PCR, LBA (HPV 6, 11, 16, 18, 26, 31, 33, 34, 35, 39, 40, 42, 44, 45, 51, 52, 53, 54, 56, 58, 59, 61, 62, 66, 67, 68, 69, 70, 71, 72, 73, 81, 82, 83, 84)	22	0	-	-
Iran	Saghravanian 2011	GP5+/GP6+ (L1) Amplification with TS primers HPV E6/7 (16. 18. 31. 33)	21	14.3	(5.0-34.6)	HPV 16 (14.3) HPV 18 (14.3)
Ireland	Herrero 2003	GP5+/GP6+ (L1) Hybridization with EIA oligonucleotide probes (2. 6. 11. 16. 18. 31. 33. 35. 39. 40. 42. 43. 44. 45. 51. 52. 56. 58. 59. 66. 68)	30	10	(3.5-25.6)	HPV 16 (10.0)
Italy	Badaracco 2000	MY09/MY11 (L1) Amplification with TS primers (6.16) and hybridization with TS probes (11.16.18.31.45.56.57)	38	26.3	(15.0-42.0)	HPV 18 (13.2) HPV 16 (10.5) HPV 6 (10.5) HPV 11 (5.3) HPV 56 (5.3)
Italy	Badaracco 2007	MY09/MY11 (L1) and GP5+/GP6+ (L1) Sequencing	53	11.3	(5.3-22.6)	HPV 16 (7.5) HPV 33 (1.9) HPV 58 (1.9)
Italy	Herrero 2003	GP5+/GP6+ (L1) Hybridization with EIA oligonucleotide probes (2. 6. 11. 16. 18. 31. 33. 35. 39. 40. 42. 43. 44. 45. 51. 52. 56. 58. 59. 66. 68)	53	3.8	(1.0-12.8)	HPV 16 (3.8)
Italy	Rittà 2009	MY09/MY11 (L1) and GP5+/GP6+ (L1) Sequencing	25	36	(20.2-55.5)	HPV 16 (36.0)
Italy	Scapoli 2009	RT-PCR for 16/18/31/45 Hybridization with TS probes (16. 18. 31. 45)	247	1.2	(0.4-3.5)	HPV 16 (1.2)
Japan	Bhawal 2008	TS-PCR E6 for 16 Electrophoretic analysis using SiHa DNA as positive control for HPV-16	28	35.7	(20.7-54.2)	HPV 16 (35.7)
Japan	Chiba 1996	TS-PCR E6/E7 for 6/11/16/18/31/33/52b/58 Restriction enzyme digestion (6. 11. 16. 18. 31. 33. 52b. 58)	32	18.8	(8.9-35.3)	HPV 16 (18.8)
Japan	Deng 2013	PCR-GP5+/6+, PCR-MY09/11, TS, Sequencing (HPV 6, 11, 16, 18, 20, 21, 22, 23, 26, 30, 31, 32, 33, 34, 35, 38, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 57, 58, 59, 60, 61, 62, 66, 67, 68, 69, 70, 71, 72, 73, 74, 80, 81, 82, 83, 84, 85, 86, 87, 89, 90, 91)	31	32.3	(18.6-49.9)	-
Japan	Higa 2003	TS-PCR E6/E7 for 16/18 Amplification with TS E6/E7 primers (6. 11. 16. 18)	46	80.4	(66.8-89.3)	HPV 16 (52.2) HPV 18 (52.2) HPV 6 (21.7) HPV 11 (2.2)
Japan	Kojima 2002	TS-PCR L1 and E6 for 38 Sequencing	53	66	(52.6-77.3)	HPV 38 (66.0)
Japan	Shima 2000	TS-PCR E6/E7 for 6/11/16/18/31/33/52b/58 RFLP (16. 18)	46	73.9	(59.7-84.4)	HPV 18 (54.3) HPV 16 (19.6)
Japan	Shimizu 2004	TS-PCR L1 for 16/18/31/33/35/39/45/51/52/56/58/59/68/73/75/76/82 Sequencing	24	16.7	(6.7-35.9)	HPV 120 (4.2) HPV 58 (4.2) HPV 75 (4.2) HPV 76 (4.2)
Japan	Sugiyama 2003	TS-PCR E6/E7 for 16/18 Electrophoretic analysis using SiHa DNA and Hela DNA as positive controls for HPV-16 and HPV-18. respectively.	79	35.4	(25.8-46.4)	HPV 16 (32.9) HPV 18 (2.5)
Japan	Tang 2003	TS-PCR E6 for 16/18/33 Sequencing	30	50	(33.2-66.8)	HPV 18 (33.3) HPV 16 (23.3)
Japan	Tsuhako 2000	TS-PCR E6/E7 for 16/18 and E6 for 6/11 Amplification with TS primers (6.11.16.18)	72	56.9	(45.4-67.7)	HPV 18 (38.9) HPV 16 (31.9) HPV 6 (13.9) HPV 11 (1.4)
Malaysia	Lim 2007	GP5+/GP6+ (L1) Amplification with TS primers (16. 18)	20	85	(64.0-94.8)	HPV 18 (75.0) HPV 16 (30.0)
Mexico	Anaya-Saavedra 2008	MY09/MY11 (L1) and GP5+GP6+ (L1) Sequencing	62	43.5	(31.9-55.9)	HPV 16 (24.2) HPV 18 (8.1) HPV 33 (3.2) HPV 11 (1.6) HPV 13 (1.6)
Mexico	Ibieta 2005	MY09/MY11 (L1) and GP5/GP6 (L1) Amplification with TS primers (16. 18)	50	42	(29.4-55.8)	HPV 16 (28.0)
Netherlands	Braakhuis 2004	GP5+/GP6+ (L1) and TS-PCR RLBH (6. 11. 16. 18. 26. 31. 33. 34. 35. 39. 40. 42. 43. 44. 45. 51. 52. 53. 54. 55. 56. 57. 58. 59. 61. 66. 68.70.72.73. 82/MM4. 83. 84. 82/IS39. 71/CP8061. 81/CP8304. 89)	106	9.4	(5.2-16.5)	HPV 16 (9.4)
Netherlands	Cruz 1996	GP5+/GP6+ (L1) and CPI/CPII (L1) Amplification with TS primers and hybridization with TS probes (2. 4. 6. 10. 11. 13. 16. 18. 25. 31. 33. 46. 51. 52)	35	54.3	(38.2-69.5)	HPV 16 (42.9) HPV 6 (2.9)
Netherlands	van Monsjou 2012	PCR, LiPA (HPV 6, 11, 16, 18, 26, 31, 33, 35, 39, 40, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 66, 68, 69, 70, 71, 72, 73, 82)	20	10	(2.8-30.1)	-
Norway	Matzow 1998	GP5+/GP6+ (L1). CPI/CPIIG (E1) and TS-PCR for 6/16/18/31/33 Amplification with TS primers (6. 16. 18. 31. 33)	30	0	-	-
Norway	Mork 2001	GP5+/GP6+ (L1) and CPI/CPII (L1) Amplification with TS primers (6. 11. 16. 18. 33)	91	7.7	(3.8-15.0)	HPV 16 (4.4) HPV 11 (1.1) HPV 33 (1.1) HPV 6 (1.1)

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Table 42 – continued from previous page

Country	Study	HPV detection method and targeted HPV types	No. Tested	%	(95% CI)[a]	Prevalence of 5 most frequent HPVs, HPV type (%)
Poland	Herrero 2003	GP5+/GP6+ (L1) Hybridization with EIA oligonucleotide probes (2. 6. 11. 16. 18. 31. 33. 35. 39. 40. 42. 43. 44. 45. 51. 52. 56. 58. 59. 66. 68)	83	0	-	-
Poland	Ribeiro 2011	PGMY09/11 (L1) Amplification with TS primers (16)	132	0	-	-
Poland	Snietura 2010	Real-time High Risk HPV test (Abbott Molecular) using L1 consensus primers Amplification with TS primers (16. 18. 31. 33. 35. 39. 45. 51. 52. 56. 58. 59. 66 and 68 - the technique only differentiates 16-18-other)	45	4.4	(1.2-14.8)	HPV 16 (4.4)
Republic of Korea	Shin 2002	TS-PCR E6 for 16/18/33 Amplification with TS primers (16. 18. 33)	76	14.5	(8.3-24.1)	HPV 18 (10.5) HPV 16 (5.3) HPV 33 (2.6)
Romania	Ribeiro 2011	PGMY09/11 (L1) Amplification with TS primers (16)	132	0	-	-
Russian Federation	Ribeiro 2011	PGMY09/11 (L1) Amplification with TS primers (16)	132	0	-	-
Serbia	Kozomara 2005	TS-PCR E6 for 16. L1 for 18. E4 for 31 and E1 for 33 Amplification with TS primers (16. 18. 31. 33)	50	64	(50.1-75.9)	HPV 31 (32.0) HPV 16 (26.0) HPV 18 (26.0)
Slovakia	Ribeiro 2011	PGMY09/11 (L1) Amplification with TS primers (16)	132	0	-	-
Slovenia	Kansky 2003	PGMY09/11 (L1). GP5+/GP6+ (L1) and WD72/76/66/67/154 (E6) RFLP	55	5.5	(1.9-14.9)	HPV 16 (1.8) HPV 33 (1.8) HPV 58 (1.8)
South Africa	Boy 2006	TS-PCR E1 for 16 and E7 for 18 Hybridization with TS probes (16. 18)	59	11.9	(5.9-22.5)	HPV 18 (11.9)
South Africa	Van Rensburg 1996	TS-PCR E6 for 6/11/16/18 Hybridization with TS probes (4. 16. 18)	146	1.4	(0.4-4.9)	HPV 11 (0.7) HPV 16 (0.7)
Spain	García-de Marcos 2014	PCR L1-Consensus primer, PCR-SPF10, EIA, LiPA (HPV 6, 11, 16, 18, 31, 33, 35, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 66, 68, 70, 73, 74)	61	26.2	(16.8-38.4)	-
Spain	Herrero 2003	GP5+/GP6+ (L1) Hybridization with EIA oligonucleotide probes (2. 6. 11. 16. 18. 31. 33. 35. 39. 40. 42. 43. 44. 45. 51. 52. 56. 58. 59. 66. 68)	172	5.8	(3.2-10.4)	HPV 16 (5.8)
Spain	Llamas-Martínez 2008	WD-66/67/72/76/154 (E6) RFLP (6.11.16.18.31.33.39.42.45.52)	33	42.4	(27.2-59.2)	HPV 16 (33.3) HPV 6 (30.3) HPV 31 (9.1)
Sudan	Herrero 2003	GP5+/GP6+ (L1) Hybridization with EIA oligonucleotide probes (2. 6. 11. 16. 18. 31. 33. 35. 39. 40. 42. 43. 44. 45. 51. 52. 56. 58. 59. 66. 68)	43	2.3	(0.4-12.1)	HPV 16 (2.3)
Sweden	Dahlgren 2004	GP5+/GP6+ (L1) and CPI/CPII (L1) Amplification with TS primers (16. 18. 33) and sequencing	85	2.4	(0.6-8.2)	HPV 16 (2.4)
Sweden	Mork 2001	GP5+/GP6+ (L1) and CPI/CPII (L1) Amplification with TS primers (6. 11. 16. 18. 33)	91	7.7	(3.8-15.0)	HPV 16 (4.4) HPV 11 (1.1) HPV 33 (1.1) HPV 6 (1.1)
Sweden	Sand 2000	MY09/MY11 (L1) Amplification with TS primers (6b/11. 16. 18)	24	12.5	(4.3-31.0)	HPV 16 (4.2) HPV 18 (4.2)
United Kingdom	Lopes 2011	GP5+/GP6+ (L1) and qPCR for 16/18 Hybridization with TS probes (16. 18)	142	3.5	(1.5-8.0)	HPV 16 (2.1) HPV 18 (2.1)
United Kingdom	Snijders 1996	GP5+/GP6+ (L1) Amplification with TS primers and SBH with TS probes (6. 11. 16. 18. 31. 33)	25	20	(8.9-39.1)	HPV 16 (20.0)
United Kingdom	Yeudall 1991	TS-PCR E6/E7 for 16. E6 for 18 and specific for 4 Hybridization with TS probes (4. 16. 18)	39	46.2	(31.6-61.4)	HPV 16 (25.6) HPV 18 (20.5)
United States of America	Chuang 2008	RT-PCR E6/E7 for 16 Hybridization with TS probes (16)	21	0	-	-
United States of America	Furniss 2007	TS-PCR L1 for 16 Amplification with TS primers (16)	150	25.3	(19.0-32.8)	HPV 16 (25.3)
United States of America	Ha 2002	RT-PCR E6/E7 for 16 Amplification with TS primers (16)	34	2.9	(0.5-14.9)	HPV 16 (2.9)
United States of America	Harris 2011	MY09/MY11 (L1) and GP5+GP6+ (L1) Sequencing	25	8	(2.2-25.0)	HPV 16 (8.0)
United States of America	Holladay 1993	L1 consensus primers Hybridization with TS probes (6. 11. 16. 18. 33)	39	17.9	(9.0-32.7)	HPV 16 (17.9) HPV 18 (2.6)
United States of America	Hooper 2015	HC2, PCR-E6, PCR-E7, PCR-MULTIPLEX (HPV 6, 11, 16, 18, 26, 31, 33, 35, 39, 42, 44, 45, 51, 52, 53, 56, 58, 59, 66, 67, 68, 69, 70, 73, 82)	24	8.3	(2.3-25.8)	-
United States of America	Liang 2008	GP5+/GP6+ (L1) Amplification with TS primers (16)	51	2	(0.3-10.3)	HPV 16 (2.0)
United States of America	Lingen 2013	PCR L1-Consensus primer, PCR-SPF10, LiPA (HPV 6, 11, 16, 18, 26, 31, 33, 35, 39, 40, 43, 44, 45, 51, 52, 53, 54, 56, 58, 59, 66, 68, 69, 70, 71, 73, 74, 81)	409	5.9	(4.0-8.6)	-
United States of America	Lohavanichbutr 2009	MY09/MY11 (L1) and GP5+/GP6+ (L1) Hybridization with Roche LBA (6. 11. 16. 18. 26. 31. 33. 35. 39. 40. 42. 45. 51. 52. 53. 54. 55. 56. 58. 59. 61. 62. 64. 66. 67. 68. 69. 70. 71. 72. 73. 81. 82. 83. 84. 89)	88	20.5	(13.3-30.0)	HPV 16 (18.2) HPV 32 (1.1) HPV 53 (1.1)
United States of America	Paz 1997	MY09/MY11 (L1) and IU/IWDO (E1) Amplification with TS primers (6. 16. 18)	53	13.2	(6.5-24.8)	HPV 16 (9.4) HPV 6 (1.9) HPV 8 (1.9)

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Table 42 – continued from previous page

Country	Study	HPV detection method and targeted HPV types	No. Tested	%	(95% CI)[a]	Prevalence of 5 most frequent HPVs, HPV type (%)
United States of America	Schlecht 2011	MY09/MY11 (L1) and HMB01 (L1) DBH (40 HPV types including 16. 18. 31. 33. 35. 39. 45. 51. 52. 56. 58. 66)	36	13.9	(6.1-28.7)	HPV 16 (11.1)
United States of America	Schwartz 1998	MY09/MY11 (L1) and TS-PCR E6 for 6/11/16/18 Hybridization with TS probes (6. 11. 16. 18. 31/33/35)	193	21.2	(16.1-27.5)	HPV 16 (11.4) HPV 6 (6.2) HPV 11 (3.6) HPV 18 (1.0)
United States of America	Smith 2004	MY09/MY11 (L1) and HMB01 (L1) Sequencing	123	10.6	(6.3-17.2)	HPV 16 (8.1) HPV 33 (2.4)
United States of America	Walline 2013	PCR-PGMY09/11, PCR L1-Consensus primer, PCR-E6, PCR- MULTIPLEX (HPV 16, 31, 33, 35, 39, 58, 66)	108	25.9	(18.6-34.9)	-
United States of America	Zhao 2005	RT-PCR E6/E7 for 16 Hybridization with TS probes (16)	38	15.8	(7.4-30.4)	HPV 16 (15.8)
Venezuela	Miller 1994	TS-PCR E6 for 16/18 Hybridization with TS probes (16. 18)	27	66.7	(47.8-81.4)	HPV 16 (59.3) HPV 18 (25.9)
Venezuela	Premoli-De-Percoco 2001	TS-PCR for 6/11/16/18 Hybridization with TS probes (6. 11. 16. 18)	50	60	(46.2-72.4)	HPV 16 (50.0) HPV 18 (16.0)

Data updated on 22 May 2023 (data as of 31 Dec 2015)

DBH: Dot Blot Hybridization; EIA: Enzyme ImmunoAssay; HC2: Hybrid Capture 2; ISH: In Situ Hybridization; LBA: Line-Blot Assay; LiPA: Line Probe Assay; PCR: Polymerase Chain Reaction; RFLP: Restriction Fragment Length Polymorphism; RLBH: Reverse Line Blot Hybridization; RT-PCR: Real Time Polymerase Chain Reaction; SBH: Southern Blot Hybridization; SPF: Short Primer Fragment; TS: Type Specific;
Only for European countries
[a] 95% Confidence Interval
Data Sources: See references in Section 9 References.

Table 43: Studies on HPV prevalence among cases of oropharyngeal cancer in the World

Country	Study	HPV detection method and targeted HPV types	No. Tested	HPV Prevalence %	(95% CI)[a]	Prevalence of 5 most frequent HPVs, HPV type (%)
MEN						
China	Li 2007	GP5+/GP6+ (L1). CP65/70ct-CP66/69ct (L1). FAP59/6415 (L1). A5/A10-A6/A8 (L1) and TS-PCR E6 for 16 Sequencing	21	14.3	(5.0-34.6)	HPV 16 (14.3)
Cuba	Herrero 2003	GP5+/GP6+ (L1) Hybridization with EIA oligonucleotide probes (2. 6. 11. 16. 18. 31. 33. 35. 39. 40. 42. 43. 44. 45. 51. 52. 56. 58. 59. 66. 68)	21	19.0	(7.7-40.0)	HPV 16 (19.0)
Czechia	Rotnáglová 2011	GP5+/GP6+ (L1) RBLH (6. 11. 16. 18. 26. 31. 33. 34. 35. 39. 40. 42. 43. 44. 45. 51. 52. 53. 54. 55. 56. 57. 58. 59. 61. 66. 68. 70. 71. 72. 73. 81. 82. 83. 84. 89)	90	64.4	(54.2-73.6)	-
France	Charfi 2008	GP5+/GP6+ (L1) and TS-PCR for 6/11/16/18/33 Amplification with TS primers (6. 11. 16. 18. 33)	36	55.6	(39.6-70.5)	-
Germany	Hoffmann 2010	GP5+/GP6+ (L1). MY09/MY11 (L1) and TS-PCR for 6/11/16/18 Hybridization with TS probes - Multiplex luminex*	31	54.8	(37.8-70.8)	HPV 16 (51.6) HPV 35 (6.5)
Germany	Reimers 2007	A10/A5-A6/A8 (L1) and CP62/70-CP65/69a (L1) Sequencing	83	25.3	(17.2-35.6)	-
Italy	Herrero 2003	GP5+/GP6+ (L1) Hybridization with EIA oligonucleotide probes (2. 6. 11. 16. 18. 31. 33. 35. 39. 40. 42. 43. 44. 45. 51. 52. 56. 58. 59. 66. 68)	30	23.3	(11.8-40.9)	HPV 16 (20.0) HPV 33 (3.3) HPV 35 (3.3)
Norway	Hannisdal 2010	GP5+/GP6+ (L1) Sequencing	99	56.6	(46.7-65.9)	-
Spain	Herrero 2003	GP5+/GP6+ (L1) Hybridization with EIA oligonucleotide probes (2. 6. 11. 16. 18. 31. 33. 35. 39. 40. 42. 43. 44. 45. 51. 52. 56. 58. 59. 66. 68)	40	5.0	(1.4-16.5)	HPV 16 (5.0)
Sweden	Attner 2010	GP5+/GP6+ (L1). CPI/IIG (E1) and TS-PCR E6/7 for 16/33 Amplification with TS primers (16. 33) and sequencing	65	75.4	(63.7-84.2)	-
Sweden	Dahlgren 2004	GP5+/GP6+ (L1) and CPI/CPII (L1) Amplification with TS primers (16. 18. 33) and sequencing	18	44.4	(24.6-66.3)	-
Sweden	Hammarstedt 2006	GP5+/GP6+ (L1). CPI/CPIIG (E1) and TS-PCR E6 for 16 Sequencing	145	48.3	(40.3-56.3)	-
Sweden	Näsman 2009	GP5+/GP6+ (L1). CPI/CPIIG (E1) and TS-PCR E6 for 16 Sequencing	76	81.6	(71.4-88.7)	-
Switzerland	Lindel 2001	SPF10 (L1) Sequencing	75	8.0	(3.7-16.4)	-
United States of America	Chaturvedi 2011	SPF10 (L1) Inno-LiPA (6. 11. 16. 18. 26. 31. 33. 35. 40. 43. 44. 45. 51. 52. 53. 54. 56. 58. 59. 66. 68. 69-71. 70. 73. 74. 82)	210	47.6	(41.0-54.4)	-
United States of America	Cohen 2008	GP5+/GP6+ (L1) and TS-PCR E7 for 16 Hybridization with TS probes (16)	27	70.4	(51.5-84.1)	HPV 16 (70.4)
United States of America	Ernster 2007	TS-PCR for 16/18 Amplification with TS primers (16. 18)	51	72.5	(59.1-82.9)	HPV 16 (72.5)
United States of America	Lohavanichbutr 2009	MY09/MY11 (L1) and GP5+/GP6+ (L1) Hybridization with Roche LBA (6. 11. 16. 18. 26. 31. 33. 35. 39. 40. 42. 45. 51. 52. 53. 54. 55. 56. 58. 59. 61. 62. 64. 66. 67. 68. 69. 70. 71. 72. 73. 81. 82. 83. 84. 89)	28	82.1	(64.4-92.1)	-
United States of America	Posner 2011	TS-PCR E6/E7 for 16 Amplification with TS primers (16)	89	50.6	(40.4-60.7)	HPV 16 (50.6)
United States of America	Tezal 2009	TS-PCR E6 for 16/18 Amplification with TS primers (16. 18)	26	76.9	(57.9-89.0)	HPV 16 (76.9)
WOMEN						

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Table 43 – continued from previous page

Country	Study	HPV detection method and targeted HPV types	No. Tested	%	(95% CI)[a]	Prevalence of 5 most frequent HPVs, HPV type (%)
China	Li 2007	GP5+/GP6+ (L1). CP65/70ct-CP66/69ct (L1). FAP59/6415 (L1). A5/A10-A6/A8 (L1) and TS-PCR E6 for 16 Sequencing	10	60.0	(31.3-83.2)	HPV 16 (60.0)
Cuba	Herrero 2003	GP5+/GP6+ (L1) Hybridization with EIA oligonucleotide probes (2. 6. 11. 16. 18. 31. 33. 35. 39. 40. 42. 43. 44. 45. 51. 52. 56. 58. 59. 66. 68)	5	0.0	(0.0-43.4)	-
Czechia	Rotnáglová 2011	GP5+/GP6+ (L1) RBLH (6. 11. 16. 18. 26. 31. 33. 34. 35. 39. 40. 42. 43. 44. 45. 51. 52. 53. 54. 55. 56. 57. 58. 59. 61. 66. 68. 70. 71. 72. 73. 81. 82. 83. 84. 89)	19	68.4	(46.0-84.6)	-
France	Charfi 2008	GP5+/GP6+ (L1) and TS-PCR for 6/11/16/18/33 Amplification with TS primers (6. 11. 16. 18. 33)	16	75.0	(50.5-89.8)	-
Germany	Hoffmann 2010	GP5+/GP6+ (L1). MY09/MY11 (L1) and TS-PCR for 6/11/16/18 Hybridization with TS probes - Multiplex luminex*	8	50.0	(21.5-78.5)	HPV 16 (50.0)
Germany	Reimers 2007	A10/A5-A6/A8 (L1) and CP62/70-CP65/69a (L1) Sequencing	23	39.1	(22.2-59.2)	-
Italy	Herrero 2003	GP5+/GP6+ (L1) Hybridization with EIA oligonucleotide probes (2. 6. 11. 16. 18. 31. 33. 35. 39. 40. 42. 43. 44. 45. 51. 52. 56. 58. 59. 66. 68)	6	0.0	(0.0-39.0)	-
Norway	Hannisdal 2010	GP5+/GP6+ (L1) Sequencing	38	39.5	(25.6-55.3)	-
Spain	Herrero 2003	GP5+/GP6+ (L1) Hybridization with EIA oligonucleotide probes (2. 6. 11. 16. 18. 31. 33. 35. 39. 40. 42. 43. 44. 45. 51. 52. 56. 58. 59. 66. 68)	4	50.0	(15.0-85.0)	HPV 16 (50.0)
Sweden	Attner 2010	GP5+/GP6+ (L1). CPI/IIG (E1) and TS-PCR E6/7 for 16/33 Amplification with TS primers (16. 33) and sequencing	30	73.3	(55.6-85.8)	-
Sweden	Dahlgren 2004	GP5+/GP6+ (L1) and CPI/CPII (L1) Amplification with TS primers (16. 18. 33) and sequencing	7	28.6	(8.2-64.1)	-
Sweden	Hammarstedt 2006	GP5+/GP6+ (L1). CPI/CPIIG (E1) and TS-PCR E6 for 16 Sequencing	58	50.0	(37.5-62.5)	-
Sweden	Näsman 2009	GP5+/GP6+ (L1). CPI/CPIIG (E1) and TS-PCR E6 for 16 Sequencing	22	95.5	(78.2-99.2)	-
Switzerland	Lindel 2001	SPF10 (L1) Sequencing	24	33.3	(18.0-53.3)	-
United States of America	Chaturvedi 2011	SPF10 (L1) Inno-LiPA (6. 11. 16. 18. 26. 31. 33. 35. 40. 43. 44. 45. 51. 52. 53. 54. 56. 58. 59. 66. 68. 69-71. 70. 73. 74. 82)	53	30.2	(19.5-43.5)	-
United States of America	Cohen 2008	GP5+/GP6+ (L1) and TS-PCR E7 for 16 Hybridization with TS probes (16)	8	62.5	(30.6-86.3)	HPV 16 (62.5)
United States of America	Ernster 2007	TS-PCR for 16/18 Amplification with TS primers (16. 18)	21	61.9	(40.9-79.2)	HPV 16 (61.9)
United States of America	Lohavanichbutr 2009	MY09/MY11 (L1) and GP5+/GP6+ (L1) Hybridization with Roche LBA (6. 11. 16. 18. 26. 31. 33. 35. 39. 40. 42. 45. 51. 52. 53. 54. 55. 56. 58. 59. 61. 62. 64. 66. 67. 68. 69. 70. 71. 72. 73. 81. 82. 83. 84. 89)	3	0.0	(0.0-56.1)	-
United States of America	Posner 2011	TS-PCR E6/E7 for 16 Amplification with TS primers (16)	22	50.0	(30.7-69.3)	HPV 16 (50.0)
United States of America	Tezal 2009	TS-PCR E6 for 16/18 Amplification with TS primers (16. 18)	4	25.0	(4.6-69.9)	HPV 16 (25.0)
BOTH OR UNSPECIFIED						
Argentina	Ribeiro 2011	PGMY09/11 (L1) Amplification with TS primers (16)	136	0.7	(0.1-4.0)	HPV 16 (0.7)
Australia	Hong 2010	E6-based MT-PCR Amplification with MT-PCR kit (6. 11. 16. 18. 26. 31. 33. 35. 39. 45. 51. 52. 53. 56. 58. 59. 66. 68. 70. 73. 82)	302	47.7	(42.1-53.3)	HPV 16 (42.1) HPV 18 (1.7) HPV 35 (1.7) HPV 39 (1.0) HPV 33 (0.7)
Brazil	Cortezzi 2004	GP5+/GP6+ (L1) DBH (6. 11. 16. 18. 31. 33. 34. 39. 42. 45. 51. 52. 54. 56)	21	14.3	(5.0-34.6)	HPV 16 (14.3)
Brazil	Ribeiro 2011	PGMY09/11 (L1) Amplification with TS primers (16)	136	0.7	(0.1-4.0)	HPV 16 (0.7)
China	Li 2007	GP5+/GP6+ (L1). CP65/70ct-CP66/69ct (L1). FAP59/6415 (L1). A5/A10-A6/A8 (L1) and TS-PCR E6 for 16 Sequencing	31	29.0	(16.1-46.6)	HPV 16 (29.0)
Cuba	Herrero 2003	GP5+/GP6+ (L1) Hybridization with EIA oligonucleotide probes (2. 6. 11. 16. 18. 31. 33. 35. 39. 40. 42. 43. 44. 45. 51. 52. 56. 58. 59. 66. 68)	26	15.4	(6.2-33.5)	HPV 16 (15.4)
Cuba	Ribeiro 2011	PGMY09/11 (L1) Amplification with TS primers (16)	136	0.7	(0.1-4.0)	HPV 16 (0.7)
Czechia	Klozar 2008	GP5+/GP6+ (L1) RLBH (6. 11. 16. 18. 26. 31. 33. 34. 35. 39. 40. 42. 43. 44. 45. 51. 52. 53. 54. 55. 56. 57. 58. 59. 61. 66. 68. 70. 71. 72. 73. 81. 82. 83. 84. 89)	20	45.0	(25.8-65.8)	HPV 16 (40.0) HPV 33 (5.0)
Czechia	Ribeiro 2011	PGMY09/11 (L1) Amplification with TS primers (16)	136	0.7	(0.1-4.0)	HPV 16 (0.7)
Czechia	Rotnáglová 2011	GP5+/GP6+ (L1) RBLH (6. 11. 16. 18. 26. 31. 33. 34. 35. 39. 40. 42. 43. 44. 45. 51. 52. 53. 54. 55. 56. 57. 58. 59. 61. 66. 68. 70. 71. 72. 73. 81. 82. 83. 84. 89)	109	65.1	(55.8-73.4)	HPV 16 (60.6) HPV 33 (1.8) HPV 18 (0.9) HPV 26 (0.9) HPV 52 (0.9)
France	Charfi 2008	GP5+/GP6+ (L1) and TS-PCR for 6/11/16/18/33 Amplification with TS primers (6. 11. 16. 18. 33)	52	61.5	(48.0-73.5)	HPV 16 (51.9) HPV 33 (1.9)
France	Fouret 1997	TS-PCR E6 for 16/18/31/33/45 Hybridization with TS probes (16. 18. 31. 33. 45)	58	17.2	(9.6-28.9)	HPV 16 (15.5)

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Table 43 – continued from previous page

Country	Study	HPV detection method and targeted HPV types	No. Tested	%	(95% CI)[a]	Prevalence of 5 most frequent HPVs, HPV type (%)
Germany	Andl 1998	TS-PCR for 6/11/16/18 Hybridization with TS probes (6. 11. 16. 18) and cycle sequencing system of BRL	21	52.4	(32.4-71.7)	HPV 16 (38.1) HPV 33 (4.8)
Germany	Hoffmann 1998	MY09/MY11 (L1) and TS-PCR for 6/11/16/18/33 SBH (6. 11. 16. 18. 31. 33. 45)	23	26.1	(12.5-46.5)	HPV 16 (8.7) HPV 45 (8.7) HPV 6 (4.3)
Germany	Hoffmann 2010	GP5+/GP6+ (L1). MY09/MY11 (L1) and TS-PCR for 6/11/16/18 Hybridization with TS probes - Multiplex luminex*	39	53.8	(38.6-68.4)	HPV 16 (51.3) HPV 35 (5.1)
Germany	Klussmann 2001	A10/A5-A6/A8 (L1) and CP62/70-CP65/69a (L1) Sequencing	33	45.5	(29.8-62.0)	HPV 16 (42.4) HPV 33 (3.0) HPV 5 (3.0) HPV 96 (3.0)
Germany	Reimers 2007	A10/A5-A6/A8 (L1) and CP62/70-CP65/69a (L1) Sequencing	106	28.3	(20.6-37.5)	HPV 16 (27.4) HPV 33 (0.9)
Germany	Weiss 2011	RT-PCR E6/E7 for 16 Hybridization with TS probes (16)	86	38.4	(28.8-48.9)	HPV 16 (38.4)
Germany	Wittekindt 2005	A10/A5-A6/A8 (L1) and (L1) Sequencing	34	52.9	(36.7-68.5)	HPV 16 (50.0) HPV 33 (2.9)
Greece	Romanitan 2008	GP5+/GP6+ (L1). CPI/CPIIG (E1) and TS-PCR E6/E7 for 16 Amplification with TS primers (16)	28	42.9	(26.5-60.9)	HPV 16 (32.1)
Italy	Boscolo-Rizzo 2009	MY09/MY11 (L1) RFLP* and amplification with TS primers E6/E2 for 16	22	18.2	(7.3-38.5)	HPV 16 (18.2)
Italy	Herrero 2003	GP5+/GP6+ (L1) Hybridization with EIA oligonucleotide probes (2. 6. 11. 16. 18. 31. 33. 35. 39. 40. 42. 43. 44. 45. 51. 52. 56. 58. 59. 66. 68)	36	19.4	(9.8-35.0)	HPV 16 (16.7) HPV 33 (2.8) HPV 35 (2.8)
Italy	Licitra 2006	RT-PCR E1 for 16/18 Hybridization with TS probes (16. 18)	90	18.9	(12.1-28.2)	HPV 16 (18.9)
Italy	Rittà 2009	MY09/MY11 (L1) and GP5+/GP6+ (L1) Sequencing	22	50.0	(30.7-69.3)	HPV 16 (50.0)
Netherlands	Braakhuis 2004	GP5+/GP6+ (L1) and TS-PCR RLBH (6. 11. 16. 18. 26. 31. 33. 34. 35. 39. 40. 42. 43. 44. 45. 51. 52. 53. 54. 55. 56. 57. 58. 59. 61. 66. 68.70.72.73. 82/MM4. 83. 84. 82/IS39. 71/CP8061. 81/CP8304. 89)	37	37.8	(24.1-53.9)	HPV 16 (37.8)
Norway	Hannisdal 2010	GP5+/GP6+ (L1) Sequencing	137	51.8	(43.5-60.0)	HPV 16 (48.9) HPV 31 (2.9) HPV 18 (2.2) HPV 33 (0.7) HPV 67 (0.7)
Poland	Ribeiro 2011	PGMY09/11 (L1) Amplification with TS primers (16)	136	0.7	(0.1-4.0)	HPV 16 (0.7)
Poland	Snietura 2010	Real-time High Risk HPV test (Abbott Molecular) using L1 consensus primers Amplification with TS primers (16. 18. 31. 33. 35. 39. 45. 51. 52. 56. 58. 59. 66 and 68 - the technique only differentiates 16-18-other)	14	50.0	(26.8-73.2)	HPV 16 (50.0)
Poland	Szkaradkiewicz 2002	MY09/MY11 (L1) Amplification with TS primers (16. 18)	28	10.7	(3.7-27.2)	-
Republic of Korea	Kim 2007	RT-PCR E2/E6 for 16 Hybridization with HPV genotyping DNA chip arrayed by multiple oligonucleotide probes (6.11.16.18.31.33.34.35.39.40.42. 43.44.45.51.52.56.58.59.66.68.69)	52	73.1	(59.7-83.2)	HPV 16 (65.4) HPV 18 (1.9) HPV 33 (1.9) HPV 35 (1.9) HPV 58 (1.9)
Republic of Korea	Oh 2004	MY09/MY11 (L1) and HMB01 (L1) Microarray hybridization (6. 11. 16. 18. 31. 33. 34. 35. 39. 40. 42. 43. 44. 45. 51. 52. 54. 56. 58. 59. 62. 66. 67. 68. 69. 70. 72)	39	64.1	(48.4-77.3)	HPV 16 (59.0) HPV 33 (2.6) HPV 58 (2.6) HPV 6 (2.6)
Romania	Ribeiro 2011	PGMY09/11 (L1) Amplification with TS primers (16)	136	0.7	(0.1-4.0)	HPV 16 (0.7)
Russian Federation	Ribeiro 2011	PGMY09/11 (L1) Amplification with TS primers (16)	136	0.7	(0.1-4.0)	HPV 16 (0.7)
Slovakia	Ribeiro 2011	PGMY09/11 (L1) Amplification with TS primers (16)	136	0.7	(0.1-4.0)	HPV 16 (0.7)
Spain	Herrero 2003	GP5+/GP6+ (L1) Hybridization with EIA oligonucleotide probes (2. 6. 11. 16. 18. 31. 33. 35. 39. 40. 42. 43. 44. 45. 51. 52. 56. 58. 59. 66. 68)	44	9.1	(3.6-21.2)	HPV 16 (9.1)
Sweden	Attner 2010	GP5+/GP6+ (L1). CPI/IIG (E1) and TS-PCR E6/7 for 16/33 Amplification with TS primers (16. 33) and sequencing	95	74.7	(65.2-82.4)	HPV 16 (64.2) HPV 33 (7.4) HPV 35 (2.1) HPV 58 (1.1)
Sweden	Dahlgren 2004	GP5+/GP6+ (L1) and CPI/CPII (L1) Amplification with TS primers (16. 18. 33) and sequencing	25	40.0	(23.4-59.3)	HPV 16 (28.0) HPV 33 (4.0) HPV 35 (4.0) HPV 38 (4.0)
Sweden	Hammarstedt 2006	GP5+/GP6+ (L1). CPI/CPIIG (E1) and TS-PCR E6 for 16 Sequencing	203	48.8	(42.0-55.6)	HPV 16 (42.9) HPV 33 (1.5) HPV 35 (0.5) HPV 45 (0.5)
Sweden	Lindquist 2012	GP5+/GP6+ (L1) and CPI/CPIIG (E1) Amplification with TS primers (16) and Multiplex Luminex (6. 11. 16. 18. 26. 31. 33. 35. 39. 42. 43. 44. 45. 51. 52. 53. 56. 58. 59. 66. 68. 70. 73. 82)	56	64.3	(51.2-75.5)	HPV 16 (64.3)
Sweden	Näsman 2009	GP5+/GP6+ (L1). CPI/CPIIG (E1) and TS-PCR E6 for 16 Sequencing	98	84.7	(76.3-90.5)	HPV 16 (78.6) HPV 33 (1.0) HPV 35 (1.0) HPV 59 (1.0)
Switzerland	Lindel 2001	SPF10 (L1) Sequencing	99	14.1	(8.6-22.3)	HPV 16 (11.1) HPV 33 (1.0) HPV 35 (1.0) HPV 45 (1.0)
United Kingdom	Anderson 2007	GP5+/GP6+ (L1) Hybridization with Roche LBA (6. 11. 16. 18. 26. 31. 33. 35. 39. 40. 42. 45. 51. 52. 53. 54. 55. 56. 58. 59. 61. 62. 64. 66. 67. 68. 69. 70. 71. 72. 73. 81. 82. 83. 84. 89)	36	22.2	(11.7-38.1)	HPV 16 (19.4) HPV 11 (2.8)
United Kingdom	Schache 2011	TS-PCR E6 for 16 Amplification with TS primers (16)	98	40.8	(31.6-50.7)	HPV 16 (40.8)
United Kingdom	Thavaraj 2011	GP5+/GP6+ (L1) Luminex 200 IS (16. 18. 26. 31. 33. 35. 39. 45. 51. 52. 53. 56. 58. 59. 66. 68. 73. 82)	142	70.4	(62.5-77.3)	HPV 16 (64.1) HPV 33 (2.1) HPV 18 (0.7) HPV 35 (0.7)

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Table 43 – continued from previous page

Country	Study	HPV detection method and targeted HPV types	No. Tested	%	(95% CI)[a]	Prevalence of 5 most frequent HPVs, HPV type (%)
United States of America	Agoston 2010	Generic L1 primers from Access Genetics and TS-PCR E7 for 16 RFLP	102	90.2	(82.9-94.6)	HPV 16 (73.5) HPV 58 (1.0)
United States of America	Chaturvedi 2011	SPF10 (L1) Inno-LiPA (6. 11. 16. 18. 26. 31. 33. 35. 40. 43. 44. 45. 51. 52. 53. 54. 56. 58. 59. 66. 68. 69-71. 70. 73. 74. 82)	263	44.1	(38.2-50.1)	HPV 16 (38.8) HPV 35 (1.5) HPV 33 (1.1) HPV 58 (1.1) HPV 18 (0.8)
United States of America	Cohen 2008	GP5+/GP6+ (L1) and TS-PCR E7 for 16 Hybridization with TS probes (16)	35	68.6	(52.0-81.4)	HPV 16 (68.6)
United States of America	D'Souza 2007	MY09/MY11 (L1) Hybridization with Roche LBA (6. 11. 16. 18. 26. 31. 33. 35. 39. 40. 42. 45. 51. 52. 53. 54. 55. 56. 58. 59. 61. 62. 64. 66. 67. 68. 69. 70. 71. 72. 73. 81. 82. 83. 84. 89)	60	63.3	(50.7-74.4)	HPV 16 (58.3) HPV 33 (6.7) HPV 35 (1.7)
United States of America	Ernster 2007	TS-PCR for 16/18 Amplification with TS primers (16. 18)	72	69.4	(58.0-78.9)	HPV 16 (69.4)
United States of America	Furniss 2007	TS-PCR L1 for 16 Amplification with TS primers (16)	43	34.9	(22.4-49.8)	HPV 16 (34.9)
United States of America	Kingma 2010	PGMY09/11 (L1) Inno-LiPA (6. 11. 16. 18. 26. 31. 33. 35. 40. 43. 44. 45. 51. 52. 53. 54. 56. 58. 59. 66. 68. 69-71. 70. 73. 74. 82)	61	86.9	(76.2-93.2)	HPV 16 (67.2) HPV 18 (14.8) HPV 33 (4.9) HPV 45 (1.6) HPV 82 (1.6)
United States of America	Kong 2009	GP5+/GP6+ (L1) and TS-PCR Sequencing	49	67.3	(53.4-78.8)	HPV 16 (65.3) HPV 18 (2.0) HPV 33 (2.0)
United States of America	Lohavanichbutr 2009	MY09/MY11 (L1) and GP5+/GP6+ (L1) Hybridization with Roche LBA (6. 11. 16. 18. 26. 31. 33. 35. 39. 40. 42. 45. 51. 52. 53. 54. 55. 56. 58. 59. 61. 62. 64. 66. 67. 68. 69. 70. 71. 72. 73. 81. 82. 83. 84. 89)	31	74.2	(56.8-86.3)	HPV 16 (67.7) HPV 35 (3.2) HPV 45 (3.2)
United States of America	Posner 2011	TS-PCR E6/E7 for 16 Amplification with TS primers (16)	111	50.5	(41.3-59.6)	HPV 16 (50.5)
United States of America	Schlecht 2011	MY09/MY11 (L1) and HMB01 (L1) DBH (40 HPV types including 16. 18. 31. 33. 35. 39. 45. 51. 52. 56. 58. 66)	30	50.0	(33.2-66.8)	HPV 16 (43.3) HPV 35 (3.3)
United States of America	Schwartz 1998	MY09/MY11 (L1) and TS-PCR E6 for 6/11/16/18 Hybridization with TS probes (6. 11. 16. 18. 31/33/35)	55	41.8	(29.7-55.0)	HPV 16 (34.5) HPV 6 (12.7) HPV 11 (3.6)
United States of America	Smith 2004	MY09/MY11 (L1) and HMB01 (L1) Sequencing	62	40.3	(29.0-52.7)	HPV 16 (37.1) HPV 18 (1.6) HPV 33 (1.6)
United States of America	Strome 2002	MY09/MY11 (L1) and TS-PCR E6 for 6/11/16/18 Sequencing	52	46.2	(33.3-59.5)	HPV 16 (40.4) HPV 12 (3.8) HPV 59 (1.9)
United States of America	Tezal 2009	TS-PCR E6 for 16/18 Amplification with TS primers (16. 18)	30	70.0	(52.1-83.3)	HPV 16 (70.0)
United States of America	Zhao 2005	RT-PCR E6/E7 for 16 Hybridization with TS probes (16)	26	57.7	(38.9-74.5)	HPV 16 (57.7)

Data updated on 22 May 2023 (data as of 31 Dec 2015)

DBH: Dot Blot Hybridization; EIA: Enzyme ImmunoAssay; HC2: Hybrid Capture 2; ISH: In Situ Hybridization; LBA: Line-Blot Assay; LiPA: Line Probe Assay; PCR: Polymerase Chain Reaction; RFLP: Restriction Fragment Length Polymorphism; RLBH: Reverse Line Blot Hybridization; RT-PCR: Real Time Polymerase Chain Reaction; SBH: Southern Blot Hybridization; SPF: Short Primer Fragment; TS: Type Specific
Only for European countries
[a] 95% Confidence Interval
Data Sources: See references in Section 9 References.

Table 44: Studies on HPV prevalence among cases of hypopharyngeal or laryngeal cancer in the World

Country	Study	HPV detection method and targeted HPV types	No. Tested	HPV Prevalence		Prevalence of 5 most frequent HPVs, HPV type (%)
				%	(95% CI)[a]	
MEN						
Canada	Fliss 1994	TS-PCR E6/E7 for 6b/11/16/18 Amplification with TS primers (6b/11. 16. 18)	28	46.4	(29.5-64.2)	HPV 16 (32.1) HPV 18 (32.1)
Chile	Torrente 2005	MY09/MY11 (L1) RFLP	25	36.0	(20.2-55.5)	-
China	Liu 2010	GP5+/GP6+ (L1) and TS-PCR E6/E7 for 16 and E6 for 18 Amplification with TS primers (16. 18)	61	37.7	(26.6-50.3)	-
Germany	Hoffmann 2006	MY09/MY11 (L1) and TS-PCR for 6/11/16/18/33 Hybridization with TS and consensus probes and further confirmation by SBH with TS and consensus probes (6. 11. 16. 18. 31. 33. 45)	17	23.5	(9.6-47.3)	HPV 16 (23.5)
Germany	Hoffmann 2009	MY09/MY11 (L1) and TS-PCR for 6/11/16/18 Hybridization with TS and consensus probes and further confirmation by SBH with TS and consensus probes (6. 11. 16. 18. 31. 33. 45)	21	33.3	(17.2-54.6)	HPV 16 (19.0)
Italy	Azzimonti 2004	GP5+/GP6+ (L1) Sequencing	23	56.5	(36.8-74.4)	HPV 16 (43.5) HPV 18 (13.0)
Italy	Cattani 1998	MY09/MY11 (L1) and TS-PCR for 33 Hybridization with TS probes (6.11.16.18.31) and amplification with TS primer (33)	70	30.0	(20.5-41.5)	-
Italy	Gallo 2009	MY09/MY11 (L1). LCRF1. LCRF2. LCRF3. LCRF4. E7R1. E7R2. E7R3. E7R4 (E6) and TS-PCR E1 for 6/11/16/18-31/33 Sequencing	36	0.0	-	-

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Table 44 – continued from previous page

Country	Study	HPV detection method and targeted HPV types	No. Tested	%	(95% CI)[a]	Prevalence of 5 most frequent HPVs, HPV type (%)
Japan	Anwar 1993	TS-PCR for 16/18/33 Hybridization with TS probes (4. 16. 18)	26	38.5	(22.4-57.5)	HPV 18 (34.6) HPV 16 (3.8) HPV 33 (3.8)
Japan	Shidara 1994	L1C1/L1C2 RFLP (6. 11. 16. 18. 31. 33. 42. 52. 58)	40	20.0	(10.5-34.8)	HPV 16 (17.5) HPV 18 (2.5)
Norway	Lie 1996	CP (E1). MY09/MY11 (L1) and GP5+/GP6+ (L1) Amplification with TS primers (6.11.16.18.31.33.35)	38	7.9	(2.7-20.8)	HPV 16 (2.6)
Poland	Morshed 2008	SPF10 (L1) LiPA 25	78	34.6	(25.0-45.7)	-
Turkey	Bozdayi 2009	MY09/MY11 (L1) Amplification with GP5+/6+ and TS primers for HPV16 positive; For HPV16 negative cases. sequencing was performed	62	43.5	(31.9-55.9)	-
Turkey	Dönmez 2000	MY09/MY11 (L1) RFLP (6. 11. 16. 18. 31. 33. 35. 39. 42. 51. 58)	55	12.7	(6.3-24.0)	HPV 11 (7.3) HPV 6 (5.5)
WOMEN						
Canada	Fliss 1994	TS-PCR E6/E7 for 6b/11/16/18 Amplification with TS primers (6b/11. 16. 18)	1	0.0	-	-
Chile	Torrente 2005	MY09/MY11 (L1) RFLP	6	16.7	(3.0-56.4)	-
China	Liu 2010	GP5+/GP6+ (L1) and TS-PCR E6/E7 for 16 and E6 for 18 Amplification with TS primers (16. 18)	23	34.8	(18.8-55.1)	-
Germany	Hoffmann 2006	MY09/MY11 (L1) and TS-PCR for 6/11/16/18/33 Hybridization with TS and consensus probes and further confirmation by SBH with TS and consensus probes (6. 11. 16. 18. 31. 33. 45)	3	33.3	(6.1-79.2)	HPV 16 (33.3)
Germany	Hoffmann 2009	MY09/MY11 (L1) and TS-PCR for 6/11/16/18 Hybridization with TS and consensus probes and further confirmation by SBH with TS and consensus probes (6. 11. 16. 18. 31. 33. 45)	6	16.7	(3.0-56.4)	-
Italy	Azzimonti 2004	GP5+/GP6+ (L1) Sequencing	2	50.0	(9.5-90.5)	HPV 16 (50.0)
Italy	Cattani 1998	MY09/MY11 (L1) and TS-PCR for 33 Hybridization with TS probes (6.11.16.18.31) and amplification with TS primer (33)	28	21.4	(10.2-39.5)	HPV 16 (21.4)
Italy	Gallo 2009	MY09/MY11 (L1). LCRF1. LCRF2. LCRF3. LCRF4. E7R1. E7R2. E7R3. E7R4 (E6) and TS-PCR E1 for 6/11/16/18-31/33 Sequencing	4	0.0	-	-
Japan	Anwar 1993	TS-PCR for 16/18/33 Hybridization with TS probes (4. 16. 18)	4	25.0	(4.6-69.9)	HPV 18 (25.0)
Japan	Shidara 1994	L1C1/L1C2 RFLP (6. 11. 16. 18. 31. 33. 42. 52. 58)	5	60.0	(23.1-88.2)	HPV 16 (40.0) HPV 18 (20.0)
Norway	Lie 1996	CP (E1). MY09/MY11 (L1) and GP5+/GP6+ (L1) Amplification with TS primers (6.11.16.18.31.33.35)	10	0.0	-	-
Poland	Morshed 2008	SPF10 (L1) LiPA 25	15	40.0	(19.8-64.3)	-
Turkey	Bozdayi 2009	MY09/MY11 (L1) Amplification with GP5+/6+ and TS primers for HPV16 positive; For HPV16 negative cases. sequencing was performed	3	0.0	-	-
BOTH OR UNSPECIFIED						
Argentina	Ribeiro 2011	PGMY09/11 (L1) Amplification with TS primers (16)	239	0.8	(0.2-3.0)	HPV 16 (0.8)
Belarus	Gudleviciene 2014	PCR-GP5+/6+, PCR-PGMY09/11, PCR L1-Consensus primer, PCR-E6, PCR-MULTIPLEX (HPV 6, 11, 16, 18, 31, 33, 35, 39, 45, 51, 52, 56, 58, 59, 66, 68, 73, 82)	34	5.9	(1.6-19.1)	HPV 6 (2.9) HPV 16 (2.9)
Belgium	Duray 2011	GP5+/GP6+ (L1) and RT-PCR E6/E7 for 6. 11. 16. 18. 31. 33. 35. 39. 45. 51. 52. 53. 56. 58. 59. 66. 67-L1. 68 TS real-time and consensus PCR E6/E7 (6. 11. 16. 18. 31. 33. 35. 39. 45. 51. 52. 53. 56. 58. 59. 66. 67-L1. 68)	59	79.7	(67.7-88.0)	HPV 16 (62.7) HPV 18 (16.9) HPV 51 (8.5) HPV 33 (5.1) HPV 66 (5.1)
Brazil	Miranda 2009	GP5+/GP6+ (L1) Amplification with TS primers (16. 18. 33) and sequencing	27	7.4	(2.1-23.4)	HPV 16 (7.4) HPV 6 (3.7)
Brazil	Ribeiro 2011	PGMY09/11 (L1) Amplification with TS primers (16)	239	0.8	(0.2-3.0)	HPV 16 (0.8)
Canada	Fliss 1994	TS-PCR E6/E7 for 6b/11/16/18 Amplification with TS primers (6b/11. 16. 18)	29	44.8	(28.4-62.5)	HPV 16 (31.0) HPV 18 (31.0)
Chile	Gheit 2014	PCR-E7, PCR- MULTIPLEX (HPV 6, 11, 16, 18, 31, 33, 35, 39, 45, 51, 52, 53, 56, 58, 59, 66, 68, 70, 73, 82)	32	12.5	(5.0-28.1)	HPV 31 (6.3) HPV 11 (3.1) HPV 59 (3.1)
Chile	Torrente 2005	MY09/MY11 (L1) RFLP	31	32.3	(18.6-49.9)	HPV 16 (9.7) HPV 58 (6.5) HPV 38 (3.2) HPV 39 (3.2) HPV 45 (3.2)
China	Liu 2010	GP5+/GP6+ (L1) and TS-PCR E6/E7 for 16 and E6 for 18 Amplification with TS primers (16. 18)	84	36.9	(27.4-47.6)	HPV 16 (34.5) HPV 18 (7.1)
China	Ma 1998	TS-PCR E6/E7 for 6/11/16/18/31/33/52b/58 SBH (6. 11. 16. 18. 31. 33. 52b. 58)	102	58.8	(49.1-67.9)	HPV 16 (29.4) HPV 6 (24.5) HPV 18 (21.6) HPV 11 (2.0) HPV 33 (1.0)
Cuba	García-Milián 1998	MY09/MY11 (L1) and TS-PCR E6 for 6/11/16/18 SBH (6. 11. 16. 18)	33	48.5	(32.5-64.8)	HPV 16 (45.5) HPV 18 (3.0) HPV 6 (3.0)
Cuba	Ribeiro 2011	PGMY09/11 (L1) Amplification with TS primers (16)	239	0.8	(0.2-3.0)	HPV 16 (0.8)
Czechia	Ribeiro 2011	PGMY09/11 (L1) Amplification with TS primers (16)	239	0.8	(0.2-3.0)	HPV 16 (0.8)
Denmark	Lindeberg 1999	MY09/MY11 (L1). GP5+/GP6+ (L1) and CPII/II (L1) Hybridization with TS probes (6.11.16.18.30.31.33.35)	30	3.3	(0.6-16.7)	-

Continued on next page

Table 44 – continued from previous page

Country	Study	HPV detection method and targeted HPV types	No. Tested	%	(95% CI)[a]	Prevalence of 5 most frequent HPVs, HPV type (%)
Finland	Koskinen 2003	SPF10 (L1) LiPA 25	28	50.0	(32.6-67.4)	HPV 16 (46.4) HPV 33 (14.3) HPV 6 (10.7) HPV 11 (3.6) HPV 51 (3.6)
Finland	Koskinen 2007	MY09/MY11 (L1). GP5+/GP6+ (L1) and SPF10 (L1) LiPA 25	69	4.3	(1.5-12.0)	HPV 16 (1.4)
Finland	Mork 2001	GP5+/GP6+ (L1) and CPI/CPII (L1) Amplification with TS primers (6. 11. 16. 18. 33)	40	2.5	(0.4-12.9)	HPV 16 (2.5)
France	Fouret 1997	TS-PCR E6 for 16/18/31/33/45 Hybridization with TS probes (16. 18. 31. 33. 45)	103	6.8	(3.3-13.4)	HPV 16 (6.8)
Germany	Fischer 2003	L1-CP65F. 66F. 69F. 70F Sequencing	47	34.0	(22.2-48.3)	HPV 73 (4.3) HPV 21 (2.1) HPV 22 (2.1) HPV 38 (2.1) HPV 41 (2.1)
Germany	Hoffmann 1998	MY09/MY11 (L1) and TS-PCR for 6/11/16/18/33 SBH (6. 11. 16. 18. 31. 33. 45)	51	21.6	(12.5-34.6)	HPV 16 (3.9) HPV 18 (2.0) HPV 45 (2.0)
Germany	Hoffmann 2006	MY09/MY11 (L1) and TS-PCR for 6/11/16/18/33 Hybridization with TS and consensus probes and further confirmation by SBH with TS and consensus probes (6. 11. 16. 18. 31. 33. 45)	20	25.0	(11.2-46.9)	HPV 16 (25.0)
Germany	Hoffmann 2009	MY09/MY11 (L1) and TS-PCR for 6/11/16/18 Hybridization with TS and consensus probes and further confirmation by SBH with TS and consensus probes (6. 11. 16. 18. 31. 33. 45)	27	29.6	(15.9-48.5)	HPV 16 (14.8)
Germany	Kleist 2000	MY09/MY11 (L1) Amplification with TS primers (16. 18)	35	20.0	(10.0-35.9)	HPV 16 (8.6) HPV 18 (8.6)
Germany	Klussmann 2001	A10/A5-A6/A8 (L1) and CP62/70-CP65/69a (L1) Sequencing	30	16.7	(7.3-33.6)	HPV 16 (13.3) HPV 19 (3.3)
Germany	Krupar 2014	PCR-E6, PCR-E7, PCR- MULTIPLEX (HPV 11, 16, 18, 31, 33, 35, 39, 42, 43, 44, 45, 51, 52, 56, 58, 59, 66, 68)	49	0.0	-	-
Greece	Gorgoulis 1999	MY09/MY11 (L1) and GP5/GP6 (L1) Amplification with TS primers (6. 11. 16. 18. 31. 33. 35) and confirmation by DBH with TS probes (6.11.16.18. 31.33.35).	91	20.9	(13.8-30.3)	HPV 16 (14.3) HPV 18 (3.3) HPV 33 (3.3) HPV 6 (3.3)
Greece	Vlachtsis 2005	TS-PCR for 16/18 Amplification with TS primers (16. 18)	90	40.0	(30.5-50.3)	HPV 16 (34.4) HPV 18 (6.7)
Hungary	Major 2005	MY09/MY11 (L1) and GP5+/GP6+ (L1) RFLP (6. 11. 16. 18)	22	54.5	(34.7-73.1)	HPV 11 (18.2) HPV 16 (13.6) HPV 6 (13.6)
India	Jacob 2002	TS-PCR E1 for 6/11/18 and L1 for 16 SBH with TS probes (6. 11. 16. 18)	44	34.1	(21.9-48.9)	HPV 16 (34.1)
Italy	Azzimonti 2004	GP5+/GP6+ (L1) Sequencing	25	56.0	(37.1-73.3)	HPV 16 (44.0) HPV 18 (12.0)
Italy	Badaracco 2000	MY09/MY11 (L1) Amplification with TS primers (6.16) and hybridization with TS probes (11.16.18.31.45.56.57)	22	50.0	(30.7-69.3)	HPV 16 (27.3) HPV 6 (18.2) HPV 45 (4.5)
Italy	Badaracco 2007	MY09/MY11 (L1) and GP5+/GP6+ (L1) Sequencing	30	16.7	(7.3-33.6)	HPV 16 (10.0) HPV 6 (6.7)
Italy	Boscolo-Rizzo 2009	MY09/MY11 (L1) RFLP* and amplification with TS primers E6/E2 for 16	45	4.4	(1.2-14.8)	HPV 16 (4.4)
Italy	Cattani 1998	MY09/MY11 (L1) and TS-PCR for 33 Hybridization with TS probes (6.11.16.18.31) and amplification with TS primer (33)	75	29.3	(20.2-40.4)	HPV 16 (12.0) HPV 18 (10.7) HPV 33 (1.3)
Italy	Gallo 2009	MY09/MY11 (L1). LCRF1. LCRF2. LCRF3. LCRF4. E7R1. E7R2. E7R3. E7R4 (E6) and TS-PCR E1 for 6/11/16/18-31/33 Sequencing	40	0.0	-	-
Japan	Anwar 1993	TS-PCR for 16/18/33 Hybridization with TS probes (4. 16. 18)	30	36.7	(21.9-54.5)	HPV 18 (33.3) HPV 16 (3.3) HPV 33 (3.3)
Japan	Deng 2013	PCR-GP5+/6+, PCR-MY09/11, TS, Sequencing (HPV 6, 11, 16, 18, 20, 21, 22, 23, 26, 30, 31, 32, 33, 34, 35, 38, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 57, 58, 59, 60, 61, 62, 66, 67, 68, 69, 70, 71, 72, 73, 74, 80, 81, 82, 83, 84, 85, 86, 87, 89, 90, 91)	26	15.4	(6.2-33.5)	HPV 16 (11.5) HPV 33 (3.8)
Japan	Mineta 1998	TS-PCR E7 for 16/18 Amplification with TS primers (16. 18)	42	31.0	(19.1-46.0)	HPV 16 (26.2) HPV 18 (4.8)
Japan	Ogura 1991	TS-PCR E6 for 16/18 Hybridization with TS probes (16. 18)	28	10.7	(3.7-27.2)	HPV 16 (10.7) HPV 18 (3.6)
Japan	Shidara 1994	L1C1/L1C2 RFLP (6. 11. 16. 18. 31. 33. 42. 52. 58)	45	24.4	(14.2-38.7)	HPV 16 (20.0) HPV 18 (4.4)
Lithuania	Gudleviciene 2009	Consensus primers from Master Mix Amplification with TS primers (16. 18)	25	32.0	(17.2-51.6)	HPV 16 (12.0)
Lithuania	Gudleviciene 2014	PCR-GP5+/6+, PCR-PGMY09/11, PCR L1-Consensus primer, PCR-E6, PCR-MULTIPLEX (HPV 6, 11, 16, 18, 31, 33, 35, 39, 45, 51, 52, 56, 58, 59, 66, 68, 73, 82)	53	20.8	(12.0-33.5)	HPV 6 (1.9) HPV 16 (1.9) HPV 31 (1.9) HPV 39 (1.9) HPV 58 (1.9)
Norway	Koskinen 2007	MY09/MY11 (L1). GP5+/GP6+ (L1) and SPF10 (L1) LiPA 25	69	4.3	(1.5-12.0)	HPV 16 (1.4)
Norway	Lie 1996	CP (E1). MY09/MY11 (L1) and GP5+/GP6+ (L1) Amplification with TS primers (6.11.16.18.31.33.35)	39	7.7	(2.7-20.3)	HPV 16 (2.6)
Norway	Mork 2001	GP5+/GP6+ (L1) and CPI/CPII (L1) Amplification with TS primers (6. 11. 16. 18. 33)	40	2.5	(0.4-12.9)	HPV 16 (2.5)
Poland	Morshed 2008	SPF10 (L1) LiPA 25	93	35.5	(26.5-45.6)	HPV 16 (30.1) HPV 18 (6.5) HPV 33 (5.4)
Poland	Ribeiro 2011	PGMY09/11 (L1) Amplification with TS primers (16)	239	0.8	(0.2-3.0)	HPV 16 (0.8)

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Table 44 – continued from previous page

Country	Study	HPV detection method and targeted HPV types	No. Tested	%	(95% CI)[a]	Prevalence of 5 most frequent HPVs, HPV type (%)
Poland	Snietura 2011	Real-time High Risk HPV test (Abbott Molecular) using L1 consensus primers RT-PCR (16. 18. 31. 33. 35. 39. 45. 51. 52. 56. 58. 59. 66. 68)	65	0.0	-	-
Romania	Ribeiro 2011	PGMY09/11 (L1) Amplification with TS primers (16)	239	0.8	(0.2-3.0)	HPV 16 (0.8)
Russian Federation	Ribeiro 2011	PGMY09/11 (L1) Amplification with TS primers (16)	239	0.8	(0.2-3.0)	HPV 16 (0.8)
Slovakia	Ribeiro 2011	PGMY09/11 (L1) Amplification with TS primers (16)	239	0.8	(0.2-3.0)	HPV 16 (0.8)
Slovenia	Poljak 1997	PGMY09/11 (L1). GP5+/GP6+ (L1) and WD72/76/66/67/154 (E6) Amplification with TS primers (6.11.16.18.31.33.51)	30	3.3	(0.6-16.7)	HPV 16 (3.3)
Spain	Alvarez Alvarez 1997	TS-PCR E6 and L1 for 6b/16/18 Amplification with TS primers (6b. 16. 18)	35	25.7	(14.2-42.1)	HPV 6 (22.9) HPV 16 (5.7)
Spain	Pérez-Ayala 1990	TS-PCR E6 for 6/11 Hybridization with TS probes (11.16)	51	56.9	(43.3-69.5)	HPV 16 (56.9)
Sweden	Koskinen 2007	MY09/MY11 (L1). GP5+/GP6+ (L1) and SPF10 (L1) LiPA 25	69	4.3	(1.5-12.0)	HPV 16 (1.4)
Sweden	Mork 2001	GP5+/GP6+ (L1) and CPI/CPII (L1) Amplification with TS primers (6. 11. 16. 18. 33)	40	2.5	(0.4-12.9)	HPV 16 (2.5)
Switzerland	Adams 1999	MY09/MY11 (L1) RFLP (6.11.16.18.31.33.35.51.53.56)	36	16.7	(7.9-31.9)	HPV 16 (16.7)
Turkey	Bozdayi 2009	MY09/MY11 (L1) Amplification with GP5+/6+ and TS primers for HPV16 positive; For HPV16 negative cases. sequencing was performed	65	41.5	(30.4-53.7)	HPV 16 (40.0) HPV 6 (1.5)
Turkey	Dönmez 2000	MY09/MY11 (L1) RFLP (6. 11. 16. 18. 31. 33. 35. 39. 42. 51. 58)	55	12.7	(6.3-24.0)	HPV 11 (7.3) HPV 6 (5.5)
Turkey	Gungor 2007	SP10296 (L1) Amplification with mPCR kit (6. 11. 16. 18. 31. 33. 52. 58)	95	7.4	(3.6-14.4)	HPV 11 (7.4) HPV 6 (2.1) HPV 16 (1.1)
United Kingdom	Anderson 2007	GP5+/GP6+ (L1) Hybridization with Roche LBA (6. 11. 16. 18. 26. 31. 33. 35. 39. 40. 42. 45. 51. 52. 53. 54. 55. 56. 58. 59. 61. 62. 64. 66. 67. 68. 69. 70. 71. 72. 73. 81. 82. 83. 84. 89)	64	0.0	-	-
United Kingdom	Conway 2012	PCR-GP5+/6+, TS, Sequencing (HPV 16, 18, 20, 21, 22, 23, 26, 30, 31, 32, 33, 34, 35, 38, 39, 40, 42, 43, 44, 45, 51, 52, 53, 54, 56, 57, 58, 59, 60, 61, 62, 66, 67, 68, 69, 70, 71, 72, 73, 74, 80, 81, 82, 83, 84, 85, 86, 87, 89, 90, 91)	12	0.0	-	-
United Kingdom	Salam 1995	MY09/MY11 (L1) RFLP (6. 11. 16. 18. 33)	36	22.2	(11.7-38.1)	HPV 6 (8.3) HPV 16 (5.6) HPV 11 (2.8)
United Kingdom	Snijders 1996	GP5+/GP6+ (L1) Amplification with TS primers and SBH with TS probes (6. 11. 16. 18. 31. 33)	31	19.4	(9.2-36.3)	HPV 16 (19.4)
United States of America	Brandwein 1993	Perkin Census L1 consensus primers Hybridization with TS probes (6. 11. 16. 18. 31. 35. 51)	40	7.5	(2.6-19.9)	HPV 16 (2.5)
United States of America	Chernock 2013	PCR L1-Consensus primer, PCR-SPF10, LiPA (HPV 16, 18, 31, 33, 35, 39, 45, 51, 52, 53, 56, 58, 59, 66, 68)	76	17.1	(10.3-27.1)	HPV 16 (13.2) HPV 31 (10.5) HPV 53 (9.2)
United States of America	Furniss 2007	TS-PCR L1 for 16 Amplification with TS primers (16)	63	31.7	(21.6-44.0)	HPV 16 (31.7)
United States of America	Paz 1997	MY09/MY11 (L1) and IU/IWDO (E1) Amplification with TS primers (6. 16. 18)	43	4.7	(1.3-15.5)	HPV 16 (2.3)
United States of America	Schlecht 2011	MY09/MY11 (L1) and HMB01 (L1) DBH (40 HPV types including 16. 18. 31. 33. 35. 39. 45. 51. 52. 56. 58. 66)	40	27.5	(16.1-42.8)	HPV 16 (27.5)
United States of America	Shen 1996	MY09/MY11 (L1) and TS-PCR E7 for 16/18 RFLP*	32	9.4	(3.2-24.2)	HPV 11 (3.1) HPV 18 (3.1) HPV 6 (3.1)
United States of America	Zhao 2005	RT-PCR E6/E7 for 16 Hybridization with TS probes (16)	22	18.2	(7.3-38.5)	HPV 16 (18.2)

Data updated on 22 May 2023 (data as of 31 Dec 2015)

DBH: Dot Blot Hybridization; EIA: Enzyme ImmunoAssay; HC2: Hybrid Capture 2; ISH: In Situ Hybridization; LBA: Line-Blot Assay; LiPA: Line Probe Assay; PCR: Polymerase Chain Reaction; RFLP: Restriction Fragment Length Polymorphism; RLBH: Reverse Line Blot Hybridization; RT-PCR: Real Time Polymerase Chain Reaction; SBH: Southern Blot Hybridization; SPF: Short Primer Fragment; TS: Type Specific

Only for European countries

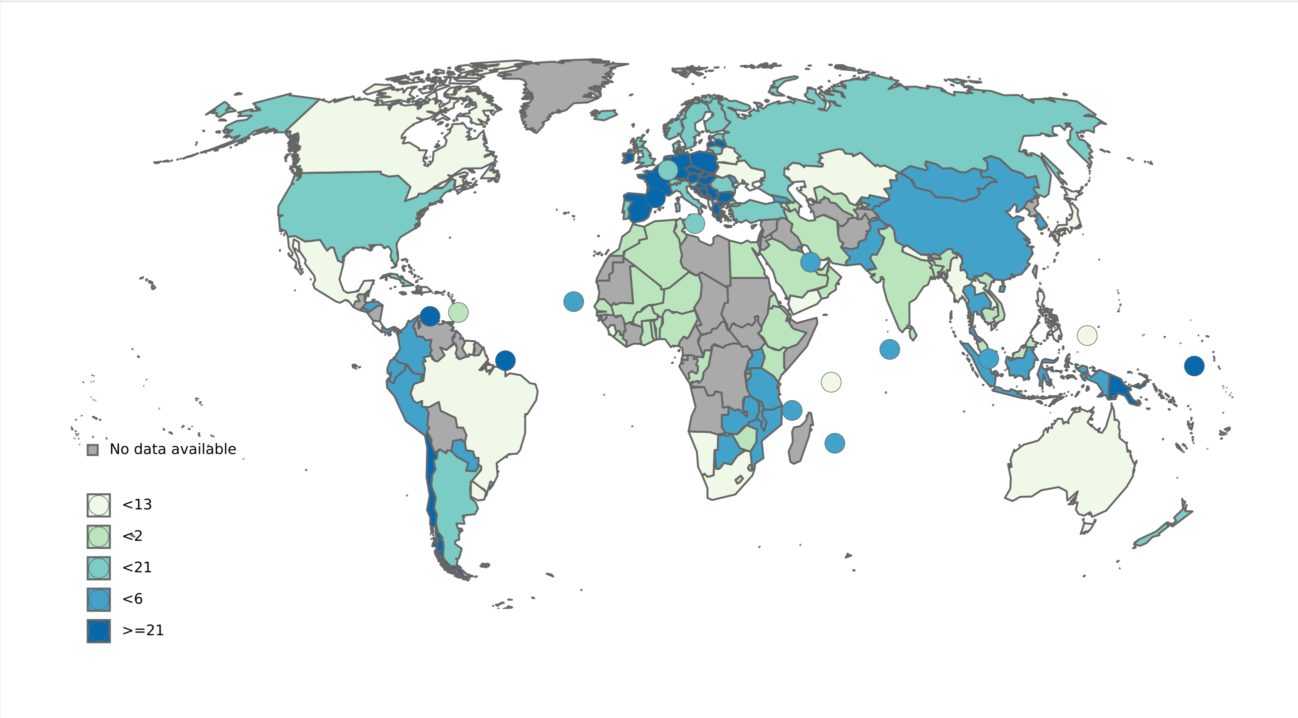
[a] 95% Confidence Interval

Data Sources: See references in Section 9 References.

5 Factors contributing to cervical cancer

HPV is a necessary cause of cervical cancer, but it is not a sufficient cause. Other cofactors are necessary for progression from cervical HPV infection to cancer. Tobacco smoking, high parity, long-term hormonal contraceptive use, and co-infection with HIV have been identified as established cofactors. Co-infection with Chlamydia trachomatis and herpes simplex virus type-2, immunosuppression, and certain dietary deficiencies are other probable cofactors. Genetic and immunological host factors and viral factors other than type, such as variants of type, viral load and viral integration, are likely to be important but have not been clearly identified. (Muñoz N, Vaccine 2006; 24(S3): 1-10). In this section, the prevalence of smoking, parity (fertility), oral contraceptive use, and HIV in the World are presented.

Figure 124: Female smoking prevalence



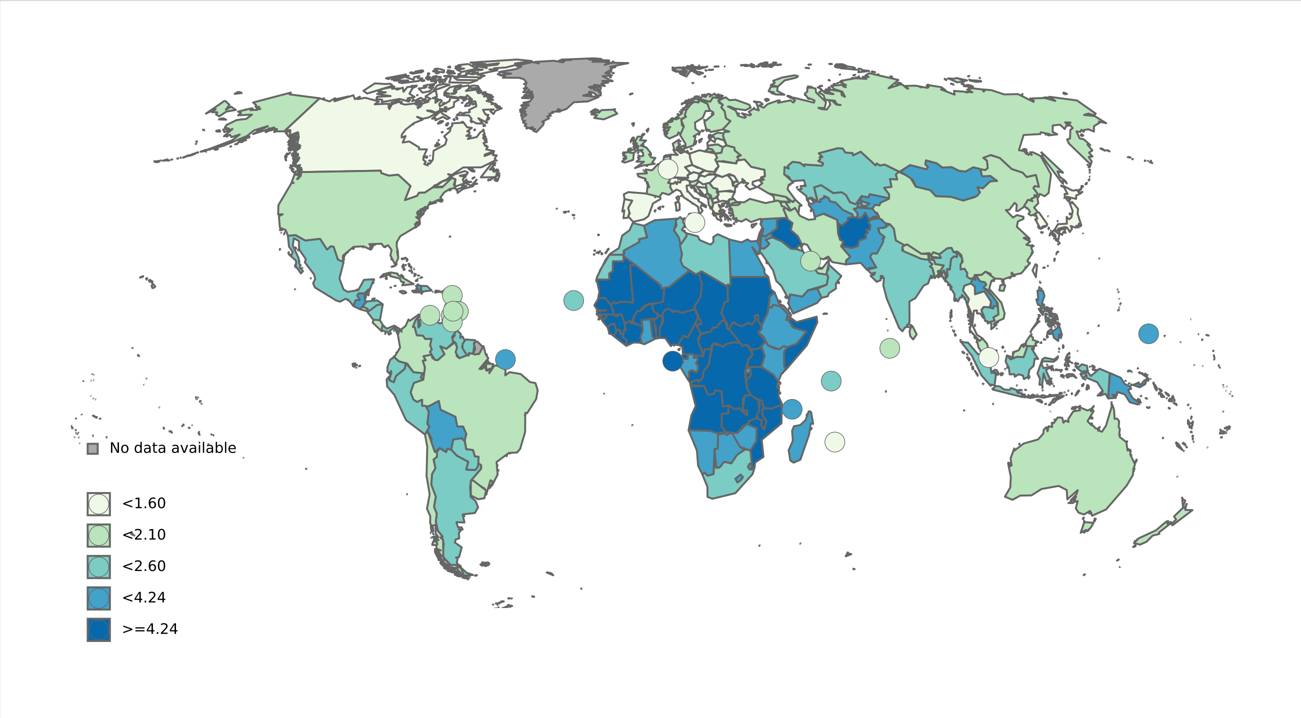
Data accessed on 12 Nov 2019

Crude adjusted prevalence (%) estimates of tabacco use among people aged >= 15 years by country, for the year 2016.

Data Sources:

WHO global report on trends in prevalence of tobacco use 2000–2025, third edition. Geneva: World Health Organization; 2019. Available at https://www.who.int/publications/i/item/who-global-report-on-trends-in-prevalence-of-tobacco-use-2000-2025-third-edition

Figure 125: Total fertility rates



Data accessed on 13 Nov 2019

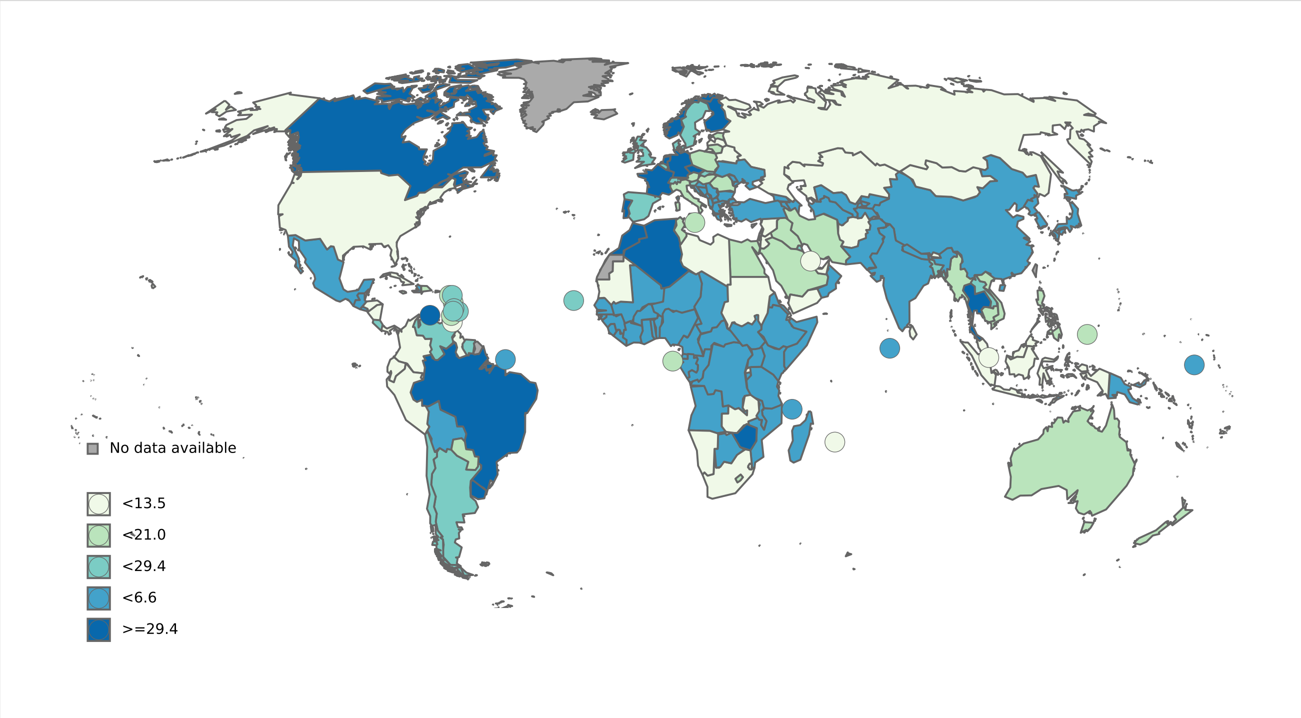
Year of estimate: 2017

Data Sources:

United Nations, Department of Economic and Social Affairs, Population Division (2017). World Population Prospects: The 2017 Revision, DVD Edition. Available at: https://www.un.org/en/development/desa/population/publications/dataset/fertility/wfd2017.asp. [Accessed on November 13, 2019].

Eurostat - Statistical office of the European Comission [web site]. Luxembourg: European Commission; 2017. Available at: https://ec.europa.eu/eurostat/web/products-datasets/-/demofrate. [Accessed on November 13, 2019].

Figure 126: Oral contraceptive use (%) among women who are married or in union in the World

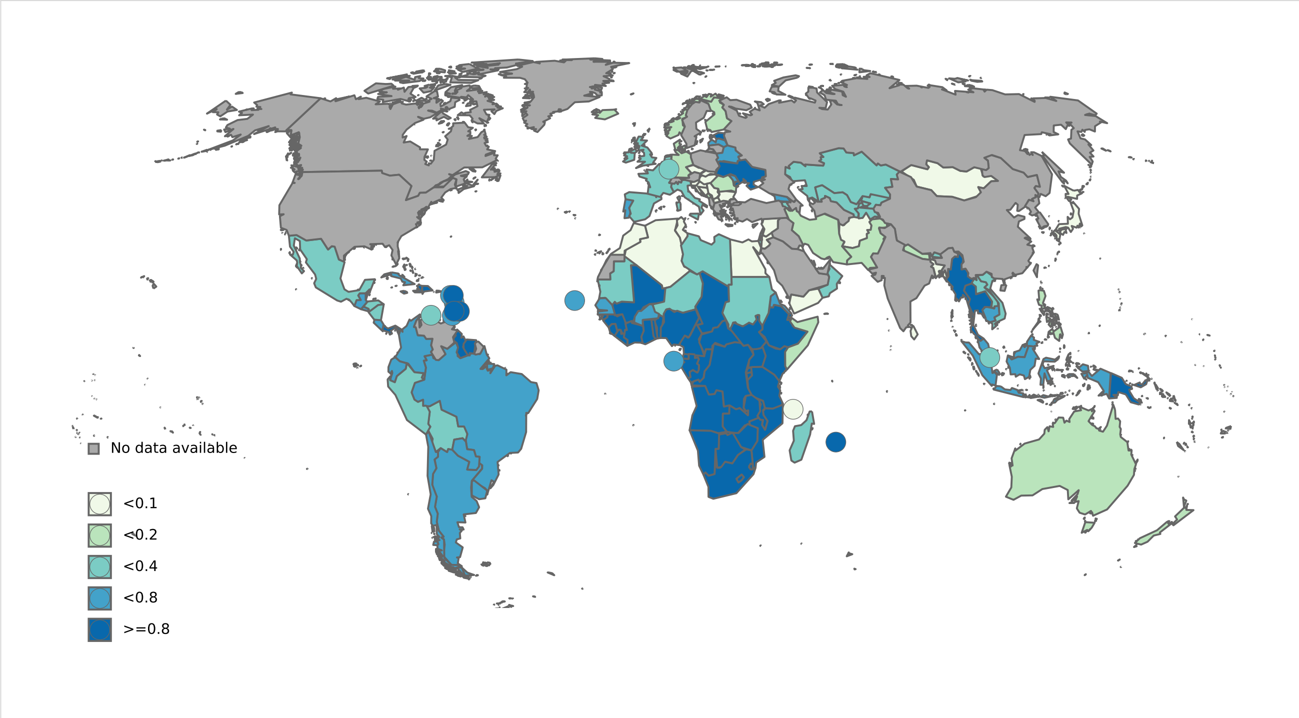


Data accessed on 18 Nov 2019

Data Sources:

United Nations, Department of Economic and Social Affairs, Population Division (2019). World Contraceptive Use 2019 (POP/DB/CP/Rev2019). https://www.un.org/en/development/desa/population/publications/dataset/contraception/wcu2019.asp. Available at: [Accessed on November 18, 2019].

Figure 127: World HIV prevalence



Data accessed on 21 Nov 2019

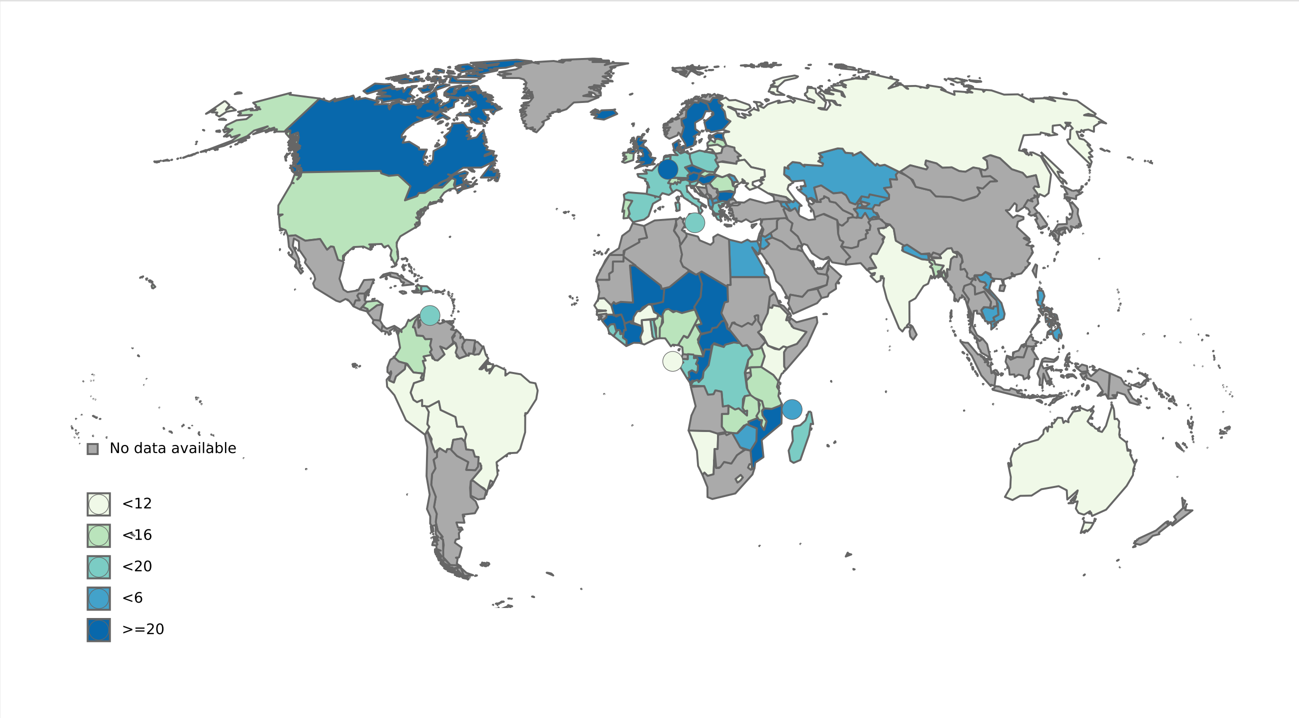
Data Sources:

UNAIDS database [internet]. Available at: http://aidsinfo.unaids.org/ [Accessed on November 21, 2019]

6 Sexual behaviour and reproductive health indicators

Sexual intercourse is the primary route of transmission of genital HPV infection. Information about sexual and reproductive health behaviours is essential to the design of effective preventive strategies against anogenital cancers. In this section, we describe sexual and reproductive health indicators that may be used as proxy measures of risk for HPV infection and anogenital cancers. Several studies have reported that earlier sexual debut is a risk factor for HPV infection, although the reason for this relationship is still unclear. In this section, information on sexual and reproductive health behaviour in the World are presented.

Figure 128: Percentage of 15-year-old girls who report sexual intercourse



Data accessed on 16 Mar 2017

Please refer to original source for methods of estimation

[a] Year of estimation: 2013-2014

[b] Fifteen-year-olds teenagers only were asked whether they had ever had sexual intercourse.

[c] Indicates a significant gender difference (at p<0.05).

[d] Year of estimation: not reported

[e] The main sources of data were surveys by the MEASURE DHS (Demographic and Health Surveys) project and published estimates from Reproductive National Health Surveys.

[f] Year of estimation: 2006

[g] Percentage of all 15- to 19-year-olds who report having had sex before the age of 15 years.

[h] Year of estimation: 2005-2010

[i] Percentage of all 15- to 19-year-olds who report having had sex before the age of 15 years in MEASURE DHS (Demographic and Health Surveys), STATcompiler (http://www.statcompiler.com/) or HIV/AIDS Survey Indicator database (http://www.measuredhs.com/hivdata/).

[j] Year of estimation: 2010

[k] Year of estimation: 2000

[l] Year of estimation: 1997

[m] Year of estimation: 2011-2012

[n] Year of estimation: 2011

[o] Year of estimation: 2012

[p] Year of estimation: 2013

[q] Year of estimation: 2014

[r] Year of estimation: 2005-2006

[s] Year of estimation: 2012-2013

[t] Year of estimation: 2015-2016

[u] Year of estimation: 2014-2015

[v] Year of estimation: 2008-2009

[w] Year of estimation: 2011-2013

Data Sources:

[1] Growing up unequal: gender and socioeconomic differences in young people's health and well-being. Health Behaviour in School-aged Children (HBSC) study: international report from the 2013/2014 survey. Inchley J, Currie D, Young T, et al. Copenhagen, WHO Regional Office for Europe, 2016 (Health Policy for Children and Adolescents, No. 7). Available at: http://www.euro.who.int/__data/assets/pdf_file/0003/303438/HSBC-No.7-Growing-up-unequal-Full-Report.pdf?ua=1

[2] Sexual behaviour in context: a global perspective. Wellings K, Collumbien M, Slaymaker E, et al. Lancet. 2006 Nov 11;368(9548):1706-28. Review. Erratum in: Lancet. 2007 Jan 27;369(9558):274. PMID:17098090.

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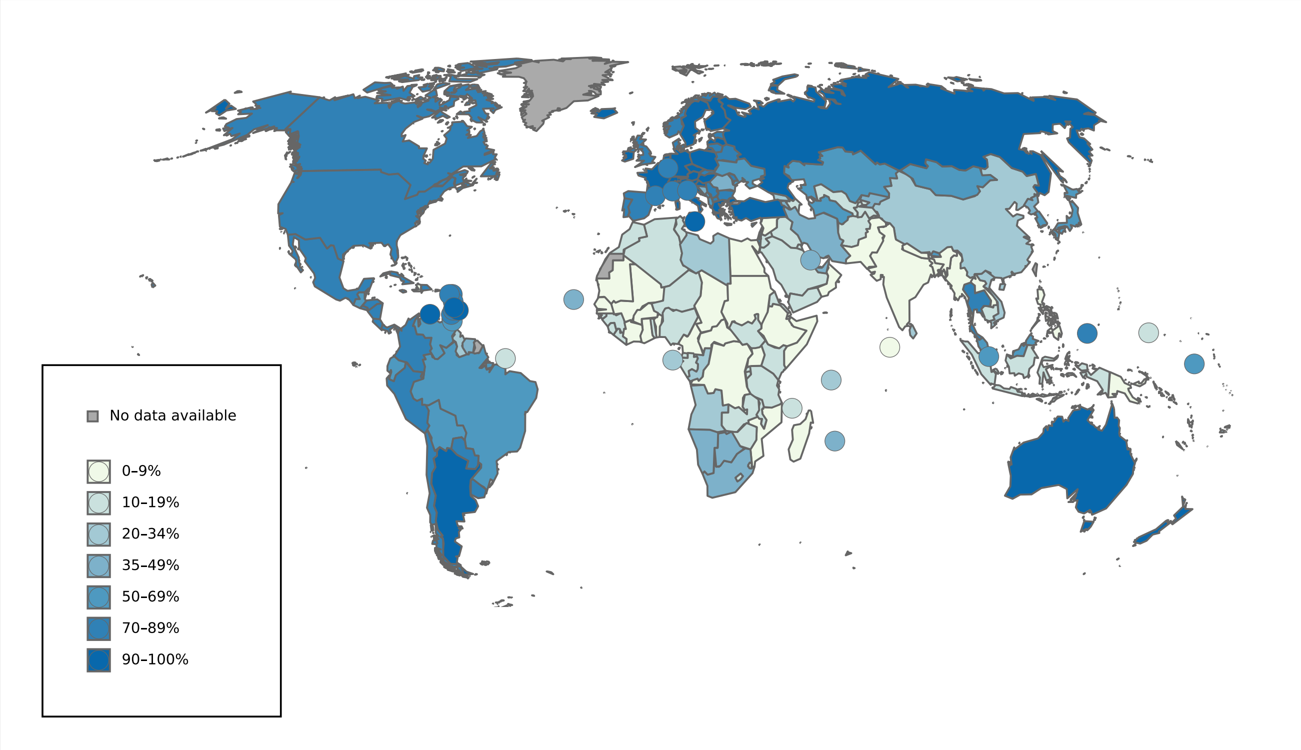
7 HPV preventive strategies

It is established that well-organised cervical screening programmes or widespread good quality cytology can reduce cervical cancer incidence and mortality. The introduction of HPV vaccination could also effectively reduce the burden of cervical cancer in the coming decades. This section presents indicators on basic characteristics and performance of cervical cancer screening, status of HPV vaccine licensure and introduction in the World.

7.1 Cervical cancer screening practices

Screening strategies differ between countries. Some countries have population-based programmes, where in each round of screening women in the target population are individually identified and invited to attend screening. This type of programme can be implemented nationwide or only in specific regions of the country. In opportunistic screening, invitations depend on the individual's decision or on encounters with health-care providers. The most frequent method for cervical cancer screening is cytology, and there are alternative methods such as HPV DNA tests and visual inspection with acetic acid (VIA). VIA is an alternative to cytology-based screening in low-resource settings (the 'see and treat' approach). HPV DNA testing is being introduced into some countries as an adjunct to cytology screening ('co-testing') or as the primary screening test to be followed by a secondary, more specific test, such as cytology

Figure 129: Ever in lifetime cervical cancer screening coverage in women 25–65 years in 2019 by country

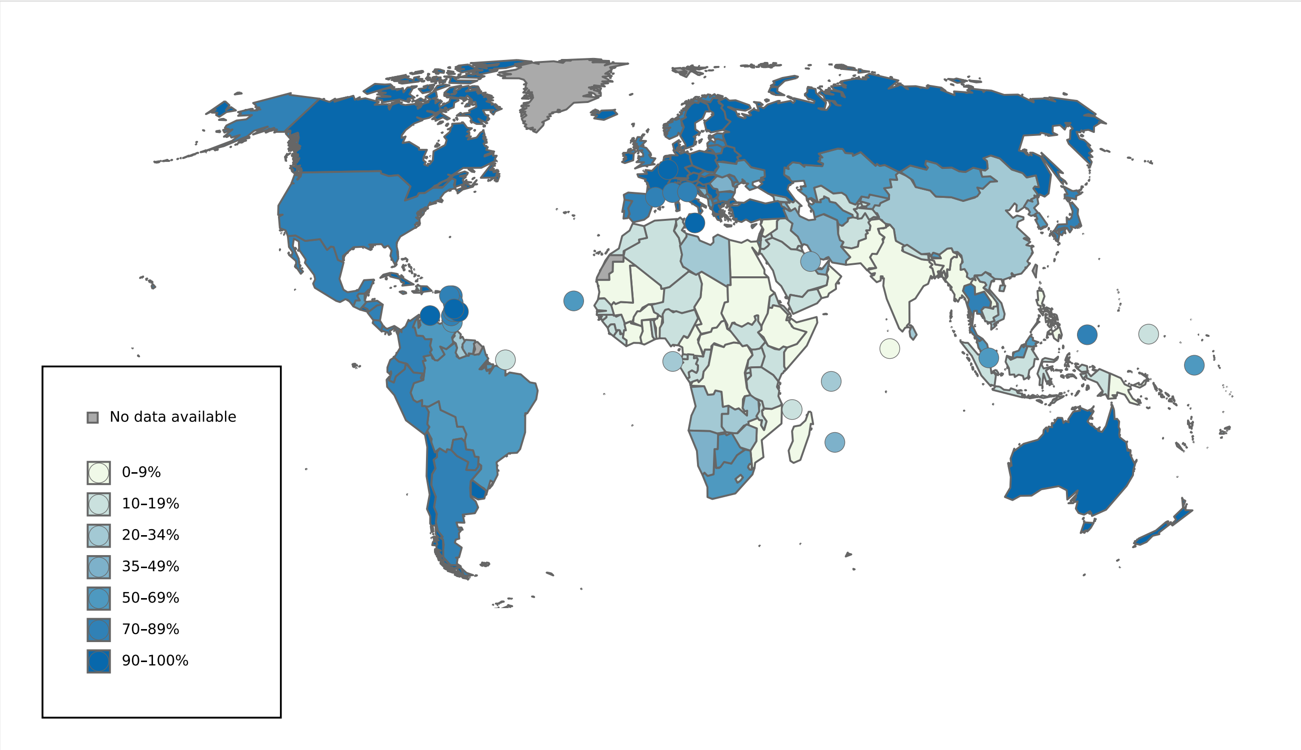


Data accessed on 31 Aug 2022

Data Sources:

Bruni L, Serrano B, Roura E, Alemany L, Cowan M, Herrero R, et al. Cervical cancer screening programmes and age-specific coverage estimates for 202 countries and territories worldwide: a review and synthetic analysis. Lancet Glob Health. 2022;10(8):e1115.

Figure 130: Ever in lifetime cervical cancer screening coverage in women 30–49 years in 2019 by country



Data accessed on 31 Aug 2022

Data Sources:

Bruni L, Serrano B, Roura E, Alemany L, Cowan M, Herrero R, et al. Cervical cancer screening programmes and age-specific coverage estimates for 202 countries and territories worldwide: a review and synthetic analysis. Lancet Glob Health. 2022;10(8):e1115.

Table 45: Main characteristics of cervical cancer screening

Country	Region	Existence of official national recommendations	Starting year of current recommendations	Active invitation to screening	Screening ages (years), primary screening test used, and screening interval or frequency of screenings
Africa					
Algeria	Algeria	Yes	2003	No	25-65 (cytology, 3 years)
Angola	Angola	No	-	-	-
Benin	Benin	No	-	-	-
Botswana	Botswana	No	-	-	-
Burkina Faso	Burkina Faso	Yes	2016	No	25-55 (VIA, 3 years)
Burundi	Burundi	No	-	-	-
Cabo Verde	Cape Verde	No	-	-	-
Cameroon	Cameroon	No	-	-	-
Central African Republic	Central African Republic	No	-	-	-
Chad	Chad	No	-	-	-
Comoros	Comoros	No	-	-	-
Congo	Congo	No	-	-	-
Côte d'Ivoire	Cote d'Ivoire	Yes	2010	No	25-55 (VIA, 3 years)
Democratic Republic of the Congo	Congo, DR	No	-	-	-
Djibouti	Djibouti	No	-	-	-
Egypt	Egypt	No	-	-	-
Equatorial Guinea	Equatorial Guinea	No	-	-	-
Eritrea	Eritrea	No	-	-	-
Eswatini	Swaziland	No	-	-	-
Ethiopia	Ethiopia	Yes	2015	No	30-49 (VIA, 5 years)
Gabon	Gabon	Yes	2014	No	25-65 (VIA, 3 years)
Gambia	Gambia	No	-	-	-
Ghana	Ghana	No	-	-	-
Guinea	Guinea	Yes	Unk	No	25-65 (VIA, Unk years)
Guinea-Bissau	Guinea-Bissau	No	-	-	-
Kenya	Kenya	Yes	2018	No	25-49 (VIA, 5 years); 25-30 (cytology, 5 years); 30-49 (HPV test, 5 years)
Lesotho	Lesotho	No	-	-	-
Liberia	Liberia	No	-	-	-
Libya	Libya	No	-	-	-
Madagascar	Madagascar	Yes	2007	No	25-49 (VIA, NA years)
Malawi	Malawi	Yes	2004	No	30-49 (VIA, 5 years)
Mali	Mali	No	-	-	-
Mauritania	Mauritania	No	-	-	-
Mauritius	Mauritius	Yes	2001	No	30-60 (VIA, 5 years)
Morocco	Morocco	Yes	2010	No	30-49 (VIA, 3 years)
Mozambique	Mozambique	Yes	2009	No	30-55 (VIA, NA years)
Namibia	Namibia	No	-	-	-
Niger	Niger	No	-	-	-
Nigeria	Nigeria	No	-	-	-
Rwanda	Rwanda	Yes	2013	No	35-45 (HPV test OR VIA, 7 years)
Sao Tome and Principe	Sao Tome and Principe	No	-	-	-
Senegal	Senegal	Yes	2018	No	30-69 (VIA, 3 years)
Seychelles	Seychelles	No	-	-	-
Sierra Leone	Sierra Leone	No	-	-	-
Somalia	Somalia	No	-	-	-
South Africa	South Africa	Yes	2017	No	25-55 (cytology, 5 years); 25-55 (HPV test, 10 years)
South Sudan	South Sudan	No	-	-	-
Sudan	Sudan	No	-	-	-
Togo	Togo	No	-	-	-
Tunisia	Tunisia	Yes	2006	No	35-59 (cytology, 5 years)
Uganda	Uganda	Yes	2020	No	25-49 (VIA, 3 years); 30-49 (HPV test, Unk years)

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Table 45 – continued from previous page

Country	Region	Existence of official national recommendations	Starting year of current recommendations	Active invitation to screening	Screening ages (years), primary screening test used, and screening interval or frequency of screenings
United Republic of Tanzania	Tanzania	No	-	-	-
Zambia	Zambia	Yes	2006	No	>=18 (VIA, 3 years)
Zimbabwe	Zimbabwe	No	-	-	-
Americas					
Antigua and Barbuda	Antigua and Barbuda	Yes	Unk	No	21-29 (cytology, 5 years); 30-65 (cytology and HPV test, 5 years)
Argentina	Argentina	Yes	2015	No	25-29 (cytology, 3 years); 30-64 (HPV test, 5 years)
Bahamas	Bahamas	Yes	Unk	No	>=18 (cytology, 1 year)
Barbados	Barbados	No	-	-	-
Belize	Belize	Yes	2016	No	25-49 (cytology and VIA, 3 years); >=50 (cytology, 3 years)
Bolivia (Plurinational State of)	Bolivia	Yes	2009	No	25-64 (cytology, 3 years); Unk (VIA, Unk years)
Brazil	Brazil	Yes	2016	No	25-64 (cytology, 3 years)
Canada	Alberta	Yes	2016	Yes	25-69 (cytology, 3 years)
Canada	British Columbia	Yes	2017	Yes	25-69 (cytology, 3 years)
Canada	Manitoba	Yes	2018	Yes	21-70 (cytology, 3 years)
Canada	New Brunswick	Yes	2019	Yes	21-69 (cytology, 2/3 years)
Canada	Newfoundland and Labrador	Yes	2020	Yes	21-70 (cytology, 3 years)
Canada	Nova Scotia	Yes	2021	Yes	25-70 (cytology, 3 years)
Canada	Northwest territories	Yes	2022	Yes	21-69 (cytology, 2 years)
Canada	Ontario	Yes	2023	Yes	Unk (cytology, 3 years)
Canada	Price Edward island	Yes	2024	Yes	25-65 (cytology, 3 years)
Canada	Quebec	Yes	2025	Yes	21-65 (cytology, 2/3 years)
Canada	Saskatchewan	Yes	2026	Yes	21-69 (cytology, 3 years)
Canada	Nuvanut	Yes	2027	Yes	21-69 (cytology, 3 years)
Canada	Yukon	Yes	2028	Yes	25-69 (cytology, 3 years)
Chile	Chile	Yes	2015	No	25-64 (cytology, 3 years); 30-64 (HPV test, 5 years)
Colombia	Colombia	Yes	2018	No	25-29 (cytology, 3 years); 30-65 (cytology, 3 years); 30-65 (HPV test, 5 years); 30-50 (VIA, 3 years)
Costa Rica	Costa Rica	Yes	2007	No	>=20 (cytology, 2 years)
Cuba	Cuba	Yes	2018	No	25-64 (cytology, 3 years)
Dominica	Dominica	Yes	Unk	No	18-65 (cytology, Unk years)
Dominican Republic	Dominican Republic	Yes	2010	No	35-64 (cytology, 3 years)
Ecuador	Ecuador	Yes	2017	No	21-65 (cytology, 3 years); 30-65 (HPV test, 5 years)
El Salvador	El Salvador	Yes	2015	No	20-29 (cytology, 2 years); 30-59 (cytology, 2 years); 30-59 (HPV test, 5 years); 60-65 (cytology, 2 years)
Grenada	Grenada	Yes	Unk	No	>=21 (cytology, 3 years)
Guatemala	Guatemala	Yes	2020	No	25-29 (cytology, 3 years); 50-54 (cytology, 3 years); 30-49 (cytology, 3 years); 30-39 (HPV test, 5 years); 40-49 (VIA, 3 years)
Guyana	Guyana	Yes	2010	No	25-49 (cytology and VIA, 3 years)
Haiti	Haiti	Yes	2019	No	35-59 (HPV test, 5 years)
Honduras	Honduras	Yes	2015	No	25-29 (VIA, 3 years); 30-64 (HPV test, 5 years)
Jamaica	Jamaica	Yes	2011	No	18-65 (cytology, 3 years)

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Table 45 – continued from previous page

Country	Region	Existence of official national recommendations	Starting year of current recommendations	Active invitation to screening	Screening ages (years), primary screening test used, and screening interval or frequency of screenings
Mexico	Mexico	Yes	2013	No	25-64 (cytology, 3 years); 35-64 (HPV test, 5 years)
Nicaragua	Nicaragua	Yes	2010	No	25-64 (cytology, 3 years); 30-50 (VIA, 1 year)
Panama	Panama	Yes	2017	No	21-70 (cytology, 2 years); 25-64 (HPV test, 3 years); 30-64 (cytology and HPV test, 3 years); Unk (VIA, unk)
Paraguay	Paraguay	Yes	2017	No	21-65 (cytology, 3 years); 30-65 (HPV test, 5 years)
Peru	Peru	Yes	2017	No	25-64 (cytology, 2 years); 30-49 (VIA, 2 years); 30-49 (HPV test, 5 years);
Saint Kitts and Nevis	St Kitts and Nevis	Yes	Unk	No	18-55 (cytology, 3 years)
Saint Lucia	St Lucia	Yes	Unk	No	18-55 (cytology, 1 year)
Saint Vincent and the Grenadines	St Vincent and The Grenadines	Yes	Unk	No	18-60 (cytology and VIA, 3 years)
Suriname	Suriname	No	-	-	-
Trinidad and Tobago	Trinidad and Tobago	Yes	Unk	No	21-65 (cytology, 3 years)
United States of America	United States of America	Yes	2018	No	21-29 (cytology, 3 years); 30-65 (cytology, 3 years); 30-65 (HPV test, 5 years); 30-65 (cytology OR HPV test, 5 years)
Uruguay	Urugay	Yes	2014	No	21-69 (cytology, 3 years)
Venezuela (Bolivarian Republic of)	Venezuela	Yes	Unk	No	25-64 (cytology, 3 years)
Asia					
Afghanistan	Afghanistan	No	-	-	-
Armenia	Armenia	Yes	2007	No	30-60 (cytology, 3 years)
Azerbaijan	Azerbaijan	No	-	-	-
Bahrain	Bahrain	Yes	Unk	No	30-65 (cytology, 3 years)
Bangladesh	Bangladesh	Yes	2018	No	30-60 (VIA, 5 years)
Bhutan	Bhutan	Yes	2006	No	25-30 (cytology, 3 years); 46-65 (cytology, 3 years); 30-45 (cytology OR VIA, 3 years)
Brunei Darussalam	Brunei	Yes	2019	Yes	20-29 (cytology, 3 years); 30-65 (cytology, 3 years); 30-65 (HPV test, 5 years); 30-65 (cytology OR HPV test, 5 years)
Cambodia	Cambodia	Yes	2018	No	30-49 (VIA, 3 years)
China	China	Yes	2019	No	35-64 (cytology or HPV test and VIA, 3 years)
Democratic People's Republic of Korea	Korea, DPR	Yes	Unk	No	30-60 (cytology, 1 year)
Georgia	Georgia	Yes	2011	Yes	25-60 (cytology, 3 years)
India	India	Yes	2016	No	30-65 (VIA, 5 years)
Indonesia	Indonesia	Yes	2008	No	30-50 (VIA, 5 years)
Iran (Islamic Republic of)	Iran	Yes	2018	No	30-49 (HPV test, 10 years)
Iraq	Iraq	No	-	-	-
Israel	Israel	Yes	2019	No	30-54 (cytology, 3 years)
Japan	Japan	Yes	2008	Yes	>=20 (cytology, 2 years)
Jordan	Jordan	No	-	-	-
Kazakhstan	Kazakhstan	Yes	2018	Yes	30-70 (cytology, 4 years)
Kuwait	Kuwait	No	-	-	-
Kyrgyzstan	Kyrgyzstan	No	-	-	-

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Table 45 – continued from previous page

Country	Region	Existence of official national recommendations	Starting year of current recommendations	Active invitation to screening	Screening ages (years), primary screening test used, and screening interval or frequency of screenings
Lao People's Democratic Republic	Laos	No	-	-	-
Lebanon	Lebanon	No	-	-	-
Malaysia	Malaysia	Yes	2019	No	30-65 (cytology, 3 years); 30-65 (HPV test, 5 years)
Maldives	Maldives	Yes	2014	No	30-50 (VIA, 5 years)
Mongolia	Mongolia	Yes	2012	Yes	30-60 (cytology, 3 years)
Myanmar	Myanmar	Yes	2018	No	30-49 (HPV test, 5 years); 30-49 (VIA, 5 years)
Nepal	Nepal	Yes	2010	No	30-60 (VIA, 5 years)
Oman	Oman	No	-	-	-
Pakistan	Pakistan	No	-	-	-
Philippines	Philippines	Yes	2009	No	25-55 (VIA, 5 years)
Qatar	Qatar	Yes	2012	No	21-49 (cytology, 3 years); 50-65 (cytology, 5 years)
Republic of Korea	Korea, Republic of	Yes	2016	Yes	20-100 (cytology, 2 years)
Saudi Arabia	Saudi Arabia	No	-	-	-
Singapore	Singapore	Yes	2019	No	25-29 (cytology, 3 years); 30-69 (HPV test, 5 years)
Sri Lanka	Sri Lanka	Yes	2017	Yes	35-45 (cytology, Unk years)
Syrian Arab Republic	Syria	Yes	2019	No	30-49 (cytology, Unk years)
Tajikistan	Tajikistan	No	-	-	-
Thailand	Thailand	Yes	2020	No	30-60 (cytology, 5 years)
Timor-Leste	Timor-Leste	Yes	Unk	No	18-60 (VIA, Unk years)
Turkey	Turkey	Yes	2014	Yes	30-65 (cytology and HPV test, 5 years)
Turkmenistan	Turkmenistan	Yes	2018	No	21-69 (cytology, 3 years)
United Arab Emirates	Abu-Dabi	Yes	2003	No	25-29 (cytology, 3 years); 30-65 (cytology OR HPV test, 5 years)
Uzbekistan	Uzbekistan	No	-	-	-
Viet Nam	Viet Nam	Yes	2011	No	21-70 (cytology and VIA, 3 years)
Yemen	Yemen	No	-	-	-
Europe					
Albania	Albania	Yes	2019	Yes	40-50 (HPV test, 5 years)
Andorra	Andorra	No	-	-	-
Austria	Austria	Yes	1970	No	>=18 (cytology, 1 year)
Belarus	Belarus	Yes	2019	No	>=18 (cytology, 2 years)
Belgium	Flemish region	Yes	2013	Yes	25-64 (cytology, 3 years)
Belgium	Walloon region, Brussels-capital region	Yes	1992	No	25-64 (cytology, 3 years)
Bosnia and Herzegovina	Bosnia and Herzegovina	Yes	Unk	No	25-60 (cytology, 3 years)
Bulgaria	Bulgaria	Yes	Unk	No	30-40 (cytology, 3 years)
Croatia	Croatia	Yes	2012	Yes	25-64 (cytology, 3 years)
Cyprus	Cyprus	Yes	Unk	No	>=18 (cytology, Unk years)
Czechia	Czech Republic	Yes	2014	Yes	25-60 (cytology, 1 year)
Denmark	Denmark	Yes	2012	Yes	23-49 (cytology, 3 years); 50-59 (cytology, 5 years); 60-64 (HPV test, 5 years)
Estonia	Estonia	Yes	2015	Yes	30-59 (cytology, 5 years)
Finland	Finland	Yes	2017	Yes	30-60 (cytology, 5 years)
France	France	Yes	2020	Yes	25-29 (cytology, 3 years); 30-65 (HPV test, 5 years)
Germany	Germany	Yes	2020	-	20-34 (cytology, 1 year); 35-65 (cytology OR HPV test, 3 years)
Greece	Greece	Yes	2018	No	>=18 (cytology, 1 year); 21-60 (HPV test, 5 years)

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Table 45 – continued from previous page

Country	Region	Existence of official national recommendations	Starting year of current recommendations	Active invitation to screening	Screening ages (years), primary screening test used, and screening interval or frequency of screenings
Hungary	Hungary	Yes	2003	Yes	25-65 (cytology, 3 years)
Iceland	Iceland	Yes	2015	Yes	23-65 (cytology, 3 years)
Ireland	Ireland	Yes	2020	Yes	25-29 (HPV test, 3 years); 30-65 (HPV test, 5 years)
Italy	Piemonte	Yes	2013	Yes	25-29 (cytology, 3 years); 30-64 (HPV test, 5 years)
Italy	Trento	Yes	2017	Yes	25-30 (cytology, 3 years); 31-64 (HPV test, 5 years)
Italy	Veneto	Yes	2014	Yes	25-29 (cytology, 3 years); 30-64 (HPV test, 5 years)
Italy	Liguria	Yes	2013	Yes	25-29 (cytology, 3 years); 30-64 (HPV test, 5 years)
Italy	Emilia Romagna	Yes	2013	Yes	25-29 (cytology, 3 years); 30-64 (HPV test, 5 years)
Italy	Toscana	Yes	2013	Yes	25-34 (cytology, 3 years); 35-64 (HPV test, 5 years)
Italy	Umbria	Yes	2013	Yes	25-34 (cytology, 3 years); 35-64 (HPV test, 5 years)
Italy	Lazio	Yes	2017	Yes	25-29 (cytology, 3 years); 30-64 (HPV test, 5 years)
Italy	Abbruzzo	Yes	2015	Yes	25-29 (cytology, 3 years); 30-64 (HPV test, 5 years)
Italy	Campania, Friuli-Venezia Giulia, Lombardia, Marche, Molise, Val d'Aoste	Yes	1996	Yes	25-64 (cytology, 3 years)
Italy	Puglia	Yes	2018	Yes	25-29 (cytology, 3 years); 30-64 (HPV test, 5 years)
Italy	Basilicata	Yes	2012	Yes	25-34 (cytology, 3 years); 35-64 (HPV test, 5 years)
Italy	Calabria	Yes	2016	Yes	25-29 (cytology, 3 years); 30-64 (HPV test, 5 years)
Italy	Sicilia	Yes	2017	Yes	25-33 (cytology, 3 years); 34-64 (HPV test, 5 years)
Italy	Sardegna	Yes	2018	Yes	25-29 (cytology, 3 years); 30-64 (HPV test, 5 years)
Latvia	Latvia	Yes	2009	Yes	25-69 (cytology, 3 years)
Lithuania	Lithuania	Yes	2008	Yes	25-60 (cytology, 3 years)
Luxembourg	Luxembourg	No	-	-	-
Malta	Malta	Yes	2016	Yes	25-35 (cytology, 3 years)
Monaco	Monaco	Yes	Unk	No	21-65 (cytology, 3 years)
Montenegro	Montenegro	Yes	2018	Yes	30-64 (HPV test, 5 years)
Netherlands	Netherlands	Yes	2017	Yes	30-60 (HPV test, 5 years)
Norway	Norway	Yes	2019	Yes	25-34 (cytology, 3 years); 35-69 (HPV test, 5 years)
Poland	Poland	Yes	2016	No	25-59 (cytology, 3 years)
Portugal	ARS Centro	Yes	2019	Yes	25-64 (HPV test, 5 years)
Portugal	ARS Alentejo	Yes	2020	Yes	25-64 (HPV test, 5 years)
Portugal	ARS Norte	Yes	2017	Yes	25-64 (HPV test, 5 years)
Portugal	ARS de Lisboa e Vale do Tejo	Yes	2017	Yes	25-64 (HPV test, 5 years)
Portugal	Azores	Yes	2010	Yes	25-64 (cytology, 3 years)
Portugal	Madeira	Yes	Unk	No	25-60 (cytology, 3 years)
Portugal	ARS Algarve	Yes	2019	Yes	25-64 (HPV test, 5 years)
Republic of Moldova	Republic of Moldova	Yes	2017	No	25-61 (cytology, 3 years)
Republic of North Macedonia	Macedonia, TFYR	Yes	2006	Yes	24-60 (cytology, 3 years)
Romania	Romania	Yes	2012	No	25-64 (cytology, 5 years)
Russian Federation	Russian Federation	Yes	2019	No	18-64 (cytology, 3 years)

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Country	Region	Existence of official national recommendations	Starting year of current recommendations	Active invitation to screening	Screening ages (years), primary screening test used, and screening interval or frequency of screenings
San Marino	San Marino	Yes	2006	Yes	25-30 (cytology, 3 years); 31-65 (HPV test, 5 years)
Serbia	Serbia	Yes	2013	Yes	25-64 (cytology, 3 years)
Slovakia	Slovakia	Yes	2020	No	23-64 (cytology, 3 years)
Slovenia	Slovenia	Yes	2011	Yes	20-64 (cytology, 3 years)
Spain	Andalucia	Yes	Unk	No	25-65 (cytology, 3 years)
Spain	Aragon	Yes	2019	No	25-34 (cytology, 3 years); 35-65 (HPV test, 5 years)
Spain	Asturias	Yes	2017	No	25-65 (cytology, 3 years)
Spain	Baleares	Yes	2004	No	25-64 (cytology, 3 years)
Spain	Canarias	Yes	2013	No	25-65 (cytology, 3 years)
Spain	Cantabria	Yes	2015	No	25-65 (cytology, 3 years)
Spain	Castilla la Mancha	Yes	2019	Yes	25-34 (cytology, 3 years); 35-65 (HPV test, 5 years)
Spain	Castilla y Leon	Yes	2008	Yes	35-64 (cytology OR HPV test, 5 years)
Spain	Cataluña	Yes	2006	No	25-65 (cytology, 3 years)
Spain	Ceuta	Yes	Unk	No	25-65 (cytology, 3 years)
Spain	Comunidad Valenciana	Yes	2019	No	20-65 (cytology, 3 years)
Spain	Extremadura	Yes	2017	No	20-65 (cytology, 2 years)
Spain	Galicia	Yes	2019	Yes	25-34 (cytology, 3 years); 35-65 (HPV test, 5 years)
Spain	La Rioja	Yes	2018	Yes	25-65 (cytology, 3 years)
Spain	Madrid	Yes	2019	No	35-65 (HPV test, 5 years)
Spain	Melilla	Yes	Unk	No	25-65 (cytology, 3 years)
Spain	Murcia	Yes	2012	No	14-65 (cytology, 3 years)
Spain	Navarra	Yes	2000	No	25-65 (cytology, 3 years)
Spain	País Vasco	Yes	2018	Yes	25-34 (cytology, 3 years); 35-65 (HPV test, 5 years)
Sweden	Sweden	Yes	2015	Yes	23-29 (cytology, 3 years); 30-50 (HPV test, 3 years); 51-70 (HPV test, 7 years)
Switzerland	Switzerland	Yes	2018	No	21-29 (cytology, 3 years); 30-70 (cytology and HPV test, 3 years)
Ukraine	Ukraine	Yes	2014	No	18-65 (cytology, 3 years)
United Kingdom of Great Britain and Northern Ireland	England	Yes	2020	Yes	25-49 (HPV test, 3 years); 50-64 (HPV test, 5 years)
United Kingdom of Great Britain and Northern Ireland	Northern Ireland	Yes	2011	Yes	25-49 (cytology, 3 years); 50-64 (cytology, 5 years)
United Kingdom of Great Britain and Northern Ireland	Scotland	Yes	2020	Yes	25-64 (HPV test, 5 years)
United Kingdom of Great Britain and Northern Ireland	Wales	Yes	2019	Yes	25-49 (HPV test, 3 years); 50-64 (HPV test, 5 years)
Oceania					
Australia	Australia	Yes	2018	Yes	25-74 (HPV test, 5 years)
Fiji	Fiji	Yes	2015	No	30-49 (VIA, 3 years)
Kiribati	Kiribati	Yes	2017	No	25-65 (cytology, 3 years)
Marshall Islands	Marshall Islands	Yes	2014	No	21-49 (VIA, 2 years); 50-60 (cytology, 2 years)

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Table 45 – continued from previous page

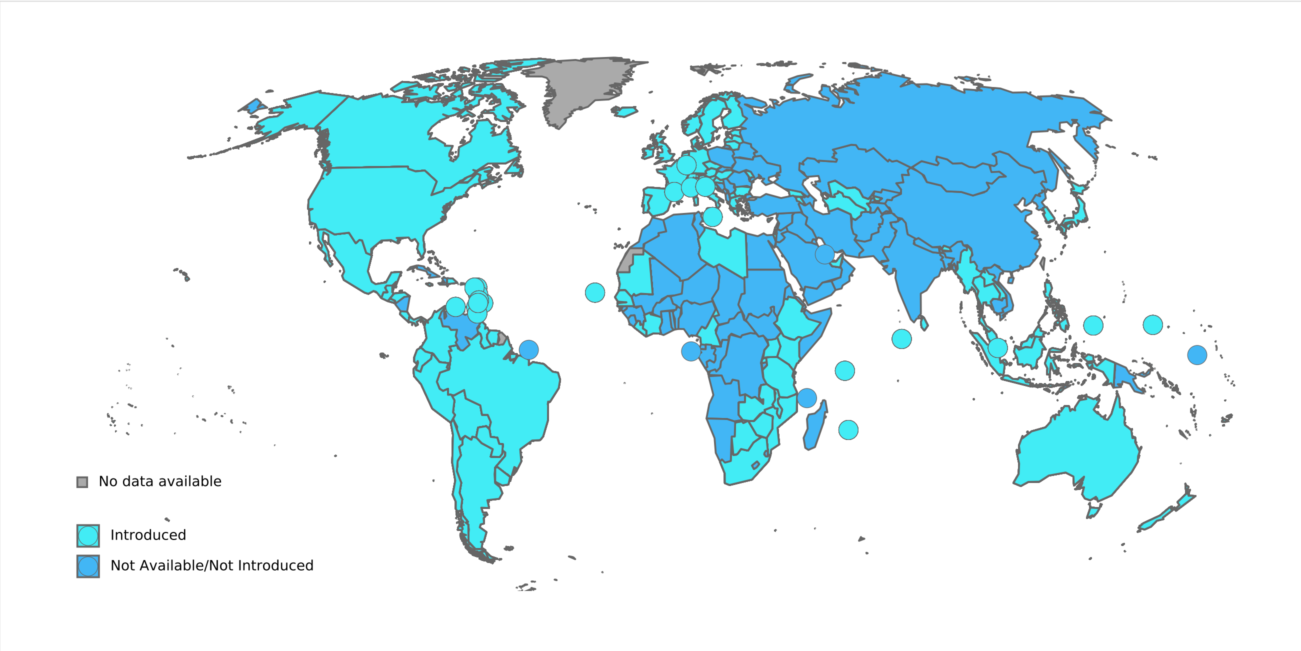
Country	Region	Existence of official national recommendations	Starting year of current recommendations	Active invitation to screening	Screening ages (years), primary screening test used, and screening interval or frequency of screenings
Micronesia (Federated States of)	Micronesia, FS	Yes	2010	No	25-45 (cytology, 10 years); 25-45 (VIA, 10 years)
Nauru	Nauru	No	-	-	-
New Zealand	New Zealand	Yes	2019	Yes	25-69 (cytology, 3 years)
Palau	Palau	Yes	2012	No	21-64 (cytology, 3 years)
Papua New Guinea	Papua New Guinea	No	-	-	-
Samoa	Samoa	No	-	-	-
Solomon Islands	Solomon Islands	No	-	-	-
Tonga	Tonga	No	-	-	-
Tuvalu	Tuvalu	No	-	-	-
Vanuatu	Vanuatu	Yes	Unk	No	30-65 (cytology, Unk years)

Data accessed on 31 Aug 2022
Data Sources:
Bruni L, Serrano B, Roura E, Alemany L, Cowan M, Herrero R, et al. Cervical cancer screening programmes and age-specific coverage estimates for 202 countries and territories worldwide: a review and synthetic analysis. Lancet Glob Health. 2022;10(8):e1115.

7.2 HPV vaccination

7.2.1 HPV vaccine licensure and introduction

Figure 131: Countries with HPV vaccine in the national immunization programme in the World



Data accessed on 24 Oct 2022
Data Sources:
Human papillomavirus (HPV) vaccination coverage. World Health Organization. 2022. Available from: https://immunizationdata.who.int/pages/coverage/hpv.html, accessed [24 Oct 2022]
Bruni L, Saura-Lázaro A, Montoliu A, Brotons M, Alemany L, Diallo MS, et al. HPV vaccination introduction worldwide and WHO and UNICEF estimates of national HPV immunization coverage 2010-2019. Prev Med. 2021;144(106399):106399.

Table 46: HPV vaccination policies in the World

Country	Sex	Programme	Introduction year	Year of estimation of HPV vaccination coverage	HPV coverage – first dose (%)	HPV coverage – last dose (%)
Europe						
Andorra	Female	Introduced	2014	2021	83	83
Austria	Female	Introduced	2014	2021	-	-
Austria	Male	Introduced	2014	2021	-	-
Belgium	Female	Introduced	2007	2021	70	78
Belgium	Male	Introduced	2019	2021	64	71
Bulgaria	Female	Introduced	2012	2021	3	8
Croatia	Female	Introduced	2016	2021	-	-
Croatia	Male	Introduced	2016	2021	-	-
Cyprus	Female	Introduced	2016	2021	-	-
Czechia	Female	Introduced	2012	2021	-	-
Czechia	Male	Introduced	2018	2021	-	-
Denmark	Female	Introduced	2009	2021	80	92
Denmark	Male	Introduced	2019	2021	78	89
Estonia	Female	Introduced	2018	2021	57	64
Finland	Female	Introduced	2013	2021	-	71
Finland	Male	Introduced	2020	2021	-	62
France	Female	Introduced	2007	2021	37	46
Germany	Female	Introduced	2007	2021	47	63
Germany	Male	Introduced	2019	2021	5	20
Greece	Female	Introduced	2008	2021	-	-
Hungary	Female	Introduced	2014	2021	82	78
Hungary	Male	Introduced	2020	2021	69	64
Iceland	Female	Introduced	2011	2021	90	86
Ireland	Female	Introduced	2010	2021	71	74
Ireland	Male	Introduced	2019	2021	67	70
Italy	Female	Introduced	2008	2021	-	-
Italy	Male	Introduced	2018	2021	-	-
Latvia	Female	Introduced	2010	2021	42	43
Lithuania	Female	Introduced	2016	2021	66	61
Luxembourg	Female	Introduced	2008	2021	-	-
Luxembourg	Male	Introduced	2019	2021	-	-
Malta	Female	Introduced	2013	2021	99	94
Monaco	Female	Introduced	2011	2021	-	-
Netherlands	Female	Introduced	2010	2021	66	66
Norway	Female	Introduced	2009	2021	93	93
Norway	Male	Introduced	2018	2021	91	92
Portugal	Female	Introduced	2008	2021	76	91
Portugal	Male	Introduced	2020	2021	53	81
Republic of Moldova	Female	Introduced	2018	2021	35	39
Republic of North Macedonia	Female	Introduced	2009	2021	21	32
San Marino	Female	Introduced	2008	2021	23	46
Slovenia	Female	Introduced	2009	2021	50	50
Spain	Female	Introduced	2007	2021	77	83
Sweden	Female	Introduced	2010	2021	83	87
Sweden	Male	Introduced	2020	2021	77	83
Switzerland	Female	Introduced	2008	2021	71	74
Switzerland	Male	Introduced	2016	2021	49	52
United Kingdom of Great Britain and Northern Ireland	Female	Introduced	2008	2021	59	77
United Kingdom of Great Britain and Northern Ireland	Male	Introduced	2019	2021	48	71
Africa						
Botswana	Female	Introduced	2015	2021	22	-
Cabo Verde	Female	Introduced	2021	2021	-	90
Cameroon	Female	Introduced	2020	2021	5	20
Cameroon	Male	Introduced	2020	2021	-	-

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Table 46 – continued from previous page

Country	Sex	Programme	Introduction year	Year of estimation of HPV vaccination coverage	HPV coverage – first dose (%)	HPV coverage – last dose (%)
Côte d'Ivoire	Female	Introduced	2019	2021	41	34
Ethiopia	Female	Introduced	2018	2021	75	86
Gambia	Female	Introduced	2019	2021	30	34
Kenya	Female	Introduced	2019	2021	44	29
Liberia	Female	Introduced	2019	2021	30	43
Libya	Female	Introduced	2013	2021	-	-
Malawi	Female	Introduced	2019	2021	12	14
Mauritania	Female	Introduced	2021	2021	-	39
Mauritania	Male	Introduced	2021	2021	-	-
Mauritius	Female	Introduced	2016	2021	55	78
Mozambique	Female	Introduced	2021	2021	-	57
Rwanda	Female	Introduced	2011	2021	73	78
Senegal	Female	Introduced	2018	2021	21	39
Seychelles	Female	Introduced	2014	2021	39	84
South Africa	Female	Introduced	2014	2021	34	37
Uganda	Female	Introduced	2015	2021	44	75
United Republic of Tanzania	Female	Introduced	2018	2021	57	73
Zambia	Female	Introduced	2019	2021	33	45
Zimbabwe	Female	Introduced	2018	2021	40	67
Oceania						
Australia	Female	Introduced	2007	2021	66	74
Australia	Male	Introduced	2013	2021	62	73
Cook Islands	Female	Introduced	2011	2021	-	-
Fiji	Female	Introduced	2013	2021	-	-
Marshall Islands	Female	Introduced	2009	2021	27	-
Micronesia (Federated States of)	Female	Introduced	2010	2021	32	-
New Zealand	Female	Introduced	2008	2021	48	68
New Zealand	Male	Introduced	2017	2021	46	68
Niue	Female	Introduced	2021	2021	76	76
Niue	Male	Introduced	2021	2021	76	76
Palau	Female	Introduced	2008	2021	21	36
Solomon Islands	Female	Introduced	2019	2021	-	15
Tuvalu	Female	Introduced	2021	2021	27	79
Americas						
Antigua and Barbuda	Female	Introduced	2018	2021	2	-
Antigua and Barbuda	Male	Introduced	2018	2021	1	-
Argentina	Female	Introduced	2011	2021	53	79
Argentina	Male	Introduced	2017	2021	42	67
Bahamas	Female	Introduced	2015	2021	-	-
Bahamas	Male	Introduced	2015	2021	-	-
Barbados	Female	Introduced	2014	2021	28	39
Barbados	Male	Introduced	2017	2021	26	36
Belize	Female	Introduced	2016	2021	4	5
Belize	Male	Introduced	2019	2021	4	5
Bolivia (Plurinational State of)	Female	Introduced	2017	2021	36	60
Brazil	Female	Introduced	2014	2021	67	81
Brazil	Male	Introduced	2017	2021	44	58
Canada	Female	Introduced	2008	2021	87	87
Canada	Male	Introduced	2017	2021	73	73
Chile	Female	Introduced	2014	2021	57	67
Chile	Male	Introduced	2019	2021	60	70
Colombia	Female	Introduced	2012	2021	11	39
Costa Rica	Female	Introduced	2019	2021	59	77
Dominica	Female	Introduced	2019	2021	68	68
Dominica	Male	Introduced	2019	2021	68	68
Dominican Republic	Female	Introduced	2017	2021	8	27

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Table 46 – continued from previous page

Country	Sex	Programme	Introduction year	Year of estimation of HPV vaccination coverage	HPV coverage – first dose (%)	HPV coverage – last dose (%)
Dominican Republic	Male	Introduced	2019	2021	-	-
Ecuador	Female	Introduced	2014	2021	3	30
El Salvador	Female	Introduced	2020	2021	24	43
Grenada	Female	Introduced	2019	2021	-	-
Guatemala	Female	Introduced	2018	2021	15	34
Guyana	Female	Introduced	2011	2021	2	3
Guyana	Male	Introduced	2019	2021	2	3
Honduras	Female	Introduced	2016	2021	53	75
Jamaica	Female	Introduced	2017	2021	2	1
Mexico	Female	Introduced	2012	2021	1	1
Panama	Female	Introduced	2008	2021	-	-
Panama	Male	Introduced	2016	2021	-	-
Paraguay	Female	Introduced	2013	2021	17	23
Peru	Female	Introduced	2011	2021	53	-
Saint Kitts and Nevis	Female	Introduced	2019	2021	84	71
Saint Kitts and Nevis	Male	Introduced	2019	2021	84	74
Saint Lucia	Female	Introduced	2019	2021	62	83
Saint Lucia	Male	Introduced	2019	2021	56	76
Saint Vincent and the Grenadines	Female	Introduced	2017	2021	-	-
Suriname	Female	Introduced	2013	2021	2	3
Trinidad and Tobago	Female	Introduced	2013	2021	8	19
Trinidad and Tobago	Male	Introduced	2015	2021	8	19
United States of America	Female	Introduced	2006	2021	48	71
United States of America	Male	Introduced	2011	2021	43	68
Uruguay	Female	Introduced	2013	2021	17	55
Uruguay	Male	Introduced	2019	2021	11	44
Asia						
Armenia	Female	Introduced	2017	2021	8	9
Bhutan	Female	Introduced	2010	2021	88	89
Bhutan	Male	Introduced	2021	2021	89	90
Brunei Darussalam	Female	Introduced	2012	2021	89	97
Georgia	Female	Introduced	2018	2021	12	14
Indonesia	Female	Introduced	2017	2021	5	6
Israel	Female	Introduced	2013	2021	55	66
Israel	Male	Introduced	2015	2021	49	61
Japan	Female	Introduced	2011	2021	-	-
Lao People's Democratic Republic	Female	Introduced	2020	2021	42	37
Malaysia	Female	Introduced	2010	2021	14	15
Maldives	Female	Introduced	2019	2021	41	60
Myanmar	Female	Introduced	2020	2021	-	-
Philippines	Female	Introduced	2015	2021	0	4
Republic of Korea	Female	Introduced	2016	2021	-	-
Singapore	Female	Introduced	2010	2021	-	-
Sri Lanka	Female	Introduced	2017	2021	46	71
Thailand	Female	Introduced	2017	2021	-	-
Turkmenistan	Female	Introduced	2016	2021	99	99
Turkmenistan	Male	Introduced	2016	2021	99	99
United Arab Emirates	Female	Introduced	2008	2021	-	-
Uzbekistan	Female	Introduced	2019	2021	87	99

Data accessed on 24 Oct 2022
Data Sources:

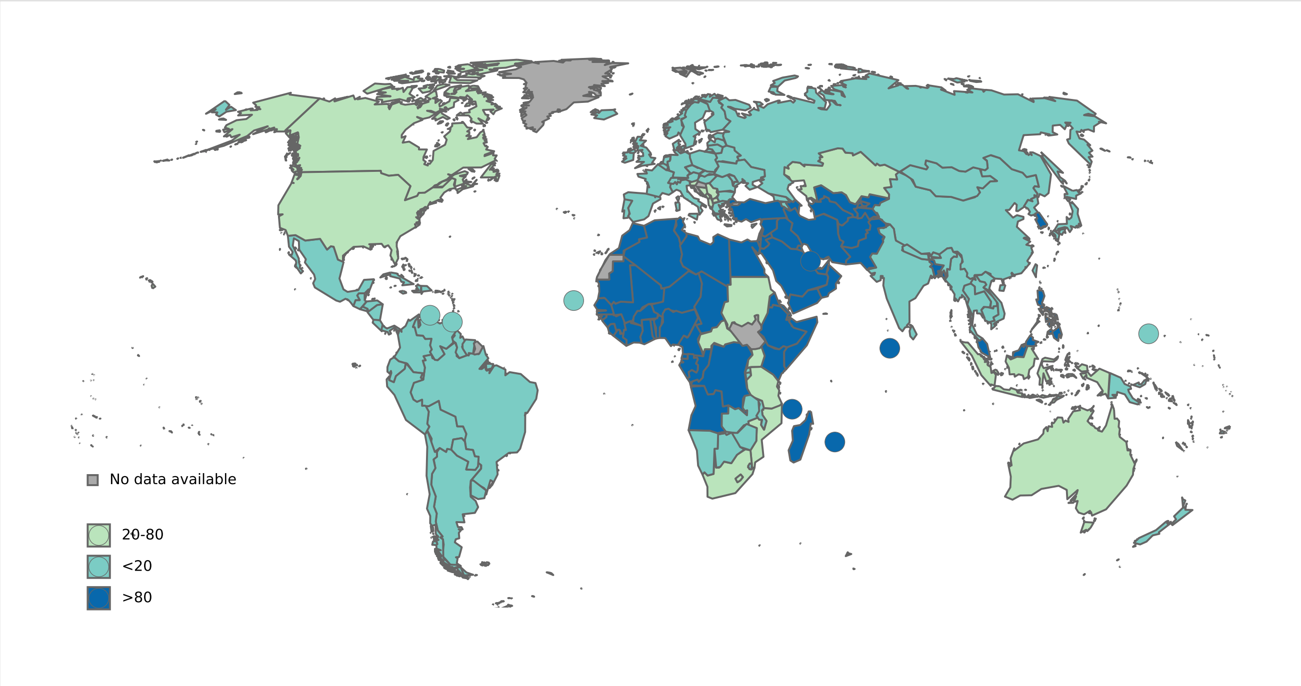
Human papillomavirus (HPV) vaccination coverage. World Health Organization. 2022. Available from: https://immunizationdata.who.int/pages/coverage/hpv.html, accessed [24 Oct 2022]

Bruni L, Saura-Lázaro A, Montoliu A, Brotons M, Alemany L, Diallo MS, et al. HPV vaccination introduction worldwide and WHO and UNICEF estimates of national HPV immunization coverage 2010-2019. Prev Med. 2021;144(106399):106399.

8 Protective factors for cervical cancer

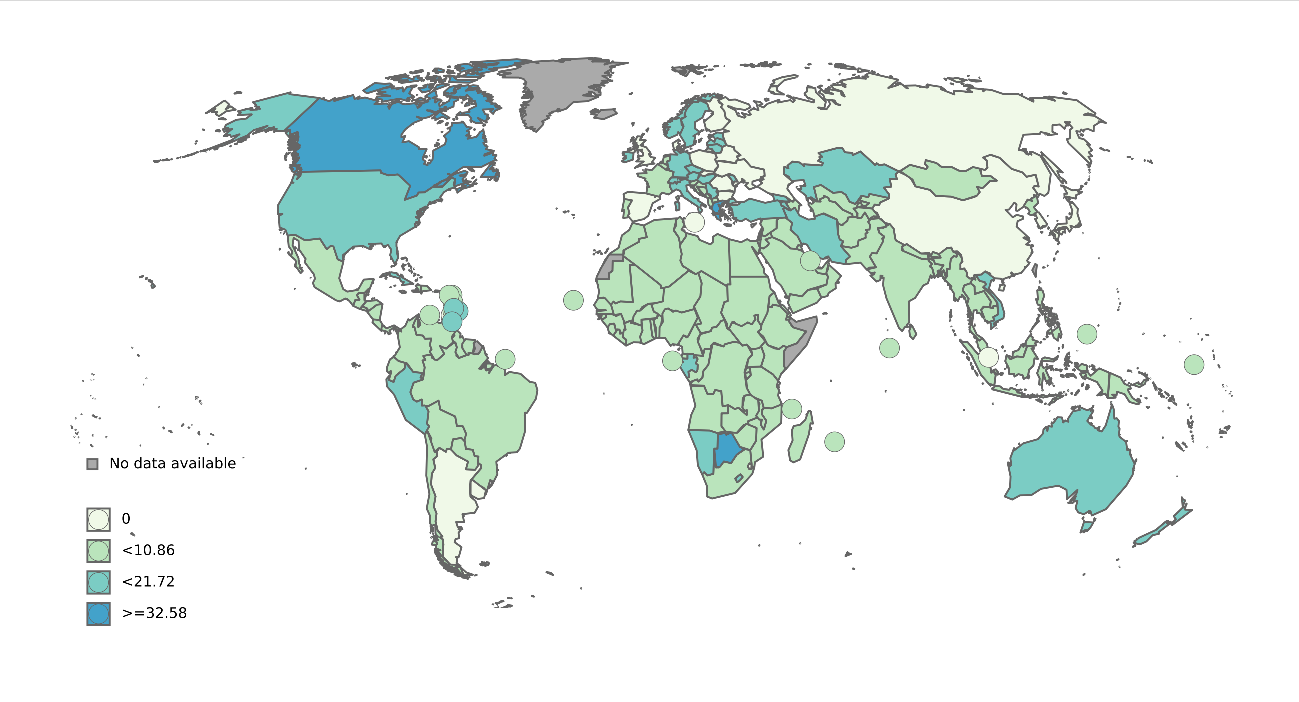
Male circumcision and the use of condoms have shown a significant protective effect against HPV transmission.

Figure 132: World prevalence of male circumcision



Data accessed on 31 Aug 2015
Data from Demographic and Health Surveys (DHS) and other publications to categorise the country-wide prevalence of male circumcision as <20%, 20-80%, or >80%.
Data Sources:
Please refer to country-specific reference(s) for full methodologies.

Figure 133: Worldwide prevalence of condom use



Data accessed on 18 Nov 2019

Please refer to original source for methods of estimation.

Data Sources:

United Nations, Department of Economic and Social Affairs, Population Division (2019). World Contraceptive Use 2019 (POP/DB/CP/Rev2019). https://www.un.org/en/development/desa/population/publications/dataset/contraception/wcu2019.asp. Available at: [Accessed on November 18, 2019].

9 References

HPV-related statistics were gathered from specific databases created at the Institut Català d'Oncologia and the International Agency for Research on Cancer.
Systematic collection of published literature from peer-reviewed journals is stored in these databases. Data correspond to results from the following reference papers as well as updated results from continuous monitoring of the literature by the HPV Information Centre:

Table 47: References of studies included

Country	Study
HPV prevalence and HPV type distribution for cytologically normal women	
General sources	Based on systematic reviews and meta-analysis performed by ICO. The ICO HPV Information Centre has updated data until June 2014. Reference publications: 1) Bruni L, J Infect Dis 2010; 202: 1789. 2) De Sanjosé S, Lancet Infect Dis 2007; 7: 453
Africa	
Algeria	Hammouda D, Int J Cancer 2005; 113: 483 ∣ Hammouda D, Int J Cancer 2011; 128: 2224, Hammouda D, Int J Cancer 2005; 113: 483 ∣ Hammouda D, Int J Cancer 2011; 128: 2224, Hammouda D, Int J Cancer 2005; 113: 483, Hammouda D, Int J Cancer 2005; 113: 483 ∣ Hammouda D, Int J Cancer 2011; 128: 2224
Benin	Piras F, Virol J 2011; 8: 514, Piras F, Virol J 2011; 8: 514, Piras F, Virol J 2011; 8: 514
Cameroon	Untiet S, Int J Cancer 2014; 135: 1911
Congo	Hovland S, Br J Cancer 2010; 102: 957 ∣ Sangwa-Lugoma G, Sex Transm Dis 2011; 38: 308, Sangwa-Lugoma G, Sex Transm Dis 2011; 38: 308, Hovland S, Br J Cancer 2010; 102: 957 ∣ Sangwa-Lugoma G, Sex Transm Dis 2011; 38: 308
Côte d'Ivoire	Adjorlolo-Johnson G, BMC Infect Dis 2010; 10: 242 ∣ La Ruche G, Int J Cancer 1998; 76: 480, Adjorlolo-Johnson G, BMC Infect Dis 2010; 10: 242 ∣ La Ruche G, Int J Cancer 1998; 76: 480, Adjorlolo-Johnson G, BMC Infect Dis 2010; 10: 242
Egypt	Abdel Aziz MT, Med Sci Monit 2006; 12: MT43, Abdel Aziz MT, Med Sci Monit 2006; 12: MT43, Abdel Aziz MT, Med Sci Monit 2006; 12: MT43
Ethiopia	Leyh-Bannurah SR, Infect Agents Cancer 2014; 9: 33 ∣ Ruland R, Eur J Epidemiol 2006; 21: 727
Gabon	Si-Mohamed A, J Med Virol 2005; 77: 430
Gambia	Wall SR, Br J Cancer 2005; 93: 1068, Wall SR, Br J Cancer 2005; 93: 1068
Guinea	Keita N, Br J Cancer 2009; 101: 202, Keita N, Br J Cancer 2009; 101: 202, Keita N, Br J Cancer 2009; 101: 202
Kenya	De Vuyst H, Cancer Causes Control 2010; 21: 2309 ∣ De Vuyst H, Sex Transm Dis 2003; 30: 137 ∣ Maranga IO, Open Virol J 2013; 7: 19 ∣ Temmerman M, Int J Gynaecol Obstet 1999; 65: 171 ∣ Yamada R, J Med Virol 2008; 80: 847, De Vuyst H, Cancer Causes Control 2010; 21: 2309 ∣ De Vuyst H, Sex Transm Dis 2003; 30: 137 ∣ Maranga IO, Open Virol J 2013; 7: 19, De Vuyst H, Sex Transm Dis 2003; 30: 137, De Vuyst H, Cancer Causes Control 2010; 21: 2309 ∣ De Vuyst H, Sex Transm Dis 2003; 30: 137
Mali	Schluterman NH, BMC Womens Health 2013; 13: 4 ∣ Tracy JK, Trop Med Int Health 2011; 16: 1432
Morocco	Alhamany Z, J Infect Dev Ctries 2010; 4: 732 ∣ Amrani M, J Clin Virol 2003; 27: 286 ∣ Bennani B, J Infect Dev Ctries 2012; 6: 543 ∣ Chaouki N, Int J Cancer 1998; 75: 546, Bennani B, J Infect Dev Ctries 2012; 6: 543 ∣ Chaouki N, Int J Cancer 1998; 75: 546, Alhamany Z, J Infect Dev Ctries 2010; 4: 732 ∣ Amrani M, J Clin Virol 2003; 27: 286 ∣ Chaouki N, Int J Cancer 1998; 75: 546, Alhamany Z, J Infect Dev Ctries 2010; 4: 732 ∣ Amrani M, J Clin Virol 2003; 27: 286 ∣ Bennani B, J Infect Dev Ctries 2012; 6: 543 ∣ Chaouki N, Int J Cancer 1998; 75: 546
Mozambique	Castellsagué X, Lancet 2001; 358: 1429 ∣ Naucler P, J Gen Virol 2011; 92: 2784, Castellsagué X, Lancet 2001; 358: 1429, Castellsagué X, Lancet 2001; 358: 1429, Castellsagué X, Lancet 2001; 358: 1429
Nigeria	Gage JC, Int J Cancer 2012; 130: 2111 ∣ Pimentel VM, J Low Genit Tract Dis 2013; 17: 203 ∣ Thomas JO, Br J Cancer 2004; 90: 638, Akarolo-Anthony SN, BMC Infect Dis 2013; 13: 521 ∣ Gage JC, Int J Cancer 2012; 130: 2111 ∣ Pimentel VM, J Low Genit Tract Dis 2013; 17: 203 ∣ Thomas JO, Br J Cancer 2004; 90: 638, Thomas JO, Br J Cancer 2004; 90: 638, Gage JC, Int J Cancer 2012; 130: 2111 ∣ Thomas JO, Br J Cancer 2004; 90: 638
Rwanda	Singh DK, J Infect Dis 2009; 199: 1851 ∣ Veldhuijzen NJ, Sex Transm Dis 2012; 39: 128
Senegal	Astori G, Intervirology 1999; 42: 221 ∣ Hanisch RA, J Clin Virol 2013; 58: 696 ∣ Hawes SE, J Infect Dis 2003; 188: 555 ∣ Mbaye el HS, J Med Virol 2014; 86: 248 ∣ Xi LF, Int J Cancer 2003; 103: 803, Astori G, Intervirology 1999; 42: 221 ∣ Xi LF, Int J Cancer 2003; 103: 803, Astori G, Intervirology 1999; 42: 221 ∣ Xi LF, Int J Cancer 2003; 103: 803, Astori G, Intervirology 1999; 42: 221 ∣ Xi LF, Int J Cancer 2003; 103: 803
South Africa	Allan B, J Clin Microbiol 2008; 46: 740 ∣ Jones HE, J Clin Microbiol 2007; 45: 1679 ∣ Mbulawa ZZ, J Gen Virol 2010; 91: 3023 ∣ McDonald AC, PLoS ONE 2012; 7: e44332 ∣ Wright TC, JAMA 2000; 283: 81, Allan B, J Clin Microbiol 2008; 46: 740 ∣ Denny L, JAMA 2005; 294: 2173 ∣ Jones HE, J Clin Microbiol 2007; 45: 1679 ∣ Mbulawa ZZ, J Gen Virol 2010; 91: 3023 ∣ McDonald AC, PLoS ONE 2012; 7: e44332 ∣ Richter K, S Afr Med J 2013; 103: 313 ∣ Wright TC, JAMA 2000; 283: 81, Allan B, J Clin Microbiol 2008; 46: 740, Allan B, J Clin Microbiol 2008; 46: 740 ∣ Jones HE, J Clin Microbiol 2007; 45: 1679 ∣ McDonald AC, PLoS ONE 2012; 7: e44332

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Table 47 – continued from previous page

Country	Study
Tanzania	Dartell MA, Int J Cancer 2014; 135: 896 ǀ Vidal AC, Infect Agents Cancer 2011; 6: 20 ǀ Watson-Jones D, Sex Transm Infect 2013; 89: 358, Watson-Jones D, Sex Transm Infect 2013; 89: 358, Dartell MA, Int J Cancer 2014; 135: 896 ǀ Vidal AC, Infect Agents Cancer 2011; 6: 20 ǀ Watson-Jones D, Sex Transm Infect 2013; 89: 358, Dartell MA, Int J Cancer 2014; 135: 896 ǀ Watson-Jones D, Sex Transm Infect 2013; 89: 358
Tunisia	Hassen E, Infection 2003; 31: 143, Hassen E, Infection 2003; 31: 143, Hassen E, Infection 2003; 31: 143, Hassen E, Infection 2003; 31: 143
Uganda	Jeronimo J, Int J Gynecol Cancer 2014; 24: 576 ǀ Odida M, Infect Agents Cancer 2011; 6: 8 ǀ Taube JM, Diagn Cytopathol 2010; 38: 555, Odida M, Infect Agents Cancer 2011; 6: 8, Asiimwe S, Int J STD AIDS 2008; 19: 605 ǀ Banura C, J Infect Dis 2008; 197: 555 ǀ Jeronimo J, Int J Gynecol Cancer 2014; 24: 576 ǀ Odida M, Infect Agents Cancer 2011; 6: 8 ǀ Safaeian M, Sex Transm Dis 2007; 34: 429 ǀ Taube JM, Diagn Cytopathol 2010; 38: 555
Zimbabwe	Baay MF, J Med Virol 2004; 73: 481 ǀ Fukuchi E, Sex Transm Dis 2009; 36: 305 ǀ Nowak RG, J Infect Dis 2011; 203: 1182 ǀ Womack SD, Int J Cancer 2000; 85: 206, Womack SD, Int J Cancer 2000; 85: 206
Americas	
Argentina	Abba MC, Rev Argent Microbiol 2003; 35: 74 ǀ Badano I, Rev Argent Microbiol 2011; 43: 263 ǀ Chouhy D, J Med Virol 2013; 85: 655 ǀ Matos E, Sex Transm Dis 2003; 30: 593, Matos E, Sex Transm Dis 2003; 30: 593, Abba MC, Rev Argent Microbiol 2003; 35: 74 ǀ Badano I, Rev Argent Microbiol 2011; 43: 263 ǀ Chouhy D, J Med Virol 2013; 85: 655 ǀ Matos E, Sex Transm Dis 2003; 30: 593, Abba MC, Rev Argent Microbiol 2003; 35: 74 ǀ Badano I, Rev Argent Microbiol 2011; 43: 263 ǀ Chouhy D, J Med Virol 2013; 85: 655 ǀ Matos E, Sex Transm Dis 2003; 30: 593
Belize	Cathro HP, Hum Pathol 2009; 40: 942, Cathro HP, Hum Pathol 2009; 40: 942, Cathro HP, Hum Pathol 2009; 40: 942
Bolivia	Cervantes J, Rev Inst Med Trop Sao Paulo 2003; 45: 131
Brazil	Augusto EF, Rev Lat Am Enfermagem 2014; 22: 100 ǀ Carestiato FN, Braz J Infect Dis 2006; 10: 331 ǀ Cassel AP, Genet Mol Biol 2014; 37: 360 ǀ Coser J, Genet Mol Res 2013; 12: 4276 ǀ da Silva MC, Arch Gynecol Obstet 2012; 286: 1015 ǀ de Abreu AL, Am J Trop Med Hyg 2012; 87: 1149 ǀ Entiauspe LG, Braz J Microbiol 2014; 45: 689 ǀ Fernandes JV, Int J Gynaecol Obstet 2009; 105: 21 ǀ Girianelli VR, Rev Bras Ginecol Obstet 2010; 32: 39 ǀ Lippman SA, Int J STD AIDS 2010; 21: 105 ǀ Lorenzato F, Int J Gynecol Cancer 2000; 10: 143 ǀ Lorenzi AT, Gynecol Oncol 2013; 131: 131 ǀ Miranda PM, Genet Mol Res 2012; 11: 1752 ǀ Muñoz N, Sex Transm Dis 1996; 23: 504 ǀ Noronha VL, DST J Bras Doenças Sex Transm 2005; 17: 49 ǀ Oliveira LH, Rev Soc Bras Med Trop 2010; 43: 4 ǀ Rocha DA, Infect Dis Obstet Gynecol 2013; 2013: 514859 ǀ Silva KC, Mem Inst Oswaldo Cruz 2009; 104: 885 ǀ Tamegão-Lopes BP, Infect Agents Cancer 2014; 9: 25 ǀ Trottier H, Cancer Epidemiol Biomarkers Prev 2006; 15: 1274, da Silva MC, Arch Gynecol Obstet 2012; 286: 1015 ǀ Fernandes JV, Int J Gynaecol Obstet 2009; 105: 21 ǀ Miranda PM, Genet Mol Res 2012; 11: 1752 ǀ Muñoz N, Sex Transm Dis 1996; 23: 504 ǀ Noronha VL, DST J Bras Doenças Sex Transm 2005; 17: 49 ǀ Rama CH, Rev Saude Publica 2008; 42: 123 ǀ Trottier H, Cancer Epidemiol Biomarkers Prev 2006; 15: 1274, Augusto EF, Rev Lat Am Enfermagem 2014; 22: 100 ǀ Cassel AP, Genet Mol Biol 2014; 37: 360 ǀ da Silva MC, Arch Gynecol Obstet 2012; 286: 1015 ǀ de Abreu AL, Am J Trop Med Hyg 2012; 87: 1149 ǀ Fernandes J, Ann Med Health Sci Res 2013; 3: 504 ǀ Girianelli VR, Rev Bras Ginecol Obstet 2010; 32: 39 ǀ Lorenzato F, Int J Gynecol Cancer 2000; 10: 143 ǀ Miranda PM, Genet Mol Res 2012; 11: 1752 ǀ Muñoz N, Sex Transm Dis 1996; 23: 504 ǀ Noronha VL, DST J Bras Doenças Sex Transm 2005; 17: 49 ǀ Rocha DA, Infect Dis Obstet Gynecol 2013; 2013: 514859 ǀ Tamegão-Lopes BP, Infect Agents Cancer 2014; 9: 25, Augusto EF, Rev Lat Am Enfermagem 2014; 22: 100 ǀ Carestiato FN, Braz J Infect Dis 2006; 10: 331 ǀ Cassel AP, Genet Mol Biol 2014; 37: 360 ǀ Coser J, Genet Mol Res 2013; 12: 4276 ǀ da Silva MC, Arch Gynecol Obstet 2012; 286: 1015 ǀ de Abreu AL, Am J Trop Med Hyg 2012; 87: 1149 ǀ de Oliveira GR, Rev Bras Ginecol Obstet 2013; 35: 226 ǀ Entiauspe LG, Braz J Microbiol 2014; 45: 689 ǀ Fernandes JV, Int J Gynaecol Obstet 2009; 105: 21 ǀ Figueiredo Alves RR, BMC Public Health 2013; 13: 1041 ǀ Franco EL, J Infect Dis 1995; 172: 756 ǀ Girianelli VR, Rev Bras Ginecol Obstet 2010; 32: 39 ǀ Lippman SA, Int J STD AIDS 2010; 21: 105 ǀ Lorenzato F, Int J Gynecol Cancer 2000; 10: 143 ǀ Lorenzi AT, Gynecol Oncol 2013; 131: 131 ǀ Miranda PM, Genet Mol Res 2012; 11: 1752 ǀ Muñoz N, Sex Transm Dis 1996; 23: 504 ǀ Noronha VL, DST J Bras Doenças Sex Transm 2005; 17: 49 ǀ Oliveira FA, Mem Inst Oswaldo Cruz 2007; 102: 751 ǀ Oliveira LH, Rev Soc Bras Med Trop 2010; 43: 4 ǀ Pinto Dda S, Cad Saude Publica 2011; 27: 769 ǀ Rocha DA, Infect Dis Obstet Gynecol 2013; 2013: 514859 ǀ Roteli-Martins CM, Int J Gynecol Pathol 2011; 30: 173 ǀ Silva KC, Mem Inst Oswaldo Cruz 2009; 104: 885 ǀ Tamegão-Lopes BP, Infect Agents Cancer 2014; 9: 25 ǀ Trottier H, Cancer Epidemiol Biomarkers Prev 2006; 15: 1274
Canada	Demers AA, Chronic Dis Inj Can 2012; 32: 177 ǀ Jiang Y, Infect Agents Cancer 2013; 8: 25 ǀ Kapala J, J Virol Methods 2007; 142: 223 ǀ Louvanto K, Am J Obstet Gynecol 2014; 210: 474.e1 ǀ Mayrand MH, Int J Cancer 2006; 119: 615 ǀ Moore RA, Cancer Causes Control 2009; 20: 1387 ǀ Ogilvie GS, Vaccine 2013; 31: 1129 ǀ Richardson H, Cancer Epidemiol Biomarkers Prev 2003; 12: 485 ǀ Roteli-Martins CM, Int J Gynecol Pathol 2011; 30: 173 ǀ Sellors JW, CMAJ 2000; 163: 503 ǀ Young TK, Sex Transm Dis 1997; 24: 293, Jiang Y, J Infect Public Health 2011; 4: 219 ǀ Kapala J, J Virol Methods 2007; 142: 223 ǀ Richardson H, Cancer Epidemiol Biomarkers Prev 2003; 12: 485, Demers AA, Chronic Dis Inj Can 2012; 32: 177 ǀ Jiang Y, Infect Agents Cancer 2013; 8: 25 ǀ Moore RA, Cancer Causes Control 2009; 20: 1387, Demers AA, Chronic Dis Inj Can 2012; 32: 177 ǀ Jiang Y, Infect Agents Cancer 2013; 8: 25 ǀ Kapala J, J Virol Methods 2007; 142: 223 ǀ Mayrand MH, Int J Cancer 2006; 119: 615 ǀ Moore RA, Cancer Causes Control 2009; 20: 1387 ǀ Richardson H, Cancer Epidemiol Biomarkers Prev 2003; 12: 485 ǀ Sellors JW, CMAJ 2000; 163: 503 ǀ Young TK, Sex Transm Dis 1997; 24: 293

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Country	Study
Chile	Ferreccio C, Cancer Epidemiol Biomarkers Prev 2004; 13: 2271, Ferreccio C, Cancer Epidemiol Biomarkers Prev 2004; 13: 2271, Ferreccio C, BMC Public Health 2008; 8: 78 I Ferreccio C, Cancer Epidemiol Biomarkers Prev 2004; 13: 2271 I Ferreccio C, Int J Cancer 2013; 132: 916 I Montalvo MT, Oncol Lett 2011; 2: 701, Ferreccio C, Cancer Epidemiol Biomarkers Prev 2004; 13: 2271 I Ferreccio C, Int J Cancer 2013; 132: 916 I Montalvo MT, Oncol Lett 2011; 2: 701
Colombia	Molano M, Br J Cancer 2002; 87: 324 I Muñoz N, Sex Transm Dis 1996; 23: 504, Molano M, Br J Cancer 2002; 87: 324 I Muñoz N, Sex Transm Dis 1996; 23: 504, Leon S, Sex Transm Dis 2009; 36: 290 I Molano M, Br J Cancer 2002; 87: 324 I Muñoz N, Sex Transm Dis 1996; 23: 504 I Soto-De Leon S, PLoS ONE 2011; 6: e14705, Leon S, Sex Transm Dis 2009; 36: 290 I Molano M, Br J Cancer 2002; 87: 324 I Muñoz N, Sex Transm Dis 1996; 23: 504 I Soto-De Leon S, PLoS ONE 2011; 6: e14705
Costa Rica	Herrero R, J Infect Dis 2005; 191: 1796 I Safaeian M, J Clin Microbiol 2007; 45: 1447, Herrero R, J Infect Dis 2005; 191: 1796, Herrero R, J Infect Dis 2005; 191: 1796, Herrero R, J Infect Dis 2005; 191: 1796 I Safaeian M, J Clin Microbiol 2007; 45: 1447
Cuba	Soto Y, J Low Genit Tract Dis 2014; 18: 210, Soto Y, J Low Genit Tract Dis 2014; 18: 210, Soto Y, J Low Genit Tract Dis 2014; 18: 210
Ecuador	Brown CR, Braz J Med Biol Res 2009; 42: 629, Brown CR, Braz J Med Biol Res 2009; 42: 629
Guatemala	Vallès X, Int J Cancer 2009; 125: 1161, Vallès X, Int J Cancer 2009; 125: 1161, Vallès X, Int J Cancer 2009; 125: 1161, Vallès X, Int J Cancer 2009; 125: 1161
Guyana	Kightlinger RS, Am J Obstet Gynecol 2010; 202: 626.e1, Kightlinger RS, Am J Obstet Gynecol 2010; 202: 626.e1
Honduras	Ferrera A, Int J Cancer 1999; 82: 799 I Tábora N, Am J Trop Med Hyg 2005; 73: 50 I Tábora N, Cancer Causes Control 2009; 20: 1663, Ferrera A, Int J Cancer 1999; 82: 799 I Tábora N, Am J Trop Med Hyg 2005; 73: 50 I Tábora N, Cancer Causes Control 2009; 20: 1663, Ferrera A, Int J Cancer 1999; 82: 799 I Tábora N, Am J Trop Med Hyg 2005; 73: 50, Ferrera A, Int J Cancer 1999; 82: 799 I Tábora N, Am J Trop Med Hyg 2005; 73: 50
Jamaica	Lewis-Bell K, Rev Panam Salud Publica 2013; 33: 159, Lewis-Bell K, Rev Panam Salud Publica 2013; 33: 159, Lewis-Bell K, Rev Panam Salud Publica 2013; 33: 159 I Watt A, Infect Agents Cancer 2009; 4 Suppl 1: S11
Mexico	Giuliano AR, Int J STD AIDS 2005; 16: 247 I Illades-Aguiar B, Gynecol Oncol 2010; 117: 291 I Lazcano-Ponce E, Int J Cancer 2001; 91: 412 I Piña-Sánchez P, Int J Gynecol Cancer 2006; 16: 1041 I Sánchez-Anguiano LF, BMC Infect Dis 2006; 6: 27, Carrillo-García A, Gynecol Oncol 2014; 134: 534 I Giuliano AR, Cancer Epidemiol Biomarkers Prev 2001; 10: 1129 I Giuliano AR, Int J STD AIDS 2005; 16: 247 I Illades-Aguiar B, Cancer Detect Prev 2009; 32: 300 I Illades-Aguiar B, Gynecol Oncol 2010; 117: 291 I Lazcano-Ponce E, Int J Cancer 2001; 91: 412 I López Rivera MG, Infect Dis Obstet Gynecol 2012; 2012: 384758 I Monroy OL, J Clin Virol 2010; 47: 43 I Piña-Sánchez P, Int J Gynecol Cancer 2006; 16: 1041 I Rojo Contreras W, Ginecol Obstet Mex 2008; 76: 9 I Sánchez-Anguiano LF, BMC Infect Dis 2006; 6: 27 I Velázquez-Márquez N, Braz J Microbiol 2010; 41: 749, Carrillo-García A, Gynecol Oncol 2014; 134: 534 I Giuliano AR, Cancer Epidemiol Biomarkers Prev 2001; 10: 1129 I Giuliano AR, Int J STD AIDS 2005; 16: 247 I Illades-Aguiar B, Cancer Detect Prev 2009; 32: 300 I Illades-Aguiar B, Gynecol Oncol 2010; 117: 291 I Lazcano-Ponce E, Cancer Causes Control 2010; 21: 1693 I Lazcano-Ponce E, Int J Cancer 2001; 91: 412 I López Rivera MG, Infect Dis Obstet Gynecol 2012; 2012: 384758 I Monroy OL, J Clin Virol 2010; 47: 43 I Piña-Sánchez P, Int J Gynecol Cancer 2006; 16: 1041 I Rojo Contreras W, Ginecol Obstet Mex 2008; 76: 9 I Salmerón J, Cancer Causes Control 2003; 14: 505 I Sánchez-Anguiano LF, BMC Infect Dis 2006; 6: 27 I Velázquez-Márquez N, Braz J Microbiol 2010; 41: 749, Carrillo-García A, Gynecol Oncol 2014; 134: 534 I Giuliano AR, Cancer Epidemiol Biomarkers Prev 2001; 10: 1129 I Giuliano AR, Int J STD AIDS 2005; 16: 247 I Hernández-Avila M, Arch Med Res 1997; 28: 265 I Hernández-Girón C, Sex Transm Dis 2005; 32: 613 I Illades-Aguiar B, Cancer Detect Prev 2009; 32: 300 I Illades-Aguiar B, Gynecol Oncol 2010; 117: 291 I Lazcano-Ponce E, Cancer Causes Control 2010; 21: 1693 I Lazcano-Ponce E, Int J Cancer 2001; 91: 412 I López Rivera MG, Infect Dis Obstet Gynecol 2012; 2012: 384758 I Monroy OL, J Clin Virol 2010; 47: 43 I Piña-Sánchez P, Int J Gynecol Cancer 2006; 16: 1041 I Rojo Contreras W, Ginecol Obstet Mex 2008; 76: 9 I Salmerón J, Cancer Causes Control 2003; 14: 505 I Sánchez-Anguiano LF, BMC Infect Dis 2006; 6: 27 I Velázquez-Márquez N, Braz J Microbiol 2010; 41: 749
Nicaragua	Jeronimo J, Int J Gynecol Cancer 2014; 24: 576, Jeronimo J, Int J Gynecol Cancer 2014; 24: 576
Paraguay	Mendoza LP, J Med Virol 2011; 83: 1351 I Rolón PA, Int J Cancer 2000; 85: 486 I Torres LM, Braz J Infect Dis 2009; 13: 203, Rolón PA, Int J Cancer 2000; 85: 486, Mendoza LP, J Med Virol 2011; 83: 1351 I Rolón PA, Int J Cancer 2000; 85: 486, Mendoza LP, J Med Virol 2011; 83: 1351 I Rolón PA, Int J Cancer 2000; 85: 486 I Torres LM, Braz J Infect Dis 2009; 13: 203
Peru	Almonte M, Int J Cancer 2007; 121: 796 I García PJ, Bull World Health Organ 2004; 82: 483 I Martorell M, Genet Mol Res 2012; 11: 2099 I Santos C, Br J Cancer 2001; 85: 966 I Silva-Caso W, Asian Pac J Trop Med 2014; 7S1: S121, Almonte M, Int J Cancer 2007; 121: 796 I García PJ, Bull World Health Organ 2004; 82: 483 I Martorell M, Genet Mol Res 2012; 11: 2099 I Santos C, Br J Cancer 2001; 85: 966 I Silva-Caso W, Asian Pac J Trop Med 2014; 7S1: S121, García PJ, Bull World Health Organ 2004; 82: 483 I Santos C, Br J Cancer 2001; 85: 966, García PJ, Bull World Health Organ 2004; 82: 483 I Martorell M, Genet Mol Res 2012; 11: 2099 I Santos C, Br J Cancer 2001; 85: 966
Trinidad and Tobago	Ragin CC, Biomarkers 2007; 12: 510, Ragin CC, Biomarkers 2007; 12: 510, Ragin CC, Biomarkers 2007; 12: 510

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Country	Study
United States of America	Chaturvedi AK, J Med Virol 2005; 75: 105 ∣ Cibas ES, Gynecol Oncol 2007; 104: 702 ∣ Dunne EF, Cancer Causes Control 2013; 24: 403 ∣ Evans MF, Cancer 2006; 106: 1054 ∣ Giuliano AR, Cancer Epidemiol Biomarkers Prev 2001; 10: 1129 ∣ Goodman MT, Cancer Res 2008; 68: 8813 ∣ Hernandez BY, Nutr Cancer 2004; 49: 109 ∣ Insinga RP, Cancer Epidemiol Biomarkers Prev 2007; 16: 709 ∣ Moscicki AB, JAMA 2001; 285: 2995 ∣ Schiffman M, Cancer Epidemiol Biomarkers Prev 2011; 20: 1398 ∣ Swan DC, J Clin Microbiol 1999; 37: 1030 ∣ Wheeler CM, Int J Cancer 2013; 132: 198 ∣ Wideroff L, Nutr Cancer 1998; 30: 130, Castle PE, Lancet Oncol 2011; 12: 880 ∣ Castle PE, Obstet Gynecol 2009; 113: 595 ∣ Chaturvedi AK, J Med Virol 2005; 75: 105 ∣ Cibas ES, Gynecol Oncol 2007; 104: 702 ∣ Datta SD, Ann Intern Med 2008; 148: 493 ∣ Dunne EF, Cancer Causes Control 2013; 24: 403 ∣ Evans MF, Cancer 2006; 106: 1054 ∣ Giuliano AR, Cancer Epidemiol Biomarkers Prev 1999; 8: 615 ∣ Giuliano AR, Cancer Epidemiol Biomarkers Prev 2001; 10: 1129 ∣ Goodman MT, Cancer Res 2008; 68: 8813 ∣ Hernandez BY, Nutr Cancer 2004; 49: 109 ∣ Insinga RP, Cancer Epidemiol Biomarkers Prev 2007; 16: 709 ∣ Khanna N, Int J Gynecol Cancer 2007; 17: 615 ∣ Kotloff KL, Sex Transm Dis 1998; 25: 243 ∣ Moscicki AB, JAMA 2001; 285: 2995 ∣ Schiffman M, Cancer Epidemiol Biomarkers Prev 2011; 20: 1398 ∣ Sherman ME, J Natl Cancer Inst 2003; 95: 46 ∣ Smith EM, Cancer Detect Prev 2003; 27: 472 ∣ Smith EM, Int J Gynaecol Obstet 2004; 87: 131 ∣ Swan DC, J Clin Microbiol 1999; 37: 1030 ∣ Tarkowski TA, J Infect Dis 2004; 189: 46 ∣ Wheeler CM, Int J Cancer 2013; 132: 198 ∣ Zhao C, Cancer 2007; 111: 292, Castle PE, J Clin Oncol 2012; 30: 3044 ∣ Castle PE, Lancet Oncol 2011; 12: 880 ∣ Castle PE, Obstet Gynecol 2009; 113: 595 ∣ Chaturvedi AK, J Med Virol 2005; 75: 105 ∣ Cibas ES, Gynecol Oncol 2007; 104: 702 ∣ Datta SD, Ann Intern Med 2008; 148: 493 ∣ Dunne EF, Cancer Causes Control 2013; 24: 403 ∣ Dunne EF, JAMA 2007; 297: 813 ∣ Evans MF, Cancer 2006; 106: 1054 ∣ Giuliano AR, Cancer Epidemiol Biomarkers Prev 1999; 8: 615 ∣ Giuliano AR, Cancer Epidemiol Biomarkers Prev 2001; 10: 1129 ∣ Goodman MT, Cancer Res 2008; 68: 8813 ∣ Hernandez BY, Nutr Cancer 2004; 49: 109 ∣ Insinga RP, Cancer Epidemiol Biomarkers Prev 2007; 16: 709 ∣ Kahn JA, Obstet Gynecol 2008; 111: 1103 ∣ Khanna N, Int J Gynecol Cancer 2007; 17: 615 ∣ Kotloff KL, Sex Transm Dis 1998; 25: 243 ∣ Moscicki AB, JAMA 2001; 285: 2995 ∣ Schiffman M, Cancer Epidemiol Biomarkers Prev 2011; 20: 1398 ∣ Sherman ME, J Natl Cancer Inst 2003; 95: 46 ∣ Smith EM, Cancer Detect Prev 2003; 27: 472 ∣ Smith EM, Int J Gynaecol Obstet 2004; 87: 131 ∣ Swan DC, J Clin Microbiol 1999; 37: 1030 ∣ Tarkowski TA, J Infect Dis 2004; 189: 46 ∣ Wheeler CM, Int J Cancer 2013; 132: 198 ∣ Winer RL, Am J Epidemiol 2003; 157: 218 ∣ Zhao C, Cancer 2007; 111: 292, Castle PE, Obstet Gynecol 2009; 113: 595 ∣ Cibas ES, Gynecol Oncol 2007; 104: 702 ∣ Datta SD, Ann Intern Med 2008; 148: 493 ∣ Evans MF, Cancer 2006; 106: 1054 ∣ Hernandez BY, Nutr Cancer 2004; 49: 109 ∣ Schiffman M, Cancer Epidemiol Biomarkers Prev 2011; 20: 1398 ∣ Smith EM, Int J Gynaecol Obstet 2004; 87: 131 ∣ Swan DC, J Clin Microbiol 1999; 37: 1030 ∣ Wheeler CM, Int J Cancer 2013; 132: 198 ∣ Wideroff L, Nutr Cancer 1998; 30: 130 ∣ Zhao C, Cancer 2007; 111: 292
Uruguay	Berois N, J Med Virol 2014; 86: 647 ∣ Ramas V, J Med Virol 2013; 85: 845, Berois N, J Med Virol 2014; 86: 647 ∣ Ramas V, J Med Virol 2013; 85: 845, Berois N, J Med Virol 2014; 86: 647 ∣ Ramas V, J Med Virol 2013; 85: 845, Ramas V, J Med Virol 2013; 85: 845
Venezuela	Michelli E, Invest Clin 2011; 52: 344, Michelli E, Invest Clin 2011; 52: 344
Asia	
Bahrain	Hajjaj AA, Saudi Med J 2006; 27: 487, Hajjaj AA, Saudi Med J 2006; 27: 487, Hajjaj AA, Saudi Med J 2006; 27: 487
Bangladesh	Nahar Q, PLoS ONE 2014; 9: e107675
Bhutan	Tshomo U, BMC Infect Dis 2014; 14: 408, Tshomo U, BMC Infect Dis 2014; 14: 408, Tshomo U, BMC Infect Dis 2014; 14: 408

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Country	Study
China	Belinson J, Gynecol Oncol 2001; 83: 439 ǀ Dai M, Br J Cancer 2006; 95: 96 ǀ Li LK, Br J Cancer 2006; 95: 1593 ǀ Wu RF, Int J Cancer 2007; 121: 1306, Bian ML, Exp Ther Med 2013; 6: 1332 ǀ Dai M, Br J Cancer 2006; 95: 96 ǀ Ding X, J Med Virol 2014; 86: 1937 ǀ Jin Q, Chin Med J 2010; 123: 2004 ǀ Li H, Eur J Obstet Gynecol Reprod Biol 2013; 170: 202 ǀ Li LK, Br J Cancer 2006; 95: 1593 ǀ Mai RQ, Asian Pac J Cancer Prev 2014; 15: 4945 ǀ Sun ZR, Int J Gynaecol Obstet 2010; 109: 105 ǀ Wei H, Int J Gynaecol Obstet 2014; 126: 28 ǀ Wu D, Eur J Obstet Gynecol Reprod Biol 2010; 151: 86 ǀ Wu EQ, Cancer Causes Control 2013; 24: 795 ǀ Wu RF, Int J Cancer 2007; 121: 1306 ǀ Yuan X, Arch Gynecol Obstet 2011; 283: 1385 ǀ Zhao FH, Int J Cancer 2014; 135: 2604 ǀ Zhao R, Br J Cancer 2009; 101: 1635, Belinson J, Gynecol Oncol 2001; 83: 439 ǀ Belinson JL, Am J Clin Pathol 2011; 135: 790 ǀ Belinson JL, Int J Gynecol Cancer 2003; 13: 819 ǀ Bian ML, Exp Ther Med 2013; 6: 1332 ǀ Chan PK, J Infect Dis 2002; 185: 28 ǀ Chan PK, J Med Virol 2009; 81: 1635 ǀ Chen Q, PLoS ONE 2012; 7: e32149 ǀ Chen Z, Exp Ther Med 2013; 6: 85 ǀ Chui SH, Public Health 2012; 126: 600 ǀ Dai M, Br J Cancer 2006; 95: 96 ǀ Ding X, J Med Virol 2014; 86: 1937 ǀ DU H, Zhonghua Liu Xing Bing Xue Za Zhi 2012; 33: 799 ǀ He X, Eur J Epidemiol 2008; 23: 403 ǀ Hu SY, Chin J Cancer Res 2011; 23: 25 ǀ Jin Q, Chin Med J 2010; 123: 2004 ǀ Li C, Cancer Epidemiol Biomarkers Prev 2010; 19: 2655 ǀ Li H, Eur J Obstet Gynecol Reprod Biol 2013; 170: 202 ǀ Li LK, Br J Cancer 2006; 95: 1593 ǀ Lin M, Aust N Z J Obstet Gynaecol 2008; 48: 189 ǀ Mai RQ, Asian Pac J Cancer Prev 2014; 15: 4945 ǀ Moy LM, Int J Cancer 2010; 127: 646 ǀ Sui S, Asian Pac J Cancer Prev 2013; 14: 5861 ǀ Sun LL, Virol J 2012; 9: 153 ǀ Sun ZR, Int J Gynaecol Obstet 2010; 109: 105 ǀ Wang S, BMC Cancer 2012; 12: 160 ǀ Wang X, Int J Gynaecol Obstet 2013; 120: 37 ǀ Wang YY, Asian Pac J Cancer Prev 2013; 14: 7483 ǀ Wei H, Int J Gynaecol Obstet 2014; 126: 28 ǀ Wu D, Eur J Obstet Gynecol Reprod Biol 2010; 151: 86 ǀ Wu EQ, Cancer Causes Control 2013; 24: 795 ǀ Wu R, Int J Gynecol Cancer 2010; 20: 1411 ǀ Wu RF, Int J Cancer 2007; 121: 1306 ǀ Ye J, Int J Gynecol Cancer 2010; 20: 1374 ǀ Ye J, Virol J 2010; 7: 66 ǀ Yeoh GP, Acta Cytol 2006; 50: 627 ǀ Yip YC, J Med Virol 2010; 82: 1724 ǀ Yu XW, J Low Genit Tract Dis 2013; 17: 17 ǀ Yuan X, Arch Gynecol Obstet 2011; 283: 1385 ǀ Zhang L, Arch Gynecol Obstet 2012; 286: 695 ǀ Zhang R, J Clin Virol 2013; 58: 144 ǀ Zhang WY, Chin Med J 2008; 121: 1578 ǀ Zhao FH, Cancer Prev Res (Phila) 2013; 6: 938 ǀ Zhao FH, Int J Cancer 2014; 135: 2604, Belinson J, Gynecol Oncol 2001; 83: 439 ǀ Belinson JL, Am J Clin Pathol 2011; 135: 790 ǀ Belinson JL, Int J Gynecol Cancer 2003; 13: 819 ǀ Bian ML, Exp Ther Med 2013; 6: 1332 ǀ Chan PK, J Infect Dis 2002; 185: 28 ǀ Dai M, Br J Cancer 2006; 95: 96 ǀ Ding X, J Med Virol 2014; 86: 1937 ǀ He X, Eur J Epidemiol 2008; 23: 403 ǀ Hu SY, Chin J Cancer Res 2011; 23: 25 ǀ Jin Q, Chin Med J 2010; 123: 2004 ǀ Li C, Cancer Epidemiol Biomarkers Prev 2010; 19: 2655 ǀ Li H, Eur J Obstet Gynecol Reprod Biol 2013; 170: 202 ǀ Li LK, Br J Cancer 2006; 95: 1593 ǀ Mai RQ, Asian Pac J Cancer Prev 2014; 15: 4945 ǀ Moy LM, Int J Cancer 2010; 127: 646 ǀ Sun ZR, Int J Gynaecol Obstet 2010; 109: 105 ǀ Wei H, Int J Gynaecol Obstet 2014; 126: 28 ǀ Wu D, Eur J Obstet Gynecol Reprod Biol 2010; 151: 86 ǀ Wu EQ, Cancer Causes Control 2013; 24: 795 ǀ Wu RF, Int J Cancer 2007; 121: 1306 ǀ Ye J, Int J Gynecol Cancer 2010; 20: 1374 ǀ Yeoh GP, Acta Cytol 2006; 50: 627 ǀ Yuan X, Arch Gynecol Obstet 2011; 283: 1385 ǀ Zhao FH, Cancer Prev Res (Phila) 2013; 6: 938 ǀ Zhao FH, Int J Cancer 2014; 135: 2604
Georgia	Alibegashvili T, Cancer Epidemiol 2011; 35: 465, Alibegashvili T, Cancer Epidemiol 2011; 35: 465, Alibegashvili T, Cancer Epidemiol 2011; 35: 465
India	Aggarwal R, Indian J Cancer 2006; 43: 110 ǀ Arora R, Eur J Obstet Gynecol Reprod Biol 2005; 121: 104 ǀ Bhatla N, Int J Gynecol Pathol 2008; 27: 426 ǀ Dutta S, Int J Gynecol Pathol 2012; 31: 178 ǀ Franceschi S, Br J Cancer 2005; 92: 601 ǀ Gupta S, Cytopathology 2009; 20: 249 ǀ Jeronimo J, Int J Gynecol Cancer 2014; 24: 576 ǀ Kashyap V, J Cytol 2013; 30: 190 ǀ Kerkar SC, Sex Reprod Healthc 2011; 2: 7 ǀ Laikangbam P, Int J Gynecol Cancer 2007; 17: 107 ǀ Sankaranarayanan R, Int J Cancer 2004; 112: 341 ǀ Singh A, Int J Gynecol Cancer 2009; 19: 1642 ǀ Vinodhini K, Int J Gynaecol Obstet 2012; 119: 253, Aggarwal R, Indian J Cancer 2006; 43: 110 ǀ Arora R, Eur J Obstet Gynecol Reprod Biol 2005; 121: 104 ǀ Bhatla N, Int J Gynecol Pathol 2008; 27: 426 ǀ Franceschi S, Br J Cancer 2005; 92: 601 ǀ Gupta S, Cytopathology 2009; 20: 249 ǀ Kerkar SC, Sex Reprod Healthc 2011; 2: 7 ǀ Laikangbam P, Int J Gynecol Cancer 2007; 17: 107, Aggarwal R, Indian J Cancer 2006; 43: 110 ǀ Arora R, Eur J Obstet Gynecol Reprod Biol 2005; 121: 104 ǀ Bhatla N, Int J Gynecol Pathol 2008; 27: 426 ǀ Dutta S, Int J Gynecol Pathol 2012; 31: 178 ǀ Franceschi S, Br J Cancer 2005; 92: 601 ǀ Gupta S, Cytopathology 2009; 20: 249 ǀ Kerkar SC, Sex Reprod Healthc 2011; 2: 7 ǀ Laikangbam P, Int J Gynecol Cancer 2007; 17: 107 ǀ Singh A, Int J Gynecol Cancer 2009; 19: 1642 ǀ Vinodhini K, Int J Gynaecol Obstet 2012; 119: 253, Aggarwal R, Indian J Cancer 2006; 43: 110 ǀ Arora R, Eur J Obstet Gynecol Reprod Biol 2005; 121: 104 ǀ Basu P, Int J Cancer 2013; 132: 1693 ǀ Bhatla N, Int J Gynecol Pathol 2008; 27: 426 ǀ Datta P, Cancer Epidemiol 2010; 34: 157 ǀ Dutta S, Int J Gynecol Pathol 2012; 31: 178 ǀ Franceschi S, Br J Cancer 2005; 92: 601 ǀ Gravitt PE, PLoS ONE 2010; 5: e13711 ǀ Gupta S, Cytopathology 2009; 20: 249 ǀ Jeronimo J, Int J Gynecol Cancer 2014; 24: 576 ǀ Kashyap V, J Cytol 2013; 30: 190 ǀ Kerkar SC, Sex Reprod Healthc 2011; 2: 7 ǀ Laikangbam P, Int J Gynecol Cancer 2007; 17: 107 ǀ Mittal S, Int J Gynaecol Obstet 2014; 126: 227 ǀ Pandey S, Asian Pac J Cancer Prev 2012; 13: 2643 ǀ Sankaranarayanan R, Int J Cancer 2004; 112: 341 ǀ Sankaranarayanan R, Int J Cancer 2005; 116: 617 ǀ Sarkar K, BMC Infect Dis 2011; 11: 72 ǀ Singh A, Int J Gynecol Cancer 2009; 19: 1642 ǀ Srivastava S, J Biosci 2012; 37: 63 ǀ Vinodhini K, Int J Gynaecol Obstet 2012; 119: 253
Indonesia	de Boer MA, Int J Gynecol Cancer 2006; 16: 1809 ǀ Rachmadi L, Acta Cytol 2012; 56: 171, de Boer MA, Int J Gynecol Cancer 2006; 16: 1809, de Boer MA, Int J Gynecol Cancer 2006; 16: 1809, de Boer MA, Int J Gynecol Cancer 2006; 16: 1809 ǀ Rachmadi L, Acta Cytol 2012; 56: 171 ǀ Vet JN, Br J Cancer 2008; 99: 214

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Country	Study
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Japan	Asato T, J Infect Dis 2004; 189: 1829 ǀ Inoue M, Int J Gynecol Cancer 2006; 16: 1007 ǀ Ishi K, J Obstet Gynaecol Res 2004; 30: 380 ǀ Konno R, Cancer Sci 2011; 102: 877 ǀ Maehama T, Infect Dis Obstet Gynecol 2005; 13: 77 ǀ Masumoto N, Gynecol Oncol 2004; 94: 509 ǀ Nishiwaki M, J Clin Microbiol 2008; 46: 1161 ǀ Onuki M, Cancer Sci 2009; 100: 1312 ǀ Saito J, Int J Gynaecol Obstet 1995; 51: 43 ǀ Sasagawa T, Cancer Epidemiol Biomarkers Prev 2001; 10: 45 ǀ Sasagawa T, Jpn J Cancer Res 1997; 88: 376 ǀ Sasagawa T, Sex Transm Infect 2005; 81: 280 ǀ Satoh T, J Virol Methods 2013; 188: 83 ǀ Takehara K, Patholog Res Int 2011; 2011: 246936 ǀ Yoshikawa H, Br J Cancer 1999; 80: 621, Inoue M, Int J Gynecol Cancer 2006; 16: 1007 ǀ Ishi K, J Obstet Gynaecol Res 2004; 30: 380 ǀ Maehama T, Infect Dis Obstet Gynecol 2005; 13: 77 ǀ Masumoto N, Gynecol Oncol 2004; 94: 509 ǀ Onuki M, Cancer Sci 2009; 100: 1312 ǀ Saito J, Int J Gynaecol Obstet 1995; 51: 43 ǀ Sasagawa T, Jpn J Cancer Res 1997; 88: 376 ǀ Sasagawa T, Sex Transm Infect 2005; 81: 280 ǀ Takehara K, Patholog Res Int 2011; 2011: 246936, Asato T, J Infect Dis 2004; 189: 1829 ǀ Inoue M, Int J Gynecol Cancer 2006; 16: 1007 ǀ Konno R, Cancer Sci 2011; 102: 877 ǀ Maehama T, Infect Dis Obstet Gynecol 2005; 13: 77 ǀ Nishiwaki M, J Clin Microbiol 2008; 46: 1161 ǀ Onuki M, Cancer Sci 2009; 100: 1312 ǀ Sasagawa T, Cancer Epidemiol Biomarkers Prev 2001; 10: 45 ǀ Sasagawa T, Jpn J Cancer Res 1997; 88: 376 ǀ Takehara K, Patholog Res Int 2011; 2011: 246936 ǀ Yoshikawa H, Br J Cancer 1999; 80: 621, Asato T, J Infect Dis 2004; 189: 1829 ǀ Chen L, J Med Virol 2013; 85: 1229 ǀ Inoue M, Int J Gynecol Cancer 2006; 16: 1007 ǀ Ishi K, J Obstet Gynaecol Res 2004; 30: 380 ǀ Konno R, Cancer Sci 2011; 102: 877 ǀ Maehama T, Infect Dis Obstet Gynecol 2005; 13: 77 ǀ Masumoto N, Gynecol Oncol 2004; 94: 509 ǀ Nishiwaki M, J Clin Microbiol 2008; 46: 1161 ǀ Onuki M, Cancer Sci 2009; 100: 1312 ǀ Saito J, Int J Gynaecol Obstet 1995; 51: 43 ǀ Sasagawa T, Cancer Epidemiol Biomarkers Prev 2001; 10: 45 ǀ Sasagawa T, Jpn J Cancer Res 1997; 88: 376 ǀ Sasagawa T, Sex Transm Infect 2005; 81: 280 ǀ Satoh T, J Virol Methods 2013; 188: 83 ǀ Takehara K, Patholog Res Int 2011; 2011: 246936 ǀ Yoshikawa H, Br J Cancer 1999; 80: 621
Kazakhstan	Buleshov 2011: reported in De Vuyst H, Vaccine 2013; 31 Suppl 5: F32
Kuwait	Al-Awadhi R, J Med Virol 2011; 83: 453, Al-Awadhi R, J Med Virol 2011; 83: 453, Al-Awadhi R, J Med Virol 2011; 83: 453, Al-Awadhi R, J Med Virol 2011; 83: 453
Laos	Phongsavan K, Int J Gynecol Cancer 2012; 22: 1398
Lebanon	Karam WG, Lebanese Medical Journal 2005; 53: 132 ǀ Mroueh AM, Eur J Gynaecol Oncol 2002; 23: 429, Karam WG, Lebanese Medical Journal 2005; 53: 132 ǀ Mroueh AM, Eur J Gynaecol Oncol 2002; 23: 429, Mroueh AM, Eur J Gynaecol Oncol 2002; 23: 429
Malaysia	Othman N, Asian Pac J Cancer Prev 2014; 15: 2245, Othman N, Asian Pac J Cancer Prev 2014; 15: 2245 ǀ Tay SK, Aust N Z J Obstet Gynaecol 2009; 49: 323, Chong PP, Asian Pac J Cancer Prev 2010; 11: 1645 ǀ Othman N, Asian Pac J Cancer Prev 2014; 15: 2245 ǀ Tay SK, Aust N Z J Obstet Gynaecol 2009; 49: 323
Mongolia	Chimeddorj B, Asian Pac J Cancer Prev 2008; 9: 563 ǀ Dondog B, Cancer Epidemiol Biomarkers Prev 2008; 17: 1731, Dondog B, Cancer Epidemiol Biomarkers Prev 2008; 17: 1731, Dondog B, Cancer Epidemiol Biomarkers Prev 2008; 17: 1731, Chimeddorj B, Asian Pac J Cancer Prev 2008; 9: 563 ǀ Dondog B, Cancer Epidemiol Biomarkers Prev 2008; 17: 1731
Nepal	Johnson DC, PLoS ONE 2014; 9: e101255 ǀ Sherpa AT, Cancer Causes Control 2010; 21: 323, Johnson DC, PLoS ONE 2014; 9: e101255 ǀ Sherpa AT, Cancer Causes Control 2010; 21: 323, Johnson DC, PLoS ONE 2014; 9: e101255 ǀ Sherpa AT, Cancer Causes Control 2010; 21: 323
Pakistan	Raza SA, Br J Cancer 2010; 102: 1657, Raza SA, Br J Cancer 2010; 102: 1657, Raza SA, Br J Cancer 2010; 102: 1657
Philippines	Ngelangel C, J Natl Cancer Inst 1998; 90: 43, Ngelangel C, J Natl Cancer Inst 1998; 90: 43, Ngelangel C, J Natl Cancer Inst 1998; 90: 43, Ngelangel C, J Natl Cancer Inst 1998; 90: 43

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Saudi Arabia	Al-Ahdal MN, J Infect Dev Ctries 2014; 8: 320, Al-Ahdal MN, J Infect Dev Ctries 2014; 8: 320
Thailand	Chaiwongkot A, Asian Pac J Cancer Prev 2007; 8: 279 ǀ Chichareon S, J Natl Cancer Inst 1998; 90: 50 ǀ Chopjitt P, Int J Infect Dis 2009; 13: 212 ǀ Laowahutanont P, Asian Pac J Cancer Prev 2014; 15: 5879 ǀ Natphopsuk S, Asian Pac J Cancer Prev 2013; 14: 6961 ǀ Settheetham-Ishida W, Microbiol Immunol 2005; 49: 417 ǀ Siritantikorn S, Southeast Asian J Trop Med Public Health 1997; 28: 707 ǀ Sriamporn S, Int J Gynecol Cancer 2006; 16: 266 ǀ Sukvirach S, J Infect Dis 2003; 187: 1246 ǀ Suwannarurk K, Cancer Epidemiol 2009; 33: 56, Chaiwongkot A, Asian Pac J Cancer Prev 2007; 8: 279 ǀ Chandeying V, Sex Health 2006; 3: 11 ǀ Chansaenroj J, Asian Pac J Cancer Prev 2010; 11: 117 ǀ Chichareon S, J Natl Cancer Inst 1998; 90: 50 ǀ Chopjitt P, Int J Infect Dis 2009; 13: 212 ǀ Ekalaksananan T, J Obstet Gynaecol Res 2010; 36: 1037 ǀ Laowahutanont P, Asian Pac J Cancer Prev 2014; 15: 5879 ǀ Marks M, Int J Cancer 2011; 128: 2962 ǀ Natphopsuk S, Asian Pac J Cancer Prev 2013; 14: 6961 ǀ Paengchit K, Asian Pac J Cancer Prev 2014; 15: 6151 ǀ Settheetham-Ishida W, Microbiol Immunol 2005; 49: 417 ǀ Siriaunkgul S, Asian Pac J Cancer Prev 2014; 15: 6837 ǀ Siritantikorn S, Southeast Asian J Trop Med Public Health 1997; 28: 707 ǀ Sriamporn S, Int J Gynecol Cancer 2006; 16: 266 ǀ Sukvirach S, J Infect Dis 2003; 187: 1246 ǀ Suwannarurk K, Cancer Epidemiol 2009; 33: 56 ǀ Swangvaree SS, Asian Pac J Cancer Prev 2010; 11: 1465 ǀ Thomas DB, Am J Epidemiol 2001; 153: 723 ǀ Wongworapat K, Sex Transm Dis 2008; 35: 172, Chichareon S, J Natl Cancer Inst 1998; 90: 50 ǀ Siriaunkgul S, Asian Pac J Cancer Prev 2014; 15: 6837 ǀ Sukvirach S, J Infect Dis 2003; 187: 1246, Chaiwongkot A, Asian Pac J Cancer Prev 2007; 8: 279 ǀ Chansaenroj J, Asian Pac J Cancer Prev 2010; 11: 117 ǀ Chichareon S, J Natl Cancer Inst 1998; 90: 50 ǀ Chopjitt P, Int J Infect Dis 2009; 13: 212 ǀ Ekalaksananan T, J Obstet Gynaecol Res 2010; 36: 1037 ǀ Laowahutanont P, Asian Pac J Cancer Prev 2014; 15: 5879 ǀ Natphopsuk S, Asian Pac J Cancer Prev 2013; 14: 6961 ǀ Paengchit K, Asian Pac J Cancer Prev 2014; 15: 6151 ǀ Settheetham-Ishida W, Microbiol Immunol 2005; 49: 417 ǀ Siriaunkgul S, Asian Pac J Cancer Prev 2014; 15: 6837 ǀ Siritantikorn S, Southeast Asian J Trop Med Public Health 1997; 28: 707 ǀ Sriamporn S, Int J Gynecol Cancer 2006; 16: 266 ǀ Sukvirach S, J Infect Dis 2003; 187: 1246 ǀ Suwannarurk K, Cancer Epidemiol 2009; 33: 56 ǀ Swangvaree SS, Asian Pac J Cancer Prev 2010; 11: 1465
Turkey	Altun 2011: reported in Vaccarella S, Vaccine 2013; 31 Suppl 6: G32 ǀ Bayram A, J Med Virol 2011; 83: 1997 ǀ Demir ET, J Med Virol 2012; 84: 1242 ǀ Dursun P, BMC Infect Dis 2009; 9: 191 ǀ Kasap B, Eur J Obstet Gynecol Reprod Biol 2011; 159: 168 ǀ Ozalp SS, J Turk Ger Gynecol Assoc 2012; 13: 8 ǀ Tezcan S, Asian Pac J Cancer Prev 2014; 15: 3997, Altun 2011: reported in Vaccarella S, Vaccine 2013; 31 Suppl 6: G32 ǀ Bayram A, J Med Virol 2011; 83: 1997 ǀ Demir ET, J Med Virol 2012; 84: 1242 ǀ Dursun P, BMC Infect Dis 2009; 9: 191 ǀ Eren F, Int J Gynaecol Obstet 2010; 109: 235 ǀ Inal MM, Int J Gynecol Cancer 2007; 17: 1266 ǀ Kasap B, Eur J Obstet Gynecol Reprod Biol 2011; 159: 168 ǀ Ozalp SS, J Turk Ger Gynecol Assoc 2012; 13: 8 ǀ Oztürk S, Mikrobiyol Bul 2004; 38: 223 ǀ Tezcan S, Asian Pac J Cancer Prev 2014; 15: 3997 ǀ Yuce K, Arch Gynecol Obstet 2012; 286: 203 ǀ Özcan ES, J Obstet Gynaecol 2011; 31: 656, Akcali S, Asian Pac J Cancer Prev 2013; 14: 503 ǀ Altun 2011: reported in Vaccarella S, Vaccine 2013; 31 Suppl 6: G32 ǀ Bayram A, J Med Virol 2011; 83: 1997 ǀ Demir ET, J Med Virol 2012; 84: 1242 ǀ Dursun P, BMC Infect Dis 2009; 9: 191 ǀ Eren F, Int J Gynaecol Obstet 2010; 109: 235 ǀ Inal MM, Int J Gynecol Cancer 2007; 17: 1266 ǀ Kasap B, Eur J Obstet Gynecol Reprod Biol 2011; 159: 168 ǀ Ozalp SS, J Turk Ger Gynecol Assoc 2012; 13: 8 ǀ Oztürk S, Mikrobiyol Bul 2004; 38: 223 ǀ Sahiner F, J Microbiol Methods 2014; 97: 44 ǀ Tezcan S, Asian Pac J Cancer Prev 2014; 15: 3997 ǀ Yuce K, Arch Gynecol Obstet 2012; 286: 203 ǀ Özcan ES, J Obstet Gynaecol 2011; 31: 656, Altun 2011: reported in Vaccarella S, Vaccine 2013; 31 Suppl 6: G32 ǀ Demir ET, J Med Virol 2012; 84: 1242 ǀ Dursun P, BMC Infect Dis 2009; 9: 191
Uzbekistan	Inamova 2009: reported in De Vuyst H, Vaccine 2013; 31 Suppl 5: F32

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Viet Nam	Pham TH, Int J Cancer 2003; 104: 213 | Vu LT, Asian Pac J Cancer Prev 2011; 12: 561 | Vu LT, Asian Pac J Cancer Prev 2012; 13: 37 | Vu LT, Western Pac Surveill Response J 2012; 3: 57, Pham TH, Int J Cancer 2003; 104: 213, Pham TH, Int J Cancer 2003; 104: 213, Pham TH, Int J Cancer 2003; 104: 213
Europe	
Belarus	Rogovskaya SI, Vaccine 2013; 31 Suppl 7: H46, Rogovskaya SI, Vaccine 2013; 31 Suppl 7: H46, Rogovskaya SI, Vaccine 2013; 31 Suppl 7: H46
Belgium	Arbyn M, Cancer Epidemiol Biomarkers Prev 2009; 18: 321 | Baay MF, Eur J Cancer 2005; 41: 2704 | Baay MF, Eur J Gynaecol Oncol 2001; 22: 204 | Depuydt CE, Br J Cancer 2003; 88: 560 | Depuydt CE, J Clin Microbiol 2012; 50: 4073 | Schmitt M, Int J Cancer 2013; 132: 2395 | Weyn C, Cancer Epidemiol 2013; 37: 457, Baay MF, Eur J Cancer 2005; 41: 2704 | Baay MF, Eur J Gynaecol Oncol 2001; 22: 204 | Weyn C, Cancer Epidemiol 2013; 37: 457, Arbyn M, Cancer Epidemiol Biomarkers Prev 2009; 18: 321 | Baay MF, Eur J Cancer 2005; 41: 2704 | Baay MF, Eur J Gynaecol Oncol 2001; 22: 204 | Depuydt CE, Br J Cancer 2003; 88: 560 | Schmitt M, Int J Cancer 2013; 132: 2395 | Weyn C, Cancer Epidemiol 2013; 37: 457, Arbyn M, Cancer Epidemiol Biomarkers Prev 2009; 18: 321 | Baay MF, Eur J Cancer 2005; 41: 2704 | Baay MF, Eur J Gynaecol Oncol 2001; 22: 204 | Depuydt CE, Br J Cancer 2003; 88: 560 | Depuydt CE, Gynecol Obstet Invest 2010; 70: 273 | Depuydt CE, J Clin Microbiol 2012; 50: 4073 | Merckx M, Eur J Cancer Prev 2014; 23: 288 | Schmitt M, Int J Cancer 2013; 132: 2395 | Weyn C, Cancer Epidemiol 2013; 37: 457
Croatia	Grahovac M, Coll Antropol 2007; 31 Suppl 2: 73, Grahovac M, Coll Antropol 2007; 31 Suppl 2: 73, Grahovac M, Coll Antropol 2007; 31 Suppl 2: 73, Grahovac M, Coll Antropol 2007; 31 Suppl 2: 73 | Kaliterna V, Coll Antropol 2007; 31 Suppl 2: 79
Czechia	Tachezy R, PLoS ONE 2013; 8: e79156, Tachezy R, PLoS ONE 2013; 8: e79156, Tachezy R, PLoS ONE 2013; 8: e79156, Tachezy R, PLoS ONE 2013; 8: e79156
Denmark	Bonde J, BMC Infect Dis 2014; 14: 413 | Kjær SK, Cancer Causes Control 2014; 25: 179 | Nielsen A, Sex Transm Dis 2008; 35: 276 | Nielsen A, Sex Transm Infect 2012; 88: 627 | Svare EI, Eur J Cancer 1998; 34: 1230, Bonde J, BMC Infect Dis 2014; 14: 413 | Kjær SK, Cancer Causes Control 2014; 25: 179 | Nielsen A, Sex Transm Dis 2008; 35: 276 | Nielsen A, Sex Transm Infect 2012; 88: 627 | Svare EI, Eur J Cancer 1998; 34: 1230, Svare EI, Eur J Cancer 1998; 34: 1230, Bonde J, BMC Infect Dis 2014; 14: 413 | Kjaer SK, BMJ 2002; 325: 572 | Kjaer SK, Int J Cancer 2008; 123: 1864 | Nielsen A, Sex Transm Dis 2008; 35: 276 | Nielsen A, Sex Transm Infect 2012; 88: 627 | Svare EI, Eur J Cancer 1998; 34: 1230
Estonia	Uusküla A, BMC Infect Dis 2010; 10: 63
Finland	Leinonen M, Int J Cancer 2008; 123: 1344, Auvinen E, Scand J Infect Dis 2005; 37: 873 | Leinonen M, Int J Cancer 2008; 123: 1344, Leinonen M, Int J Cancer 2008; 123: 1344
France	Beby-Defaux A, J Med Virol 2004; 73: 262 | Dalstein V, Int J Cancer 2003; 106: 396 | Monsonego J, Gynecol Oncol 2005; 99: 160 | Monsonego J, Int J Cancer 2011; 129: 691 | Pannier-Stockman C, J Clin Virol 2008; 42: 353 | Vaucel E, Arch Gynecol Obstet 2011; 284: 989, Baudu A, J Epidemiol Glob Health 2014; 4: 35 | Beby-Defaux A, J Med Virol 2004; 73: 262 | Casalegno JS, Int J Gynaecol Obstet 2011; 114: 116 | Heard I, PLoS ONE 2013; 8: e79372 | Monsonego J, Gynecol Obstet Fertil 2013; 41: 305 | Pannier-Stockman C, J Clin Virol 2008; 42: 353 | Vaucel E, Arch Gynecol Obstet 2011; 284: 989, Baudu A, J Epidemiol Glob Health 2014; 4: 35 | Beby-Defaux A, J Med Virol 2004; 73: 262 | Boulanger JC, Gynecol Obstet Fertil 2004; 32: 218 | Casalegno JS, Int J Gynaecol Obstet 2011; 114: 116 | Clavel C, Br J Cancer 2001; 84: 1616 | Dalstein V, Int J Cancer 2003; 106: 396 | Heard I, PLoS ONE 2013; 8: e79372 | Monsonego J, Gynecol Oncol 2005; 99: 160 | Monsonego J, Int J Cancer 2011; 129: 691 | Pannier-Stockman C, J Clin Virol 2008; 42: 353 | Riethmuller D, Diagn Mol Pathol 1999; 8: 157 | Vaucel E, Arch Gynecol Obstet 2011; 284: 989, Baudu A, J Epidemiol Glob Health 2014; 4: 35 | Beby-Defaux A, J Med Virol 2004; 73: 262 | Boulanger JC, Gynecol Obstet Fertil 2004; 32: 218 | Casalegno JS, Int J Gynaecol Obstet 2011; 114: 116 | Clavel C, Br J Cancer 2001; 84: 1616 | Dalstein V, Int J Cancer 2003; 106: 396 | Heard I, PLoS ONE 2013; 8: e79372 | Monsonego J, Gynecol Oncol 2005; 99: 160 | Monsonego J, Int J Cancer 2011; 129: 691 | Pannier-Stockman C, J Clin Virol 2008; 42: 353 | Riethmuller D, Diagn Mol Pathol 1999; 8: 157 | Vaucel E, Arch Gynecol Obstet 2011; 284: 989
Germany	de Jonge M, Acta Cytol 2013; 57: 591 | Iftner T, J Med Virol 2010; 82: 1928 | Luyten A, J Clin Virol 2009; 46 Suppl 3: S5 | Petry KU, Br J Cancer 2003; 88: 1570 | Schneider A, Int J Cancer 2000; 89: 529, de Jonge M, Acta Cytol 2013; 57: 591 | Iftner T, J Med Virol 2010; 82: 1928 | Luyten A, J Clin Virol 2009; 46 Suppl 3: S5 | Petry KU, Br J Cancer 2003; 88: 1570 | Schneider A, Int J Cancer 2000; 89: 529, Iftner T, J Med Virol 2010; 82: 1928, de Jonge M, Acta Cytol 2013; 57: 591 | Iftner T, J Med Virol 2010; 82: 1928 | Klug SJ, J Med Virol 2007; 79: 616
Greece	Agorastos T, Eur J Cancer Prev 2004; 13: 145 | Argyri E, BMC Infect Dis 2013; 13: 53, Agorastos T, Eur J Cancer Prev 2004; 13: 145 | Argyri E, BMC Infect Dis 2013; 13: 53 | Panotopoulou E, J Med Virol 2007; 79: 1898 | Tsiodras S, BMC Cancer 2010; 10: 53 | Tsiodras S, Clin Microbiol Infect 2011; 17: 1185, Agorastos T, Eur J Cancer Prev 2004; 13: 145 | Agorastos T, Eur J Cancer Prev 2009; 18: 504 | Argyri E, BMC Infect Dis 2013; 13: 53 | Panotopoulou E, J Med Virol 2007; 79: 1898 | Paraskevaidis E, Gynecol Oncol 2001; 82: 355 | Tsiodras S, BMC Cancer 2010; 10: 53 | Tsiodras S, Clin Microbiol Infect 2011; 17: 1185, Agorastos T, Eur J Cancer Prev 2004; 13: 145 | Argyri E, BMC Infect Dis 2013; 13: 53 | Panotopoulou E, J Med Virol 2007; 79: 1898 | Paraskevaidis E, Gynecol Oncol 2001; 82: 355 | Tsiodras S, BMC Cancer 2010; 10: 53 | Tsiodras S, Clin Microbiol Infect 2011; 17: 1185
Hungary	Nyári T, Eur J Obstet Gynecol Reprod Biol 2006; 126: 246, Nyári T, Eur J Obstet Gynecol Reprod Biol 2006; 126: 246
Ireland	Anderson L, J Med Virol 2013; 85: 295 | Keegan H, Br J Biomed Sci 2007; 64: 18, Anderson L, J Med Virol 2013; 85: 295 | Keegan H, Br J Biomed Sci 2007; 64: 18, Keegan H, Br J Biomed Sci 2007; 64: 18, Anderson L, J Med Virol 2013; 85: 295 | Keegan H, Br J Biomed Sci 2007; 64: 18

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Latvia	Silins I, Gynecol Oncol 2004; 93: 484
Lithuania	Gudleviciene Z, Medicina (Kaunas) 2005; 41: 910 | Kliucinskas M, Gynecol Obstet Invest 2006; 62: 173 | Simanaviciene V, J Med Virol 2014, Gudleviciene Z, Medicina (Kaunas) 2005; 41: 910 | Simanaviciene V, J Med Virol 2014, Gudleviciene Z, Medicina (Kaunas) 2005; 41: 910, Gudleviciene Z, Medicina (Kaunas) 2005; 41: 910 | Simanaviciene V, J Med Virol 2014
Netherlands	Boers A, PLoS ONE 2014; 9: e101930 | Bulkmans NW, Int J Cancer 2004; 110: 94 | Hesselink AT, J Clin Microbiol 2013; 51: 2409 | Jacobs MV, Int J Cancer 2000; 87: 221 | Rijkaart DC, Br J Cancer 2012; 106: 975 | Rijkaart DC, Lancet Oncol 2012; 13: 78 | Rozendaal L, J Clin Pathol 2000; 53: 606 | Zielinski GD, Br J Cancer 2001; 85: 398, Boers A, PLoS ONE 2014; 9: e101930 | Bulkmans NW, Int J Cancer 2004; 110: 94 | Hesselink AT, J Clin Microbiol 2013; 51: 2409 | Jacobs MV, Int J Cancer 2000; 87: 221 | Lenselink CH, PLoS ONE 2008; 3: e3743 | Rijkaart DC, Br J Cancer 2012; 106: 975 | Rijkaart DC, Lancet Oncol 2012; 13: 78 | Rozendaal L, J Clin Pathol 2000; 53: 606 | Zielinski GD, Br J Cancer 2001; 85: 398, Bulkmans NW, Int J Cancer 2004; 110: 94 | Jacobs MV, Int J Cancer 2000; 87: 221 | Rozendaal L, J Clin Pathol 2000; 53: 606, Bulkmans NW, Br J Cancer 2007; 96: 1419 | Jacobs MV, Int J Cancer 2000; 87: 221 | Rozendaal L, J Clin Pathol 2000; 53: 606 | Zielinski GD, Br J Cancer 2001; 85: 398
Norway	Gjøoen K, APMIS 1996; 104: 68 | Molden T, Cancer Epidemiol Biomarkers Prev 2005; 14: 367 | Molden T, Gynecol Oncol 2006; 100: 95 | Skjeldestad FE, Acta Obstet Gynecol Scand 2008; 87: 81, Gjøoen K, APMIS 1996; 104: 68, Gjøoen K, APMIS 1996; 104: 68 | Molden T, Cancer Epidemiol Biomarkers Prev 2005; 14: 367, Gjøoen K, APMIS 1996; 104: 68 | Molden T, Cancer Epidemiol Biomarkers Prev 2005; 14: 367 | Molden T, Gynecol Oncol 2006; 100: 95
Poland	Bardin A, Eur J Cancer 2008; 44: 557, Bardin A, Eur J Cancer 2008; 44: 557, Bardin A, Eur J Cancer 2008; 44: 557, Bardin A, Eur J Cancer 2008; 44: 557
Portugal	Dutra I, Infect Agents Cancer 2008; 3: 6 | Pista A, Clin Microbiol Infect 2011; 17: 941 | Pista A, Int J Gynecol Cancer 2011; 21: 1150 | Vieira L, Eur J Microbiol Immunol (Bp) 2013; 3: 61, Pista A, Int J Gynecol Cancer 2011; 21: 1150, Pista A, Clin Microbiol Infect 2011; 17: 941, Pista A, Clin Microbiol Infect 2011; 17: 941 | Pista A, Int J Gynecol Cancer 2011; 21: 1150 | Vieira L, Eur J Microbiol Immunol (Bp) 2013; 3: 61
Romania	Moga MA, Asian Pac J Cancer Prev 2014; 15: 6887 | Ursu RG, Virol J 2011; 8: 558, Moga MA, Asian Pac J Cancer Prev 2014; 15: 6887, Moga MA, Asian Pac J Cancer Prev 2014; 15: 6887 | Ursu RG, Virol J 2011; 8: 558
Russian Federation	Alexandrova YN, Cancer Lett 1999; 145: 43 | Komarova 2010: reported in De Vuyst H, Vaccine 2013; 31 Suppl 5: F32 | Rogovskaya SI, Vaccine 2013; 31 Suppl 7: H46 | Shipitsyna E, Cancer Epidemiol 2011; 35: 160, Alexandrova YN, Cancer Lett 1999; 145: 43 | Komarova 2010: reported in De Vuyst H, Vaccine 2013; 31 Suppl 5: F32 | Rogovskaya SI, Vaccine 2013; 31 Suppl 7: H46 | Shipitsyna E, Cancer Epidemiol 2011; 35: 160, Alexandrova YN, Cancer Lett 1999; 145: 43 | Bdaizieva 2010: reported in De Vuyst H, Vaccine 2013; 31 Suppl 5: F32 | Goncharevskaya 2011: reported in De Vuyst H, Vaccine 2013; 31 Suppl 5: F32 | Komarova 2010: reported in De Vuyst H, Vaccine 2013; 31 Suppl 5: F32 | Kubanov 2005: reported in De Vuyst H, Vaccine 2013; 31 Suppl 5: F32 | Rogovskaya SI, Vaccine 2013; 31 Suppl 7: H46 | Shargorodskaya 2011: reported in De Vuyst H, Vaccine 2013; 31 Suppl 5: F32 | Shipitsyna E, Cancer Epidemiol 2011; 35: 160 | Shipulina 2011: reported in De Vuyst H, Vaccine 2013; 31 Suppl 5: F32, Alexandrova YN, Cancer Lett 1999; 145: 43
Slovenia	Ucakar V, J Med Virol 2014; 86: 1772 | Ucakar V, Vaccine 2012; 30: 116, Ucakar V, J Med Virol 2014; 86: 1772 | Ucakar V, Vaccine 2012; 30: 116, Ucakar V, J Med Virol 2014; 86: 1772 | Ucakar V, Vaccine 2012; 30: 116

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Sweden	Kjellberg L, Am J Obstet Gynecol 1998; 179: 1497 ❘ Naucler P, N Engl J Med 2007; 357: 1589 ❘ Ylitalo N, Cancer Res 2000; 60: 6027, Kjellberg L, Am J Obstet Gynecol 1998; 179: 1497 ❘ Naucler P, N Engl J Med 2007; 357: 1589 ❘ Ylitalo N, Cancer Res 2000; 60: 6027, Elfström KM, BMJ 2014; 348: g130 ❘ Kjellberg L, Am J Obstet Gynecol 1998; 179: 1497 ❘ Naucler P, N Engl J Med 2007; 357: 1589 ❘ Stenvall H, Acta Derm Venereol 2007; 87: 243 ❘ Ylitalo N, Cancer Res 2000; 60: 6027, Naucler P, N Engl J Med 2007; 357: 1589 ❘ Ylitalo N, Cancer Res 2000; 60: 6027
Switzerland	Bigras G, Br J Cancer 2005; 93: 575, Bigras G, Br J Cancer 2005; 93: 575, Bigras G, Br J Cancer 2005; 93: 575
United Kingdom	Cuschieri KS, J Clin Pathol 2004; 57: 68 ❘ Grainge MJ, Emerging Infect Dis 2005; 11: 1680 ❘ Herbert A, J Fam Plann Reprod Health Care 2007; 33: 171 ❘ Howell-Jones R, Br J Cancer 2010; 103: 209 ❘ Kitchener HC, Br J Cancer 2006; 95: 56 ❘ Peto J, Br J Cancer 2004; 91: 942, Cuschieri KS, J Clin Pathol 2004; 57: 68 ❘ Cuzick J, Br J Cancer 1999; 81: 554 ❘ Cuzick J, Lancet 1995; 345: 1533 ❘ Grainge MJ, Emerging Infect Dis 2005; 11: 1680 ❘ Hibbitts S, Br J Cancer 2006; 95: 226 ❘ Hibbitts S, J Clin Virol 2014; 59: 109 ❘ Sargent A, Br J Cancer 2008; 98: 1704, Cuschieri KS, J Clin Pathol 2004; 57: 68 ❘ Cuzick J, Br J Cancer 1999; 81: 554 ❘ Cuzick J, Lancet 1995; 345: 1533 ❘ Cuzick J, Lancet 2003; 362: 1871 ❘ Grainge MJ, Emerging Infect Dis 2005; 11: 1680 ❘ Herbert A, J Fam Plann Reprod Health Care 2007; 33: 171 ❘ Hibbitts S, Br J Cancer 2008; 99: 1929 ❘ Hibbitts S, J Clin Virol 2014; 59: 109 ❘ Howell-Jones R, Br J Cancer 2010; 103: 209 ❘ Kitchener HC, Br J Cancer 2006; 95: 56 ❘ Peto J, Br J Cancer 2004; 91: 942, Cuschieri KS, J Clin Pathol 2004; 57: 68 ❘ Cuzick J, Br J Cancer 1999; 81: 554 ❘ Cuzick J, Lancet 1995; 345: 1533 ❘ Cuzick J, Lancet 2003; 362: 1871 ❘ Grainge MJ, Emerging Infect Dis 2005; 11: 1680 ❘ Herbert A, J Fam Plann Reprod Health Care 2007; 33: 171 ❘ Hibbitts S, Br J Cancer 2008; 99: 1929 ❘ Hibbitts S, J Clin Virol 2014; 59: 109 ❘ Howell-Jones R, Br J Cancer 2010; 103: 209 ❘ Kitchener HC, Br J Cancer 2006; 95: 56 ❘ Peto J, Br J Cancer 2004; 91: 942
Oceania	
Australia	Tabrizi SN, J Clin Virol 2014; 60: 250, Tabrizi SN, J Clin Virol 2014; 60: 250, Bowden FJ, Sex Health 2005; 2: 229 ❘ Tabrizi SN, J Clin Virol 2014; 60: 250 ❘ Tabrizi SN, J Infect Dis 2012; 206: 1645, Tabrizi SN, J Clin Virol 2014; 60: 250
Fiji	Foliaki S, Infect Agents Cancer 2014; 9: 14
HPV type distribution for invasive cervical cancer (ICC)	
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Africa	
Algeria	Contributing studies: Bosch FX, J Natl Cancer Inst 1995; 87: 796 ❘ Hammouda D, Int J Cancer 2005; 113: 483, Contributing studies: Bosch FX, J Natl Cancer Inst 1995; 87: 796 ❘ Hammouda D, Int J Cancer 2005; 113: 483, Bosch FX, J Natl Cancer Inst 1995; 87: 796 ❘ Hammouda D, Int J Cancer 2005; 113: 483
Botswana	Contributing studies: Ermel A, Infect Agents Cancer 2014; 9: 22, Ermel A, Infect Agents Cancer 2014; 9: 22, Contributing studies: Ermel A, Infect Agents Cancer 2014; 9: 22
Ethiopia	Contributing studies: Abate E, J Med Virol 2013; 85: 282 ❘ Fanta BE, Ethiop Med J 2005; 43: 151, Contributing studies: Abate E, J Med Virol 2013; 85: 282 ❘ Fanta BE, Ethiop Med J 2005; 43: 151, Abate E, J Med Virol 2013; 85: 282 ❘ Fanta BE, Ethiop Med J 2005; 43: 151
Ghana	Contributing studies: Awua AK, Infect Agents Cancer 2016; 11: 4 ❘ Denny L, Int J Cancer 2014; 134: 1389, Awua AK, Infect Agents Cancer 2016; 11: 4 ❘ Denny L, Int J Cancer 2014; 134: 1389, Contributing studies: Awua AK, Infect Agents Cancer 2016; 11: 4 ❘ Denny L, Int J Cancer 2014; 134: 1389
Guinea	Contributing studies: Bosch FX, J Natl Cancer Inst 1995; 87: 796 ❘ Keita N, Br J Cancer 2009; 101: 202, Contributing studies: Bosch FX, J Natl Cancer Inst 1995; 87: 796 ❘ Keita N, Br J Cancer 2009; 101: 202, Bosch FX, J Natl Cancer Inst 1995; 87: 796 ❘ Keita N, Br J Cancer 2009; 101: 202
Kenya	De Vuyst H, Int J Cancer 2008; 122: 244 ❘ De Vuyst H, Int J Cancer 2012; 131: 949, Contributing studies: De Vuyst H, Int J Cancer 2008; 122: 244 ❘ De Vuyst H, Int J Cancer 2012; 131: 949, Contributing studies: De Vuyst H, Int J Cancer 2008; 122: 244 ❘ De Vuyst H, Int J Cancer 2012; 131: 949
Mali	Bayo S, Int J Epidemiol 2002; 31: 202 ❘ Bosch FX, J Natl Cancer Inst 1995; 87: 796 ❘ Ndiaye C, Trop Med Int Health 2012; 17: 1432, Contributing studies: Bayo S, Int J Epidemiol 2002; 31: 202 ❘ Bosch FX, J Natl Cancer Inst 1995; 87: 796 ❘ Ndiaye C, Trop Med Int Health 2012; 17: 1432, Contributing studies: Bayo S, Int J Epidemiol 2002; 31: 202 ❘ Bosch FX, J Natl Cancer Inst 1995; 87: 796 ❘ Ndiaye C, Trop Med Int Health 2012; 17: 1432

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Morocco	Contributing studies: Chaouki N, Int J Cancer 1998; 75: 546 | El khair MM, Med Oncol 2010; 27: 861, Chaouki N, Int J Cancer 1998; 75: 546 | El khair MM, Med Oncol 2010; 27: 861, Contributing studies: Chaouki N, Int J Cancer 1998; 75: 546 | El khair MM, Med Oncol 2010; 27: 861
Mozambique	Contributing studies: Castellsagué X, Int J Cancer 2008; 122: 1901 | Naucler P, J Gen Virol 2004; 85: 2189, Castellsagué X, Int J Cancer 2008; 122: 1901 | Naucler P, J Gen Virol 2004; 85: 2189, Contributing studies: Castellsagué X, Int J Cancer 2008; 122: 1901 | Naucler P, J Gen Virol 2004; 85: 2189
Nigeria	Contributing studies: Denny L, Int J Cancer 2014; 134: 1389, Denny L, Int J Cancer 2014; 134: 1389, Contributing studies: Denny L, Int J Cancer 2014; 134: 1389
Senegal	Contributing studies: Lin P, Cancer Epidemiol Biomarkers Prev 2001; 10: 1037 | Ndiaye C, Trop Med Int Health 2012; 17: 1432 | Xi LF, Int J Cancer 2003; 103: 803, Contributing studies: Lin P, Cancer Epidemiol Biomarkers Prev 2001; 10: 1037 | Ndiaye C, Trop Med Int Health 2012; 17: 1432 | Xi LF, Int J Cancer 2003; 103: 803, Lin P, Cancer Epidemiol Biomarkers Prev 2001; 10: 1037 | Ndiaye C, Trop Med Int Health 2012; 17: 1432 | Xi LF, Int J Cancer 2003; 103: 803
South Africa	Contributing studies: De Vuyst H, Int J Cancer 2012; 131: 949 | Denny L, Int J Cancer 2014; 134: 1389 | Kay P, J Med Virol 2003; 71: 265 | Pegoraro RJ, Int J Gynecol Cancer 2002; 12: 383 | van Aardt MC, Int J Gynecol Cancer 2015; 25: 919 | Williamson AL, J Med Virol 1994; 43: 231, Contributing studies: De Vuyst H, Int J Cancer 2012; 131: 949 | Denny L, Int J Cancer 2014; 134: 1389 | Kay P, J Med Virol 2003; 71: 265 | Pegoraro RJ, Int J Gynecol Cancer 2002; 12: 383 | van Aardt MC, Int J Gynecol Cancer 2015; 25: 919 | Williamson AL, J Med Virol 1994; 43: 231, De Vuyst H, Int J Cancer 2012; 131: 949 | Denny L, Int J Cancer 2014; 134: 1389 | Kay P, J Med Virol 2003; 71: 265 | Pegoraro RJ, Int J Gynecol Cancer 2002; 12: 383 | van Aardt MC, Int J Gynecol Cancer 2015; 25: 919 | Williamson AL, J Med Virol 1994; 43: 231
Sudan	Abate E, J Med Virol 2013; 85: 282, Contributing studies: Abate E, J Med Virol 2013; 85: 282, Contributing studies: Abate E, J Med Virol 2013; 85: 282
Tanzania	Contributing studies: Bosch FX, J Natl Cancer Inst 1995; 87: 796 | ter Meulen J, Int J Cancer 1992; 51: 515, Bosch FX, J Natl Cancer Inst 1995; 87: 796 | ter Meulen J, Int J Cancer 1992; 51: 515, Contributing studies: Bosch FX, J Natl Cancer Inst 1995; 87: 796 | ter Meulen J, Int J Cancer 1992; 51: 515
Tunisia	Contributing studies: KrennHrubec K, J Med Virol 2011; 83: 651, Contributing studies: KrennHrubec K, J Med Virol 2011; 83: 651, KrennHrubec K, J Med Virol 2011; 83: 651
Uganda	Bosch FX, J Natl Cancer Inst 1995; 87: 796 | Odida M, BMC Infect Dis 2008; 8: 85 | Odida M, Infect Agent Cancer 2010; 5: 15, Contributing studies: Bosch FX, J Natl Cancer Inst 1995; 87: 796 | Odida M, BMC Infect Dis 2008; 8: 85 | Odida M, Infect Agent Cancer 2010; 5: 15, Contributing studies: Bosch FX, J Natl Cancer Inst 1995; 87: 796 | Odida M, BMC Infect Dis 2008; 8: 85 | Odida M, Infect Agent Cancer 2010; 5: 15
Zimbabwe	Contributing studies: Stanczuk GA, Acta Obstet Gynecol Scand 2003; 82: 762, Stanczuk GA, Acta Obstet Gynecol Scand 2003; 82: 762, Contributing studies: Stanczuk GA, Acta Obstet Gynecol Scand 2003; 82: 762
Americas	
Argentina	Alonio LV, J Clin Virol 2003; 27: 263 | Bosch FX, J Natl Cancer Inst 1995; 87: 796 | Golijow CD, Gynecol Oncol 2005; 96: 181 | Turazza E, Acta Obstet Gynecol Scand 1997; 76: 271, Contributing studies: Alonio LV, J Clin Virol 2003; 27: 263 | Bosch FX, J Natl Cancer Inst 1995; 87: 796 | Golijow CD, Gynecol Oncol 2005; 96: 181 | Turazza E, Acta Obstet Gynecol Scand 1997; 76: 271, Contributing studies: Alonio LV, J Clin Virol 2003; 27: 263 | Bosch FX, J Natl Cancer Inst 1995; 87: 796 | Golijow CD, Gynecol Oncol 2005; 96: 181 | Turazza E, Acta Obstet Gynecol Scand 1997; 76: 271
Bolivia	Contributing studies: Bosch FX, J Natl Cancer Inst 1995; 87: 796, Bosch FX, J Natl Cancer Inst 1995; 87: 796, Contributing studies: Bosch FX, J Natl Cancer Inst 1995; 87: 796
Brazil	Contributing studies: Bosch FX, J Natl Cancer Inst 1995; 87: 796 | Cambruzzi E, Pathol Oncol Res 2005; 11: 114 | de Oliveira CM, BMC Cancer 2013; 13: 357 | Eluf-Neto J, Br J Cancer 1994; 69: 114 | Lorenzato F, Int J Gynecol Cancer 2000; 10: 143 | Rabelo-Santos SH, Mem Inst Oswaldo Cruz 2003; 98: 181 | Serrano B, Cancer Epidemiol 2014 | Tomita LY, Int J Cancer 2010; 126: 703, Bosch FX, J Natl Cancer Inst 1995; 87: 796 | Cambruzzi E, Pathol Oncol Res 2005; 11: 114 | de Oliveira CM, BMC Cancer 2013; 13: 357 | Eluf-Neto J, Br J Cancer 1994; 69: 114 | Lorenzato F, Int J Gynecol Cancer 2000; 10: 143 | Rabelo-Santos SH, Mem Inst Oswaldo Cruz 2003; 98: 181 | Serrano B, Cancer Epidemiol 2014 | Tomita LY, Int J Cancer 2010; 126: 703, Contributing studies: Bosch FX, J Natl Cancer Inst 1995; 87: 796 | Cambruzzi E, Pathol Oncol Res 2005; 11: 114 | de Oliveira CM, BMC Cancer 2013; 13: 357 | Eluf-Neto J, Br J Cancer 1994; 69: 114 | Lorenzato F, Int J Gynecol Cancer 2000; 10: 143 | Rabelo-Santos SH, Mem Inst Oswaldo Cruz 2003; 98: 181 | Serrano B, Cancer Epidemiol 2014 | Tomita LY, Int J Cancer 2010; 126: 703
Canada	Contributing studies: Bosch FX, J Natl Cancer Inst 1995; 87: 796 | Duggan MA, Hum Pathol 1995; 26: 319 | Tran-Thanh D, Am J Obstet Gynecol 2003; 188: 129, Contributing studies: Bosch FX, J Natl Cancer Inst 1995; 87: 796 | Duggan MA, Hum Pathol 1995; 26: 319 | Tran-Thanh D, Am J Obstet Gynecol 2003; 188: 129, Bosch FX, J Natl Cancer Inst 1995; 87: 796 | Duggan MA, Hum Pathol 1995; 26: 319 | Tran-Thanh D, Am J Obstet Gynecol 2003; 188: 129
Chile	Contributing studies: Bosch FX, J Natl Cancer Inst 1995; 87: 796 | Roa JC, Int J Gynaecol Obstet 2009; 105: 150 | Valdivia L IM, Rev Chilena Infectol 2010; 27: 11, Contributing studies: Bosch FX, J Natl Cancer Inst 1995; 87: 796 | Roa JC, Int J Gynaecol Obstet 2009; 105: 150 | Valdivia L IM, Rev Chilena Infectol 2010; 27: 11, Bosch FX, J Natl Cancer Inst 1995; 87: 796 | Roa JC, Int J Gynaecol Obstet 2009; 105: 150 | Valdivia L IM, Rev Chilena Infectol 2010; 27: 11

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Colombia	Contributing studies: Bosch FX, J Natl Cancer Inst 1995; 87: 796 ∣ Moreno-Acosta P, Virus Genes 2008; 37: 22 ∣ Murillo R, Infect Dis Obstet Gynecol 2009; 2009: 653598 ∣ Muñoz N, Int J Cancer 1992; 52: 743, Contributing studies: Bosch FX, J Natl Cancer Inst 1995; 87: 796 ∣ Moreno-Acosta P, Virus Genes 2008; 37: 22 ∣ Murillo R, Infect Dis Obstet Gynecol 2009; 2009: 653598 ∣ Muñoz N, Int J Cancer 1992; 52: 743, Bosch FX, J Natl Cancer Inst 1995; 87: 796 ∣ Moreno-Acosta P, Virus Genes 2008; 37: 22 ∣ Murillo R, Infect Dis Obstet Gynecol 2009; 2009: 653598 ∣ Muñoz N, Int J Cancer 1992; 52: 743
Costa Rica	Contributing studies: Herrero R, J Infect Dis 2005; 191: 1796, Herrero R, J Infect Dis 2005; 191: 1796, Contributing studies: Herrero R, J Infect Dis 2005; 191: 1796
Cuba	Contributing studies: Bosch FX, J Natl Cancer Inst 1995; 87: 796, Contributing studies: Bosch FX, J Natl Cancer Inst 1995; 87: 796, Bosch FX, J Natl Cancer Inst 1995; 87: 796
Ecuador	Contributing studies: Mejía L, J Med Virol 2016; 88: 144, Mejía L, J Med Virol 2016; 88: 144, Contributing studies: Mejía L, J Med Virol 2016; 88: 144
Honduras	Contributing studies: Ferreira M, Mod Pathol 2008; 21: 968, Ferreira M, Mod Pathol 2008; 21: 968, Contributing studies: Ferreira M, Mod Pathol 2008; 21: 968
Jamaica	Contributing studies: Strickler HD, J Med Virol 1999; 59: 60, Contributing studies: Strickler HD, J Med Virol 1999; 59: 60, Strickler HD, J Med Virol 1999; 59: 60
Mexico	Aguilar-Lemarroy A, J Med Virol 2015; 87: 871 ∣ Alarcón-Romero Ldel C, Salud Publica Mex 2009; 51: 134 ∣ Carrillo-García A, Gynecol Oncol 2014; 134: 534 ∣ Flores-Miramontes MG, Virol J 2015; 12: 161 ∣ González-Losa Mdel R, J Clin Virol 2004; 29: 202 ∣ Guardado-Estrada M, PLoS ONE 2014; 9: e109406 ∣ Illades-Aguiar B, Cancer Detect Prev 2009; 32: 300 ∣ Meyer T, J Infect Dis 1998; 178: 252 ∣ Piña-Sánchez P, Int J Gynecol Cancer 2006; 16: 1041 ∣ Serrano B, Cancer Epidemiol 2014 ∣ Torroella-Kouri M, Gynecol Oncol 1998; 70: 115, Contributing studies: Aguilar-Lemarroy A, J Med Virol 2015; 87: 871 ∣ Alarcón-Romero Ldel C, Salud Publica Mex 2009; 51: 134 ∣ Carrillo-García A, Gynecol Oncol 2014; 134: 534 ∣ Flores-Miramontes MG, Virol J 2015; 12: 161 ∣ González-Losa Mdel R, J Clin Virol 2004; 29: 202 ∣ Guardado-Estrada M, PLoS ONE 2014; 9: e109406 ∣ Illades-Aguiar B, Cancer Detect Prev 2009; 32: 300 ∣ Meyer T, J Infect Dis 1998; 178: 252 ∣ Piña-Sánchez P, Int J Gynecol Cancer 2006; 16: 1041 ∣ Serrano B, Cancer Epidemiol 2014 ∣ Torroella-Kouri M, Gynecol Oncol 1998; 70: 115, Contributing studies: Aguilar-Lemarroy A, J Med Virol 2015; 87: 871 ∣ Alarcón-Romero Ldel C, Salud Publica Mex 2009; 51: 134 ∣ Carrillo-García A, Gynecol Oncol 2014; 134: 534 ∣ Flores-Miramontes MG, Virol J 2015; 12: 161 ∣ González-Losa Mdel R, J Clin Virol 2004; 29: 202 ∣ Guardado-Estrada M, PLoS ONE 2014; 9: e109406 ∣ Illades-Aguiar B, Cancer Detect Prev 2009; 32: 300 ∣ Meyer T, J Infect Dis 1998; 178: 252 ∣ Piña-Sánchez P, Int J Gynecol Cancer 2006; 16: 1041 ∣ Serrano B, Cancer Epidemiol 2014 ∣ Torroella-Kouri M, Gynecol Oncol 1998; 70: 115
Nicaragua	Hindryckx P, Sex Transm Infect 2006; 82: 334, Contributing studies: Hindryckx P, Sex Transm Infect 2006; 82: 334, Contributing studies: Hindryckx P, Sex Transm Infect 2006; 82: 334
Panama	Contributing studies: Bosch FX, J Natl Cancer Inst 1995; 87: 796, Bosch FX, J Natl Cancer Inst 1995; 87: 796, Contributing studies: Bosch FX, J Natl Cancer Inst 1995; 87: 796
Paraguay	Contributing studies: Kasamatsu E, J Med Virol 2012; 84: 1628 ∣ Rolón PA, Int J Cancer 2000; 85: 486, Kasamatsu E, J Med Virol 2012; 84: 1628 ∣ Rolón PA, Int J Cancer 2000; 85: 486, Contributing studies: Kasamatsu E, J Med Virol 2012; 84: 1628 ∣ Rolón PA, Int J Cancer 2000; 85: 486
Peru	Martorell M, Genet Mol Res 2012; 11: 2099 ∣ Santos C, Br J Cancer 2001; 85: 966, Contributing studies: Martorell M, Genet Mol Res 2012; 11: 2099 ∣ Santos C, Br J Cancer 2001; 85: 966, Contributing studies: Martorell M, Genet Mol Res 2012; 11: 2099 ∣ Santos C, Br J Cancer 2001; 85: 966
Suriname	Contributing studies: De Boer MA, Int J Cancer 2005; 114: 422, Contributing studies: De Boer MA, Int J Cancer 2005; 114: 422, De Boer MA, Int J Cancer 2005; 114: 422
Trinidad and Tobago	Hosein F, Rev Panam Salud Publica 2013; 33: 267, Contributing studies: Hosein F, Rev Panam Salud Publica 2013; 33: 267, Contributing studies: Hosein F, Rev Panam Salud Publica 2013; 33: 267

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Country	Study
United States of America	Contributing studies: Bosch FX, J Natl Cancer Inst 1995; 87: 796 ǀ Bryan JT, J Med Virol 2006; 78: 117 ǀ Burger RA, J Natl Cancer Inst 1996; 88: 1361 ǀ Burnett AF, Gynecol Oncol 1992; 47: 343 ǀ de Sanjose S, Lancet Oncol 2010; 11: 1048 ǀ Ferguson AW, Mod Pathol 1998; 11: 11 ǀ Guo M, Mod Pathol 2007; 20: 256 ǀ Hariri S, PLoS ONE 2012; 7: e34044 ǀ Hopenhayn C, J Low Genit Tract Dis 2014; 18: 182 ǀ Joste NE, Cancer Epidemiol Biomarkers Prev 2015; 24: 230 ǀ Paquette RL, Cancer 1993; 72: 1272 ǀ Patel DA, J Virol Methods 2009; 160: 78 ǀ Pirog EC, Am J Pathol 2000; 157: 1055 ǀ Quint KD, Gynecol Oncol 2009; 114: 390 ǀ Resnick RM, J Natl Cancer Inst 1990; 82: 1477 ǀ Schwartz SM, J Clin Oncol 2001; 19: 1906 ǀ Sebbelov AM, Microbes Infect 2000; 2: 121 ǀ Wentzensen N, Int J Cancer 2009; 124: 964 ǀ Wheeler CM, J Natl Cancer Inst 2009; 101: 475 ǀ Wistuba II, Cancer Res 1997; 57: 3154 ǀ Zuna RE, Mod Pathol 2007; 20: 167, Bosch FX, J Natl Cancer Inst 1995; 87: 796 ǀ Bryan JT, J Med Virol 2006; 78: 117 ǀ Burger RA, J Natl Cancer Inst 1996; 88: 1361 ǀ Burnett AF, Gynecol Oncol 1992; 47: 343 ǀ de Sanjose S, Lancet Oncol 2010; 11: 1048 ǀ Ferguson AW, Mod Pathol 1998; 11: 11 ǀ Guo M, Mod Pathol 2007; 20: 256 ǀ Hariri S, PLoS ONE 2012; 7: e34044 ǀ Hopenhayn C, J Low Genit Tract Dis 2014; 18: 182 ǀ Joste NE, Cancer Epidemiol Biomarkers Prev 2015; 24: 230 ǀ Paquette RL, Cancer 1993; 72: 1272 ǀ Patel DA, J Virol Methods 2009; 160: 78 ǀ Pirog EC, Am J Pathol 2000; 157: 1055 ǀ Quint KD, Gynecol Oncol 2009; 114: 390 ǀ Resnick RM, J Natl Cancer Inst 1990; 82: 1477 ǀ Schwartz SM, J Clin Oncol 2001; 19: 1906 ǀ Sebbelov AM, Microbes Infect 2000; 2: 121 ǀ Wentzensen N, Int J Cancer 2009; 124: 964 ǀ Wheeler CM, J Natl Cancer Inst 2009; 101: 475 ǀ Wistuba II, Cancer Res 1997; 57: 3154 ǀ Zuna RE, Mod Pathol 2007; 20: 167, Contributing studies: Bosch FX, J Natl Cancer Inst 1995; 87: 796 ǀ Bryan JT, J Med Virol 2006; 78: 117 ǀ Burger RA, J Natl Cancer Inst 1996; 88: 1361 ǀ Burnett AF, Gynecol Oncol 1992; 47: 343 ǀ de Sanjose S, Lancet Oncol 2010; 11: 1048 ǀ Ferguson AW, Mod Pathol 1998; 11: 11 ǀ Guo M, Mod Pathol 2007; 20: 256 ǀ Hariri S, PLoS ONE 2012; 7: e34044 ǀ Hopenhayn C, J Low Genit Tract Dis 2014; 18: 182 ǀ Joste NE, Cancer Epidemiol Biomarkers Prev 2015; 24: 230 ǀ Paquette RL, Cancer 1993; 72: 1272 ǀ Patel DA, J Virol Methods 2009; 160: 78 ǀ Pirog EC, Am J Pathol 2000; 157: 1055 ǀ Quint KD, Gynecol Oncol 2009; 114: 390 ǀ Resnick RM, J Natl Cancer Inst 1990; 82: 1477 ǀ Schwartz SM, J Clin Oncol 2001; 19: 1906 ǀ Sebbelov AM, Microbes Infect 2000; 2: 121 ǀ Wentzensen N, Int J Cancer 2009; 124: 964 ǀ Wheeler CM, J Natl Cancer Inst 2009; 101: 475 ǀ Wistuba II, Cancer Res 1997; 57: 3154 ǀ Zuna RE, Mod Pathol 2007; 20: 167
Venezuela	Contributing studies: Sánchez-Lander J, Cancer Epidemiol 2012; 36: e284, Sánchez-Lander J, Cancer Epidemiol 2012; 36: e284, Contributing studies: Sánchez-Lander J, Cancer Epidemiol 2012; 36: e284
Asia	
China	Cai HB, Eur J Gynaecol Oncol 2008; 29: 72 ǀ Cai HB, Oncology 2009; 76: 157 ǀ Chan PK, Int J Cancer 2009; 125: 1671 ǀ Chan PK, Int J Cancer 2012; 131: 692 ǀ Chen W, Cancer Causes Control 2009; 20: 1705 ǀ Ding X, J Med Virol 2014; 86: 1937 ǀ Gao YE, Sheng Wu Hua Xue Yu Sheng Wu Wu Li Xue Bao 2003; 35: 1029 ǀ Hong D, Int J Gynecol Cancer 2008; 18: 104 ǀ Huang S, Int J Cancer 1997; 70: 408 ǀ Li H, Eur J Obstet Gynecol Reprod Biol 2013; 170: 202 ǀ Lin QQ, Int J Cancer 1998; 75: 484 ǀ Liu GB, J First Mil Med Univ 2005; 25: 1236 ǀ Liu J, Gynecol Oncol 2004; 94: 803 ǀ Liu SS, Tumour Biol 2008; 29: 105 ǀ Liu X, Int J Gynecol Cancer 2010; 20: 147 ǀ Lo KW, Gynecol Obstet Invest 2001; 51: 202 ǀ Lo KW, Int J Cancer 2002; 100: 327 ǀ Peng HQ, Int J Cancer 1991; 47: 711 ǀ Qiu AD, Gynecol Oncol 2007; 104: 77 ǀ Serrano B, Cancer Epidemiol 2014 ǀ Shah W, Clin Oncol (R Coll Radiol) 2009; 21: 768 ǀ Stephen AL, Int J Cancer 2000; 86: 695 ǀ Tao PP, Zhonghua Fu Chan Ke Za Zhi 2006; 41: 43 ǀ Wang L, J Med Virol 2015; 87: 516 ǀ Wu EQ, BMC Cancer 2008; 8: 202 ǀ Wu EQ, Int J Gynecol Cancer 2009; 19: 919 ǀ Wu Y, J Med Virol 2008; 80: 1808 ǀ Yu MY, Int J Cancer 2003; 105: 204 ǀ Yuan X, Arch Gynecol Obstet 2011; 283: 1385 ǀ Zhao Y, Pathol Int 2008; 58: 643, Contributing studies: Cai HB, Eur J Gynaecol Oncol 2008; 29: 72 ǀ Cai HB, Oncology 2009; 76: 157 ǀ Chan PK, Int J Cancer 2009; 125: 1671 ǀ Chan PK, Int J Cancer 2012; 131: 692 ǀ Chen W, Cancer Causes Control 2009; 20: 1705 ǀ Ding X, J Med Virol 2014; 86: 1937 ǀ Gao YE, Sheng Wu Hua Xue Yu Sheng Wu Wu Li Xue Bao 2003; 35: 1029 ǀ Hong D, Int J Gynecol Cancer 2008; 18: 104 ǀ Huang S, Int J Cancer 1997; 70: 408 ǀ Li H, Eur J Obstet Gynecol Reprod Biol 2013; 170: 202 ǀ Lin QQ, Int J Cancer 1998; 75: 484 ǀ Liu GB, J First Mil Med Univ 2005; 25: 1236 ǀ Liu J, Gynecol Oncol 2004; 94: 803 ǀ Liu SS, Tumour Biol 2008; 29: 105 ǀ Liu X, Int J Gynecol Cancer 2010; 20: 147 ǀ Lo KW, Gynecol Obstet Invest 2001; 51: 202 ǀ Lo KW, Int J Cancer 2002; 100: 327 ǀ Peng HQ, Int J Cancer 1991; 47: 711 ǀ Qiu AD, Gynecol Oncol 2007; 104: 77 ǀ Serrano B, Cancer Epidemiol 2014 ǀ Shah W, Clin Oncol (R Coll Radiol) 2009; 21: 768 ǀ Stephen AL, Int J Cancer 2000; 86: 695 ǀ Tao PP, Zhonghua Fu Chan Ke Za Zhi 2006; 41: 43 ǀ Wang L, J Med Virol 2015; 87: 516 ǀ Wu EQ, BMC Cancer 2008; 8: 202 ǀ Wu EQ, Int J Gynecol Cancer 2009; 19: 919 ǀ Wu Y, J Med Virol 2008; 80: 1808 ǀ Yu MY, Int J Cancer 2003; 105: 204 ǀ Yuan X, Arch Gynecol Obstet 2011; 283: 1385 ǀ Zhao Y, Pathol Int 2008; 58: 643, Contributing studies: Cai HB, Eur J Gynaecol Oncol 2008; 29: 72 ǀ Cai HB, Oncology 2009; 76: 157 ǀ Chan PK, Int J Cancer 2009; 125: 1671 ǀ Chan PK, Int J Cancer 2012; 131: 692 ǀ Chen W, Cancer Causes Control 2009; 20: 1705 ǀ Ding X, J Med Virol 2014; 86: 1937 ǀ Gao YE, Sheng Wu Hua Xue Yu Sheng Wu Wu Li Xue Bao 2003; 35: 1029 ǀ Hong D, Int J Gynecol Cancer 2008; 18: 104 ǀ Huang S, Int J Cancer 1997; 70: 408 ǀ Li H, Eur J Obstet Gynecol Reprod Biol 2013; 170: 202 ǀ Lin QQ, Int J Cancer 1998; 75: 484 ǀ Liu GB, J First Mil Med Univ 2005; 25: 1236 ǀ Liu J, Gynecol Oncol 2004; 94: 803 ǀ Liu SS, Tumour Biol 2008; 29: 105 ǀ Liu X, Int J Gynecol Cancer 2010; 20: 147 ǀ Lo KW, Gynecol Obstet Invest 2001; 51: 202 ǀ Lo KW, Int J Cancer 2002; 100: 327 ǀ Peng HQ, Int J Cancer 1991; 47: 711 ǀ Qiu AD, Gynecol Oncol 2007; 104: 77 ǀ Serrano B, Cancer Epidemiol 2014 ǀ Shah W, Clin Oncol (R Coll Radiol) 2009; 21: 768 ǀ Stephen AL, Int J Cancer 2000; 86: 695 ǀ Tao PP, Zhonghua Fu Chan Ke Za Zhi 2006; 41: 43 ǀ Wang L, J Med Virol 2015; 87: 516 ǀ Wu EQ, BMC Cancer 2008; 8: 202 ǀ Wu EQ, Int J Gynecol Cancer 2009; 19: 919 ǀ Wu Y, J Med Virol 2008; 80: 1808 ǀ Yu MY, Int J Cancer 2003; 105: 204 ǀ Yuan X, Arch Gynecol Obstet 2011; 283: 1385 ǀ Zhao Y, Pathol Int 2008; 58: 643
Georgia	Alibegashvili T, Cancer Epidemiol 2011; 35: 465, Contributing studies: Alibegashvili T, Cancer Epidemiol 2011; 35: 465, Contributing studies: Alibegashvili T, Cancer Epidemiol 2011; 35: 465

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Country	Study
India	Contributing studies: Basu P, Asian Pac J Cancer Prev 2009; 10: 27 ǀ Bhatla N, Int J Gynecol Pathol 2006; 25: 398 ǀ Deodhar K, J Med Virol 2012; 84: 1054 ǀ Franceschi S, Int J Cancer 2003; 107: 127 ǀ Gheit T, Vaccine 2009; 27: 636 ǀ Munagala R, Int J Oncol 2009; 34: 263 ǀ Munirajan AK, Gynecol Oncol 1998; 69: 205 ǀ Munjal K, Int J Gynecol Pathol 2014; 33: 531 ǀ Nagpal JK, Eur J Clin Invest 2002; 32: 943 ǀ Nair P, Pathol Oncol Res 1999; 5: 95 ǀ Nambaru L, Asian Pac J Cancer Prev 2009; 10: 355 ǀ Neyaz MK, Biomarkers 2008; 13: 597 ǀ Peedicayil A, Int J Gynecol Cancer 2006; 16: 1591 ǀ Peedicayil A, J Low Genit Tract Dis 2009; 13: 102 ǀ Serrano B, Cancer Epidemiol 2014 ǀ Sowjanya AP, BMC Infect Dis 2005; 5: 116, Basu P, Asian Pac J Cancer Prev 2009; 10: 27 ǀ Bhatla N, Int J Gynecol Pathol 2006; 25: 398 ǀ Deodhar K, J Med Virol 2012; 84: 1054 ǀ Franceschi S, Int J Cancer 2003; 107: 127 ǀ Gheit T, Vaccine 2009; 27: 636 ǀ Munagala R, Int J Oncol 2009; 34: 263 ǀ Munirajan AK, Gynecol Oncol 1998; 69: 205 ǀ Munjal K, Int J Gynecol Pathol 2014; 33: 531 ǀ Nagpal JK, Eur J Clin Invest 2002; 32: 943 ǀ Nair P, Pathol Oncol Res 1999; 5: 95 ǀ Nambaru L, Asian Pac J Cancer Prev 2009; 10: 355 ǀ Neyaz MK, Biomarkers 2008; 13: 597 ǀ Peedicayil A, Int J Gynecol Cancer 2006; 16: 1591 ǀ Peedicayil A, J Low Genit Tract Dis 2009; 13: 102 ǀ Serrano B, Cancer Epidemiol 2014 ǀ Sowjanya AP, BMC Infect Dis 2005; 5: 116, Contributing studies: Basu P, Asian Pac J Cancer Prev 2009; 10: 27 ǀ Bhatla N, Int J Gynecol Pathol 2006; 25: 398 ǀ Deodhar K, J Med Virol 2012; 84: 1054 ǀ Franceschi S, Int J Cancer 2003; 107: 127 ǀ Gheit T, Vaccine 2009; 27: 636 ǀ Munagala R, Int J Oncol 2009; 34: 263 ǀ Munirajan AK, Gynecol Oncol 1998; 69: 205 ǀ Munjal K, Int J Gynecol Pathol 2014; 33: 531 ǀ Nagpal JK, Eur J Clin Invest 2002; 32: 943 ǀ Nair P, Pathol Oncol Res 1999; 5: 95 ǀ Nambaru L, Asian Pac J Cancer Prev 2009; 10: 355 ǀ Neyaz MK, Biomarkers 2008; 13: 597 ǀ Peedicayil A, Int J Gynecol Cancer 2006; 16: 1591 ǀ Peedicayil A, J Low Genit Tract Dis 2009; 13: 102 ǀ Serrano B, Cancer Epidemiol 2014 ǀ Sowjanya AP, BMC Infect Dis 2005; 5: 116
Indonesia	Contributing studies: Bosch FX, J Natl Cancer Inst 1995; 87: 796 ǀ De Boer MA, Int J Cancer 2005; 114: 422 ǀ Schellekens MC, Gynecol Oncol 2004; 93: 49 ǀ Tobing MD, Asian Pac J Cancer Prev 2014; 15: 5781, Bosch FX, J Natl Cancer Inst 1995; 87: 796 ǀ De Boer MA, Int J Cancer 2005; 114: 422 ǀ Schellekens MC, Gynecol Oncol 2004; 93: 49 ǀ Tobing MD, Asian Pac J Cancer Prev 2014; 15: 5781, Contributing studies: Bosch FX, J Natl Cancer Inst 1995; 87: 796 ǀ De Boer MA, Int J Cancer 2005; 114: 422 ǀ Schellekens MC, Gynecol Oncol 2004; 93: 49 ǀ Tobing MD, Asian Pac J Cancer Prev 2014; 15: 5781
Iran	Contributing studies: Esmaeili M, Gynecol Obstet Invest 2008; 66: 68 ǀ Hamkar R, East Mediterr Health J 2002; 8: 805 ǀ Khodakarami N, Int J Cancer 2012; 131: E156 ǀ Mortazavi S, Asian Pac J Cancer Prev 2002; 3: 69 ǀ Salehi-Vaziri M, Arch Virol 2015; 160: 1181, Contributing studies: Esmaeili M, Gynecol Obstet Invest 2008; 66: 68 ǀ Hamkar R, East Mediterr Health J 2002; 8: 805 ǀ Khodakarami N, Int J Cancer 2012; 131: E156 ǀ Mortazavi S, Asian Pac J Cancer Prev 2002; 3: 69 ǀ Salehi-Vaziri M, Arch Virol 2015; 160: 1181, Esmaeili M, Gynecol Obstet Invest 2008; 66: 68 ǀ Hamkar R, East Mediterr Health J 2002; 8: 805 ǀ Khodakarami N, Int J Cancer 2012; 131: E156 ǀ Mortazavi S, Asian Pac J Cancer Prev 2002; 3: 69 ǀ Salehi-Vaziri M, Arch Virol 2015; 160: 1181
Israel	Contributing studies: Bassal R, J Low Genit Tract Dis 2015; 19: 161 ǀ Laskov I, Int J Gynecol Cancer 2013; 23: 730, Contributing studies: Bassal R, J Low Genit Tract Dis 2015; 19: 161 ǀ Laskov I, Int J Gynecol Cancer 2013; 23: 730, Bassal R, J Low Genit Tract Dis 2015; 19: 161 ǀ Laskov I, Int J Gynecol Cancer 2013; 23: 730

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Country	Study
Japan	Asato T, J Infect Dis 2004; 189: 1829 ∣ Azuma Y, Jpn J Clin Oncol 2014 ∣ Fujinaga Y, J Gen Virol 1991; 72 (Pt 5): 1039 ∣ Harima Y, Int J Radiat Oncol Biol Phys 2002; 52: 1345 ∣ Imajoh M, Virol J 2012; 9: 154 ∣ Inoue M, Int J Gynecol Cancer 2006; 16: 1007 ∣ Ishikawa H, Cancer 2001; 91: 80 ∣ Kanao H, Cancer Lett 2004; 213: 31 ∣ Kashiwabara K, Acta Pathol Jpn 1992; 42: 876 ∣ Maehama T, Infect Dis Obstet Gynecol 2005; 13: 77 ∣ Maki H, Jpn J Cancer Res 1991; 82: 411 ∣ Nakagawa H, Anticancer Res 2002; 22: 1655 ∣ Nakagawa S, Cancer 1996; 78: 1935 ∣ Nawa A, Cancer 1995; 75: 518 ∣ Onuki M, Cancer Sci 2009; 100: 1312 ∣ Saito J, Gynecol Obstet Invest 2000; 49: 190 ∣ Sasagawa T, Cancer Epidemiol Biomarkers Prev 2001; 10: 45 ∣ Takehara K, Patholog Res Int 2011; 2011: 246936 ∣ Tsuda H, Gynecol Oncol 2003; 91: 476 ∣ Watari H, Pathobiology 2011; 78: 220 ∣ Yamakawa Y, Gynecol Oncol 1994; 53: 190 ∣ Yamasaki K, J Obstet Gynaecol Res 2011; 37: 1666 ∣ Yoshida T, Cancer 2004; 102: 100 ∣ Yoshida T, Virchows Arch 2009; 455: 253, Contributing studies: Asato T, J Infect Dis 2004; 189: 1829 ∣ Azuma Y, Jpn J Clin Oncol 2014 ∣ Fujinaga Y, J Gen Virol 1991; 72 (Pt 5): 1039 ∣ Harima Y, Int J Radiat Oncol Biol Phys 2002; 52: 1345 ∣ Imajoh M, Virol J 2012; 9: 154 ∣ Inoue M, Int J Gynecol Cancer 2006; 16: 1007 ∣ Ishikawa H, Cancer 2001; 91: 80 ∣ Kanao H, Cancer Lett 2004; 213: 31 ∣ Kashiwabara K, Acta Pathol Jpn 1992; 42: 876 ∣ Maehama T, Infect Dis Obstet Gynecol 2005; 13: 77 ∣ Maki H, Jpn J Cancer Res 1991; 82: 411 ∣ Nakagawa H, Anticancer Res 2002; 22: 1655 ∣ Nakagawa S, Cancer 1996; 78: 1935 ∣ Nawa A, Cancer 1995; 75: 518 ∣ Onuki M, Cancer Sci 2009; 100: 1312 ∣ Saito J, Gynecol Obstet Invest 2000; 49: 190 ∣ Sasagawa T, Cancer Epidemiol Biomarkers Prev 2001; 10: 45 ∣ Takehara K, Patholog Res Int 2011; 2011: 246936 ∣ Tsuda H, Gynecol Oncol 2003; 91: 476 ∣ Watari H, Pathobiology 2011; 78: 220 ∣ Yamakawa Y, Gynecol Oncol 1994; 53: 190 ∣ Yamasaki K, J Obstet Gynaecol Res 2011; 37: 1666 ∣ Yoshida T, Cancer 2004; 102: 100 ∣ Yoshida T, Virchows Arch 2009; 455: 253, Contributing studies: Asato T, J Infect Dis 2004; 189: 1829 ∣ Azuma Y, Jpn J Clin Oncol 2014 ∣ Fujinaga Y, J Gen Virol 1991; 72 (Pt 5): 1039 ∣ Harima Y, Int J Radiat Oncol Biol Phys 2002; 52: 1345 ∣ Imajoh M, Virol J 2012; 9: 154 ∣ Inoue M, Int J Gynecol Cancer 2006; 16: 1007 ∣ Ishikawa H, Cancer 2001; 91: 80 ∣ Kanao H, Cancer Lett 2004; 213: 31 ∣ Kashiwabara K, Acta Pathol Jpn 1992; 42: 876 ∣ Maehama T, Infect Dis Obstet Gynecol 2005; 13: 77 ∣ Maki H, Jpn J Cancer Res 1991; 82: 411 ∣ Nakagawa H, Anticancer Res 2002; 22: 1655 ∣ Nakagawa S, Cancer 1996; 78: 1935 ∣ Nawa A, Cancer 1995; 75: 518 ∣ Onuki M, Cancer Sci 2009; 100: 1312 ∣ Saito J, Gynecol Obstet Invest 2000; 49: 190 ∣ Sasagawa T, Cancer Epidemiol Biomarkers Prev 2001; 10: 45 ∣ Takehara K, Patholog Res Int 2011; 2011: 246936 ∣ Tsuda H, Gynecol Oncol 2003; 91: 476 ∣ Watari H, Pathobiology 2011; 78: 220 ∣ Yamakawa Y, Gynecol Oncol 1994; 53: 190 ∣ Yamasaki K, J Obstet Gynaecol Res 2011; 37: 1666 ∣ Yoshida T, Cancer 2004; 102: 100 ∣ Yoshida T, Virchows Arch 2009; 455: 253
Jordan	Contributing studies: Sughayer MA, Int J Gynaecol Obstet 2010; 108: 74, Sughayer MA, Int J Gynaecol Obstet 2010; 108: 74, Contributing studies: Sughayer MA, Int J Gynaecol Obstet 2010; 108: 74
Malaysia	Contributing studies: Cheah PL, Malays J Pathol 2008; 30: 37 ∣ Hamzi Abdul Raub S, Asian Pac J Cancer Prev 2014; 15: 651 ∣ Quek SC, Int J Gynecol Cancer 2013; 23: 148 ∣ Sharifah NA, Asian Pac J Cancer Prev 2009; 10: 303 ∣ Yadav M, Med J Malaysia 1995; 50: 64, Contributing studies: Cheah PL, Malays J Pathol 2008; 30: 37 ∣ Hamzi Abdul Raub S, Asian Pac J Cancer Prev 2014; 15: 651 ∣ Quek SC, Int J Gynecol Cancer 2013; 23: 148 ∣ Sharifah NA, Asian Pac J Cancer Prev 2009; 10: 303 ∣ Yadav M, Med J Malaysia 1995; 50: 64, Cheah PL, Malays J Pathol 2008; 30: 37 ∣ Hamzi Abdul Raub S, Asian Pac J Cancer Prev 2014; 15: 651 ∣ Quek SC, Int J Gynecol Cancer 2013; 23: 148 ∣ Sharifah NA, Asian Pac J Cancer Prev 2009; 10: 303 ∣ Yadav M, Med J Malaysia 1995; 50: 64
Mongolia	Chimeddorj B, Asian Pac J Cancer Prev 2008; 9: 563, Contributing studies: Chimeddorj B, Asian Pac J Cancer Prev 2008; 9: 563, Contributing studies: Chimeddorj B, Asian Pac J Cancer Prev 2008; 9: 563
Nepal	Contributing studies: Sherpa AT, Cancer Causes Control 2010; 21: 323, Sherpa AT, Cancer Causes Control 2010; 21: 323, Contributing studies: Sherpa AT, Cancer Causes Control 2010; 21: 323
Pakistan	Khan S, Int J Infect Dis 2007; 11: 313 ∣ Raza SA, Br J Cancer 2010; 102: 1657, Contributing studies: Khan S, Int J Infect Dis 2007; 11: 313 ∣ Raza SA, Br J Cancer 2010; 102: 1657, Contributing studies: Khan S, Int J Infect Dis 2007; 11: 313 ∣ Raza SA, Br J Cancer 2010; 102: 1657
Philippines	Contributing studies: Bosch FX, J Natl Cancer Inst 1995; 87: 796 ∣ de Sanjose S, Lancet Oncol 2010; 11: 1048 ∣ Ngelangel C, J Natl Cancer Inst 1998; 90: 43 ∣ Quek SC, Int J Gynecol Cancer 2013; 23: 148, Contributing studies: Bosch FX, J Natl Cancer Inst 1995; 87: 796 ∣ de Sanjose S, Lancet Oncol 2010; 11: 1048 ∣ Ngelangel C, J Natl Cancer Inst 1998; 90: 43 ∣ Quek SC, Int J Gynecol Cancer 2013; 23: 148, Contributing studies: Bosch FX, J Natl Cancer Inst 1995; 87: 796 ∣ de Sanjose S, Lancet Oncol 2010; 11: 1048 ∣ Ngelangel C, J Natl Cancer Inst 1998; 90: 43 ∣ Quek SC, Int J Gynecol Cancer 2013; 23: 148
Republic of Korea	Contributing studies: An HJ, Cancer 2003; 97: 1672 ∣ An HJ, Mod Pathol 2005; 18: 528 ∣ Cho NH, Am J Obstet Gynecol 2003; 188: 56 ∣ Hwang T, J Korean Med Sci 1999; 14: 593 ∣ Hwang TS, Gynecol Oncol 2003; 90: 51 ∣ Kim JY, J Clin Oncol 2009; 27: 5088 ∣ Kim KH, Yonsei Med J 1995; 36: 412 ∣ Lee HS, Int J Gynecol Cancer 2007; 17: 497 ∣ Oh JK, Asian Pac J Cancer Prev 2010; 11: 993 ∣ Quek SC, Int J Gynecol Cancer 2013; 23: 148 ∣ Song ES, J Korean Med Sci 2007; 22: 99 ∣ Tong SY, Int J Gynecol Cancer 2007; 17: 1307, An HJ, Cancer 2003; 97: 1672 ∣ An HJ, Mod Pathol 2005; 18: 528 ∣ Cho NH, Am J Obstet Gynecol 2003; 188: 56 ∣ Hwang T, J Korean Med Sci 1999; 14: 593 ∣ Hwang TS, Gynecol Oncol 2003; 90: 51 ∣ Kim JY, J Clin Oncol 2009; 27: 5088 ∣ Kim KH, Yonsei Med J 1995; 36: 412 ∣ Lee HS, Int J Gynecol Cancer 2007; 17: 497 ∣ Oh JK, Asian Pac J Cancer Prev 2010; 11: 993 ∣ Quek SC, Int J Gynecol Cancer 2013; 23: 148 ∣ Song ES, J Korean Med Sci 2007; 22: 99 ∣ Tong SY, Int J Gynecol Cancer 2007; 17: 1307, Contributing studies: An HJ, Cancer 2003; 97: 1672 ∣ An HJ, Mod Pathol 2005; 18: 528 ∣ Cho NH, Am J Obstet Gynecol 2003; 188: 56 ∣ Hwang T, J Korean Med Sci 1999; 14: 593 ∣ Hwang TS, Gynecol Oncol 2003; 90: 51 ∣ Kim JY, J Clin Oncol 2009; 27: 5088 ∣ Kim KH, Yonsei Med J 1995; 36: 412 ∣ Lee HS, Int J Gynecol Cancer 2007; 17: 497 ∣ Oh JK, Asian Pac J Cancer Prev 2010; 11: 993 ∣ Quek SC, Int J Gynecol Cancer 2013; 23: 148 ∣ Song ES, J Korean Med Sci 2007; 22: 99 ∣ Tong SY, Int J Gynecol Cancer 2007; 17: 1307

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Country	Study
Saudi Arabia	Contributing studies: Alsbeih G, Gynecol Oncol 2011; 121: 522, Alsbeih G, Gynecol Oncol 2011; 121: 522, Contributing studies: Alsbeih G, Gynecol Oncol 2011; 121: 522
Singapore	Contributing studies: Quek SC, Int J Gynecol Cancer 2013; 23: 148, Contributing studies: Quek SC, Int J Gynecol Cancer 2013; 23: 148, Quek SC, Int J Gynecol Cancer 2013; 23: 148
Sri Lanka	Karunaratne K, BMC Cancer 2014; 14: 116 | Samarawickrema NA, Int J Gynaecol Obstet 2011; 115: 180, Contributing studies: Karunaratne K, BMC Cancer 2014; 14: 116 | Samarawickrema NA, Int J Gynaecol Obstet 2011; 115: 180, Contributing studies: Karunaratne K, BMC Cancer 2014; 14: 116 | Samarawickrema NA, Int J Gynaecol Obstet 2011; 115: 180
Syria	Contributing studies: Darnel AD, Clin Microbiol Infect 2010; 16: 262, Darnel AD, Clin Microbiol Infect 2010; 16: 262, Contributing studies: Darnel AD, Clin Microbiol Infect 2010; 16: 262
Thailand	Contributing studies: Bhattarakosol P, J Med Assoc Thai 1996; 79 Suppl 1: S56 | Bosch FX, J Natl Cancer Inst 1995; 87: 796 | Chansaenroj J, J Med Virol 2014; 86: 601 | Chichareon S, J Natl Cancer Inst 1998; 90: 50 | Chopjitt P, Int J Infect Dis 2009; 13: 212 | Natphopsuk S, Asian Pac J Cancer Prev 2013; 14: 6961 | Settheetham-Ishida W, Microbiol Immunol 2005; 49: 417 | Siriaunkgul S, Gynecol Oncol 2008; 108: 555 | Siritantikorn S, Southeast Asian J Trop Med Public Health 1997; 28: 707, Contributing studies: Bhattarakosol P, J Med Assoc Thai 1996; 79 Suppl 1: S56 | Bosch FX, J Natl Cancer Inst 1995; 87: 796 | Chansaenroj J, J Med Virol 2014; 86: 601 | Chichareon S, J Natl Cancer Inst 1998; 90: 50 | Chopjitt P, Int J Infect Dis 2009; 13: 212 | Natphopsuk S, Asian Pac J Cancer Prev 2013; 14: 6961 | Settheetham-Ishida W, Microbiol Immunol 2005; 49: 417 | Siriaunkgul S, Gynecol Oncol 2008; 108: 555 | Siritantikorn S, Southeast Asian J Trop Med Public Health 1997; 28: 707, Bhattarakosol P, J Med Assoc Thai 1996; 79 Suppl 1: S56 | Bosch FX, J Natl Cancer Inst 1995; 87: 796 | Chansaenroj J, J Med Virol 2014; 86: 601 | Chichareon S, J Natl Cancer Inst 1998; 90: 50 | Chopjitt P, Int J Infect Dis 2009; 13: 212 | Natphopsuk S, Asian Pac J Cancer Prev 2013; 14: 6961 | Settheetham-Ishida W, Microbiol Immunol 2005; 49: 417 | Siriaunkgul S, Gynecol Oncol 2008; 108: 555 | Siritantikorn S, Southeast Asian J Trop Med Public Health 1997; 28: 707
Turkey	Contributing studies: Ozgul N, J Obstet Gynaecol Res 2008; 34: 865 | Usubütün A, Int J Gynecol Pathol 2009; 28: 541, Contributing studies: Ozgul N, J Obstet Gynaecol Res 2008; 34: 865 | Usubütün A, Int J Gynecol Pathol 2009; 28: 541, Ozgul N, J Obstet Gynaecol Res 2008; 34: 865 | Usubütün A, Int J Gynecol Pathol 2009; 28: 541
Viet Nam	Quek SC, Int J Gynecol Cancer 2013; 23: 148, Contributing studies: Quek SC, Int J Gynecol Cancer 2013; 23: 148, Contributing studies: Quek SC, Int J Gynecol Cancer 2013; 23: 148
Europe	
Austria	Bachtiary B, Int J Cancer 2002; 102: 237 | Widschwendter A, Cancer Lett 2003; 202: 231, Contributing studies: Bachtiary B, Int J Cancer 2002; 102: 237 | Widschwendter A, Cancer Lett 2003; 202: 231, Contributing studies: Bachtiary B, Int J Cancer 2002; 102: 237 | Widschwendter A, Cancer Lett 2003; 202: 231
Belarus	Kulmala SM, J Med Virol 2007; 79: 771, Contributing studies: Kulmala SM, J Med Virol 2007; 79: 771, Contributing studies: Kulmala SM, J Med Virol 2007; 79: 771
Belgium	Contributing studies: Baay MF, Eur J Gynaecol Oncol 2001; 22: 204, Baay MF, Eur J Gynaecol Oncol 2001; 22: 204, Contributing studies: Baay MF, Eur J Gynaecol Oncol 2001; 22: 204
Bosnia and Herzegovina	Contributing studies: Iljazovic E, Cancer Epidemiol 2014; 38: 504, Iljazović E, Cancer Epidemiol 2014; 38: 504, Contributing studies: Iljazovic E, Cancer Epidemiol 2014; 38: 504
Bulgaria	Contributing studies: Todorova I, J Clin Pathol 2010; 63: 1121, Contributing studies: Todorova I, J Clin Pathol 2010; 63: 1121, Todorova I, J Clin Pathol 2010; 63: 1121
Croatia	Contributing studies: Dabic MM, Acta Obstet Gynecol Scand 2008; 87: 366 | Hadzisejdic I, Coll Antropol 2006; 30: 879, Dabic MM, Acta Obstet Gynecol Scand 2008; 87: 366 | Hadzisejdic I, Coll Antropol 2006; 30: 879, Contributing studies: Dabic MM, Acta Obstet Gynecol Scand 2008; 87: 366 | Hadzisejdic I, Coll Antropol 2006; 30: 879
Czechia	Contributing studies: Slama J, Int J Gynecol Cancer 2009; 19: 703 | Tachezy R, J Med Virol 1999; 58: 378 | Tachezy R, PLoS ONE 2011; 6: e21913, Contributing studies: Slama J, Int J Gynecol Cancer 2009; 19: 703 | Tachezy R, J Med Virol 1999; 58: 378 | Tachezy R, PLoS ONE 2011; 6: e21913, Slama J, Int J Gynecol Cancer 2009; 19: 703 | Tachezy R, J Med Virol 1999; 58: 378 | Tachezy R, PLoS ONE 2011; 6: e21913
Denmark	Contributing studies: Hording U, APMIS 1997; 105: 313 | Kirschner B, Acta Obstet Gynecol Scand 2013; 92: 1023 | Kjær SK, Cancer Causes Control 2014; 25: 179 | Sebbelov AM, Microbes Infect 2000; 2: 121, Contributing studies: Hording U, APMIS 1997; 105: 313 | Kirschner B, Acta Obstet Gynecol Scand 2013; 92: 1023 | Kjær SK, Cancer Causes Control 2014; 25: 179 | Sebbelov AM, Microbes Infect 2000; 2: 121, Hording U, APMIS 1997; 105: 313 | Kirschner B, Acta Obstet Gynecol Scand 2013; 92: 1023 | Kjær SK, Cancer Causes Control 2014; 25: 179 | Sebbelov AM, Microbes Infect 2000; 2: 121
Finland	Iwasawa A, Cancer 1996; 77: 2275, Contributing studies: Iwasawa A, Cancer 1996; 77: 2275, Contributing studies: Iwasawa A, Cancer 1996; 77: 2275
France	Contributing studies: de Cremoux P, Int J Cancer 2009; 124: 778 | Lombard I, J Clin Oncol 1998; 16: 2613 | Prétet JL, Int J Cancer 2008; 122: 424 | Riou G, Lancet 1990; 335: 1171, de Cremoux P, Int J Cancer 2009; 124: 778 | Lombard I, J Clin Oncol 1998; 16: 2613 | Prétet JL, Int J Cancer 2008; 122: 424 | Riou G, Lancet 1990; 335: 1171, Contributing studies: de Cremoux P, Int J Cancer 2009; 124: 778 | Lombard I, J Clin Oncol 1998; 16: 2613 | Prétet JL, Int J Cancer 2008; 122: 424 | Riou G, Lancet 1990; 335: 1171
Germany	Contributing studies: Bosch FX, J Natl Cancer Inst 1995; 87: 796 | Milde-Langosch K, Int J Cancer 1995; 63: 639, Bosch FX, J Natl Cancer Inst 1995; 87: 796 | Milde-Langosch K, Int J Cancer 1995; 63: 639, Contributing studies: Bosch FX, J Natl Cancer Inst 1995; 87: 796 | Milde-Langosch K, Int J Cancer 1995; 63: 639

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Hungary	Kónya J, J Med Virol 1995; 46: 1, Contributing studies: Kónya J, J Med Virol 1995; 46: 1, Contributing studies: Kónya J, J Med Virol 1995; 46: 1
Iceland	Contributing studies: Sigurdsson K, Int J Cancer 2007; 121: 2682, Sigurdsson K, Int J Cancer 2007; 121: 2682, Contributing studies: Sigurdsson K, Int J Cancer 2007; 121: 2682
Ireland	Contributing studies: Butler D, J Pathol 2000; 192: 502 ꞁ Fay J, J Med Virol 2009; 81: 897 ꞁ O'Leary JJ, J Clin Pathol 1998; 51: 576 ꞁ Skyldberg BM, Mod Pathol 1999; 12: 675, Contributing studies: Butler D, J Pathol 2000; 192: 502 ꞁ Fay J, J Med Virol 2009; 81: 897 ꞁ O'Leary JJ, J Clin Pathol 1998; 51: 576 ꞁ Skyldberg BM, Mod Pathol 1999; 12: 675, Butler D, J Pathol 2000; 192: 502 ꞁ Fay J, J Med Virol 2009; 81: 897 ꞁ O'Leary JJ, J Clin Pathol 1998; 51: 576 ꞁ Skyldberg BM, Mod Pathol 1999; 12: 675
Italy	Carozzi FM, Cancer Epidemiol Biomarkers Prev 2010; 19: 2389 ꞁ Ciotti M, Oncol Rep 2006; 15: 143 ꞁ Del Mistro A, Infect Agents Cancer 2006; 1: 9 ꞁ Gargiulo F, Virus Res 2007; 125: 176 ꞁ Garzetti GG, Cancer 1998; 82: 886 ꞁ Mariani L, BMC Cancer 2010; 10: 259 ꞁ Rolla M, Eur J Gynaecol Oncol 2009; 30: 557 ꞁ Sideri M, Vaccine 2009; 27 Suppl 1: A30 ꞁ Spinillo A, J Med Virol 2014; 86: 1145 ꞁ Tornesello ML, Gynecol Oncol 2011; 121: 32 ꞁ Tornesello ML, J Med Virol 2006; 78: 1663 ꞁ Voglino G, Pathologica 2000; 92: 516, Contributing studies: Carozzi FM, Cancer Epidemiol Biomarkers Prev 2010; 19: 2389 ꞁ Ciotti M, Oncol Rep 2006; 15: 143 ꞁ Del Mistro A, Infect Agents Cancer 2006; 1: 9 ꞁ Gargiulo F, Virus Res 2007; 125: 176 ꞁ Garzetti GG, Cancer 1998; 82: 886 ꞁ Mariani L, BMC Cancer 2010; 10: 259 ꞁ Rolla M, Eur J Gynaecol Oncol 2009; 30: 557 ꞁ Sideri M, Vaccine 2009; 27 Suppl 1: A30 ꞁ Spinillo A, J Med Virol 2014; 86: 1145 ꞁ Tornesello ML, Gynecol Oncol 2011; 121: 32 ꞁ Tornesello ML, J Med Virol 2006; 78: 1663 ꞁ Voglino G, Pathologica 2000; 92: 516, Contributing studies: Carozzi FM, Cancer Epidemiol Biomarkers Prev 2010; 19: 2389 ꞁ Ciotti M, Oncol Rep 2006; 15: 143 ꞁ Del Mistro A, Infect Agents Cancer 2006; 1: 9 ꞁ Gargiulo F, Virus Res 2007; 125: 176 ꞁ Garzetti GG, Cancer 1998; 82: 886 ꞁ Mariani L, BMC Cancer 2010; 10: 259 ꞁ Rolla M, Eur J Gynaecol Oncol 2009; 30: 557 ꞁ Sideri M, Vaccine 2009; 27 Suppl 1: A30 ꞁ Spinillo A, J Med Virol 2014; 86: 1145 ꞁ Tornesello ML, Gynecol Oncol 2011; 121: 32 ꞁ Tornesello ML, J Med Virol 2006; 78: 1663 ꞁ Voglino G, Pathologica 2000; 92: 516
Latvia	Contributing studies: Kulmala SM, J Med Virol 2007; 79: 771 ꞁ Silins I, Gynecol Oncol 2004; 93: 484, Kulmala SM, J Med Virol 2007; 79: 771 ꞁ Silins I, Gynecol Oncol 2004; 93: 484, Contributing studies: Kulmala SM, J Med Virol 2007; 79: 771 ꞁ Silins I, Gynecol Oncol 2004; 93: 484
Lithuania	Contributing studies: Gudleviciene Z, Medicina (Kaunas) 2005; 41: 910 ꞁ Simanaviciene V, J Med Virol 2014, Contributing studies: Gudleviciene Z, Medicina (Kaunas) 2005; 41: 910 ꞁ Simanaviciene V, J Med Virol 2014, Gudleviciene Z, Medicina (Kaunas) 2005; 41: 910 ꞁ Simanaviciene V, J Med Virol 2014
Luxembourg	Ressler S, Clin Cancer Res 2007; 13: 7067, Contributing studies: Ressler S, Clin Cancer Res 2007; 13: 7067, Contributing studies: Ressler S, Clin Cancer Res 2007; 13: 7067
Netherlands	Contributing studies: Baalbergen A, Gynecol Oncol 2013; 128: 530 ꞁ Baay MF, J Clin Microbiol 1996; 34: 745 ꞁ Bulk S, Br J Cancer 2006; 94: 171 ꞁ De Boer MA, Int J Cancer 2005; 114: 422 ꞁ Krul EJ, Int J Gynecol Cancer 1999; 9: 206 ꞁ Resnick RM, J Natl Cancer Inst 1990; 82: 1477 ꞁ Tang N, J Clin Virol 2009; 45 Suppl 1: S25 ꞁ Van Den Brule AJ, Int J Cancer 1991; 48: 404 ꞁ Zielinski GD, J Pathol 2003; 201: 535, Baalbergen A, Gynecol Oncol 2013; 128: 530 ꞁ Baay MF, J Clin Microbiol 1996; 34: 745 ꞁ Bulk S, Br J Cancer 2006; 94: 171 ꞁ De Boer MA, Int J Cancer 2005; 114: 422 ꞁ Krul EJ, Int J Gynecol Cancer 1999; 9: 206 ꞁ Resnick RM, J Natl Cancer Inst 1990; 82: 1477 ꞁ Tang N, J Clin Virol 2009; 45 Suppl 1: S25 ꞁ Van Den Brule AJ, Int J Cancer 1991; 48: 404 ꞁ Zielinski GD, J Pathol 2003; 201: 535, Contributing studies: Baalbergen A, Gynecol Oncol 2013; 128: 530 ꞁ Baay MF, J Clin Microbiol 1996; 34: 745 ꞁ Bulk S, Br J Cancer 2006; 94: 171 ꞁ De Boer MA, Int J Cancer 2005; 114: 422 ꞁ Krul EJ, Int J Gynecol Cancer 1999; 9: 206 ꞁ Resnick RM, J Natl Cancer Inst 1990; 82: 1477 ꞁ Tang N, J Clin Virol 2009; 45 Suppl 1: S25 ꞁ Van Den Brule AJ, Int J Cancer 1991; 48: 404 ꞁ Zielinski GD, J Pathol 2003; 201: 535
Norway	Bertelsen BI, Virchows Arch 2006; 449: 141 ꞁ Karlsen F, J Clin Microbiol 1996; 34: 2095, Contributing studies: Bertelsen BI, Virchows Arch 2006; 449: 141 ꞁ Karlsen F, J Clin Microbiol 1996; 34: 2095, Contributing studies: Bertelsen BI, Virchows Arch 2006; 449: 141 ꞁ Karlsen F, J Clin Microbiol 1996; 34: 2095
Poland	Baay MF, Eur J Gynaecol Oncol 2009; 30: 162 ꞁ Bardin A, Eur J Cancer 2008; 44: 557 ꞁ Biesaga B, Folia Histochem Cytobiol 2012; 50: 239 ꞁ Bosch FX, J Natl Cancer Inst 1995; 87: 796 ꞁ Dybikowska A, Oncol Rep 2002; 9: 871 ꞁ Kwasniewska A, Eur J Gynaecol Oncol 2009; 30: 65 ꞁ Pirog EC, Am J Pathol 2000; 157: 1055, Contributing studies: Baay MF, Eur J Gynaecol Oncol 2009; 30: 162 ꞁ Bardin A, Eur J Cancer 2008; 44: 557 ꞁ Biesaga B, Folia Histochem Cytobiol 2012; 50: 239 ꞁ Bosch FX, J Natl Cancer Inst 1995; 87: 796 ꞁ Dybikowska A, Oncol Rep 2002; 9: 871 ꞁ Kwasniewska A, Eur J Gynaecol Oncol 2009; 30: 65 ꞁ Pirog EC, Am J Pathol 2000; 157: 1055, Contributing studies: Baay MF, Eur J Gynaecol Oncol 2009; 30: 162 ꞁ Bardin A, Eur J Cancer 2008; 44: 557 ꞁ Biesaga B, Folia Histochem Cytobiol 2012; 50: 239 ꞁ Bosch FX, J Natl Cancer Inst 1995; 87: 796 ꞁ Dybikowska A, Oncol Rep 2002; 9: 871 ꞁ Kwasniewska A, Eur J Gynaecol Oncol 2009; 30: 65 ꞁ Pirog EC, Am J Pathol 2000; 157: 1055

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Russian Federation	Contributing studies: Kleter B, J Clin Microbiol 1999; 37: 2508 ǀ Kulmala SM, J Med Virol 2007; 79: 771, Kleter B, J Clin Microbiol 1999; 37: 2508 ǀ Kulmala SM, J Med Virol 2007; 79: 771, Contributing studies: Kleter B, J Clin Microbiol 1999; 37: 2508 ǀ Kulmala SM, J Med Virol 2007; 79: 771
Slovenia	Contributing studies: Jancar N, Eur J Obstet Gynecol Reprod Biol 2009; 145: 184, Jancar N, Eur J Obstet Gynecol Reprod Biol 2009; 145: 184, Contributing studies: Jancar N, Eur J Obstet Gynecol Reprod Biol 2009; 145: 184
Spain	Contributing studies: Alemany L, Gynecol Oncol 2012; 124: 512 ǀ Bosch FX, J Natl Cancer Inst 1995; 87: 796 ǀ Darwich L, Int J Gynecol Cancer 2011; 21: 1486 ǀ González-Bosquet E, Gynecol Oncol 2008; 111: 9 ǀ Herraez-Hernandez E, J Virol Methods 2013; 193: 9 ǀ Martró E, Enferm Infecc Microbiol Clin 2012; 30: 225 ǀ Mazarico E, Gynecol Oncol 2012; 125: 181 ǀ Muñoz N, Int J Cancer 1992; 52: 743 ǀ Rodriguez JA, Diagn Mol Pathol 1998; 7: 276, Contributing studies: Alemany L, Gynecol Oncol 2012; 124: 512 ǀ Bosch FX, J Natl Cancer Inst 1995; 87: 796 ǀ Darwich L, Int J Gynecol Cancer 2011; 21: 1486 ǀ González-Bosquet E, Gynecol Oncol 2008; 111: 9 ǀ Herraez-Hernandez E, J Virol Methods 2013; 193: 9 ǀ Martró E, Enferm Infecc Microbiol Clin 2012; 30: 225 ǀ Mazarico E, Gynecol Oncol 2012; 125: 181 ǀ Muñoz N, Int J Cancer 1992; 52: 743 ǀ Rodriguez JA, Diagn Mol Pathol 1998; 7: 276, Alemany L, Gynecol Oncol 2012; 124: 512 ǀ Bosch FX, J Natl Cancer Inst 1995; 87: 796 ǀ Darwich L, Int J Gynecol Cancer 2011; 21: 1486 ǀ González-Bosquet E, Gynecol Oncol 2008; 111: 9 ǀ Herraez-Hernandez E, J Virol Methods 2013; 193: 9 ǀ Martró E, Enferm Infecc Microbiol Clin 2012; 30: 225 ǀ Mazarico E, Gynecol Oncol 2012; 125: 181 ǀ Muñoz N, Int J Cancer 1992; 52: 743 ǀ Rodriguez JA, Diagn Mol Pathol 1998; 7: 276
Sweden	Contributing studies: Andersson S, Acta Obstet Gynecol Scand 2003; 82: 960 ǀ Andersson S, Cancer Detect Prev 2005; 29: 37 ǀ Andersson S, Eur J Cancer 2001; 37: 246 ǀ Du J, Acta Oncol 2011; 50: 1215 ǀ Graflund M, Int J Gynecol Cancer 2004; 14: 896 ǀ Hagmar B, Med Oncol Tumor Pharmacother 1992; 9: 113 ǀ Skyldberg BM, Mod Pathol 1999; 12: 675 ǀ Wallin KL, N Engl J Med 1999; 341: 1633 ǀ Zehbe I, J Pathol 1997; 181: 270, Contributing studies: Andersson S, Acta Obstet Gynecol Scand 2003; 82: 960 ǀ Andersson S, Cancer Detect Prev 2005; 29: 37 ǀ Andersson S, Eur J Cancer 2001; 37: 246 ǀ Du J, Acta Oncol 2011; 50: 1215 ǀ Graflund M, Int J Gynecol Cancer 2004; 14: 896 ǀ Hagmar B, Med Oncol Tumor Pharmacother 1992; 9: 113 ǀ Skyldberg BM, Mod Pathol 1999; 12: 675 ǀ Wallin KL, N Engl J Med 1999; 341: 1633 ǀ Zehbe I, J Pathol 1997; 181: 270, Andersson S, Acta Obstet Gynecol Scand 2003; 82: 960 ǀ Andersson S, Cancer Detect Prev 2005; 29: 37 ǀ Andersson S, Eur J Cancer 2001; 37: 246 ǀ Du J, Acta Oncol 2011; 50: 1215 ǀ Graflund M, Int J Gynecol Cancer 2004; 14: 896 ǀ Hagmar B, Med Oncol Tumor Pharmacother 1992; 9: 113 ǀ Skyldberg BM, Mod Pathol 1999; 12: 675 ǀ Wallin KL, N Engl J Med 1999; 341: 1633 ǀ Zehbe I, J Pathol 1997; 181: 270
United Kingdom	Contributing studies: Arends MJ, Hum Pathol 1993; 24: 432 ǀ Crook T, Lancet 1992; 339: 1070 ǀ Cuschieri K, Br J Cancer 2010; 102: 930 ǀ Cuschieri K, Int J Cancer 2014; 135: 2721 ǀ Cuzick J, Br J Cancer 2000; 82: 1348 ǀ Giannoudis A, Int J Cancer 1999; 83: 66 ǀ Howell-Jones R, Br J Cancer 2010; 103: 209 ǀ Mesher D, J Clin Pathol 2015; 68: 135 ǀ Powell N, Int J Cancer 2009; 125: 2425 ǀ Tawfik El-Mansi M, Int J Gynecol Cancer 2006; 16: 1025, Arends MJ, Hum Pathol 1993; 24: 432 ǀ Crook T, Lancet 1992; 339: 1070 ǀ Cuschieri K, Br J Cancer 2010; 102: 930 ǀ Cuschieri K, Int J Cancer 2014; 135: 2721 ǀ Cuzick J, Br J Cancer 2000; 82: 1348 ǀ Giannoudis A, Int J Cancer 1999; 83: 66 ǀ Howell-Jones R, Br J Cancer 2010; 103: 209 ǀ Mesher D, J Clin Pathol 2015; 68: 135 ǀ Powell N, Int J Cancer 2009; 125: 2425 ǀ Tawfik El-Mansi M, Int J Gynecol Cancer 2006; 16: 1025, Contributing studies: Arends MJ, Hum Pathol 1993; 24: 432 ǀ Crook T, Lancet 1992; 339: 1070 ǀ Cuschieri K, Br J Cancer 2010; 102: 930 ǀ Cuschieri K, Int J Cancer 2014; 135: 2721 ǀ Cuzick J, Br J Cancer 2000; 82: 1348 ǀ Giannoudis A, Int J Cancer 1999; 83: 66 ǀ Howell-Jones R, Br J Cancer 2010; 103: 209 ǀ Mesher D, J Clin Pathol 2015; 68: 135 ǀ Powell N, Int J Cancer 2009; 125: 2425 ǀ Tawfik El-Mansi M, Int J Gynecol Cancer 2006; 16: 1025
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Australia	Contributing studies: Brestovac B, J Med Virol 2005; 76: 106 ǀ Chen S, Int J Gynaecol Obstet 1999; 67: 163 ǀ de Sanjose S, Lancet Oncol 2010; 11: 1048 ǀ Liu J, Gynecol Oncol 2004; 94: 803 ǀ Plunkett M, Pathology 2003; 35: 397 ǀ Stevens MP, Int J Gynecol Cancer 2006; 16: 1017 ǀ Thompson CH, Gynecol Oncol 1994; 54: 40, Brestovac B, J Med Virol 2005; 76: 106 ǀ Chen S, Int J Gynaecol Obstet 1999; 67: 163 ǀ de Sanjose S, Lancet Oncol 2010; 11: 1048 ǀ Liu J, Gynecol Oncol 2004; 94: 803 ǀ Plunkett M, Pathology 2003; 35: 397 ǀ Stevens MP, Int J Gynecol Cancer 2006; 16: 1017 ǀ Thompson CH, Gynecol Oncol 1994; 54: 40, Contributing studies: Brestovac B, J Med Virol 2005; 76: 106 ǀ Chen S, Int J Gynaecol Obstet 1999; 67: 163 ǀ de Sanjose S, Lancet Oncol 2010; 11: 1048 ǀ Liu J, Gynecol Oncol 2004; 94: 803 ǀ Plunkett M, Pathology 2003; 35: 397 ǀ Stevens MP, Int J Gynecol Cancer 2006; 16: 1017 ǀ Thompson CH, Gynecol Oncol 1994; 54: 40
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Africa	
Algeria	Hammouda D, Int J Cancer 2011; 128: 2224, Contributing studies: Hammouda D, Int J Cancer 2011; 128: 2224
Cameroon	Untiet S, Int J Cancer 2014; 135: 1911, Contributing studies: Untiet S, Int J Cancer 2014; 135: 1911

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DR Congo	Hovland S, Br J Cancer 2010; 102: 957, Contributing studies: Hovland S, Br J Cancer 2010; 102: 957
Equatorial Guinea	García-Espinosa B, Diagn Pathol 2009; 4: 31, Contributing studies: García-Espinosa B, Diagn Pathol 2009; 4: 31
Ethiopia	Abate E, J Med Virol 2013; 85: 282, Contributing studies: Abate E, J Med Virol 2013; 85: 282
Guinea	Keita N, Br J Cancer 2009; 101: 202, Contributing studies: Keita N, Br J Cancer 2009; 101: 202
Kenya	De Vuyst H, Cancer Causes Control 2010; 21: 2309 ꘡ De Vuyst H, Int J Cancer 2012; 131: 949 ꘡ De Vuyst H, Sex Transm Dis 2003; 30: 137, Contributing studies: De Vuyst H, Cancer Causes Control 2010; 21: 2309 ꘡ De Vuyst H, Int J Cancer 2012; 131: 949 ꘡ De Vuyst H, Sex Transm Dis 2003; 30: 137
Morocco	Alhamany Z, J Infect Dev Ctries 2010; 4: 732, Contributing studies: Alhamany Z, J Infect Dev Ctries 2010; 4: 732
Nigeria	Gage JC, Int J Cancer 2012; 131: 2903 ꘡ Haghshenas M, Infect Agents Cancer 2013; 8: 20, Contributing studies: Gage JC, Int J Cancer 2012; 131: 2903 ꘡ Haghshenas M, Infect Agents Cancer 2013; 8: 20
Rwanda	Contributing studies: Singh DK, J Infect Dis 2009; 199: 1851, Singh DK, J Infect Dis 2009; 199: 1851
Senegal	Contributing studies: Chabaud M, J Med Virol 1996; 49: 259 ꘡ Xi LF, Int J Cancer 2003; 103: 803, Chabaud M, J Med Virol 1996; 49: 259 ꘡ Xi LF, Int J Cancer 2003; 103: 803
South Africa	Allan B, J Clin Microbiol 2008; 46: 740 ꘡ De Vuyst H, Int J Cancer 2012; 131: 949 ꘡ Said HM, J Clin Virol 2009; 44: 318 ꘡ van Aardt MC, Personal communication Unpublished, Contributing studies: Allan B, J Clin Microbiol 2008; 46: 740 ꘡ De Vuyst H, Int J Cancer 2012; 131: 949 ꘡ Said HM, J Clin Virol 2009; 44: 318 ꘡ van Aardt MC, Personal communication Unpublished
Sudan	Abate E, J Med Virol 2013; 85: 282, Contributing studies: Abate E, J Med Virol 2013; 85: 282
Tanzania	Contributing studies: Dartell MA, Int J Cancer 2014; 135: 896, Dartell MA, Int J Cancer 2014; 135: 896
Zimbabwe	Sawaya GF, Obstet Gynecol 2008; 112: 990, Contributing studies: Sawaya GF, Obstet Gynecol 2008; 112: 990
Americas	
Argentina	Abba MC, Rev Argent Microbiol 2003; 35: 74 ꘡ Alonio LV, J Clin Virol 2003; 27: 263 ꘡ Chouhy D, Int J Mol Med 2006; 18: 995 ꘡ Deluca GD, Rev Inst Med Trop Sao Paulo 2004; 46: 9 ꘡ Venezuela RF, Rev Inst Med Trop Sao Paulo 2012; 54: 11, Contributing studies: Abba MC, Rev Argent Microbiol 2003; 35: 74 ꘡ Alonio LV, J Clin Virol 2003; 27: 263 ꘡ Chouhy D, Int J Mol Med 2006; 18: 995 ꘡ Deluca GD, Rev Inst Med Trop Sao Paulo 2004; 46: 9 ꘡ Venezuela RF, Rev Inst Med Trop Sao Paulo 2012; 54: 11
Belize	Cathro HP, Hum Pathol 2009; 40: 942, Contributing studies: Cathro HP, Hum Pathol 2009; 40: 942
Brazil	Camara GN, Mem Inst Oswaldo Cruz 2003; 98: 879 ꘡ Carestiato FN, Rev Soc Bras Med Trop 2006; 39: 428 ꘡ Chagas BS, PLoS ONE 2015; 10: e0132570 ꘡ Fernandes JV, BMC Res Notes 2010; 3: 96 ꘡ Fernandes JV, Int J Gynaecol Obstet 2009; 105: 21 ꘡ Freitas TP, Rev Inst Med Trop Sao Paulo 2007; 49: 297 ꘡ Krambeck WM, Clin Exp Obstet Gynecol 2008; 35: 175 ꘡ Lorenzato F, Int J Gynecol Cancer 2000; 10: 143 ꘡ Pitta DR, Rev Bras Ginecol Obstet 2010; 32: 315 ꘡ Resende LS, BMC Infect Dis 2014; 14: 214 ꘡ Ribeiro AA, Int J Gynecol Pathol 2011; 30: 288 ꘡ Terra AP, Tumori 2007; 93: 572 ꘡ Tomita LY, Int J Cancer 2010; 126: 703, Contributing studies: Camara GN, Mem Inst Oswaldo Cruz 2003; 98: 879 ꘡ Carestiato FN, Rev Soc Bras Med Trop 2006; 39: 428 ꘡ Chagas BS, PLoS ONE 2015; 10: e0132570 ꘡ Fernandes JV, BMC Res Notes 2010; 3: 96 ꘡ Fernandes JV, Int J Gynaecol Obstet 2009; 105: 21 ꘡ Freitas TP, Rev Inst Med Trop Sao Paulo 2007; 49: 297 ꘡ Krambeck WM, Clin Exp Obstet Gynecol 2008; 35: 175 ꘡ Lorenzato F, Int J Gynecol Cancer 2000; 10: 143 ꘡ Pitta DR, Rev Bras Ginecol Obstet 2010; 32: 315 ꘡ Resende LS, BMC Infect Dis 2014; 14: 214 ꘡ Ribeiro AA, Int J Gynecol Pathol 2011; 30: 288 ꘡ Terra AP, Tumori 2007; 93: 572 ꘡ Tomita LY, Int J Cancer 2010; 126: 703
Canada	Antonishyn NA, Arch Pathol Lab Med 2008; 132: 54 ꘡ Coutlée F, J Med Virol 2011; 83: 1034 ꘡ Jiang Y, J Infect Public Health 2011; 4: 219 ꘡ Moore RA, Cancer Causes Control 2009; 20: 1387, Contributing studies: Antonishyn NA, Arch Pathol Lab Med 2008; 132: 54 ꘡ Coutlée F, J Med Virol 2011; 83: 1034 ꘡ Jiang Y, J Infect Public Health 2011; 4: 219 ꘡ Moore RA, Cancer Causes Control 2009; 20: 1387
Chile	Ili CG, J Med Virol 2011; 83: 833, Contributing studies: Ili CG, J Med Virol 2011; 83: 833
Colombia	Bosch FX, Cancer Epidemiol Biomarkers Prev 1993; 2: 415 ꘡ García DA, Open Virol J 2011; 5: 70 ꘡ Muñoz N, Int J Cancer 1992; 52: 743, Contributing studies: Bosch FX, Cancer Epidemiol Biomarkers Prev 1993; 2: 415 ꘡ García DA, Open Virol J 2011; 5: 70 ꘡ Muñoz N, Int J Cancer 1992; 52: 743
Costa Rica	Herrero R, J Infect Dis 2005; 191: 1796, Contributing studies: Herrero R, J Infect Dis 2005; 191: 1796
Cuba	Soto Y, Sex Transm Dis 2007; 34: 974, Contributing studies: Soto Y, Sex Transm Dis 2007; 34: 974
Ecuador	Mejía L, J Med Virol 2016; 88: 144, Contributing studies: Mejía L, J Med Virol 2016; 88: 144
Honduras	Ferreira M, Mod Pathol 2008; 21: 968, Contributing studies: Ferreira M, Mod Pathol 2008; 21: 968
Jamaica	Rattray C, J Infect Dis 1996; 173: 718 ꘡ Strickler HD, J Med Virol 1999; 59: 60, Contributing studies: Rattray C, J Infect Dis 1996; 173: 718 ꘡ Strickler HD, J Med Virol 1999; 59: 60
Mexico	Giuliano AR, Cancer Epidemiol Biomarkers Prev 2001; 10: 1129 ꘡ Illades-Aguiar B, Gynecol Oncol 2010; 117: 291 ꘡ Piña-Sánchez P, Int J Gynecol Cancer 2006; 16: 1041 ꘡ Torroella-Kouri M, Gynecol Oncol 1998; 70: 115 ꘡ Velázquez-Márquez N, Int J Infect Dis 2009; 13: 690, Contributing studies: Giuliano AR, Cancer Epidemiol Biomarkers Prev 2001; 10: 1129 ꘡ Illades-Aguiar B, Gynecol Oncol 2010; 117: 291 ꘡ Piña-Sánchez P, Int J Gynecol Cancer 2006; 16: 1041 ꘡ Torroella-Kouri M, Gynecol Oncol 1998; 70: 115 ꘡ Velázquez-Márquez N, Int J Infect Dis 2009; 13: 690
Nicaragua	Hindryckx P, Sex Transm Infect 2006; 82: 334, Contributing studies: Hindryckx P, Sex Transm Infect 2006; 82: 334
Paraguay	Mendoza LP, J Med Virol 2011; 83: 1351, Contributing studies: Mendoza LP, J Med Virol 2011; 83: 1351

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Country	Study
Peru	Contributing studies: Martorell M, Genet Mol Res 2012; 11: 2099, Martorell M, Genet Mol Res 2012; 11: 2099
United States of America	Adam E, Am J Obstet Gynecol 1998; 178: 1235 ǀ Bell MC, Gynecol Oncol 2007; 107: 236 ǀ Castle PE, Cancer Epidemiol Biomarkers Prev 2010; 19: 1675 ǀ Castle PE, Cancer Epidemiol Biomarkers Prev 2011; 20: 946 ǀ Einstein MH, Int J Cancer 2007; 120: 55 ǀ Evans MF, Cancer 2006; 106: 1054 ǀ Evans MF, Eur J Gynaecol Oncol 2003; 24: 373 ǀ Giuliano AR, Cancer Epidemiol Biomarkers Prev 2001; 10: 1129 ǀ Guo M, Mod Pathol 2007; 20: 256 ǀ Hariri S, J Infect Dis 2012; 206: 1878 ǀ Hariri S, PLoS ONE 2012; 7: e34044 ǀ Hu L, Mod Pathol 2005; 18: 267 ǀ Joste NE, Cancer Epidemiol Biomarkers Prev 2015; 24: 230 ǀ Kong CS, Am J Surg Pathol 2007; 31: 33 ǀ Lee SH, Int J Gynaecol Obstet 2009; 105: 210 ǀ Moscicki AB, Obstet Gynecol 2008; 112: 1335 ǀ Stoler MH, Am J Clin Pathol 2011; 135: 468 ǀ Vidal AC, Cancer Causes Control 2014; 25: 1055 ǀ Voss JS, Anal Quant Cytol Histol 2009; 31: 208 ǀ Wentzensen N, Int J Cancer 2009; 124: 964 ǀ Wheeler CM, J Infect Dis 2006; 194: 1291 ǀ Wheeler CM, J Natl Cancer Inst 2009; 101: 475 ǀ Zuna RE, Mod Pathol 2007; 20: 167, Contributing studies: Adam E, Am J Obstet Gynecol 1998; 178: 1235 ǀ Bell MC, Gynecol Oncol 2007; 107: 236 ǀ Castle PE, Cancer Epidemiol Biomarkers Prev 2010; 19: 1675 ǀ Castle PE, Cancer Epidemiol Biomarkers Prev 2011; 20: 946 ǀ Einstein MH, Int J Cancer 2007; 120: 55 ǀ Evans MF, Cancer 2006; 106: 1054 ǀ Evans MF, Eur J Gynaecol Oncol 2003; 24: 373 ǀ Giuliano AR, Cancer Epidemiol Biomarkers Prev 2001; 10: 1129 ǀ Guo M, Mod Pathol 2007; 20: 256 ǀ Hariri S, J Infect Dis 2012; 206: 1878 ǀ Hariri S, PLoS ONE 2012; 7: e34044 ǀ Hu L, Mod Pathol 2005; 18: 267 ǀ Joste NE, Cancer Epidemiol Biomarkers Prev 2015; 24: 230 ǀ Kong CS, Am J Surg Pathol 2007; 31: 33 ǀ Lee SH, Int J Gynaecol Obstet 2009; 105: 210 ǀ Moscicki AB, Obstet Gynecol 2008; 112: 1335 ǀ Stoler MH, Am J Clin Pathol 2011; 135: 468 ǀ Vidal AC, Cancer Causes Control 2014; 25: 1055 ǀ Voss JS, Anal Quant Cytol Histol 2009; 31: 208 ǀ Wentzensen N, Int J Cancer 2009; 124: 964 ǀ Wheeler CM, J Infect Dis 2006; 194: 1291 ǀ Wheeler CM, J Natl Cancer Inst 2009; 101: 475 ǀ Zuna RE, Mod Pathol 2007; 20: 167
Venezuela	Sánchez-Lander J, Cancer Epidemiol 2012; 36: e284, Contributing studies: Sánchez-Lander J, Cancer Epidemiol 2012; 36: e284
Asia	
Bangladesh	Banik U, Cytojournal 2013; 10: 14, Contributing studies: Banik U, Cytojournal 2013; 10: 14
China	Chan MK, Gynecol Oncol 1996; 60: 217 ǀ Chan PK, Int J Cancer 2006; 118: 243 ǀ Chan PK, Int J Cancer 2012; 131: 692 ǀ Chan PK, J Med Virol 1999; 59: 232 ǀ Ding X, J Med Virol 2014; 86: 1937 ǀ Guo J, Scand J Infect Dis 2010; 42: 72 ǀ Jin Q, Chin Med J 2010; 123: 2004 ǀ Li H, Eur J Obstet Gynecol Reprod Biol 2013; 170: 202 ǀ Li J, Int J Gynaecol Obstet 2011; 112: 131 ǀ Li J, J Clin Microbiol 2012; 50: 1079 ǀ Liu SS, Tumour Biol 2008; 29: 105 ǀ Singh S, Int J Clin Exp Pathol 2015; 8: 11901 ǀ Sun B, Arch Virol 2014; 159: 1027 ǀ Tao PP, Zhonghua Fu Chan Ke Za Zhi 2006; 41: 43 ǀ Wu CH, Sex Transm Dis 1994; 21: 309 ǀ Wu EQ, Cancer Causes Control 2013; 24: 795 ǀ Yuan X, Arch Gynecol Obstet 2011; 283: 1385 ǀ Zhang R, Cancer Epidemiol 2013; 37: 939 ǀ Zhao FH, Int J Cancer 2014; 135: 2604 ǀ Zhao Y, Pathol Int 2008; 58: 643, Contributing studies: Chan MK, Gynecol Oncol 1996; 60: 217 ǀ Chan PK, Int J Cancer 2006; 118: 243 ǀ Chan PK, Int J Cancer 2012; 131: 692 ǀ Chan PK, J Med Virol 1999; 59: 232 ǀ Ding X, J Med Virol 2014; 86: 1937 ǀ Guo J, Scand J Infect Dis 2010; 42: 72 ǀ Jin Q, Chin Med J 2010; 123: 2004 ǀ Li H, Eur J Obstet Gynecol Reprod Biol 2013; 170: 202 ǀ Li J, Int J Gynaecol Obstet 2011; 112: 131 ǀ Li J, J Clin Microbiol 2012; 50: 1079 ǀ Liu SS, Tumour Biol 2008; 29: 105 ǀ Singh S, Int J Clin Exp Pathol 2015; 8: 11901 ǀ Sun B, Arch Virol 2014; 159: 1027 ǀ Tao PP, Zhonghua Fu Chan Ke Za Zhi 2006; 41: 43 ǀ Wu CH, Sex Transm Dis 1994; 21: 309 ǀ Wu EQ, Cancer Causes Control 2013; 24: 795 ǀ Yuan X, Arch Gynecol Obstet 2011; 283: 1385 ǀ Zhang R, Cancer Epidemiol 2013; 37: 939 ǀ Zhao FH, Int J Cancer 2014; 135: 2604 ǀ Zhao Y, Pathol Int 2008; 58: 643
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Iran	Esmaeili M, Gynecol Obstet Invest 2008; 66: 68 ǀ Ghaffari SR, Asian Pac J Cancer Prev 2006; 7: 529 ǀ Khodakarami N, Int J Cancer 2012; 131: E156, Contributing studies: Esmaeili M, Gynecol Obstet Invest 2008; 66: 68 ǀ Ghaffari SR, Asian Pac J Cancer Prev 2006; 7: 529 ǀ Khodakarami N, Int J Cancer 2012; 131: E156
Israel	Bassal R, J Low Genit Tract Dis 2015; 19: 161 ǀ Laskov I, Int J Gynecol Cancer 2013; 23: 730, Contributing studies: Bassal R, J Low Genit Tract Dis 2015; 19: 161 ǀ Laskov I, Int J Gynecol Cancer 2013; 23: 730
Japan	Azuma Y, Jpn J Clin Oncol 2014 ǀ Ichimura H, Int J Clin Oncol 2003; 8: 322 ǀ Inoue M, Int J Gynecol Cancer 2006; 16: 1007 ǀ Konno R, Cancer Sci 2011; 102: 877 ǀ Matsumoto K, Int J Cancer 2011; 128: 2898 ǀ Nagai Y, Gynecol Oncol 2000; 79: 294 ǀ Nakamura Y, Int J Clin Oncol 2015; 20: 974 ǀ Nishiwaki M, J Clin Microbiol 2008; 46: 1161 ǀ Niwa K, Oncol Rep 2003; 10: 1437 ǀ Okadome M, J Obstet Gynaecol Res 2014; 40: 561 ǀ Onuki M, Cancer Sci 2009; 100: 1312 ǀ Sasagawa T, Cancer Epidemiol Biomarkers Prev 2001; 10: 45 ǀ Takehara K, Patholog Res Int 2011; 2011: 246936 ǀ Tsuda H, Gynecol Oncol 2003; 91: 476 ǀ Yamasaki K, J Obstet Gynaecol Res 2011; 37: 1666 ǀ Yoshida T, Cancer 2004; 102: 100, Contributing studies: Azuma Y, Jpn J Clin Oncol 2014 ǀ Ichimura H, Int J Clin Oncol 2003; 8: 322 ǀ Inoue M, Int J Gynecol Cancer 2006; 16: 1007 ǀ Konno R, Cancer Sci 2011; 102: 877 ǀ Matsumoto K, Int J Cancer 2011; 128: 2898 ǀ Nagai Y, Gynecol Oncol 2000; 79: 294 ǀ Nakamura Y, Int J Clin Oncol 2015; 20: 974 ǀ Nishiwaki M, J Clin Microbiol 2008; 46: 1161 ǀ Niwa K, Oncol Rep 2003; 10: 1437 ǀ Okadome M, J Obstet Gynaecol Res 2014; 40: 561 ǀ Onuki M, Cancer Sci 2009; 100: 1312 ǀ Sasagawa T, Cancer Epidemiol Biomarkers Prev 2001; 10: 45 ǀ Takehara K, Patholog Res Int 2011; 2011: 246936 ǀ Tsuda H, Gynecol Oncol 2003; 91: 476 ǀ Yamasaki K, J Obstet Gynaecol Res 2011; 37: 1666 ǀ Yoshida T, Cancer 2004; 102: 100

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Malaysia	Quek SC, Int J Gynecol Cancer 2013; 23: 148, Contributing studies: Quek SC, Int J Gynecol Cancer 2013; 23: 148
Myanmar	Mu-Mu-Shwe, Acta Med Okayama 2014; 68: 79, Contributing studies: Mu-Mu-Shwe, Acta Med Okayama 2014; 68: 79
Pakistan	Raza SA, Br J Cancer 2010; 102: 1657, Contributing studies: Raza SA, Br J Cancer 2010; 102: 1657
Philippines	Contributing studies: Quek SC, Int J Gynecol Cancer 2013; 23: 148, Quek SC, Int J Gynecol Cancer 2013; 23: 148
Republic of Korea	Cho NH, Am J Obstet Gynecol 2003; 188: 56 ❙ Hwang TS, Gynecol Oncol 2003; 90: 51 ❙ Kahng J, Ann Lab Med 2014; 34: 127 ❙ Kang WD, Int J Gynecol Cancer 2009; 19: 924 ❙ Oh YL, Cytopathology 2001; 12: 75 ❙ Quek SC, Int J Gynecol Cancer 2013; 23: 148, Contributing studies: Cho NH, Am J Obstet Gynecol 2003; 188: 56 ❙ Hwang TS, Gynecol Oncol 2003; 90: 51 ❙ Kahng J, Ann Lab Med 2014; 34: 127 ❙ Kang WD, Int J Gynecol Cancer 2009; 19: 924 ❙ Oh YL, Cytopathology 2001; 12: 75 ❙ Quek SC, Int J Gynecol Cancer 2013; 23: 148
Singapore	Quek SC, Int J Gynecol Cancer 2013; 23: 148, Contributing studies: Quek SC, Int J Gynecol Cancer 2013; 23: 148
Sri Lanka	Karunaratne K, BMC Cancer 2014; 14: 116, Contributing studies: Karunaratne K, BMC Cancer 2014; 14: 116
Thailand	Chansaenroj J, Asian Pac J Cancer Prev 2010; 11: 117 ❙ Chansaenroj J, J Med Virol 2014; 86: 601 ❙ Limpaiboon T, Southeast Asian J Trop Med Public Health 2000; 31: 66 ❙ Sukasem C, J Med Virol 2011; 83: 119 ❙ Suwannarurk K, Cancer Epidemiol 2009; 33: 56 ❙ Swangvaree SS, Asian Pac J Cancer Prev 2013; 14: 1023, Contributing studies: Chansaenroj J, Asian Pac J Cancer Prev 2010; 11: 117 ❙ Chansaenroj J, J Med Virol 2014; 86: 601 ❙ Limpaiboon T, Southeast Asian J Trop Med Public Health 2000; 31: 66 ❙ Sukasem C, J Med Virol 2011; 83: 119 ❙ Suwannarurk K, Cancer Epidemiol 2009; 33: 56 ❙ Swangvaree SS, Asian Pac J Cancer Prev 2013; 14: 1023
Turkey	Baser E, Int J Gynaecol Obstet 2014; 125: 275 ❙ Sahiner F, Mikrobiyol Bul 2012; 46: 624 ❙ Tezcan S, Asian Pac J Cancer Prev 2014; 15: 3997 ❙ Yuce K, Arch Gynecol Obstet 2012; 286: 203, Contributing studies: Baser E, Int J Gynaecol Obstet 2014; 125: 275 ❙ Sahiner F, Mikrobiyol Bul 2012; 46: 624 ❙ Tezcan S, Asian Pac J Cancer Prev 2014; 15: 3997 ❙ Yuce K, Arch Gynecol Obstet 2012; 286: 203
Viet Nam	Contributing studies: Quek SC, Int J Gynecol Cancer 2013; 23: 148, Quek SC, Int J Gynecol Cancer 2013; 23: 148
Europe	
Austria	Rössler L, Wien Klin Wochenschr 2013; 125: 591, Contributing studies: Rössler L, Wien Klin Wochenschr 2013; 125: 591
Belarus	Kulmala SM, J Med Virol 2007; 79: 771, Contributing studies: Kulmala SM, J Med Virol 2007; 79: 771
Belgium	Arbyn M, Cancer Epidemiol Biomarkers Prev 2009; 18: 321 ❙ Baay MF, Eur J Gynaecol Oncol 2001; 22: 204 ❙ Beerens E, Cytopathology 2005; 16: 199 ❙ Depuydt CE, Br J Cancer 2003; 88: 560, Contributing studies: Arbyn M, Cancer Epidemiol Biomarkers Prev 2009; 18: 321 ❙ Baay MF, Eur J Gynaecol Oncol 2001; 22: 204 ❙ Beerens E, Cytopathology 2005; 16: 199 ❙ Depuydt CE, Br J Cancer 2003; 88: 560
Croatia	Grce M, Anticancer Res 2001; 21: 579 ❙ Grce M, J Clin Microbiol 2004; 42: 1341, Contributing studies: Grce M, Anticancer Res 2001; 21: 579 ❙ Grce M, J Clin Microbiol 2004; 42: 1341
Czechia	Tachezy R, PLoS ONE 2011; 6: e21913, Contributing studies: Tachezy R, PLoS ONE 2011; 6: e21913
Denmark	Bonde J, BMC Infect Dis 2014; 14: 413 ❙ Hording U, Eur J Obstet Gynecol Reprod Biol 1995; 62: 49 ❙ Kirschner B, Acta Obstet Gynecol Scand 2013; 92: 1032 ❙ Kjaer SK, Int J Cancer 2008; 123: 1864 ❙ Kjær SK, Cancer Causes Control 2014; 25: 179 ❙ Sebbelov AM, Res Virol 1994; 145: 83 ❙ Thomsen LT, Int J Cancer 2015; 137: 193, Contributing studies: Bonde J, BMC Infect Dis 2014; 14: 413 ❙ Hording U, Eur J Obstet Gynecol Reprod Biol 1995; 62: 49 ❙ Kirschner B, Acta Obstet Gynecol Scand 2013; 92: 1032 ❙ Kjaer SK, Int J Cancer 2008; 123: 1864 ❙ Kjær SK, Cancer Causes Control 2014; 25: 179 ❙ Sebbelov AM, Res Virol 1994; 145: 83 ❙ Thomsen LT, Int J Cancer 2015; 137: 193
France	Monsonego J, Int J STD AIDS 2008; 19: 385 ❙ Prétet JL, Int J Cancer 2008; 122: 424 ❙ Vaucel E, Arch Gynecol Obstet 2011; 284: 989, Contributing studies: Monsonego J, Int J STD AIDS 2008; 19: 385 ❙ Prétet JL, Int J Cancer 2008; 122: 424 ❙ Vaucel E, Arch Gynecol Obstet 2011; 284: 989
Germany	de Jonge M, Acta Cytol 2013; 57: 591 ❙ Klug SJ, J Med Virol 2007; 79: 616 ❙ Merkelbach-Bruse S, Diagn Mol Pathol 1999; 8: 32 ❙ Meyer T, Int J Gynecol Cancer 2001; 11: 198 ❙ Nindl I, Int J Gynecol Pathol 1997; 16: 197 ❙ Nindl I, J Clin Pathol 1999; 52: 17, Contributing studies: de Jonge M, Acta Cytol 2013; 57: 591 ❙ Klug SJ, J Med Virol 2007; 79: 616 ❙ Merkelbach-Bruse S, Diagn Mol Pathol 1999; 8: 32 ❙ Meyer T, Int J Gynecol Cancer 2001; 11: 198 ❙ Nindl I, Int J Gynecol Pathol 1997; 16: 197 ❙ Nindl I, J Clin Pathol 1999; 52: 17
Greece	Agorastos T, Eur J Obstet Gynecol Reprod Biol 2005; 121: 99 ❙ Argyri E, BMC Infect Dis 2013; 13: 53 ❙ Daponte A, J Clin Virol 2006; 36: 189 ❙ Kroupis C, Epidemiol Infect 2007; 135: 943 ❙ Labropoulou V, Sex Transm Dis 1997; 24: 469 ❙ Panotopoulou E, J Med Virol 2007; 79: 1898 ❙ Paraskevaidis E, Gynecol Oncol 2001; 82: 355 ❙ Tsiodras S, Clin Microbiol Infect 2011; 17: 1185, Contributing studies: Agorastos T, Eur J Obstet Gynecol Reprod Biol 2005; 121: 99 ❙ Argyri E, BMC Infect Dis 2013; 13: 53 ❙ Daponte A, J Clin Virol 2006; 36: 189 ❙ Kroupis C, Epidemiol Infect 2007; 135: 943 ❙ Labropoulou V, Sex Transm Dis 1997; 24: 469 ❙ Panotopoulou E, J Med Virol 2007; 79: 1898 ❙ Paraskevaidis E, Gynecol Oncol 2001; 82: 355 ❙ Tsiodras S, Clin Microbiol Infect 2011; 17: 1185
Hungary	Szoke K, J Med Virol 2003; 71: 585, Contributing studies: Szoke K, J Med Virol 2003; 71: 585
Iceland	Sigurdsson K, Int J Cancer 2007; 121: 2682, Contributing studies: Sigurdsson K, Int J Cancer 2007; 121: 2682

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Ireland	Butler D, J Pathol 2000; 192: 502 ❘ Keegan H, J Virol Methods 2014; 201: 93 ❘ Murphy N, J Clin Pathol 2003; 56: 56 ❘ O'Leary JJ, J Clin Pathol 1998; 51: 576, Contributing studies: Butler D, J Pathol 2000; 192: 502 ❘ Keegan H, J Virol Methods 2014; 201: 93 ❘ Murphy N, J Clin Pathol 2003; 56: 56 ❘ O'Leary JJ, J Clin Pathol 1998; 51: 576
Italy	Agarossi A, J Med Virol 2009; 81: 529 ❘ Capra G, Virus Res 2008; 133: 195 ❘ Carozzi F, J Clin Virol 2014; 60: 257 ❘ Carozzi FM, Cancer Epidemiol Biomarkers Prev 2010; 19: 2389 ❘ Gargiulo F, Virus Res 2007; 125: 176 ❘ Giorgi Rossi P, BMC Infect Dis 2010; 10: 214 ❘ Laconi S, Pathologica 2000; 92: 524 ❘ Sandri MT, J Med Virol 2009; 81: 271 ❘ Spinillo A, J Med Virol 2014; 86: 1145 ❘ Tornesello ML, J Med Virol 2006; 78: 1663 ❘ Venturoli S, J Med Virol 2008; 80: 1434 ❘ Zerbini M, J Clin Pathol 2001; 54: 377, Contributing studies: Agarossi A, J Med Virol 2009; 81: 529 ❘ Capra G, Virus Res 2008; 133: 195 ❘ Carozzi F, J Clin Virol 2014; 60: 257 ❘ Carozzi FM, Cancer Epidemiol Biomarkers Prev 2010; 19: 2389 ❘ Gargiulo F, Virus Res 2007; 125: 176 ❘ Giorgi Rossi P, BMC Infect Dis 2010; 10: 214 ❘ Laconi S, Pathologica 2000; 92: 524 ❘ Sandri MT, J Med Virol 2009; 81: 271 ❘ Spinillo A, J Med Virol 2014; 86: 1145 ❘ Tornesello ML, J Med Virol 2006; 78: 1663 ❘ Venturoli S, J Med Virol 2008; 80: 1434 ❘ Zerbini M, J Clin Pathol 2001; 54: 377
Latvia	Kulmala SM, J Med Virol 2007; 79: 771, Contributing studies: Kulmala SM, J Med Virol 2007; 79: 771
Lithuania	Gudleviciene Z, Medicina (Kaunas) 2005; 41: 910 ❘ Simanaviciene V, J Med Virol 2014, Contributing studies: Gudleviciene Z, Medicina (Kaunas) 2005; 41: 910 ❘ Simanaviciene V, J Med Virol 2014
Netherlands	Bulkmans NW, Int J Cancer 2005; 117: 177 ❘ Cornelissen MT, Virchows Arch, B, Cell Pathol 1992; 62: 167 ❘ Prinsen CF, BJOG 2007; 114: 951 ❘ Reesink-Peters N, Eur J Obstet Gynecol Reprod Biol 2001; 98: 199 ❘ Tang N, J Clin Virol 2009; 45 Suppl 1: S25 ❘ van Duin M, Int J Cancer 2003; 105: 577, Contributing studies: Bulkmans NW, Int J Cancer 2005; 117: 177 ❘ Cornelissen MT, Virchows Arch, B, Cell Pathol 1992; 62: 167 ❘ Prinsen CF, BJOG 2007; 114: 951 ❘ Reesink-Peters N, Eur J Obstet Gynecol Reprod Biol 2001; 98: 199 ❘ Tang N, J Clin Virol 2009; 45 Suppl 1: S25 ❘ van Duin M, Int J Cancer 2003; 105: 577
Norway	Contributing studies: Kraus I, Br J Cancer 2004; 90: 1407 ❘ Molden T, Cancer Epidemiol Biomarkers Prev 2005; 14: 367 ❘ Roberts CC, J Clin Virol 2006; 36: 277 ❘ Sjoeborg KD, Gynecol Oncol 2010; 118: 29, Kraus I, Br J Cancer 2004; 90: 1407 ❘ Molden T, Cancer Epidemiol Biomarkers Prev 2005; 14: 367 ❘ Roberts CC, J Clin Virol 2006; 36: 277 ❘ Sjoeborg KD, Gynecol Oncol 2010; 118: 29
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Romania	Contributing studies: Anton G, APMIS 2011; 119: 1 ❘ Ursu RG, Virol J 2011; 8: 558, Anton G, APMIS 2011; 119: 1 ❘ Ursu RG, Virol J 2011; 8: 558
Russian Federation	Kulmala SM, J Med Virol 2007; 79: 771, Contributing studies: Kulmala SM, J Med Virol 2007; 79: 771
Slovenia	Kovanda A, Acta Dermatovenerol Alp Pannonica Adriat 2009; 18: 47, Contributing studies: Kovanda A, Acta Dermatovenerol Alp Pannonica Adriat 2009; 18: 47
Spain	Bosch FX, Cancer Epidemiol Biomarkers Prev 1993; 2: 415 ❘ Conesa-Zamora P, BMC Infect Dis 2009; 9: 124 ❘ Darwich L, Int J Gynecol Cancer 2011; 21: 1486 ❘ de Méndez MT, Acta Cytol 2009; 53: 540 ❘ de Oña M, J Med Virol 2010; 82: 597 ❘ García-Sierra N, J Clin Microbiol 2009; 47: 2165 ❘ Herraez-Hernandez E, J Virol Methods 2013; 193: 9 ❘ Martín P, BMC Infect Dis 2011; 11: 316 ❘ Muñoz N, Int J Cancer 1992; 52: 743, Contributing studies: Bosch FX, Cancer Epidemiol Biomarkers Prev 1993; 2: 415 ❘ Conesa-Zamora P, BMC Infect Dis 2009; 9: 124 ❘ Darwich L, Int J Gynecol Cancer 2011; 21: 1486 ❘ de Méndez MT, Acta Cytol 2009; 53: 540 ❘ de Oña M, J Med Virol 2010; 82: 597 ❘ García-Sierra N, J Clin Microbiol 2009; 47: 2165 ❘ Herraez-Hernandez E, J Virol Methods 2013; 193: 9 ❘ Martín P, BMC Infect Dis 2011; 11: 316 ❘ Muñoz N, Int J Cancer 1992; 52: 743
Sweden	Andersson S, Br J Cancer 2005; 92: 2195 ❘ Kalantari M, Hum Pathol 1997; 28: 899 ❘ Zehbe I, Virchows Arch 1996; 428: 151, Contributing studies: Andersson S, Br J Cancer 2005; 92: 2195 ❘ Kalantari M, Hum Pathol 1997; 28: 899 ❘ Zehbe I, Virchows Arch 1996; 428: 151
Switzerland	Dobec M, J Med Virol 2011; 83: 1370, Contributing studies: Dobec M, J Med Virol 2011; 83: 1370
United Kingdom	Anderson L, J Med Virol 2013; 85: 295 ❘ Arends MJ, Hum Pathol 1993; 24: 432 ❘ Cuschieri KS, J Clin Pathol 2004; 57: 68 ❘ Cuzick J, Br J Cancer 1994; 69: 167 ❘ Cuzick J, J Clin Virol 2014; 60: 44 ❘ Geraets DT, J Clin Microbiol 2014; 52: 3996 ❘ Herrington CS, Br J Cancer 1995; 71: 206 ❘ Hibbitts S, Br J Cancer 2008; 99: 1929 ❘ Howell-Jones R, Br J Cancer 2010; 103: 209 ❘ Jamison J, Cytopathology 2009; 20: 242 ❘ Sargent A, Br J Cancer 2008; 98: 1704 ❘ Southern SA, Diagn Mol Pathol 1998; 7: 114, Contributing studies: Anderson L, J Med Virol 2013; 85: 295 ❘ Arends MJ, Hum Pathol 1993; 24: 432 ❘ Cuschieri KS, J Clin Pathol 2004; 57: 68 ❘ Cuzick J, Br J Cancer 1994; 69: 167 ❘ Cuzick J, J Clin Virol 2014; 60: 44 ❘ Geraets DT, J Clin Microbiol 2014; 52: 3996 ❘ Herrington CS, Br J Cancer 1995; 71: 206 ❘ Hibbitts S, Br J Cancer 2008; 99: 1929 ❘ Howell-Jones R, Br J Cancer 2010; 103: 209 ❘ Jamison J, Cytopathology 2009; 20: 242 ❘ Sargent A, Br J Cancer 2008; 98: 1704 ❘ Southern SA, Diagn Mol Pathol 1998; 7: 114
Oceania	
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HPV type distribution for cervical low grade squamous intraepithelial lesions	

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General sources	Based on meta-analysis performed by IARC's Infections and Cancer Epidemiology Group up to November 2011, the ICO HPV Information Centre has updated data until June 2015. Reference publications: 1) Guan P, Int J Cancer 2012;131:2349 2) Clifford GM, Cancer Epidemiol Biomarkers Prev 2005;14:1157
Africa	
Algeria	Contributing studies: Hammouda D, Int J Cancer 2011; 128: 2224, Hammouda D, Int J Cancer 2011; 128: 2224
Cameroon	Contributing studies: Untiet S, Int J Cancer 2014; 135: 1911
Côte d'Ivoire	La Ruche G, Int J Cancer 1998; 76: 480, Contributing studies: La Ruche G, Int J Cancer 1998; 76: 480
DR Congo	Hovland S, Br J Cancer 2010; 102: 957, Contributing studies: Hovland S, Br J Cancer 2010; 102: 957
Ethiopia	Contributing studies: Abate E, J Med Virol 2013; 85: 282, Abate E, J Med Virol 2013; 85: 282
Guinea	Contributing studies: Keita N, Br J Cancer 2009; 101: 202, Keita N, Br J Cancer 2009; 101: 202
Kenya	De Vuyst H, Cancer Causes Control 2010; 21: 2309 | De Vuyst H, Int J Cancer 2012; 131: 949 | De Vuyst H, Sex Transm Dis 2003; 30: 137, Contributing studies: De Vuyst H, Cancer Causes Control 2010; 21: 2309 | De Vuyst H, Int J Cancer 2012; 131: 949 | De Vuyst H, Sex Transm Dis 2003; 30: 137
Morocco	Alhamany Z, J Infect Dev Ctries 2010; 4: 732, Contributing studies: Alhamany Z, J Infect Dev Ctries 2010; 4: 732
Nigeria	Gage JC, Int J Cancer 2012; 131: 2903 | Thomas JO, Br J Cancer 2004; 90: 638, Contributing studies: Gage JC, Int J Cancer 2012; 131: 2903 | Thomas JO, Br J Cancer 2004; 90: 638
Senegal	Contributing studies: Chabaud M, J Med Virol 1996; 49: 259 | Xi LF, Int J Cancer 2003; 103: 803, Chabaud M, J Med Virol 1996; 49: 259 | Xi LF, Int J Cancer 2003; 103: 803
South Africa	Allan B, J Clin Microbiol 2008; 46: 740, Contributing studies: Allan B, J Clin Microbiol 2008; 46: 740 | van Aardt MC, Personal communication Unpublished
Zimbabwe	Sawaya GF, Obstet Gynecol 2008; 112: 990, Contributing studies: Sawaya GF, Obstet Gynecol 2008; 112: 990
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Argentina	Abba MC, Rev Argent Microbiol 2003; 35: 74 | Chouhy D, Int J Mol Med 2006; 18: 995 | Deluca GD, Rev Inst Med Trop Sao Paulo 2004; 46: 9 | Eiguchi K, J Low Genit Tract Dis 2008; 12: 262 | Tonon SA, Infect Dis Obstet Gynecol 1999; 7: 237 | Venezuela RF, Rev Inst Med Trop Sao Paulo 2012; 54: 11, Contributing studies: Abba MC, Rev Argent Microbiol 2003; 35: 74 | Chouhy D, Int J Mol Med 2006; 18: 995 | Deluca GD, Rev Inst Med Trop Sao Paulo 2004; 46: 9 | Eiguchi K, J Low Genit Tract Dis 2008; 12: 262 | Tonon SA, Infect Dis Obstet Gynecol 1999; 7: 237 | Venezuela RF, Rev Inst Med Trop Sao Paulo 2012; 54: 11
Belize	Cathro HP, Hum Pathol 2009; 40: 942, Contributing studies: Cathro HP, Hum Pathol 2009; 40: 942
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Chile	Ili CG, J Med Virol 2011; 83: 833 | López M J, Rev Med Chil 2010; 138: 1343, Contributing studies: Ili CG, J Med Virol 2011; 83: 833 | López M J, Rev Med Chil 2010; 138: 1343
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Nicaragua	Hindryckx P, Sex Transm Infect 2006; 82: 334, Contributing studies: Hindryckx P, Sex Transm Infect 2006; 82: 334
Paraguay	Mendoza LP, J Med Virol 2011; 83: 1351 | Tonon SA, Infect Dis Obstet Gynecol 1999; 7: 237, Contributing studies: Mendoza LP, J Med Virol 2011; 83: 1351 | Tonon SA, Infect Dis Obstet Gynecol 1999; 7: 237
Peru	Contributing studies: Martorell M, Genet Mol Res 2012; 11: 2099, Martorell M, Genet Mol Res 2012; 11: 2099
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Uruguay	Contributing studies: Ramas V, J Med Virol 2013; 85: 845, Ramas V, J Med Virol 2013; 85: 845
Venezuela	Correnti M, Gynecol Oncol 2011; 121: 527, Contributing studies: Correnti M, Gynecol Oncol 2011; 121: 527
Asia	
Bangladesh	Contributing studies: Banik U, Cytojournal 2013; 10: 14, Banik U, Cytojournal 2013; 10: 14
China	Contributing studies: Chan PK, Int J Cancer 2006; 118: 243 | Chan PK, Int J Cancer 2012; 131: 692 | Chan PK, J Med Virol 1999; 59: 232 | Ding X, J Med Virol 2014; 86: 1937 | Guo J, Scand J Infect Dis 2010; 42: 72 | Hong D, Int J Gynecol Cancer 2008; 18: 104 | Jin Q, Chin Med J 2010; 123: 2004 | Li H, Eur J Obstet Gynecol Reprod Biol 2013; 170: 202 | Li J, J Clin Microbiol 2012; 50: 1079 | Liu SS, Tumour Biol 2008; 29: 105 | Liu X, Int J Gynecol Cancer 2010; 20: 147 | Sun B, Arch Virol 2014; 159: 1027 | Tao PP, Zhonghua Fu Chan Ke Za Zhi 2006; 41: 43 | Wu D, Eur J Obstet Gynecol Reprod Biol 2010; 151: 86 | Wu EQ, Cancer Causes Control 2013; 24: 795 | Yuan X, Arch Gynecol Obstet 2011; 283: 1385 | Zhang R, Cancer Epidemiol 2013; 37: 939 | Zhao FH, Int J Cancer 2014; 135: 2604 | Zhao Y, Pathol Int 2008; 58: 643, Chan PK, Int J Cancer 2006; 118: 243 | Chan PK, Int J Cancer 2012; 131: 692 | Chan PK, J Med Virol 1999; 59: 232 | Ding X, J Med Virol 2014; 86: 1937 | Guo J, Scand J Infect Dis 2010; 42: 72 | Hong D, Int J Gynecol Cancer 2008; 18: 104 | Jin Q, Chin Med J 2010; 123: 2004 | Li H, Eur J Obstet Gynecol Reprod Biol 2013; 170: 202 | Li J, J Clin Microbiol 2012; 50: 1079 | Liu SS, Tumour Biol 2008; 29: 105 | Liu X, Int J Gynecol Cancer 2010; 20: 147 | Sun B, Arch Virol 2014; 159: 1027 | Tao PP, Zhonghua Fu Chan Ke Za Zhi 2006; 41: 43 | Wu D, Eur J Obstet Gynecol Reprod Biol 2010; 151: 86 | Wu EQ, Cancer Causes Control 2013; 24: 795 | Yuan X, Arch Gynecol Obstet 2011; 283: 1385 | Zhang R, Cancer Epidemiol 2013; 37: 939 | Zhao FH, Int J Cancer 2014; 135: 2604 | Zhao Y, Pathol Int 2008; 58: 643
India	Contributing studies: Berlin Grace VM, Indian J Cancer 2009; 46: 203 | Franceschi S, Br J Cancer 2005; 92: 601 | Nagpal JK, Eur J Clin Invest 2002; 32: 943 | Nair P, Pathol Oncol Res 1999; 5: 95 | Singh M, Tumour Biol 2009; 30: 276, Berlin Grace VM, Indian J Cancer 2009; 46: 203 | Franceschi S, Br J Cancer 2005; 92: 601 | Nagpal JK, Eur J Clin Invest 2002; 32: 943 | Nair P, Pathol Oncol Res 1999; 5: 95 | Singh M, Tumour Biol 2009; 30: 276
Iran	Contributing studies: Esmaeili M, Gynecol Obstet Invest 2008; 66: 68 | Ghaffari SR, Asian Pac J Cancer Prev 2006; 7: 529 | Khodakarami N, Int J Cancer 2012; 131: E156, Esmaeili M, Gynecol Obstet Invest 2008; 66: 68 | Ghaffari SR, Asian Pac J Cancer Prev 2006; 7: 529 | Khodakarami N, Int J Cancer 2012; 131: E156

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Kuwait	Al-Awadhi R, Diagn Cytopathol 2013; 41: 107 ǀ Al-Awadhi R, J Med Virol 2011; 83: 453, Contributing studies: Al-Awadhi R, Diagn Cytopathol 2013; 41: 107 ǀ Al-Awadhi R, J Med Virol 2011; 83: 453
Malaysia	Sharifah NA, Asian Pac J Cancer Prev 2009; 10: 303, Contributing studies: Sharifah NA, Asian Pac J Cancer Prev 2009; 10: 303
Myanmar	Contributing studies: Mu-Mu-Shwe, Acta Med Okayama 2014; 68: 79, Mu-Mu-Shwe, Acta Med Okayama 2014; 68: 79
Pakistan	Raza SA, Br J Cancer 2010; 102: 1657, Contributing studies: Raza SA, Br J Cancer 2010; 102: 1657
Republic of Korea	An HJ, Cancer 2003; 97: 1672 ǀ Cho NH, Am J Obstet Gynecol 2003; 188: 56 ǀ Hwang TS, Gynecol Oncol 2003; 90: 51 ǀ Kang WD, Int J Gynecol Cancer 2009; 19: 924 ǀ Lee HS, Int J Gynecol Cancer 2007; 17: 497 ǀ Oh YL, Cytopathology 2001; 12: 75, Contributing studies: An HJ, Cancer 2003; 97: 1672 ǀ Cho NH, Am J Obstet Gynecol 2003; 188: 56 ǀ Hwang TS, Gynecol Oncol 2003; 90: 51 ǀ Kang WD, Int J Gynecol Cancer 2009; 19: 924 ǀ Lee HS, Int J Gynecol Cancer 2007; 17: 497 ǀ Oh YL, Cytopathology 2001; 12: 75
Thailand	Bhattarakosol P, J Med Assoc Thai 2002; 85 Suppl 1: S360 ǀ Chaiwongkot A, Asian Pac J Cancer Prev 2007; 8: 279 ǀ Chansaenroj J, Asian Pac J Cancer Prev 2010; 11: 117 ǀ Chansaenroj J, J Med Virol 2014; 86: 601 ǀ Ekalaksananan T, J Obstet Gynaecol Res 2001; 27: 117 ǀ Suwannarurk K, Cancer Epidemiol 2009; 33: 56, Contributing studies: Bhattarakosol P, J Med Assoc Thai 2002; 85 Suppl 1: S360 ǀ Chaiwongkot A, Asian Pac J Cancer Prev 2007; 8: 279 ǀ Chansaenroj J, Asian Pac J Cancer Prev 2010; 11: 117 ǀ Chansaenroj J, J Med Virol 2014; 86: 601 ǀ Ekalaksananan T, J Obstet Gynaecol Res 2001; 27: 117 ǀ Suwannarurk K, Cancer Epidemiol 2009; 33: 56
Turkey	Ergünay K, Mikrobiyol Bul 2008; 42: 273 ǀ Ozgul N, J Obstet Gynaecol Res 2008; 34: 865 ǀ Sahiner F, Mikrobiyol Bul 2012; 46: 624 ǀ Tezcan S, Asian Pac J Cancer Prev 2014; 15: 3997 ǀ Yuce K, Arch Gynecol Obstet 2012; 286: 203, Contributing studies: Ergünay K, Mikrobiyol Bul 2008; 42: 273 ǀ Ozgul N, J Obstet Gynaecol Res 2008; 34: 865 ǀ Sahiner F, Mikrobiyol Bul 2012; 46: 624 ǀ Tezcan S, Asian Pac J Cancer Prev 2014; 15: 3997 ǀ Yuce K, Arch Gynecol Obstet 2012; 286: 203
Europe	
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Belgium	Arbyn M, Cancer Epidemiol Biomarkers Prev 2009; 18: 321 ǀ Baay MF, Eur J Gynaecol Oncol 2001; 22: 204 ǀ Beerens E, Cytopathology 2005; 16: 199 ǀ Depuydt CE, Br J Cancer 2003; 88: 560 ǀ Weyn C, Cancer Epidemiol 2013; 37: 457, Contributing studies: Arbyn M, Cancer Epidemiol Biomarkers Prev 2009; 18: 321 ǀ Baay MF, Eur J Gynaecol Oncol 2001; 22: 204 ǀ Beerens E, Cytopathology 2005; 16: 199 ǀ Depuydt CE, Br J Cancer 2003; 88: 560 ǀ Weyn C, Cancer Epidemiol 2013; 37: 457
Croatia	Contributing studies: Grce M, Anticancer Res 2001; 21: 579 ǀ Grce M, Eur J Epidemiol 1997; 13: 645 ǀ Grce M, J Clin Microbiol 2004; 42: 1341, Grce M, Anticancer Res 2001; 21: 579 ǀ Grce M, Eur J Epidemiol 1997; 13: 645 ǀ Grce M, J Clin Microbiol 2004; 42: 1341
Czechia	Tachezy R, PLoS ONE 2011; 6: e21913, Contributing studies: Tachezy R, PLoS ONE 2011; 6: e21913
Denmark	Contributing studies: Hording U, Eur J Obstet Gynecol Reprod Biol 1995; 62: 49 ǀ Kjaer SK, Int J Cancer 2008; 123: 1864 ǀ Kjær SK, Cancer Causes Control 2014; 25: 179, Hording U, Eur J Obstet Gynecol Reprod Biol 1995; 62: 49 ǀ Kjaer SK, Int J Cancer 2008; 123: 1864 ǀ Kjær SK, Cancer Causes Control 2014; 25: 179
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Greece	Adamopoulou M, Anticancer Res 2009; 29: 3401 ǀ Argyri E, BMC Infect Dis 2013; 13: 53 ǀ Kroupis C, Epidemiol Infect 2007; 135: 943 ǀ Labropoulou V, Sex Transm Dis 1997; 24: 469 ǀ Mammas IN, Oncol Rep 2008; 20: 141 ǀ Panotopoulou E, J Med Virol 2007; 79: 1898 ǀ Tsiodras S, Clin Microbiol Infect 2011; 17: 1185, Contributing studies: Adamopoulou M, Anticancer Res 2009; 29: 3401 ǀ Argyri E, BMC Infect Dis 2013; 13: 53 ǀ Kroupis C, Epidemiol Infect 2007; 135: 943 ǀ Labropoulou V, Sex Transm Dis 1997; 24: 469 ǀ Mammas IN, Oncol Rep 2008; 20: 141 ǀ Panotopoulou E, J Med Virol 2007; 79: 1898 ǀ Tsiodras S, Clin Microbiol Infect 2011; 17: 1185

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Italy	Agarossi A, J Med Virol 2009; 81: 529 ǀ Agodi A, Int J Gynecol Cancer 2009; 19: 1094 ǀ Astori G, Virus Res 1997; 50: 57 ǀ Capra G, Virus Res 2008; 133: 195 ǀ Chironna M, J Prev Med Hyg 2010; 51: 139 ǀ Gargiulo F, Virus Res 2007; 125: 176 ǀ Giorgi Rossi P, BMC Infect Dis 2010; 10: 214 ǀ Laconi S, Pathologica 2000; 92: 524 ǀ Menegazzi P, Infect Dis Obstet Gynecol 2009; 2009: 198425 ǀ Sandri MT, J Med Virol 2009; 81: 271 ǀ Spinillo A, Gynecol Oncol 2009; 113: 115 ǀ Spinillo A, J Med Virol 2014; 86: 1145 ǀ Tornesello ML, J Med Virol 2006; 78: 1663 ǀ Venturoli S, J Clin Virol 2002; 25: 177 ǀ Venturoli S, J Med Virol 2008; 80: 1434 ǀ Voglino G, Pathologica 2000; 92: 516 ǀ Zerbini M, J Clin Pathol 2001; 54: 377, Contributing studies: Agarossi A, J Med Virol 2009; 81: 529 ǀ Agodi A, Int J Gynecol Cancer 2009; 19: 1094 ǀ Astori G, Virus Res 1997; 50: 57 ǀ Capra G, Virus Res 2008; 133: 195 ǀ Chironna M, J Prev Med Hyg 2010; 51: 139 ǀ Gargiulo F, Virus Res 2007; 125: 176 ǀ Giorgi Rossi P, BMC Infect Dis 2010; 10: 214 ǀ Laconi S, Pathologica 2000; 92: 524 ǀ Menegazzi P, Infect Dis Obstet Gynecol 2009; 2009: 198425 ǀ Sandri MT, J Med Virol 2009; 81: 271 ǀ Spinillo A, Gynecol Oncol 2009; 113: 115 ǀ Spinillo A, J Med Virol 2014; 86: 1145 ǀ Tornesello ML, J Med Virol 2006; 78: 1663 ǀ Venturoli S, J Clin Virol 2002; 25: 177 ǀ Venturoli S, J Med Virol 2008; 80: 1434 ǀ Voglino G, Pathologica 2000; 92: 516 ǀ Zerbini M, J Clin Pathol 2001; 54: 377
Latvia	Contributing studies: Kulmala SM, J Med Virol 2007; 79: 771, Kulmala SM, J Med Virol 2007; 79: 771
Lithuania	Gudleviciene Z, Medicina (Kaunas) 2005; 41: 910, Contributing studies: Gudleviciene Z, Medicina (Kaunas) 2005; 41: 910
Netherlands	Contributing studies: Bollen LJ, Am J Obstet Gynecol 1997; 177: 548 ǀ Prinsen CF, BJOG 2007; 114: 951 ǀ Reesink-Peters N, Eur J Obstet Gynecol Reprod Biol 2001; 98: 199, Bollen LJ, Am J Obstet Gynecol 1997; 177: 548 ǀ Prinsen CF, BJOG 2007; 114: 951 ǀ Reesink-Peters N, Eur J Obstet Gynecol Reprod Biol 2001; 98: 199
Norway	Contributing studies: Molden T, Cancer Epidemiol Biomarkers Prev 2005; 14: 367 ǀ Roberts CC, J Clin Virol 2006; 36: 277, Molden T, Cancer Epidemiol Biomarkers Prev 2005; 14: 367 ǀ Roberts CC, J Clin Virol 2006; 36: 277
Portugal	Contributing studies: Medeiros R, Eur J Cancer Prev 2005; 14: 467 ǀ Nobre RJ, J Med Virol 2010; 82: 1024, Medeiros R, Eur J Cancer Prev 2005; 14: 467 ǀ Nobre RJ, J Med Virol 2010; 82: 1024
Romania	Contributing studies: Anton G, APMIS 2011; 119: 1 ǀ Ursu RG, Virol J 2011; 8: 558, Anton G, APMIS 2011; 119: 1 ǀ Ursu RG, Virol J 2011; 8: 558
Russian Federation	Kulmala SM, J Med Virol 2007; 79: 771, Contributing studies: Kulmala SM, J Med Virol 2007; 79: 771
Spain	Contributing studies: Conesa-Zamora P, BMC Infect Dis 2009; 9: 124 ǀ de Méndez MT, Acta Cytol 2009; 53: 540 ǀ de Oña M, J Med Virol 2010; 82: 597 ǀ Doménech-Peris A, Gynecol Obstet Invest 2010; 70: 113 ǀ García-Sierra N, J Clin Microbiol 2009; 47: 2165 ǀ Herraez-Hernandez E, J Virol Methods 2013; 193: 9 ǀ Martín P, BMC Infect Dis 2011; 11: 316, Conesa-Zamora P, BMC Infect Dis 2009; 9: 124 ǀ de Méndez MT, Acta Cytol 2009; 53: 540 ǀ de Oña M, J Med Virol 2010; 82: 597 ǀ Doménech-Peris A, Gynecol Obstet Invest 2010; 70: 113 ǀ García-Sierra N, J Clin Microbiol 2009; 47: 2165 ǀ Herraez-Hernandez E, J Virol Methods 2013; 193: 9 ǀ Martín P, BMC Infect Dis 2011; 11: 316
Sweden	Andersson S, Br J Cancer 2005; 92: 2195 ǀ Brismar-Wendel S, Br J Cancer 2009; 101: 511 ǀ Kalantari M, Hum Pathol 1997; 28: 899 ǀ Söderlund-Strand A, Am J Obstet Gynecol 2011; 205: 145.e1 ǀ Zehbe I, Virchows Arch 1996; 428: 151, Contributing studies: Andersson S, Br J Cancer 2005; 92: 2195 ǀ Brismar-Wendel S, Br J Cancer 2009; 101: 511 ǀ Kalantari M, Hum Pathol 1997; 28: 899 ǀ Söderlund-Strand A, Am J Obstet Gynecol 2011; 205: 145.e1 ǀ Zehbe I, Virchows Arch 1996; 428: 151
Switzerland	Contributing studies: Dobec M, J Med Virol 2011; 83: 1370, Dobec M, J Med Virol 2011; 83: 1370
United Kingdom	Contributing studies: Anderson L, J Med Virol 2013; 85: 295 ǀ Arends MJ, Hum Pathol 1993; 24: 432 ǀ Cuschieri KS, J Clin Pathol 2004; 57: 68 ǀ Cuzick J, Br J Cancer 1994; 69: 167 ǀ Cuzick J, Br J Cancer 1999; 81: 554 ǀ Giannoudis A, Int J Cancer 1999; 83: 66 ǀ Hibbitts S, Br J Cancer 2008; 99: 1929 ǀ Howell-Jones R, Br J Cancer 2010; 103: 209 ǀ Jamison J, Cytopathology 2009; 20: 242 ǀ Sargent A, Br J Cancer 2008; 98: 1704 ǀ Southern SA, Hum Pathol 2001; 32: 1351 ǀ Woo YL, Int J Cancer 2010; 126: 133, Anderson L, J Med Virol 2013; 85: 295 ǀ Arends MJ, Hum Pathol 1993; 24: 432 ǀ Cuschieri KS, J Clin Pathol 2004; 57: 68 ǀ Cuzick J, Br J Cancer 1994; 69: 167 ǀ Cuzick J, Br J Cancer 1999; 81: 554 ǀ Giannoudis A, Int J Cancer 1999; 83: 66 ǀ Hibbitts S, Br J Cancer 2008; 99: 1929 ǀ Howell-Jones R, Br J Cancer 2010; 103: 209 ǀ Jamison J, Cytopathology 2009; 20: 242 ǀ Sargent A, Br J Cancer 2008; 98: 1704 ǀ Southern SA, Hum Pathol 2001; 32: 1351 ǀ Woo YL, Int J Cancer 2010; 126: 133
HPV type distribution for invasive anal cancer	
General sources	Based on systematic reviews (up to 2008) performed by ICO for the IARC Monograph on the Evaluation of Carcinogenic Risks to Humans volume 100B and IARC's Infections and Cancer Epidemiology Group. The ICO HPV Information Centre has updated data until June 2015. Reference publications: 1) Bouvard V, Lancet Oncol 2009;10:321 2) De Vuyst H, Int J Cancer 2009;124:1626
Africa	
Mali	Alemany L, Int J Cancer 2015; 136: 98
Nigeria	Alemany L, Int J Cancer 2015; 136: 98
Senegal	Alemany L, Int J Cancer 2015; 136: 98
Americas	
Canada	Ouhoummane N, Cancer Epidemiol 2013; 37: 807
Chile	Alemany L, Int J Cancer 2015; 136: 98
Colombia	Alemany L, Int J Cancer 2015; 136: 98
Ecuador	Alemany L, Int J Cancer 2015; 136: 98

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Country	Study
Guatemala	Alemany L, Int J Cancer 2015; 136: 98
Honduras	Alemany L, Int J Cancer 2015; 136: 98
Mexico	Alemany L, Int J Cancer 2015; 136: 98
Paraguay	Alemany L, Int J Cancer 2015; 136: 98
United States of America	Alemany L, Int J Cancer 2015; 136: 98 ǀ Daling JR, Cancer 2004; 101: 270 ǀ Palefsky JM, Cancer Res 1991; 51: 1014 ǀ Zaki SR, Am J Pathol 1992; 140: 1345
Asia	
Bangladesh	Alemany L, Int J Cancer 2015; 136: 98
India	Alemany L, Int J Cancer 2015; 136: 98
Republic of Korea	Alemany L, Int J Cancer 2015; 136: 98 ǀ Yhim HY, Int J Cancer 2011; 129: 1752 ǀ Youk EG, Dis Colon Rectum 2001; 44: 236
Europe	
Bosnia and Herzegovina	Alemany L, Int J Cancer 2015; 136: 98
Czechia	Alemany L, Int J Cancer 2015; 136: 98 ǀ Tachezy R, PLoS ONE 2011; 6: e21913
Denmark	Serup-Hansen E, J Clin Oncol 2014; 32: 1812
France	Abramowitz L, Int J Cancer 2011; 129: 433 ǀ Alemany L, Int J Cancer 2015; 136: 98 ǀ Valmary-Degano S, Hum Pathol 2013; 44: 992 ǀ Vincent-Salomon A, Mod Pathol 1996; 9: 614
Germany	Alemany L, Int J Cancer 2015; 136: 98 ǀ Rödel F, Int J Cancer 2015; 136: 278 ǀ Varnai AD, Int J Colorectal Dis 2006; 21: 135
Italy	Indinnimeo M, J Exp Clin Cancer Res 1999; 18: 47
Poland	Alemany L, Int J Cancer 2015; 136: 98
Portugal	Alemany L, Int J Cancer 2015; 136: 98
Slovenia	Alemany L, Int J Cancer 2015; 136: 98
Spain	Alemany L, Int J Cancer 2015; 136: 98
Sweden	Laytragoon-Lewin N, Anticancer Res 2007; 27: 4473
United Kingdom	Alemany L, Int J Cancer 2015; 136: 98 ǀ Baricevic I, Eur J Cancer 2015; 51: 776
HPV type distribution for anal intraepithelial neoplasia (AIN)	
General sources	Based on systematic reviews (up to 2008) performed by ICO for the IARC Monograph on the Evaluation of Carcinogenic Risks to Humans volume 100B and IARC's Infections and Cancer Epidemiology Group. The ICO HPV Information Centre has updated data until June 2015. Reference publications: 1) Bouvard V, Lancet Oncol 2009;10:321 2) De Vuyst H, Int J Cancer 2009;124:1626
Americas	
Canada	Gohy L, J Acquir Immune Defic Syndr 2008; 49: 32 ǀ Salit IE, Cancer Epidemiol Biomarkers Prev 2009; 18: 1986, Gohy L, J Acquir Immune Defic Syndr 2008; 49: 32 ǀ Salit IE, Cancer Epidemiol Biomarkers Prev 2009; 18: 1986
Chile	Alemany L, Int J Cancer 2015; 136: 98, Alemany L, Int J Cancer 2015; 136: 98
Colombia	Alemany L, Int J Cancer 2015; 136: 98, Alemany L, Int J Cancer 2015; 136: 98
Ecuador	Alemany L, Int J Cancer 2015; 136: 98, Alemany L, Int J Cancer 2015; 136: 98
Guatemala	Alemany L, Int J Cancer 2015; 136: 98, Alemany L, Int J Cancer 2015; 136: 98
Honduras	Alemany L, Int J Cancer 2015; 136: 98, Alemany L, Int J Cancer 2015; 136: 98
Mexico	Alemany L, Int J Cancer 2015; 136: 98, Alemany L, Int J Cancer 2015; 136: 98
Paraguay	Alemany L, Int J Cancer 2015; 136: 98, Alemany L, Int J Cancer 2015; 136: 98
United States of America	Sahasrabuddhe VV, J Infect Dis 2013; 207: 392, Sahasrabuddhe VV, J Infect Dis 2013; 207: 392
Asia	
Thailand	Phanuphak N, PLoS ONE 2013; 8: e78291, Phanuphak N, PLoS ONE 2013; 8: e78291
Europe	
Bosnia and Herzegovina	Alemany L, Int J Cancer 2015; 136: 98, Alemany L, Int J Cancer 2015; 136: 98
Czechia	Alemany L, Int J Cancer 2015; 136: 98, Alemany L, Int J Cancer 2015; 136: 98
France	Alemany L, Int J Cancer 2015; 136: 98, Alemany L, Int J Cancer 2015; 136: 98
Germany	Alemany L, Int J Cancer 2015; 136: 98 ǀ Hampl M, Obstet Gynecol 2006; 108: 1361 ǀ Silling S, J Clin Virol 2012; 53: 325 ǀ Varnai AD, Int J Colorectal Dis 2006; 21: 135 ǀ Wieland U, Arch Dermatol 2006; 142: 1438, Alemany L, Int J Cancer 2015; 136: 98 ǀ Hampl M, Obstet Gynecol 2006; 108: 1361 ǀ Silling S, J Clin Virol 2012; 53: 325 ǀ Varnai AD, Int J Colorectal Dis 2006; 21: 135 ǀ Wieland U, Arch Dermatol 2006; 142: 1438
Italy	Tanzi E, Vaccine 2009; 27 Suppl 1: A17, Tanzi E, Vaccine 2009; 27 Suppl 1: A17
Netherlands	Richel O, J Infect Dis 2014; 210: 111, Richel O, J Infect Dis 2014; 210: 111
Poland	Alemany L, Int J Cancer 2015; 136: 98, Alemany L, Int J Cancer 2015; 136: 98
Portugal	Alemany L, Int J Cancer 2015; 136: 98, Alemany L, Int J Cancer 2015; 136: 98
Slovenia	Alemany L, Int J Cancer 2015; 136: 98, Alemany L, Int J Cancer 2015; 136: 98
Spain	Alemany L, Int J Cancer 2015; 136: 98 ǀ García-Espinosa B, Diagn Pathol 2013; 8: 204 ǀ Sirera G, AIDS 2013; 27: 951 ǀ Torres M, J Clin Microbiol 2013; 51: 3512, Alemany L, Int J Cancer 2015; 136: 98 ǀ García-Espinosa B, Diagn Pathol 2013; 8: 204 ǀ Sirera G, AIDS 2013; 27: 951 ǀ Torres M, J Clin Microbiol 2013; 51: 3512
United Kingdom	Alemany L, Int J Cancer 2015; 136: 98 ǀ Fox PA, Sex Transm Infect 2005; 81: 142, Alemany L, Int J Cancer 2015; 136: 98 ǀ Fox PA, Sex Transm Infect 2005; 81: 142
HPV type distribution for invasive vulvar cancer	

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Country	Study
General sources	Based on systematic reviews (up to 2008) performed by ICO for the IARC Monograph on the Evaluation of Carcinogenic Risks to Humans volume 100B and IARC's Infections and Cancer Epidemiology Group. The ICO HPV Information Centre has updated data until June 2015. Reference publications: 1) Bouvard V, Lancet Oncol 2009;10:321 2) De Vuyst H, Int J Cancer 2009;124:1626
Africa	
Mali	de Sanjosé S, Eur J Cancer 2013; 49: 3450
Mozambique	de Sanjosé S, Eur J Cancer 2013; 49: 3450
Nigeria	de Sanjosé S, Eur J Cancer 2013; 49: 3450
Senegal	de Sanjosé S, Eur J Cancer 2013; 49: 3450
Americas	
Argentina	de Sanjosé S, Eur J Cancer 2013; 49: 3450
Brazil	de Sanjosé S, Eur J Cancer 2013; 49: 3450 ❙ Pinto AP, Gynecol Oncol 1999; 74: 61
Chile	de Sanjosé S, Eur J Cancer 2013; 49: 3450
Colombia	de Sanjosé S, Eur J Cancer 2013; 49: 3450
Ecuador	de Sanjosé S, Eur J Cancer 2013; 49: 3450
Guatemala	de Sanjosé S, Eur J Cancer 2013; 49: 3450
Honduras	de Sanjosé S, Eur J Cancer 2013; 49: 3450
Mexico	de Sanjosé S, Eur J Cancer 2013; 49: 3450
Paraguay	de Sanjosé S, Eur J Cancer 2013; 49: 3450
United States of America	de Sanjosé S, Eur J Cancer 2013; 49: 3450 ❙ Gargano JW, J Low Genit Tract Dis 2012; 16: 471 ❙ Kim YT, Hum Pathol 1996; 27: 389 ❙ Madeleine MM, J Natl Cancer Inst 1997; 89: 1516 ❙ Riethdorf S, Hum Pathol 2004; 35: 1477 ❙ Sutton BC, Mod Pathol 2008; 21: 345 ❙ Tate JE, Gynecol Oncol 1994; 53: 78
Uruguay	de Sanjosé S, Eur J Cancer 2013; 49: 3450
Venezuela	de Sanjosé S, Eur J Cancer 2013; 49: 3450
Asia	
Bangladesh	de Sanjosé S, Eur J Cancer 2013; 49: 3450
India	de Sanjosé S, Eur J Cancer 2013; 49: 3450
Israel	de Sanjosé S, Eur J Cancer 2013; 49: 3450
Japan	Nagano H, J Obstet Gynaecol Res 1996; 22: 1 ❙ Osakabe M, Pathol Int 2007; 57: 322
Kuwait	de Sanjosé S, Eur J Cancer 2013; 49: 3450
Lebanon	de Sanjosé S, Eur J Cancer 2013; 49: 3450
Philippines	de Sanjosé S, Eur J Cancer 2013; 49: 3450
Republic of Korea	de Sanjosé S, Eur J Cancer 2013; 49: 3450
Thailand	Ngamkham J, Asian Pac J Cancer Prev 2013; 14: 2355
Turkey	de Sanjosé S, Eur J Cancer 2013; 49: 3450
Europe	
Austria	de Sanjosé S, Eur J Cancer 2013; 49: 3450
Belarus	de Sanjosé S, Eur J Cancer 2013; 49: 3450
Bosnia and Herzegovina	de Sanjosé S, Eur J Cancer 2013; 49: 3450
Czechia	de Sanjosé S, Eur J Cancer 2013; 49: 3450 ❙ Tachezy R, PLoS ONE 2011; 6: e21913
Denmark	Bryndorf T, Cytogenet Genome Res 2004; 106: 43 ❙ Hørding U, Gynecol Oncol 1994; 52: 241 ❙ Hørding U, Int J Cancer 1993; 55: 394 ❙ Madsen BS, Int J Cancer 2008; 122: 2827
Finland	Iwasawa A, Obstet Gynecol 1997; 89: 81
France	de Sanjosé S, Eur J Cancer 2013; 49: 3450
Germany	Choschzick M, Int J Gynecol Pathol 2011; 30: 497 ❙ de Sanjosé S, Eur J Cancer 2013; 49: 3450 ❙ Hampl M, Obstet Gynecol 2006; 108: 1361 ❙ Milde-Langosch K, Int J Cancer 1995; 63: 639 ❙ Reuschenbach M, J Low Genit Tract Dis 2013; 17: 289 ❙ Riethdorf S, Hum Pathol 2004; 35: 1477
Greece	de Sanjosé S, Eur J Cancer 2013; 49: 3450
Italy	Bonvicini F, J Med Virol 2005; 77: 102 ❙ de Sanjosé S, Eur J Cancer 2013; 49: 3450
Netherlands	Kagie MJ, Gynecol Oncol 1997; 67: 178 ❙ Trietsch MD, Br J Cancer 2013; 109: 2259 ❙ van de Nieuwenhof HP, Cancer Epidemiol Biomarkers Prev 2009; 18: 2061 ❙ van der Avoort IA, Int J Gynecol Pathol 2006; 25: 22
Poland	Bujko M, Acta Obstet Gynecol Scand 2012; 91: 391 ❙ de Sanjosé S, Eur J Cancer 2013; 49: 3450 ❙ Liss J, Ginekol Pol 1998; 69: 330
Portugal	de Sanjosé S, Eur J Cancer 2013; 49: 3450
Spain	Alonso I, Gynecol Oncol 2011; 122: 509 ❙ de Sanjosé S, Eur J Cancer 2013; 49: 3450 ❙ Guerrero D, Int J Cancer 2011; 128: 2853 ❙ Lerma E, Int J Gynecol Pathol 1999; 18: 191
Sweden	Larsson GL, Int J Gynecol Cancer 2012; 22: 1413 ❙ Lindell G, Gynecol Oncol 2010; 117: 312
United Kingdom	Abdel-Hady ES, Cancer Res 2001; 61: 192 ❙ de Sanjosé S, Eur J Cancer 2013; 49: 3450
Oceania	
Australia	de Sanjosé S, Eur J Cancer 2013; 49: 3450 ❙ Tan SE, Sex Health 2013; 10: 18
HPV type distribution for vulvar intraepithelial neoplasia (VIN)	
General sources	Based on systematic reviews (up to 2008) performed by ICO for the IARC Monograph on the Evaluation of Carcinogenic Risks to Humans volume 100B and IARC's Infections and Cancer Epidemiology Group. The ICO HPV Information Centre has updated data until June 2015. Reference publications: 1) Bouvard V, Lancet Oncol 2009;10:321 2) De Vuyst H, Int J Cancer 2009;124:1626
Americas	
Argentina	de Sanjosé S, Eur J Cancer 2013; 49: 3450, de Sanjosé S, Eur J Cancer 2013; 49: 3450

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Country	Study
Brazil	de Sanjosé S, Eur J Cancer 2013; 49: 3450, de Sanjosé S, Eur J Cancer 2013; 49: 3450
Chile	de Sanjosé S, Eur J Cancer 2013; 49: 3450, de Sanjosé S, Eur J Cancer 2013; 49: 3450
Colombia	de Sanjosé S, Eur J Cancer 2013; 49: 3450, de Sanjosé S, Eur J Cancer 2013; 49: 3450
Ecuador	de Sanjosé S, Eur J Cancer 2013; 49: 3450, de Sanjosé S, Eur J Cancer 2013; 49: 3450
Guatemala	de Sanjosé S, Eur J Cancer 2013; 49: 3450, de Sanjosé S, Eur J Cancer 2013; 49: 3450
Honduras	de Sanjosé S, Eur J Cancer 2013; 49: 3450, de Sanjosé S, Eur J Cancer 2013; 49: 3450
Mexico	de Sanjosé S, Eur J Cancer 2013; 49: 3450, de Sanjosé S, Eur J Cancer 2013; 49: 3450
Paraguay	de Sanjosé S, Eur J Cancer 2013; 49: 3450, de Sanjosé S, Eur J Cancer 2013; 49: 3450
United States of America	Gargano JW, J Low Genit Tract Dis 2012; 16: 471 ǀ Madeleine MM, J Natl Cancer Inst 1997; 89: 1516 ǀ Riethdorf S, Hum Pathol 2004; 35: 1477 ǀ Srodon M, Am J Surg Pathol 2006; 30: 1513, Gargano JW, J Low Genit Tract Dis 2012; 16: 471 ǀ Madeleine MM, J Natl Cancer Inst 1997; 89: 1516 ǀ Riethdorf S, Hum Pathol 2004; 35: 1477 ǀ Srodon M, Am J Surg Pathol 2006; 30: 1513
Uruguay	de Sanjosé S, Eur J Cancer 2013; 49: 3450, de Sanjosé S, Eur J Cancer 2013; 49: 3450
Venezuela	de Sanjosé S, Eur J Cancer 2013; 49: 3450, de Sanjosé S, Eur J Cancer 2013; 49: 3450
Asia	
Bangladesh	de Sanjosé S, Eur J Cancer 2013; 49: 3450, de Sanjosé S, Eur J Cancer 2013; 49: 3450
India	de Sanjosé S, Eur J Cancer 2013; 49: 3450, de Sanjosé S, Eur J Cancer 2013; 49: 3450
Israel	de Sanjosé S, Eur J Cancer 2013; 49: 3450, de Sanjosé S, Eur J Cancer 2013; 49: 3450
Kuwait	de Sanjosé S, Eur J Cancer 2013; 49: 3450, de Sanjosé S, Eur J Cancer 2013; 49: 3450
Lebanon	de Sanjosé S, Eur J Cancer 2013; 49: 3450, de Sanjosé S, Eur J Cancer 2013; 49: 3450
Philippines	de Sanjosé S, Eur J Cancer 2013; 49: 3450, de Sanjosé S, Eur J Cancer 2013; 49: 3450
Republic of Korea	de Sanjosé S, Eur J Cancer 2013; 49: 3450, de Sanjosé S, Eur J Cancer 2013; 49: 3450
Turkey	de Sanjosé S, Eur J Cancer 2013; 49: 3450, de Sanjosé S, Eur J Cancer 2013; 49: 3450
Europe	
Austria	de Sanjosé S, Eur J Cancer 2013; 49: 3450, de Sanjosé S, Eur J Cancer 2013; 49: 3450
Belarus	de Sanjosé S, Eur J Cancer 2013; 49: 3450, de Sanjosé S, Eur J Cancer 2013; 49: 3450
Bosnia and Herzegovina	de Sanjosé S, Eur J Cancer 2013; 49: 3450, de Sanjosé S, Eur J Cancer 2013; 49: 3450
Czechia	de Sanjosé S, Eur J Cancer 2013; 49: 3450 ǀ Tachezy R, PLoS ONE 2011; 6: e21913, de Sanjosé S, Eur J Cancer 2013; 49: 3450 ǀ Tachezy R, PLoS ONE 2011; 6: e21913
Denmark	Junge J, APMIS 1995; 103: 501, Junge J, APMIS 1995; 103: 501
France	de Sanjosé S, Eur J Cancer 2013; 49: 3450, de Sanjosé S, Eur J Cancer 2013; 49: 3450
Germany	de Sanjosé S, Eur J Cancer 2013; 49: 3450 ǀ Hampl M, Obstet Gynecol 2006; 108: 1361 ǀ Riethdorf S, Hum Pathol 2004; 35: 1477, de Sanjosé S, Eur J Cancer 2013; 49: 3450 ǀ Hampl M, Obstet Gynecol 2006; 108: 1361 ǀ Riethdorf S, Hum Pathol 2004; 35: 1477
Greece	de Sanjosé S, Eur J Cancer 2013; 49: 3450 ǀ Tsimplaki E, J Oncol 2012; 2012: 893275, de Sanjosé S, Eur J Cancer 2013; 49: 3450 ǀ Tsimplaki E, J Oncol 2012; 2012: 893275
Italy	Bonvicini F, J Med Virol 2005; 77: 102 ǀ de Sanjosé S, Eur J Cancer 2013; 49: 3450, Bonvicini F, J Med Virol 2005; 77: 102 ǀ de Sanjosé S, Eur J Cancer 2013; 49: 3450
Netherlands	van Beurden M, Cancer 1995; 75: 2879 ǀ van der Avoort IA, Int J Gynecol Pathol 2006; 25: 22 ǀ van Esch EM, Int J Cancer 2014; 135: 830, van Beurden M, Cancer 1995; 75: 2879 ǀ van der Avoort IA, Int J Gynecol Pathol 2006; 25: 22 ǀ van Esch EM, Int J Cancer 2014; 135: 830
Poland	de Sanjosé S, Eur J Cancer 2013; 49: 3450, de Sanjosé S, Eur J Cancer 2013; 49: 3450
Portugal	de Sanjosé S, Eur J Cancer 2013; 49: 3450, de Sanjosé S, Eur J Cancer 2013; 49: 3450
Spain	de Sanjosé S, Eur J Cancer 2013; 49: 3450 ǀ Lerma E, Int J Gynecol Pathol 1999; 18: 191, de Sanjosé S, Eur J Cancer 2013; 49: 3450 ǀ Lerma E, Int J Gynecol Pathol 1999; 18: 191
United Kingdom	Abdel-Hady ES, Cancer Res 2001; 61: 192 ǀ Baldwin PJ, Clin Cancer Res 2003; 9: 5205 ǀ Bryant D, J Med Virol 2011; 83: 1358 ǀ Daayana S, Br J Cancer 2010; 102: 1129 ǀ de Sanjosé S, Eur J Cancer 2013; 49: 3450 ǀ Winters U, Clin Cancer Res 2008; 14: 5292, Abdel-Hady ES, Cancer Res 2001; 61: 192 ǀ Baldwin PJ, Clin Cancer Res 2003; 9: 5205 ǀ Bryant D, J Med Virol 2011; 83: 1358 ǀ Daayana S, Br J Cancer 2010; 102: 1129 ǀ de Sanjosé S, Eur J Cancer 2013; 49: 3450 ǀ Winters U, Clin Cancer Res 2008; 14: 5292
Oceania	
Australia	de Sanjosé S, Eur J Cancer 2013; 49: 3450 ǀ Tan SE, Sex Health 2013; 10: 18, de Sanjosé S, Eur J Cancer 2013; 49: 3450 ǀ Tan SE, Sex Health 2013; 10: 18
HPV type distribution for invasive vaginal cancer	
General sources	Based on systematic reviews (up to 2008) performed by ICO for the IARC Monograph on the Evaluation of Carcinogenic Risks to Humans volume 100B and IARC's Infections and Cancer Epidemiology Group. The ICO HPV Information Centre has updated data until June 2015. Reference publications: 1) Bouvard V, Lancet Oncol 2009;10:321 2) De Vuyst H, Int J Cancer 2009;124:1626
Africa	
Mozambique	Alemany L, Eur J Cancer 2014; 50: 2846, Alemany L, Eur J Cancer 2014; 50: 2846
Nigeria	Alemany L, Eur J Cancer 2014; 50: 2846, Alemany L, Eur J Cancer 2014; 50: 2846
Americas	
Argentina	Alemany L, Eur J Cancer 2014; 50: 2846, Alemany L, Eur J Cancer 2014; 50: 2846
Brazil	Alemany L, Eur J Cancer 2014; 50: 2846, Alemany L, Eur J Cancer 2014; 50: 2846
Chile	Alemany L, Eur J Cancer 2014; 50: 2846, Alemany L, Eur J Cancer 2014; 50: 2846
Colombia	Alemany L, Eur J Cancer 2014; 50: 2846, Alemany L, Eur J Cancer 2014; 50: 2846
Ecuador	Alemany L, Eur J Cancer 2014; 50: 2846, Alemany L, Eur J Cancer 2014; 50: 2846

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Country	Study
Guatemala	Alemany L, Eur J Cancer 2014; 50: 2846, Alemany L, Eur J Cancer 2014; 50: 2846
Mexico	Alemany L, Eur J Cancer 2014; 50: 2846, Alemany L, Eur J Cancer 2014; 50: 2846
Paraguay	Alemany L, Eur J Cancer 2014; 50: 2846, Alemany L, Eur J Cancer 2014; 50: 2846
United States of America	Alemany L, Eur J Cancer 2014; 50: 2846, Alemany L, Eur J Cancer 2014; 50: 2846
Uruguay	Alemany L, Eur J Cancer 2014; 50: 2846, Alemany L, Eur J Cancer 2014; 50: 2846
Venezuela	Alemany L, Eur J Cancer 2014; 50: 2846, Alemany L, Eur J Cancer 2014; 50: 2846
Asia	
Bangladesh	Alemany L, Eur J Cancer 2014; 50: 2846, Alemany L, Eur J Cancer 2014; 50: 2846
India	Alemany L, Eur J Cancer 2014; 50: 2846, Alemany L, Eur J Cancer 2014; 50: 2846
Israel	Alemany L, Eur J Cancer 2014; 50: 2846, Alemany L, Eur J Cancer 2014; 50: 2846
Kuwait	Alemany L, Eur J Cancer 2014; 50: 2846, Alemany L, Eur J Cancer 2014; 50: 2846
Lebanon	Alemany L, Eur J Cancer 2014; 50: 2846, Alemany L, Eur J Cancer 2014; 50: 2846
Philippines	Alemany L, Eur J Cancer 2014; 50: 2846, Alemany L, Eur J Cancer 2014; 50: 2846
Republic of Korea	Alemany L, Eur J Cancer 2014; 50: 2846, Alemany L, Eur J Cancer 2014; 50: 2846
Turkey	Alemany L, Eur J Cancer 2014; 50: 2846, Alemany L, Eur J Cancer 2014; 50: 2846
Europe	
Austria	Alemany L, Eur J Cancer 2014; 50: 2846, Alemany L, Eur J Cancer 2014; 50: 2846
Belarus	Alemany L, Eur J Cancer 2014; 50: 2846, Alemany L, Eur J Cancer 2014; 50: 2846
Czechia	Alemany L, Eur J Cancer 2014; 50: 2846, Alemany L, Eur J Cancer 2014; 50: 2846
Denmark	Madsen BS, Int J Cancer 2008; 122: 2827, Madsen BS, Int J Cancer 2008; 122: 2827
France	Alemany L, Eur J Cancer 2014; 50: 2846, Alemany L, Eur J Cancer 2014; 50: 2846
Germany	Alemany L, Eur J Cancer 2014; 50: 2846, Alemany L, Eur J Cancer 2014; 50: 2846
Greece	Alemany L, Eur J Cancer 2014; 50: 2846, Alemany L, Eur J Cancer 2014; 50: 2846
Poland	Alemany L, Eur J Cancer 2014; 50: 2846, Alemany L, Eur J Cancer 2014; 50: 2846
Portugal	Ferreira M, Mod Pathol 2008; 21: 968, Ferreira M, Mod Pathol 2008; 21: 968
Spain	Alemany L, Eur J Cancer 2014; 50: 2846 | Fuste V, Histopathology 2010; 57: 907, Alemany L, Eur J Cancer 2014; 50: 2846 | Fuste V, Histopathology 2010; 57: 907
Sweden	Larsson GL, Gynecol Oncol 2013; 129: 406, Larsson GL, Gynecol Oncol 2013; 129: 406
United Kingdom	Alemany L, Eur J Cancer 2014; 50: 2846, Alemany L, Eur J Cancer 2014; 50: 2846
HPV type distribution for vaginal intraepithelial neoplasia (VAIN)	
General sources	Based on systematic reviews (up to 2008) performed by ICO for the IARC Monograph on the Evaluation of Carcinogenic Risks to Humans volume 100B and IARC's Infections and Cancer Epidemiology Group. The ICO HPV Information Centre has updated data until June 2015. Reference publications: 1) Bouvard V, Lancet Oncol 2009;10:321 2) De Vuyst H, Int J Cancer 2009;124:1626
Americas	
Argentina	Alemany L, Eur J Cancer 2014; 50: 2846, Alemany L, Eur J Cancer 2014; 50: 2846
Brazil	Alemany L, Eur J Cancer 2014; 50: 2846, Alemany L, Eur J Cancer 2014; 50: 2846
Chile	Alemany L, Eur J Cancer 2014; 50: 2846, Alemany L, Eur J Cancer 2014; 50: 2846
Colombia	Alemany L, Eur J Cancer 2014; 50: 2846, Alemany L, Eur J Cancer 2014; 50: 2846
Ecuador	Alemany L, Eur J Cancer 2014; 50: 2846, Alemany L, Eur J Cancer 2014; 50: 2846
Guatemala	Alemany L, Eur J Cancer 2014; 50: 2846, Alemany L, Eur J Cancer 2014; 50: 2846
Mexico	Alemany L, Eur J Cancer 2014; 50: 2846, Alemany L, Eur J Cancer 2014; 50: 2846
Paraguay	Alemany L, Eur J Cancer 2014; 50: 2846, Alemany L, Eur J Cancer 2014; 50: 2846
United States of America	Alemany L, Eur J Cancer 2014; 50: 2846 | Daling JR, Gynecol Oncol 2002; 84: 263 | Srodon M, Am J Surg Pathol 2006; 30: 1513, Alemany L, Eur J Cancer 2014; 50: 2846 | Daling JR, Gynecol Oncol 2002; 84: 263 | Srodon M, Am J Surg Pathol 2006; 30: 1513
Uruguay	Alemany L, Eur J Cancer 2014; 50: 2846, Alemany L, Eur J Cancer 2014; 50: 2846
Venezuela	Alemany L, Eur J Cancer 2014; 50: 2846, Alemany L, Eur J Cancer 2014; 50: 2846
Asia	
Bangladesh	Alemany L, Eur J Cancer 2014; 50: 2846, Alemany L, Eur J Cancer 2014; 50: 2846
India	Alemany L, Eur J Cancer 2014; 50: 2846, Alemany L, Eur J Cancer 2014; 50: 2846
Israel	Alemany L, Eur J Cancer 2014; 50: 2846, Alemany L, Eur J Cancer 2014; 50: 2846
Japan	Sugase M, Int J Cancer 1997; 72: 412, Sugase M, Int J Cancer 1997; 72: 412
Kuwait	Alemany L, Eur J Cancer 2014; 50: 2846, Alemany L, Eur J Cancer 2014; 50: 2846
Lebanon	Alemany L, Eur J Cancer 2014; 50: 2846, Alemany L, Eur J Cancer 2014; 50: 2846
Philippines	Alemany L, Eur J Cancer 2014; 50: 2846, Alemany L, Eur J Cancer 2014; 50: 2846
Republic of Korea	Alemany L, Eur J Cancer 2014; 50: 2846, Alemany L, Eur J Cancer 2014; 50: 2846
Turkey	Alemany L, Eur J Cancer 2014; 50: 2846, Alemany L, Eur J Cancer 2014; 50: 2846
Europe	
Austria	Alemany L, Eur J Cancer 2014; 50: 2846, Alemany L, Eur J Cancer 2014; 50: 2846
Belarus	Alemany L, Eur J Cancer 2014; 50: 2846, Alemany L, Eur J Cancer 2014; 50: 2846
Czechia	Alemany L, Eur J Cancer 2014; 50: 2846, Alemany L, Eur J Cancer 2014; 50: 2846
France	Alemany L, Eur J Cancer 2014; 50: 2846, Alemany L, Eur J Cancer 2014; 50: 2846
Germany	Alemany L, Eur J Cancer 2014; 50: 2846 | Hampl M, Obstet Gynecol 2006; 108: 1361, Alemany L, Eur J Cancer 2014; 50: 2846 | Hampl M, Obstet Gynecol 2006; 108: 1361
Greece	Alemany L, Eur J Cancer 2014; 50: 2846 | Tsimplaki E, J Oncol 2012; 2012: 893275, Alemany L, Eur J Cancer 2014; 50: 2846 | Tsimplaki E, J Oncol 2012; 2012: 893275

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Country	Study
Italy	Frega A, Cancer Lett 2007; 249: 235, Frega A, Cancer Lett 2007; 249: 235
Poland	Alemany L, Eur J Cancer 2014; 50: 2846, Alemany L, Eur J Cancer 2014; 50: 2846
Spain	Alemany L, Eur J Cancer 2014; 50: 2846, Alemany L, Eur J Cancer 2014; 50: 2846
United Kingdom	Alemany L, Eur J Cancer 2014; 50: 2846, Alemany L, Eur J Cancer 2014; 50: 2846
HPV type distribution for invasive penile cancer	
General sources	The ICO HPV Information Centre has updated data until June 2015. Reference publications (up to 2008): 1) Bouvard V, Lancet Oncol 2009;10:321 2) Miralles-Guri C,J Clin Pathol 2009;62:870
Africa	
South Africa	Lebelo RL, J Med Virol 2014; 86: 257, Lebelo RL, J Med Virol 2014; 86: 257
Uganda	Tornesello ML, Cancer Lett 2008; 269: 159, Tornesello ML, Cancer Lett 2008; 269: 159
Americas	
Argentina	Picconi MA, J Med Virol 2000; 61: 65, Picconi MA, J Med Virol 2000; 61: 65
Brazil	Afonso LA, Mem Inst Oswaldo Cruz 2012; 107: 18 | Calmon MF, PLoS ONE 2013; 8: e53260 | de Sousa ID, BMC Urol 2015; 15: 13 | Fonseca AG, Int Braz J Urol 2013; 39: 542 | Scheiner MA, Int Braz J Urol 2008; 34: 467, Afonso LA, Mem Inst Oswaldo Cruz 2012; 107: 18 | Bezerra AL, Cancer 2001; 91: 2315 | Calmon MF, PLoS ONE 2013; 8: e53260 | Fonseca AG, Int Braz J Urol 2013; 39: 542 | Levi JE, Int J Cancer 1998; 76: 779 | Scheiner MA, Int Braz J Urol 2008; 34: 467
Canada	Maden C, J Natl Cancer Inst 1993; 85: 19, Maden C, J Natl Cancer Inst 1993; 85: 19
Mexico	López-Romero R, Int J Clin Exp Pathol 2013; 6: 1409 | Salazar EL, Arch Androl 2005; 51: 327, López-Romero R, Int J Clin Exp Pathol 2013; 6: 1409
Paraguay	Cubilla AL, Am J Surg Pathol 2010; 34: 104 | Rubin MA, Am J Pathol 2001; 159: 1211, Cubilla AL, Am J Surg Pathol 2010; 34: 104 | Gregoire L, J Natl Cancer Inst 1995; 87: 1705 | Rubin MA, Am J Pathol 2001; 159: 1211
United States of America	Alemany L, Eur Urol 2016; 69: 953 | Cupp MR, J Urol 1995; 154: 1024 | Daling JR, Int J Cancer 2005; 116: 606 | Hernandez BY, Front Oncol 2014; 4: 9 | Rubin MA, Am J Pathol 2001; 159: 1211, Cupp MR, J Urol 1995; 154: 1024 | Daling JR, Int J Cancer 2005; 116: 606 | Gregoire L, J Natl Cancer Inst 1995; 87: 1705 | Rubin MA, Am J Pathol 2001; 159: 1211 | Sarkar FH, J Urol 1992; 147: 389 | Varma VA, Hum Pathol 1991; 22: 908
Asia	
China	Chan KW, J Clin Pathol 1994; 47: 823, Chan KW, J Clin Pathol 1994; 47: 823
Japan	Iwasawa A, J Urol 1993; 149: 59 | Suzuki H, Jpn J Clin Oncol 1994; 24: 1 | Yanagawa N, Pathol Int 2008; 58: 477, Iwasawa A, J Urol 1993; 149: 59 | Suzuki H, Jpn J Clin Oncol 1994; 24: 1 | Yanagawa N, Pathol Int 2008; 58: 477
Thailand	Senba M, J Med Virol 2006; 78: 1341, Senba M, J Med Virol 2006; 78: 1341
Viet Nam	Do HT, Br J Cancer 2013; 108: 229, Do HT, Br J Cancer 2013; 108: 229
Europe	
Austria	Mannweiler S, J Am Acad Dermatol 2013; 69: 73, Aumayr K, Int J Immunopathol Pharmacol 2013; 26: 611 | Mannweiler S, J Am Acad Dermatol 2013; 69: 73
Belgium	D'Hauwers KW, Vaccine 2012; 30: 6573, D'Hauwers KW, Vaccine 2012; 30: 6573
Denmark	Krustrup D, Int J Exp Pathol 2009; 90: 182
France	Humbey O, Eur J Cancer 2003; 39: 684 | Perceau G, Br J Dermatol 2003; 148: 934, Humbey O, Eur J Cancer 2003; 39: 684
Germany	Perceau G, Br J Dermatol 2003; 148: 934 | Poetsch M, Virchows Arch 2011; 458: 221, Poetsch M, Virchows Arch 2011; 458: 221
Italy	Barzon L, Am J Pathol 2014; 184: 3376 | Gentile V, Int J Immunopathol Pharmacol 2006; 19: 209 | Tornesello ML, Cancer Lett 2008; 269: 159, Gentile V, Int J Immunopathol Pharmacol 2006; 19: 209 | Tornesello ML, Cancer Lett 2008; 269: 159
Netherlands	Heideman DA, J Clin Oncol 2007; 25: 4550 | Lont AP, Int J Cancer 2006; 119: 1078, Heideman DA, J Clin Oncol 2007; 25: 4550
Spain	Ferrándiz-Pulido C, J Am Acad Dermatol 2013; 68: 73 | Guerrero D, BJU Int 2008; 102: 747 | Pascual A, Histol Histopathol 2007; 22: 177, Ferrándiz-Pulido C, J Am Acad Dermatol 2013; 68: 73 | Guerrero D, BJU Int 2008; 102: 747 | Pascual A, Histol Histopathol 2007; 22: 177
Sweden	Kirrander P, BJU Int 2011; 108: 355
HPV type distribution for penile intraepithelial neoplasia (PEIN)	
General sources	The ICO HPV Information Centre has updated data until June 2014. Reference publication (up to 2008): Bouvard V, Lancet Oncol 2009;10:321
Africa	
South Africa	Boy S, J Oral Pathol Med 2006; 35: 86 | Van Rensburg EJ, Anticancer Res 1996; 16: 969
Sudan	Herrero R, J Natl Cancer Inst 2003; 95: 1772
Americas	
Argentina	GonzÃ¡lez JV, Medicina (B Aires) 2007; 67: 363 | Ribeiro KB, Int J Epidemiol 2011; 40: 489
Brazil	Oliveira MC, Auris Nasus Larynx 2009; 36: 450 | Ribeiro KB, Int J Epidemiol 2011; 40: 489 | Rivero ER, Braz Oral Res 2006; 20: 21
Canada	Herrero R, J Natl Cancer Inst 2003; 95: 1772 | Lingen MW, Oral Oncol 2013; 49: 1 | Noble-Topham SE, Arch Otolaryngol Head Neck Surg 1993; 119: 1299
Cuba	Herrero R, J Natl Cancer Inst 2003; 95: 1772 | Ribeiro KB, Int J Epidemiol 2011; 40: 489
Mexico	López-Romero R, Int J Clin Exp Pathol 2013; 6: 1409, Anaya-Saavedra G, Arch Med Res 2008; 39: 189 | Ibieta BR, Oral Surg Oral Med Oral Pathol Oral Radiol Endod 2005; 99: 311, López-Romero R, Int J Clin Exp Pathol 2013; 6: 1409

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Country	Study
United States of America	Cupp MR, J Urol 1995; 154: 1024, Cupp MR, J Urol 1995; 154: 1024, Chuang AY, Oral Oncol 2008; 44: 915 ǀ Furniss CS, Int J Cancer 2007; 120: 2386 ǀ Ha PK, Clin Cancer Res 2002; 8: 1203 ǀ Harris SL, Head Neck 2011; 33: 1622 ǀ Holladay EB, Am J Clin Pathol 1993; 100: 36 ǀ Hooper JE, Appl Immunohistochem Mol Morphol 2015; 23: 266 ǀ Liang XH, J Oral Maxillofac Surg 2008; 66: 1875 ǀ Lingen MW, Oral Oncol 2013; 49: 1 ǀ Lohavanichbutr P, Arch Otolaryngol Head Neck Surg 2009; 135: 180 ǀ Paz IB, Cancer 1997; 79: 595 ǀ Schlecht NF, Mod Pathol 2011; 24: 1295 ǀ Schwartz SM, J Natl Cancer Inst 1998; 90: 1626 ǀ Smith EM, Int J Cancer 2004; 108: 766 ǀ Walline HM, JAMA Otolaryngol Head Neck Surg 2013; 139: 1320 ǀ Zhao M, Int J Cancer 2005; 117: 605
Venezuela	Miller CS, Oral Surg Oral Med Oral Pathol 1994; 77: 480 ǀ Premoli-De-Percoco G, J Oral Pathol Med 2001; 30: 355
Asia	
China	Gan LL, Asian Pac J Cancer Prev 2014; 15: 5861 ǀ Lee LA, Medicine (Baltimore) 2015; 94: e2069 ǀ Tang X, J Oral Pathol Med 2003; 32: 393 ǀ Wen S, Anticancer Res 1997; 17: 307 ǀ Zhang ZY, Int J Oral Maxillofac Surg 2004; 33: 71
India	Balaram P, Int J Cancer 1995; 61: 450 ǀ Bhattacharya N, J Oral Pathol Med 2009; 38: 759 ǀ Chaudhary AK, Virol J 2010; 7: 253 ǀ D'Costa J, Oral Oncol 1998; 34: 413 ǀ Herrero R, J Natl Cancer Inst 2003; 95: 1772 ǀ Laprise C, Int J Cancer 2016; 138: 912 ǀ Mishra A, Int J Cancer 2006; 119: 2840 ǀ Sebastian P, J Oral Pathol Med 2014; 43: 593
Iran	Saghravanian N, Acta Odontol Scand 2011; 69: 406
Japan	Bhawal UK, Arch Otolaryngol Head Neck Surg 2008; 134: 1055 ǀ Chiba I, Oncogene 1996; 12: 1663 ǀ Deng Z, Head Neck 2013; 35: 800 ǀ Higa M, Oral Oncol 2003; 39: 405 ǀ Kojima A, Oral Oncol 2002; 38: 591 ǀ Shima K, Br J Oral Maxillofac Surg 2000; 38: 445 ǀ Shimizu M, J Dermatol Sci 2004; 36: 33 ǀ Sugiyama M, Oral Surg Oral Med Oral Pathol Oral Radiol Endod 2003; 95: 594 ǀ Tang X, J Oral Pathol Med 2003; 32: 393 ǀ Tsuhako K, J Oral Pathol Med 2000; 29: 70
Malaysia	Lim KP, Oncol Rep 2007; 17: 1321
Republic of Korea	Shin KH, Int J Oncol 2002; 21: 297
Europe	
Austria	Mannweiler S, J Am Acad Dermatol 2013; 69: 73, Mannweiler S, J Am Acad Dermatol 2013; 69: 73
Belarus	Gudleviciene Z, J Med Virol 2014; 86: 531
Belgium	D'Hauwers KW, Vaccine 2012; 30: 6573, D'Hauwers KW, Vaccine 2012; 30: 6573, Duray A, Laryngoscope 2012; 122: 1558
Czechia	Ribeiro KB, Int J Epidemiol 2011; 40: 489
Finland	Koskinen WJ, Int J Cancer 2003; 107: 401 ǀ Mork J, N Engl J Med 2001; 344: 1125
Germany	Klussmann JP, Cancer 2001; 92: 2875 ǀ KrÃ¼ger M, J Craniomaxillofac Surg 2014; 42: 1506 ǀ Ostwald C, Med Microbiol Immunol 2003; 192: 145 ǀ Weiss D, Head Neck 2011; 33: 856
Greece	Aggelopoulou EP, Anticancer Res 1999; 19: 1391 ǀ Blioumi E, Oral Oncol 2014; 50: 840 ǀ Romanitan M, Anticancer Res 2008; 28: 2077
Hungary	Nemes JA, Oral Surg Oral Med Oral Pathol Oral Radiol Endod 2006; 102: 344 ǀ Szarka K, Oral Microbiol Immunol 2009; 24: 314
Ireland	Herrero R, J Natl Cancer Inst 2003; 95: 1772
Italy	Badaracco G, Anticancer Res 2000; 20: 1301 ǀ Badaracco G, Oncol Rep 2007; 17: 931 ǀ Herrero R, J Natl Cancer Inst 2003; 95: 1772 ǀ Rittà M, Head Neck 2009; 31: 318 ǀ Scapoli L, Mod Pathol 2009; 22: 366
Netherlands	Braakhuis BJ, J Natl Cancer Inst 2004; 96: 998 ǀ Cruz IB, Eur J Cancer, B, Oral Oncol 1996; 32B: 55 ǀ van Monsjou HS, Int J Cancer 2012; 130: 1806
Norway	Matzow T, Acta Oncol 1998; 37: 73 ǀ Mork J, N Engl J Med 2001; 344: 1125
Poland	Herrero R, J Natl Cancer Inst 2003; 95: 1772 ǀ Ribeiro KB, Int J Epidemiol 2011; 40: 489 ǀ Snietura M, Pol J Pathol 2010; 61: 133
Romania	Ribeiro KB, Int J Epidemiol 2011; 40: 489
Russian Federation	Ribeiro KB, Int J Epidemiol 2011; 40: 489
Serbia	Kozomara R, J Craniomaxillofac Surg 2005; 33: 342
Slovakia	Ribeiro KB, Int J Epidemiol 2011; 40: 489
Slovenia	Kansky AA, Acta Virol 2003; 47: 11
Spain	GarcÃa-de Marcos JA, Int J Oral Maxillofac Surg 2014; 43: 274 ǀ Herrero R, J Natl Cancer Inst 2003; 95: 1772 ǀ Llamas-MartÃnez S, Anticancer Res 2008; 28: 3733
Sweden	Wikström A, J Eur Acad Dermatol Venereol 2012; 26: 325, Kirrander P, BJU Int 2011; 108: 355 ǀ Wikström A, J Eur Acad Dermatol Venereol 2012; 26: 325, Dahlgren L, Int J Cancer 2004; 112: 1015 ǀ Mork J, N Engl J Med 2001; 344: 1125 ǀ Sand L, Anticancer Res 2000; 20: 1183
The anogenital prevalence of HPV-DNA in men: HPV in men	
General sources	Based on published systematic reviews, the ICO HPV Information Centre has updated data until October 2015. Reference publications: 1) Dunne EF, J Infect Dis 2006; 194: 1044 2) Smith JS, J Adolesc Health 2011; 48: 540 3) Olesen TB, Sex Transm Infect 2014; 90: 455 4) Hebnes JB, J Sex Med 2014; 11: 2630.
Africa	
Kenya	Ng'ayo MO, Sex Transm Infect 2008; 84: 62 ǀ Smith JS, Int J Cancer 2010; 126: 572
Rwanda	Veldhuijzen NJ, Sex Transm Dis 2012; 39: 128
South Africa	Auvert B, J Acquir Immune Defic Syndr 2010; 53: 111 ǀ Mbulawa ZZ, J Gen Virol 2010; 91: 3023
Tanzania	Olesen TB, Sex Transm Dis 2013; 40: 592
Uganda	Tobian AA, Sex Transm Infect 2013; 89: 122

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Country	Study
Americas	
Brazil	Franceschi S, Br J Cancer 2002; 86: 705 ǀ Giuliano AR, Cancer Epidemiol Biomarkers Prev 2008; 17: 2036 ǀ Nyitray AG, J Infect Dis 2011; 203: 49 ǀ Rosenblatt C, Int J Gynaecol Obstet 2004; 84: 156 ǀ Vardas E, J Infect Dis 2011; 203: 58
Canada	Vardas E, J Infect Dis 2011; 203: 58
Chile	Guzmán P, Rev Med Chil 2008; 136: 1381
Colombia	Franceschi S, Br J Cancer 2002; 86: 705
Mexico	Giuliano AR, Cancer Epidemiol Biomarkers Prev 2008; 17: 2036 ǀ Lajous M, Cancer Epidemiol Biomarkers Prev 2005; 14: 1710 ǀ Lazcano-Ponce E, Sex Transm Dis 2001; 28: 277 ǀ Nyitray AG, J Infect Dis 2011; 203: 49 ǀ Sánchez-Alemán MA, Salud Publica Mex 2002; 44: 442 ǀ Vaccarella S, Int J Cancer 2006; 119: 1934 ǀ Vardas E, J Infect Dis 2011; 203: 58
United States of America	Giuliano AR, J Infect Dis 2008; 198: 827 ǀ Giuliano AR, Cancer Epidemiol Biomarkers Prev 2008; 17: 2036 ǀ Hernandez BY, J Infect Dis 2008; 197: 787 ǀ Nielson CM, Cancer Epidemiol Biomarkers Prev 2007; 16: 1107 ǀ Nyitray AG, J Infect Dis 2011; 203: 49 ǀ Partridge JM, J Infect Dis 2007; 196: 1128 ǀ Vardas E, J Infect Dis 2011; 203: 58 ǀ Weaver BA, J Infect Dis 2004; 189: 677
Asia	
China	Liu F, Sci Rep 2015; 5: 27
India	Gupta A, J Clin Virol 2006; 37: 190
Japan	Takahashi S, Sex Transm Dis 2003; 30: 629
Philippines	Franceschi S, Br J Cancer 2002; 86: 705
Republic of Korea	Shin HR, J Infect Dis 2004; 190: 468
Thailand	Franceschi S, Br J Cancer 2002; 86: 705
Europe	
Croatia	Grce M, Anticancer Res 1996; 16: 1039 ǀ Vardas E, J Infect Dis 2011; 203: 58
Denmark	Hebnes JB, Sex Transm Dis 2015; 42: 463 ǀ Kjaer SK, Cancer Epidemiol Biomarkers Prev 2005; 14: 1528
Finland	Hippeläinen M, Sex Transm Dis 1993; 20: 321 ǀ Kero K, J Sex Med 2011; 8: 2522
Germany	Grussendorf-Conen EI, Arch Dermatol Res 1987; 279 Suppl: S73 ǀ Vardas E, J Infect Dis 2011; 203: 58
Italy	Lorenzon L, J Clin Virol 2014; 60: 264 ǀ Nasca MR, Int J Dermatol 2006; 45: 681
Spain	Franceschi S, Br J Cancer 2002; 86: 705 ǀ Vardas E, J Infect Dis 2011; 203: 58
Sweden	Forslund O, J Clin Microbiol 1993; 31: 1975 ǀ Kataoka A, J Med Virol 1991; 33: 159
The anogenital prevalence of HPV-DNA in men: HPV in special subgroups (HIV, MSM, etc)	
General sources	Based on published systematic reviews, the ICO HPV Information Centre has updated data until October 2015. Reference publications: 1) Dunne EF, J Infect Dis 2006; 194: 1044 2) Smith JS, J Adolesc Health 2011; 48: 540 3) Olesen TB, Sex Transm Infect 2014; 90: 455 4) Hebnes JB, J Sex Med 2014; 11: 2630.
Africa	
South Africa	Firnhaber C, Int J STD AIDS 2011; 22: 107 ǀ Mbulawa ZZ, J Gen Virol 2010; 91: 3023 ǀ Müller EE, Sex Transm Infect 2010; 86: 175 ǀ Vogt SL, Front Oncol 2013; 3: 68
Uganda	Tobian AA, Sex Transm Infect 2013; 89: 122
Americas	
Argentina	Pando MA, PLoS One 2012; 7: 127
Brazil	de Lima Rocha MG, PLoS ONE 2012; 7: 128 ǀ Franceschi S, Br J Cancer 2002; 86: 705 ǀ Freire MP, Int Braz J Urol 2014; 40: 67 ǀ Goldstone S, J Infect Dis 2011; 203: 66 ǀ Guimarães MD, J Acquir Immune Defic Syndr 2011; 57 Suppl 3: S217 ǀ Nicolau SM, Urology 2005; 65: 251 ǀ Nyitray AG, J Infect Dis 2011; 203: 49 ǀ Rombaldi RL, Braz J Med Biol Res 2006; 39: 177 ǀ Rosenblatt C, Int J Gynaecol Obstet 2004; 84: 156
Canada	de Pokomandy A, J Infect Dis 2009; 199: 965 ǀ Goldstone S, J Infect Dis 2011; 203: 66 ǀ Ogilvie GS, Sex Transm Infect 2009; 85: 221 ǀ Salit IE, Cancer Epidemiol Biomarkers Prev 2009; 18: 1986 ǀ Salit IE, AIDS 2010; 24: 1307
Colombia	Franceschi S, Br J Cancer 2002; 86: 705
Mexico	Goldstone S, J Infect Dis 2011; 203: 66 ǀ Leyva-López AG, Salud Publica Mex 2003; 45 Supp 5: S589 ǀ Mendez-Martinez R, BMC Infect Dis 2014; 14: 104 ǀ Nyitray AG, J Infect Dis 2011; 203: 49 ǀ Torres-Ibarra L, Prev Med 2014; 69C: 157
Peru	Blas MM, PLoS One 2015; 10: 124 ǀ Quinn R, AIDS Res Hum Retroviruses 2012; 28: 1734
United States of America	Baken LA, J Infect Dis 1995; 171: 429 ǀ Baldwin SB, J Infect Dis 2003; 187: 1064 ǀ Berry JM, Dis Colon Rectum 2009; 52: 239 ǀ Caussy D, Int J Cancer 1990; 46: 214 ǀ Chin-Hong PV, J Infect Dis 2004; 190: 2070 ǀ Chin-Hong PV, Ann Intern Med 2008; 149: 300 ǀ Colón-López V, PLoS ONE 2014; 9: 132 ǀ Conley L, J Infect Dis 2010; 202: 1567 ǀ Critchlow CW, AIDS 1998; 12: 1177 ǀ Fife KH, Sex Transm Dis 2003; 30: 246 ǀ Friedman HB, J Infect Dis 1998; 178: 45 ǀ Gandra S, HIV AIDS Auckl 2015; 7: 29 ǀ Goldstone S, J Infect Dis 2011; 203: 66 ǀ Hood JE, Int J STD AIDS 2016; 27: 353 ǀ Kiviat NB, AIDS 1993; 7: 43 ǀ Moscicki AB, AIDS 2003; 17: 311 ǀ Nyitray AG, J Infect Dis 2011; 203: 49 ǀ Palefsky JM, Genitourin Med 1997; 73: 174 ǀ Palefsky JM, J Infect Dis 1998; 177: 361 ǀ Palefsky JM, AIDS 2005; 19: 1407 ǀ Wiley DJ, PLoS ONE 2013; 8: 131 ǀ Wilkin TJ, J Infect Dis 2004; 190: 1685
Asia	
China	Gao L, PLoS ONE 2010; 5: 125 ǀ Li Z, PLoS One 2015; 10: 122 ǀ Tang X, Biomed Environ Sci 2006; 19: 153 ǀ Yang Y, PLoS ONE 2012; 7: 126 ǀ Zhang DY, PLoS ONE 2014; 9: 134
India	Gupta A, J Clin Virol 2006; 37: 190

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Country	Study
Japan	Nagata N, PLoS One 2015; 10: 123 ǀ Shigehara K, Int J Urol 2010; 17: 563 ǀ Takahashi S, Sex Transm Dis 2003; 30: 629 ǀ Takahashi S, J Infect Chemother 2005; 11: 270
Philippines	Franceschi S, Br J Cancer 2002; 86: 705
Thailand	Franceschi S, Br J Cancer 2002; 86: 705 ǀ Leaungwutiwong P, Sex Transm Dis 2015; 42: 208 ǀ Phanuphak N, J Acquir Immune Defic Syndr 2013; 63: 472 ǀ Supindham T, PLoS One 2015; 10: 121
Europe	
Croatia	Goldstone S, J Infect Dis 2011; 203: 66
Denmark	Svare EI, Sex Transm Infect 2002; 78: 215
France	Aynaud O, Urology 2003; 61: 1098 ǀ Damay A, J Med Virol 2010; 82: 592 ǀ Philibert P, J Clin Med 2014; 3: 1386 ǀ Piketty C, Sex Transm Dis 2004; 31: 96
Germany	Goldstone S, J Infect Dis 2011; 203: 66 ǀ Schneider A, J Urol 1988; 140: 1431 ǀ Wieland U, Int J Med Microbiol 2015; 305: 689
Greece	Hadjivassiliou M, Int J STD AIDS 2007; 18: 329
Ireland	Sadlier C, HIV Med 2014; 15: 499
Italy	Barzon L, J Med Virol 2010; 82: 1424 ǀ Benevolo M, J Med Virol 2008; 80: 1275 ǀ Chiarini F, Minerva Urol Nefrol 1998; 50: 225 ǀ Della Torre G, Am J Pathol 1992; 141: 1181 ǀ Dona MG, J Infect 2015; 71: 74 ǀ Garbuglia A, J Clin Virol 2015; 72: 49 ǀ Giovannelli L, J Clin Microbiol 2007; 45: 248 ǀ Orlando G, J Acquir Immune Defic Syndr 2008; 47: 129 ǀ Pierangeli A, AIDS 2008; 22: 1929 ǀ Sammarco ML, J Med Virol 2016; 88: 911
Netherlands	Bleeker MC, J Am Acad Dermatol 2002; 47: 351 ǀ Bleeker MC, Int J Cancer 2005; 113: 36 ǀ Bleeker MC, Clin Infect Dis 2005; 41: 612 ǀ van der Snoek EM, Sex Transm Dis 2003; 30: 639 ǀ Van Doornum GJ, Genitourin Med 1994; 70: 240 ǀ van Rijn VM, PLoS ONE 2014; 9: 133 ǀ Vriend HJ, PLoS ONE 2013; 8: 130 ǀ Welling CA, Sex Transm Dis 2015; 42: 297
Russian Federation	Wirtz AL, Euro Surveill 2015; 20: 23
Slovenia	Golob B, Biomed Res Int 2014; 2014: 117 ǀ Milosevic M, Cent Eur J Med 2010; 5: 698
Spain	Álvarez-Argüelles ME, PLoS ONE 2013; 8: 129 ǀ Franceschi S, Br J Cancer 2002; 86: 705 ǀ Goldstone S, J Infect Dis 2011; 203: 66 ǀ Hidalgo-Tenorio C, PLoS One 2015; 10: 120 ǀ Sendagorta E, Dis Colon Rectum 2014; 57: 475 ǀ Sendagorta E, J Med Virol 2015; 87: 1397 ǀ Torres M, J Clin Microbiol 2013; 51: 3512 ǀ Videla S, Sex Transm Dis 2013; 40: 03
Sweden	Kataoka A, J Med Virol 1991; 33: 159 ǀ Löwhagen GB, Int J STD AIDS 1999; 10: 615 ǀ Strand A, Genitourin Med 1993; 69: 446 ǀ Voog E, Int J STD AIDS 1997; 8: 772 ǀ Wikström A, Int J STD AIDS 1991; 2: 105 ǀ Wikström A, Int J STD AIDS 2000; 11: 80
United Kingdom	Bissett SL, J Med Virol 2011; 83: 1744 ǀ Cuschieri K, J Med Virol 2011; 83: 1983 ǀ Hillman RJ, Genitourin Med 1993; 69: 187 ǀ Jalal H, Int J STD AIDS 2007; 18: 617 ǀ King EM, Br J Cancer 2015; 112: 1585 ǀ Lacey HB, Sex Transm Infect 1999; 75: 172
HPV prevalence and type distribution in oral specimens collected from healthy population	
General sources	Systematic review and meta-analysis was performed by ICO HPV Information Centre until July 2012. Pubmed was searched using the keywords oral and papillomavirus. Inclusion criteria: studies reporting oral HPV prevalence in healthy population in Europe; n > 50. Exclusion criteria: focused only in children or immunosuppressed population; not written in English; case-control studies; commentaries and systematic reviews and studies that did not use HPV DNA detection methods.
Africa	
South Africa	Davidson CL, S Afr Med J 2014;104(5):358-61 ǀ Marais DJ, BMC Infect Dis 2006;6:95
Sudan	Herrero R, J Natl Cancer Inst 2003;95(23):1772-83
Americas	
Argentina	Ribeiro KB, Int J Epidemiol 2011;40(2):489-502
Brazil	Araujo MV, Cad Saude Publica 2014;30(5):1115-9 ǀ Cavenaghi VB, Braz J Otorhinolaryngol 2013;79(5):599-602 ǀ do Sacramento PR, J Med Virol 2006;78(5):614-8 ǀ Esquenazi D, Braz J Otorhinolaryngol 2010;76(1):78-84 ǀ Kreimer AR, Cancer Epidemiol Biomarkers Prev 2011;20(1):172-82 ǀ Machado AP, Braz J Infect Dis 2014;18(3):266-70 ǀ Ribeiro KB, Int J Epidemiol 2011;40(2):489-502
Canada	Dahlstrom KR, Cancer Epidemiol Biomarkers Prev 2014;23(12):2959-64 ǀ Pintos J, Oral Oncol 2008;44(3):242-50
Costa Rica	Lang Kuhs KA, J Infect Dis 2013;208(10):1643-52
Cuba	Ribeiro KB, Int J Epidemiol 2011;40(2):489-502
Mexico	Anaya-Saavedra G, Arch Med Res 2008;39(2):189-97 ǀ Gonzalez-Ramirez I, Oral Dis 2013;19(8):796-804 ǀ Kreimer AR, Cancer Epidemiol Biomarkers Prev 2011;20(1):172-82
Trinidad and Tobago	Ragin CC, Biomarkers 2007;12(5):510-22
United States of America	Cook RL, Sex Transm Dis 2014;41(8):486-92 ǀ Chaturvedi AK, Cancer Res 2015;75(12):2468-77 ǀ D'Souza G, J Infect Dis 2009;199(9):1263-9 ǀ D'Souza G, J Infect Dis 2009;199(9):1263-9 ǀ Edelstein ZR, Sex Transm Dis 2012;39(11):860-7 ǀ Kreimer AR, Cancer Epidemiol Biomarkers Prev 2011;20(1):172-82 ǀ Pickard RK, Sex Transm Dis 2012;39(7):559-66 ǀ Ragin C, Int J Mol Sci 2011;12(6):3928-40 ǀ Sauter SL, Cancer Epidemiol Biomarkers Prev 2015;24(5):864-72 ǀ Schwartz SM, J Natl Cancer Inst 1998;90(21):1626-36 ǀ Smith EM, J Natl Cancer Inst 2004;96(6):449-55 ǀ Smith EM, Pediatr Infect Dis J 2007;26(9):836-40 ǀ Smith EM, Sex Transm Dis 2004;31(1):57-62 ǀ Summersgill KF, Oral Surg Oral Med Oral Pathol Oral Radiol Endod 2001;91(1):62-9 ǀ Winer RL, Am J Epidemiol 2003;157(3):218-26
Asia	
China	Hang D, Cancer Epidemiol Biomarkers Prev 2014;23(10):2101-10
India	Herrero R, J Natl Cancer Inst 2003;95(23):1772-83 ǀ Koppikar P, Int J Cancer 2005;113(6):946-50
Iran	Seifi S, Iran J Public Health 2013;42(1):79-85

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Country	Study
Japan	Kurose K, Oral Surg Oral Med Oral Pathol Oral Radiol Endod 2004;98(1):91-6
Malaysia	Saini R, J Investig Clin Dent 2011;2(4):241-7
Europe	
Denmark	Eike A, Clin Otolaryngol 1995;20:171, Eike A, Clin Otolaryngol Allied Sci 1995;20(2):171-3
Finland	Kero K, Eur Urol 2012;62(6):1063-70 | Leimola-Virtanen R, Clin Infect Dis 1996;22(3):593-4, Kero K, J Sex Med 2011;8:2522, Kero K, Eur Urol 2012;62(6):1063-70
Germany	Meyer MF, Oral Oncol 2014;50(1):27-31
Greece	Lambropoulos AF, Eur J Oral Sci 1997;105:294, Lambropoulos AF, Eur J Oral Sci 1997;105(4):294-7
Hungary	Szarka K, Oral Microbiol Immunol 2009;24(4):314-8 | Tatar TZ, J Oral Pathol Med 2015;44(9):722-7
Italy	Migaldi M, J Oral Pathol Med 2012;41(1):16-20 | Montaldo C, J Oral Pathol Med 2007;36(8):482-7 | Morbini P, Oral Surg Oral Med Oral Pathol Oral Radiol 2013;116(4):474-84, Migaldi M, J Oral Pathol Med 2012;41:16, Montaldo C, J Oral Pathol Med 2007;36:482
Spain	Herrero R, J Natl Cancer Inst 2003;95(23):1772-83, Cañadas MP, J Clin Microbiol 2004;42:1330
Sweden	Hansson BG, Acta Otolaryngol 2005;125(12):1337-44 | Nordfors C, Scand J Infect Dis 2013;45(11):878-81
United Kingdom	Kujan O, Oral Oncol 2006;42:810
HPV prevalence and type distribution in invasive oral cavity squamous cell carcinoma	
General sources	Based on systematic reviews and meta-analysis performed by ICO. Reference publications: 1) Ndiaye C, Lancet Oncol 2014; 15: 1319 2) Kreimer AR, Cancer Epidemiol Biomarkers Prev 2005; 14: 467
Africa	
South Africa	Boy S, J Oral Pathol Med 2006; 35: 86 | Van Rensburg EJ, Anticancer Res 1996; 16: 969, Boy S, J Oral Pathol Med 2006; 35: 86 | Van Rensburg EJ, Anticancer Res 1996; 16: 969
Sudan	Herrero R, J Natl Cancer Inst 2003; 95: 1772, Herrero R, J Natl Cancer Inst 2003; 95: 1772
Americas	
Argentina	González JV, Medicina (B Aires) 2007; 67: 363 | Ribeiro KB, Int J Epidemiol 2011; 40: 489, González JV, Medicina (B Aires) 2007; 67: 363 | Ribeiro KB, Int J Epidemiol 2011; 40: 489
Brazil	Oliveira MC, Auris Nasus Larynx 2009; 36: 450 | Ribeiro KB, Int J Epidemiol 2011; 40: 489 | Rivero ER, Braz Oral Res 2006; 20: 21, Oliveira MC, Auris Nasus Larynx 2009; 36: 450 | Ribeiro KB, Int J Epidemiol 2011; 40: 489 | Rivero ER, Braz Oral Res 2006; 20: 21
Canada	Herrero R, J Natl Cancer Inst 2003; 95: 1772 | Lingen MW, Oral Oncol 2013; 49: 1 | Noble-Topham SE, Arch Otolaryngol Head Neck Surg 1993; 119: 1299, Herrero R, J Natl Cancer Inst 2003; 95: 1772 | Lingen MW, Oral Oncol 2013; 49: 1 | Noble-Topham SE, Arch Otolaryngol Head Neck Surg 1993; 119: 1299
Cuba	Herrero R, J Natl Cancer Inst 2003; 95: 1772 | Ribeiro KB, Int J Epidemiol 2011; 40: 489, Herrero R, J Natl Cancer Inst 2003; 95: 1772 | Ribeiro KB, Int J Epidemiol 2011; 40: 489
Mexico	Anaya-Saavedra G, Arch Med Res 2008; 39: 189 | Ibieta BR, Oral Surg Oral Med Oral Pathol Oral Radiol Endod 2005; 99: 311, Anaya-Saavedra G, Arch Med Res 2008; 39: 189 | Ibieta BR, Oral Surg Oral Med Oral Pathol Oral Radiol Endod 2005; 99: 311
United States of America	Chuang AY, Oral Oncol 2008; 44: 915 | Furniss CS, Int J Cancer 2007; 120: 2386 | Ha PK, Clin Cancer Res 2002; 8: 1203 | Harris SL, Head Neck 2011; 33: 1622 | Holladay EB, Am J Clin Pathol 1993; 100: 36 | Hooper JE, Appl Immunohistochem Mol Morphol 2015; 23: 266 | Liang XH, J Oral Maxillofac Surg 2008; 66: 1875 | Lingen MW, Oral Oncol 2013; 49: 1 | Lohavanichbutr P, Arch Otolaryngol Head Neck Surg 2009; 135: 180 | Paz IB, Cancer 1997; 79: 595 | Schlecht NF, Mod Pathol 2011; 24: 1295 | Schwartz SM, J Natl Cancer Inst 1998; 90: 1626 | Smith EM, Int J Cancer 2004; 108: 766 | Walline HM, JAMA Otolaryngol Head Neck Surg 2013; 139: 1320 | Zhao M, Int J Cancer 2005; 117: 605, Chuang AY, Oral Oncol 2008; 44: 915 | Furniss CS, Int J Cancer 2007; 120: 2386 | Ha PK, Clin Cancer Res 2002; 8: 1203 | Harris SL, Head Neck 2011; 33: 1622 | Holladay EB, Am J Clin Pathol 1993; 100: 36 | Hooper JE, Appl Immunohistochem Mol Morphol 2015; 23: 266 | Liang XH, J Oral Maxillofac Surg 2008; 66: 1875 | Lingen MW, Oral Oncol 2013; 49: 1 | Lohavanichbutr P, Arch Otolaryngol Head Neck Surg 2009; 135: 180 | Paz IB, Cancer 1997; 79: 595 | Schlecht NF, Mod Pathol 2011; 24: 1295 | Schwartz SM, J Natl Cancer Inst 1998; 90: 1626 | Smith EM, Int J Cancer 2004; 108: 766 | Walline HM, JAMA Otolaryngol Head Neck Surg 2013; 139: 1320 | Zhao M, Int J Cancer 2005; 117: 605
Venezuela	Miller CS, Oral Surg Oral Med Oral Pathol 1994; 77: 480 | Premoli-De-Percoco G, J Oral Pathol Med 2001; 30: 355, Miller CS, Oral Surg Oral Med Oral Pathol 1994; 77: 480 | Premoli-De-Percoco G, J Oral Pathol Med 2001; 30: 355
Asia	
China	Gan LL, Asian Pac J Cancer Prev 2014; 15: 5861 | Lee LA, Medicine (Baltimore) 2015; 94: e2069 | Tang X, J Oral Pathol Med 2003; 32: 393 | Wen S, Anticancer Res 1997; 17: 307 | Zhang ZY, Int J Oral Maxillofac Surg 2004; 33: 71, Gan LL, Asian Pac J Cancer Prev 2014; 15: 5861 | Lee LA, Medicine (Baltimore) 2015; 94: e2069 | Tang X, J Oral Pathol Med 2003; 32: 393 | Wen S, Anticancer Res 1997; 17: 307 | Zhang ZY, Int J Oral Maxillofac Surg 2004; 33: 71
India	Balaram P, Int J Cancer 1995; 61: 450 | Bhattacharya N, J Oral Pathol Med 2009; 38: 759 | Chaudhary AK, Virol J 2010; 7: 253 | D'Costa J, Oral Oncol 1998; 34: 413 | Herrero R, J Natl Cancer Inst 2003; 95: 1772 | Laprise C, Int J Cancer 2016; 138: 912 | Mishra A, Int J Cancer 2006; 119: 2840 | Sebastian P, J Oral Pathol Med 2014; 43: 593, Balaram P, Int J Cancer 1995; 61: 450 | Bhattacharya N, J Oral Pathol Med 2009; 38: 759 | Chaudhary AK, Virol J 2010; 7: 253 | D'Costa J, Oral Oncol 1998; 34: 413 | Herrero R, J Natl Cancer Inst 2003; 95: 1772 | Laprise C, Int J Cancer 2016; 138: 912 | Mishra A, Int J Cancer 2006; 119: 2840 | Sebastian P, J Oral Pathol Med 2014; 43: 593

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Country	Study
Iran	Saghravanian N, Acta Odontol Scand 2011; 69: 406, Saghravanian N, Acta Odontol Scand 2011; 69: 406
Japan	Bhawal UK, Arch Otolaryngol Head Neck Surg 2008; 134: 1055 ǀ Chiba I, Oncogene 1996; 12: 1663 ǀ Deng Z, Head Neck 2013; 35: 800 ǀ Higa M, Oral Oncol 2003; 39: 405 ǀ Kojima A, Oral Oncol 2002; 38: 591 ǀ Shima K, Br J Oral Maxillofac Surg 2000; 38: 445 ǀ Shimizu M, J Dermatol Sci 2004; 36: 33 ǀ Sugiyama M, Oral Surg Oral Med Oral Pathol Oral Radiol Endod 2003; 95: 594 ǀ Tang X, J Oral Pathol Med 2003; 32: 393 ǀ Tsuhako K, J Oral Pathol Med 2000; 29: 70, Bhawal UK, Arch Otolaryngol Head Neck Surg 2008; 134: 1055 ǀ Chiba I, Oncogene 1996; 12: 1663 ǀ Deng Z, Head Neck 2013; 35: 800 ǀ Higa M, Oral Oncol 2003; 39: 405 ǀ Kojima A, Oral Oncol 2002; 38: 591 ǀ Shima K, Br J Oral Maxillofac Surg 2000; 38: 445 ǀ Shimizu M, J Dermatol Sci 2004; 36: 33 ǀ Sugiyama M, Oral Surg Oral Med Oral Pathol Oral Radiol Endod 2003; 95: 594 ǀ Tang X, J Oral Pathol Med 2003; 32: 393 ǀ Tsuhako K, J Oral Pathol Med 2000; 29: 70
Malaysia	Lim KP, Oncol Rep 2007; 17: 1321, Lim KP, Oncol Rep 2007; 17: 1321
Republic of Korea	Shin KH, Int J Oncol 2002; 21: 297, Shin KH, Int J Oncol 2002; 21: 297
Europe	
Belarus	Gudleviciene Z, J Med Virol 2014; 86: 531, Gudleviciene Z, J Med Virol 2014; 86: 531
Belgium	Duray A, Laryngoscope 2012; 122: 1558, Duray A, Laryngoscope 2012; 122: 1558
Czechia	Ribeiro KB, Int J Epidemiol 2011; 40: 489, Ribeiro KB, Int J Epidemiol 2011; 40: 489
Finland	Koskinen WJ, Int J Cancer 2003; 107: 401 ǀ Mork J, N Engl J Med 2001; 344: 1125, Koskinen WJ, Int J Cancer 2003; 107: 401 ǀ Mork J, N Engl J Med 2001; 344: 1125
Germany	Klussmann JP, Cancer 2001; 92: 2875 ǀ Krüger M, J Craniomaxillofac Surg 2014; 42: 1506 ǀ Ostwald C, Med Microbiol Immunol 2003; 192: 145 ǀ Weiss D, Head Neck 2011; 33: 856, Klussmann JP, Cancer 2001; 92: 2875 ǀ Krüger M, J Craniomaxillofac Surg 2014; 42: 1506 ǀ Ostwald C, Med Microbiol Immunol 2003; 192: 145 ǀ Weiss D, Head Neck 2011; 33: 856
Greece	Aggelopoulou EP, Anticancer Res 1999; 19: 1391 ǀ Blioumi E, Oral Oncol 2014; 50: 840 ǀ Romanitan M, Anticancer Res 2008; 28: 2077, Aggelopoulou EP, Anticancer Res 1999; 19: 1391 ǀ Blioumi E, Oral Oncol 2014; 50: 840 ǀ Romanitan M, Anticancer Res 2008; 28: 2077
Hungary	Nemes JA, Oral Surg Oral Med Oral Pathol Oral Radiol Endod 2006; 102: 344 ǀ Szarka K, Oral Microbiol Immunol 2009; 24: 314, Nemes JA, Oral Surg Oral Med Oral Pathol Oral Radiol Endod 2006; 102: 344 ǀ Szarka K, Oral Microbiol Immunol 2009; 24: 314
Ireland	Herrero R, J Natl Cancer Inst 2003; 95: 1772, Herrero R, J Natl Cancer Inst 2003; 95: 1772
Italy	Badaracco G, Anticancer Res 2000; 20: 1301 ǀ Badaracco G, Oncol Rep 2007; 17: 931 ǀ Herrero R, J Natl Cancer Inst 2003; 95: 1772 ǀ Rittà M, Head Neck 2009; 31: 318 ǀ Scapoli L, Mod Pathol 2009; 22: 366, Badaracco G, Anticancer Res 2000; 20: 1301 ǀ Badaracco G, Oncol Rep 2007; 17: 931 ǀ Herrero R, J Natl Cancer Inst 2003; 95: 1772 ǀ Rittà M, Head Neck 2009; 31: 318 ǀ Scapoli L, Mod Pathol 2009; 22: 366
Netherlands	Braakhuis BJ, J Natl Cancer Inst 2004; 96: 998 ǀ Cruz IB, Eur J Cancer, B, Oral Oncol 1996; 32B: 55 ǀ van Monsjou HS, Int J Cancer 2012; 130: 1806, Braakhuis BJ, J Natl Cancer Inst 2004; 96: 998 ǀ Cruz IB, Eur J Cancer, B, Oral Oncol 1996; 32B: 55 ǀ van Monsjou HS, Int J Cancer 2012; 130: 1806
Norway	Matzow T, Acta Oncol 1998; 37: 73 ǀ Mork J, N Engl J Med 2001; 344: 1125, Matzow T, Acta Oncol 1998; 37: 73 ǀ Mork J, N Engl J Med 2001; 344: 1125
Poland	Herrero R, J Natl Cancer Inst 2003; 95: 1772 ǀ Ribeiro KB, Int J Epidemiol 2011; 40: 489 ǀ Snietura M, Pol J Pathol 2010; 61: 133, Herrero R, J Natl Cancer Inst 2003; 95: 1772 ǀ Ribeiro KB, Int J Epidemiol 2011; 40: 489 ǀ Snietura M, Pol J Pathol 2010; 61: 133
Romania	Ribeiro KB, Int J Epidemiol 2011; 40: 489, Ribeiro KB, Int J Epidemiol 2011; 40: 489
Russian Federation	Ribeiro KB, Int J Epidemiol 2011; 40: 489, Ribeiro KB, Int J Epidemiol 2011; 40: 489
Serbia	Kozomara R, J Craniomaxillofac Surg 2005; 33: 342, Kozomara R, J Craniomaxillofac Surg 2005; 33: 342
Slovakia	Ribeiro KB, Int J Epidemiol 2011; 40: 489, Ribeiro KB, Int J Epidemiol 2011; 40: 489
Slovenia	Kansky AA, Acta Virol 2003; 47: 11, Kansky AA, Acta Virol 2003; 47: 11
Spain	García-de Marcos JA, Int J Oral Maxillofac Surg 2014; 43: 274 ǀ Herrero R, J Natl Cancer Inst 2003; 95: 1772 ǀ Llamas-Martínez S, Anticancer Res 2008; 28: 3733, García-de Marcos JA, Int J Oral Maxillofac Surg 2014; 43: 274 ǀ Herrero R, J Natl Cancer Inst 2003; 95: 1772 ǀ Llamas-Martínez S, Anticancer Res 2008; 28: 3733
Sweden	Dahlgren L, Int J Cancer 2004; 112: 1015 ǀ Mork J, N Engl J Med 2001; 344: 1125 ǀ Sand L, Anticancer Res 2000; 20: 1183, Dahlgren L, Int J Cancer 2004; 112: 1015 ǀ Mork J, N Engl J Med 2001; 344: 1125 ǀ Sand L, Anticancer Res 2000; 20: 1183
HPV prevalence and type distribution in invasive oropharyngeal squamous cell carcinoma	
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Africa	
South Africa	Paquette C, Head Neck Pathol 2013; 7: 361
Americas	
Argentina	Ribeiro KB, Int J Epidemiol 2011; 40: 489, Ribeiro KB, Int J Epidemiol 2011; 40: 489
Brazil	Cortezzi SS, Cancer Genet Cytogenet 2004; 150: 44 ǀ Ribeiro KB, Int J Epidemiol 2011; 40: 489, Cortezzi SS, Cancer Genet Cytogenet 2004; 150: 44 ǀ Ribeiro KB, Int J Epidemiol 2011; 40: 489
Canada	Nichols AC, J Otolaryngol Head Neck Surg 2013; 42: 9
Cuba	Herrero R, J Natl Cancer Inst 2003; 95: 1772 ǀ Ribeiro KB, Int J Epidemiol 2011; 40: 489, Herrero R, J Natl Cancer Inst 2003; 95: 1772 ǀ Ribeiro KB, Int J Epidemiol 2011; 40: 489

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Country	Study
United States of America	Agoston ES, Am J Clin Pathol 2010; 134: 36 I Chaturvedi AK, J Clin Oncol 2011; 29: 4294 I Cohen MA, Acta Otolaryngol 2008; 128: 583 I D'Souza G, N Engl J Med 2007; 356: 1944 I Ernster JA, Laryngoscope 2007; 117: 2115 I Furniss CS, Int J Cancer 2007; 120: 2386 I Kingma DW, Anticancer Res 2010; 30: 5099 I Kong CS, Int J Radiat Oncol Biol Phys 2009; 74: 553 I Lohavanichbutr P, Arch Otolaryngol Head Neck Surg 2009; 135: 180 I Posner MR, Ann Oncol 2011; 22: 1071 I Schlecht NF, Mod Pathol 2011; 24: 1295 I Schwartz SM, J Natl Cancer Inst 1998; 90: 1626 I Smith EM, Int J Cancer 2004; 108: 766 I Strome SE, Clin Cancer Res 2002; 8: 1093 I Tezal M, Arch Otolaryngol Head Neck Surg 2009; 135: 391 I Zhao M, Int J Cancer 2005; 117: 605, Agoston ES, Am J Clin Pathol 2010; 134: 36 I Chaturvedi AK, J Clin Oncol 2011; 29: 4294 I Cohen MA, Acta Otolaryngol 2008; 128: 583 I D'Souza G, J Clin Oncol 2014; 32: 2408 I D'Souza G, N Engl J Med 2007; 356: 1944 I Ernster JA, Laryngoscope 2007; 117: 2115 I Furniss CS, Int J Cancer 2007; 120: 2386 I Hooper JE, Appl Immunohistochem Mol Morphol 2015; 23: 266 I Isayeva T, Hum Pathol 2014; 45: 310 I Jordan RC, Am J Surg Pathol 2012; 36: 945 I Kerr DA, Am J Surg Pathol 2015; 39: 1643 I Kingma DW, Anticancer Res 2010; 30: 5099 I Kong CS, Int J Radiat Oncol Biol Phys 2009; 74: 553 I Lohavanichbutr P, Arch Otolaryngol Head Neck Surg 2009; 135: 180 I Posner MR, Ann Oncol 2011; 22: 1071 I Schlecht NF, Mod Pathol 2011; 24: 1295 I Schwartz SM, J Natl Cancer Inst 1998; 90: 1626 I Sethi S, Int J Cancer 2012; 131: 1179 I Smith EM, Int J Cancer 2004; 108: 766 I Steinau M, Emerging Infect Dis 2014; 20: 822 I Strome SE, Clin Cancer Res 2002; 8: 1093 I Tezal M, Arch Otolaryngol Head Neck Surg 2009; 135: 391 I Walline HM, JAMA Otolaryngol Head Neck Surg 2013; 139: 1320 I Zhao M, Int J Cancer 2005; 117: 605
Asia	
China	Li W, Pathology 2007; 39: 217, Li W, Pathology 2007; 39: 217
India	Bahl A, Head Neck 2014; 36: 505
Japan	Deng Z, Head Neck 2013; 35: 800 I Hama T, Oncology 2014; 87: 173 I Hatakeyama H, Oncol Rep 2014; 32: 2673
Republic of Korea	Kim SH, Int J Cancer 2007; 120: 1418 I Oh TJ, J Clin Microbiol 2004; 42: 3272, Kim SH, Int J Cancer 2007; 120: 1418 I Oh TJ, J Clin Microbiol 2004; 42: 3272
Turkey	Tural D, Asian Pac J Cancer Prev 2013; 14: 6065
Europe	
Czechia	Klozar J, Eur Arch Otorhinolaryngol 2008; 265 Suppl 1: S75 I Ribeiro KB, Int J Epidemiol 2011; 40: 489 I Rotnáglová E, Int J Cancer 2011; 129: 101, Klozar J, Eur Arch Otorhinolaryngol 2008; 265 Suppl 1: S75 I Ribeiro KB, Int J Epidemiol 2011; 40: 489 I Rotnáglová E, Int J Cancer 2011; 129: 101
Finland	Jouhi L, Tumour Biol 2015; 36: 7755
France	Charfi L, Cancer Lett 2008; 260: 72 I Fouret P, Arch Otolaryngol Head Neck Surg 1997; 123: 513, Charfi L, Cancer Lett 2008; 260: 72 I Fonmarty D, Eur Ann Otorhinolaryngol Head Neck Dis 2015; 132: 135 I Fouret P, Arch Otolaryngol Head Neck Surg 1997; 123: 513
Germany	Andl T, Cancer Res 1998; 58: 5 I Hoffmann M, Acta Otolaryngol 1998; 118: 138 I Hoffmann M, Int J Cancer 2010; 127: 1595 I Klussmann JP, Cancer 2001; 92: 2875 I Reimers N, Int J Cancer 2007; 120: 1731 I Weiss D, Head Neck 2011; 33: 856 I Wittekindt C, Adv Otorhinolaryngol 2005; 62: 72, Andl T, Cancer Res 1998; 58: 5 I Hoffmann M, Acta Otolaryngol 1998; 118: 138 I Hoffmann M, Int J Cancer 2010; 127: 1595 I Holzinger D, Cancer Res 2012; 72: 4993 I Klussmann JP, Cancer 2001; 92: 2875 I Krupar R, Eur Arch Otorhinolaryngol 2014; 271: 1737 I Reimers N, Int J Cancer 2007; 120: 1731 I Weiss D, Head Neck 2011; 33: 856 I Wittekindt C, Adv Otorhinolaryngol 2005; 62: 72
Greece	Romanitan M, Anticancer Res 2008; 28: 2077, Romanitan M, Anticancer Res 2008; 28: 2077
Italy	Boscolo-Rizzo P, J Cancer Res Clin Oncol 2009; 135: 559 I Herrero R, J Natl Cancer Inst 2003; 95: 1772 I Licitra L, J Clin Oncol 2006; 24: 5630 I Rittà M, Head Neck 2009; 31: 318, Boscolo-Rizzo P, J Cancer Res Clin Oncol 2009; 135: 559 I Herrero R, J Natl Cancer Inst 2003; 95: 1772 I Licitra L, J Clin Oncol 2006; 24: 5630 I Rittà M, Head Neck 2009; 31: 318
Netherlands	Braakhuis BJ, J Natl Cancer Inst 2004; 96: 998, Braakhuis BJ, J Natl Cancer Inst 2004; 96: 998 I Henneman R, Anticancer Res 2015; 35: 4015 I van Monsjou HS, Int J Cancer 2012; 130: 1806
Norway	Hannisdal K, Acta Otolaryngol 2010; 130: 293, Hannisdal K, Acta Otolaryngol 2010; 130: 293
Poland	Ribeiro KB, Int J Epidemiol 2011; 40: 489 I Snietura M, Pol J Pathol 2010; 61: 133 I Szkaradkiewicz A, Clin Exp Med 2002; 2: 137, Ribeiro KB, Int J Epidemiol 2011; 40: 489 I Snietura M, Pol J Pathol 2010; 61: 133 I Szkaradkiewicz A, Clin Exp Med 2002; 2: 137
Romania	Ribeiro KB, Int J Epidemiol 2011; 40: 489, Ribeiro KB, Int J Epidemiol 2011; 40: 489
Russian Federation	Ribeiro KB, Int J Epidemiol 2011; 40: 489, Ribeiro KB, Int J Epidemiol 2011; 40: 489
Slovakia	Ribeiro KB, Int J Epidemiol 2011; 40: 489, Ribeiro KB, Int J Epidemiol 2011; 40: 489
Spain	Herrero R, J Natl Cancer Inst 2003; 95: 1772, Herrero R, J Natl Cancer Inst 2003; 95: 1772
Sweden	Attner P, Int J Cancer 2010; 126: 2879 I Dahlgren L, Int J Cancer 2004; 112: 1015 I Hammarstedt L, Int J Cancer 2006; 119: 2620 I Lindquist D, Anticancer Res 2012; 32: 153 I Näsman A, Int J Cancer 2009; 125: 362, Attner P, Int J Cancer 2010; 126: 2879 I Dahlgren L, Int J Cancer 2004; 112: 1015 I Hammarstedt L, Int J Cancer 2006; 119: 2620 I Lindquist D, Anticancer Res 2012; 32: 153 I Näsman A, Int J Cancer 2009; 125: 362
Switzerland	Lindel K, Cancer 2001; 92: 805, Lindel K, Cancer 2001; 92: 805
United Kingdom	Anderson CE, J Clin Pathol 2007; 60: 439 I Schache AG, Clin Cancer Res 2011; 17: 6262 I Thavaraj S, J Clin Pathol 2011; 64: 308, Anderson CE, J Clin Pathol 2007; 60: 439 I Conway C, J Mol Diagn 2012; 14: 104 I Evans M, BMC Cancer 2013; 13: 220 I Schache AG, Clin Cancer Res 2011; 17: 6262 I Thavaraj S, J Clin Pathol 2011; 64: 308 I Wells LA, J Clin Pathol 2015; 68: 849
HPV prevalence and type distribution in invasive hypopharyngeal squamous cell carcinoma	
General sources	Based on systematic reviews and meta-analysis performed by ICO. Reference publications: 1) Ndiaye C, Lancet Oncol 2014; 15: 1319 2) Kreimer AR, Cancer Epidemiol Biomarkers Prev 2005; 14: 467

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Country	Study
Americas	
Argentina	Ribeiro KB, Int J Epidemiol 2011; 40: 489, Ribeiro KB, Int J Epidemiol 2011; 40: 489
Brazil	Miranda FA, J Histochem Cytochem 2009; 57: 665 | Ribeiro KB, Int J Epidemiol 2011; 40: 489, Miranda FA, J Histochem Cytochem 2009; 57: 665 | Ribeiro KB, Int J Epidemiol 2011; 40: 489
Canada	Fliss DM, Laryngoscope 1994; 104: 146, Fliss DM, Laryngoscope 1994; 104: 146
Chile	Gheit T, J Med Virol 2014; 86: 642 | Torrente MC, Acta Otolaryngol 2005; 125: 888, Gheit T, J Med Virol 2014; 86: 642 | Torrente MC, Acta Otolaryngol 2005; 125: 888
Cuba	García-Milián R, Acta Otolaryngol 1998; 118: 754 | Ribeiro KB, Int J Epidemiol 2011; 40: 489, García-Milián R, Acta Otolaryngol 1998; 118: 754 | Ribeiro KB, Int J Epidemiol 2011; 40: 489
United States of America	Brandwein MS, Ann Otol Rhinol Laryngol 1993; 102: 309 | Chernock RD, Mod Pathol 2013; 26: 223 | Furniss CS, Int J Cancer 2007; 120: 2386 | Paz IB, Cancer 1997; 79: 595 | Schlecht NF, Mod Pathol 2011; 24: 1295 | Shen J, Mod Pathol 1996; 9: 15 | Zhao M, Int J Cancer 2005; 117: 605, Brandwein MS, Ann Otol Rhinol Laryngol 1993; 102: 309 | Chernock RD, Mod Pathol 2013; 26: 223 | Furniss CS, Int J Cancer 2007; 120: 2386 | Paz IB, Cancer 1997; 79: 595 | Schlecht NF, Mod Pathol 2011; 24: 1295 | Shen J, Mod Pathol 1996; 9: 15 | Zhao M, Int J Cancer 2005; 117: 605
Asia	
China	Liu B, Neoplasma 2010; 57: 594 | Ma XL, J Med Virol 1998; 54: 186, Liu B, Neoplasma 2010; 57: 594 | Ma XL, J Med Virol 1998; 54: 186
India	Jacob SE, J Surg Oncol 2002; 79: 142, Jacob SE, J Surg Oncol 2002; 79: 142
Japan	Anwar K, Int J Cancer 1993; 53: 22 | Deng Z, Head Neck 2013; 35: 800 | Mineta H, Anticancer Res 1998; 18: 4765 | Ogura H, Jpn J Cancer Res 1991; 82: 1184 | Shidara K, Laryngoscope 1994; 104: 1008, Anwar K, Int J Cancer 1993; 53: 22 | Deng Z, Head Neck 2013; 35: 800 | Mineta H, Anticancer Res 1998; 18: 4765 | Ogura H, Jpn J Cancer Res 1991; 82: 1184 | Shidara K, Laryngoscope 1994; 104: 1008
Turkey	Bozdayi G, J Otolaryngol Head Neck Surg 2009; 38: 119 | Dönmez M, Kuwait Med J 2000 | Gungor A, J Laryngol Otol 2007; 121: 772, Bozdayi G, J Otolaryngol Head Neck Surg 2009; 38: 119 | Dönmez M, Kuwait Med J 2000 | Gungor A, J Laryngol Otol 2007; 121: 772
Europe	
Belarus	Gudleviciene Z, J Med Virol 2014; 86: 531, Gudleviciene Z, J Med Virol 2014; 86: 531
Belgium	Duray A, Int J Oncol 2011; 39: 51, Duray A, Int J Oncol 2011; 39: 51
Czechia	Ribeiro KB, Int J Epidemiol 2011; 40: 489, Ribeiro KB, Int J Epidemiol 2011; 40: 489
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Table 47 – continued from previous page

Country	Study
Switzerland	Adams V, Anticancer Res 1999; 19: 1, Adams V, Anticancer Res 1999; 19: 1

10 Glossary

Table 48: Glossary

Term	Definition
Incidence	Incidence is the number of new cases arising in a given period in a specified population. This information is collected routinely by cancer registries. It can be expressed as an absolute number of cases per year or as a rate per 100,000 persons per year (see Crude rate and ASR below). The rate provides an approximation of the average risk of developing a cancer.
Mortality	Mortality is the number of deaths occurring in a given period in a specified population. It can be expressed as an absolute number of deaths per year or as a rate per 100,000 persons per year.
Prevalence	The prevalence of a particular cancer can be defined as the number of persons in a defined population who have been diagnosed with that type of cancer, and who are still alive at the end of a given year, the survivors. Complete prevalence represents the number of persons alive at certain point in time who previously had a diagnosis of the disease, regardless of how long ago the diagnosis was, or if the patient is still under treatment or is considered cured. Partial prevalence , which limits the number of patients to those diagnosed during a fixed time in the past, is a particularly useful measure of cancer burden. Prevalence of cancers based on cases diagnosed within one, three and five are presented as they are likely to be of relevance to the different stages of cancer therapy, namely, initial treatment (one year), clinical follow-up (three years) and cure (five years). Patients who are still alive five years after diagnosis are usually considered cured since the death rates of such patients are similar to those in the general population. There are exceptions, particularly breast cancer. Prevalence is presented for the adult population only (ages 15 and over), and is available both as numbers and as proportions per 100,000 persons.
Crude rate	Data on incidence or mortality are often presented as rates. For a specific tumour and population, a crude rate is calculated simply by dividing the number of new cancers or cancer deaths observed during a given time period by the corresponding number of person years in the population at risk. For cancer, the result is usually expressed as an annual rate per 100,000 persons at risk.
ASR (age-standardised rate)	An age-standardised rate (ASR) is a summary measure of the rate that a population would have if it had a standard age structure. Standardization is necessary when comparing several populations that differ with respect to age because age has a powerful influence on the risk of cancer. The ASR is a weighted mean of the age-specific rates; the weights are taken from population distribution of the standard population. The most frequently used standard population is the World Standard Population. The calculated incidence or mortality rate is then called age-standardised incidence or mortality rate (world). It is also expressed per 100,000. The world standard population used in GLOBOCAN is as proposed by Segi [1] and modified by Doll and al. [2]. The age-standardised rate is calculated using 10 age-groups. The result may be slightly different from that computed using the same data categorised using the traditional 5 year age bands.
Cumulative risk	Cumulative incidence/mortality is the probability or risk of individuals getting/dying from the disease during a specified period. For cancer, it is expressed as the number of new born children (out of 100, or 1000) who would be expected to develop/die from a particular cancer before the age of 75 if they had the rates of cancer observed in the period in the absence of competing causes.
Cytologically normal women	No abnormal cells are observed on the surface of their cervix upon cytology.
Cervical Intraepithelial Neoplasia (CIN) / Squamous Intraepithelial Lesions (SIL)	SIL and CIN are two commonly used terms to describe precancerous lesions or the abnormal growth of squamous cells observed in the cervix. SIL is an abnormal result derived from cervical cytological screening or Pap smear testing. CIN is a histological diagnosis made upon analysis of cervical tissue obtained by biopsy or surgical excision. The condition is graded as CIN 1, 2 or 3, according to the thickness of the abnormal epithelium (1/3, 2/3 or the entire thickness).
Low-grade cervical lesions (LSIL/CIN-1)	Low-grade cervical lesions are defined by early changes in size, shape, and number of ab-normal cells formed on the surface of the cervix and may be referred to as mild dysplasia, LSIL, or CIN-1.
High-grade cervical lesions (HSIL / CIN-2 / CIN-3 / CIS)	High-grade cervical lesions are defined by a large number of precancerous cells on the sur-face of the cervix that are distinctly different from normal cells. They have the potential to become cancerous cells and invade deeper tissues of the cervix. These lesions may be referred to as moderate or severe dysplasia, HSIL, CIN-2, CIN-3 or cervical carcinoma in situ (CIS).
Carcinoma in situ (CIS)	Preinvasive malignancy limited to the epithelium without invasion of the basement membrane. CIN 3 encompasses the squamous carcinoma in situ.
Invasive cervical cancer (ICC) / Cervical cancer	If the high-grade precancerous cells invade the basement membrane is called ICC. ICC stages range from stage I (cancer is in the cervix or uterus only) to stage IV (the cancer has spread to distant organs, such as the liver).
Adenocarcinoma	Invasive tumour with glandular and squamous elements intermingled

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International Agency for Research on Cancer (IARC)

Note to the reader

Anyone who is aware of relevant published data that may not have been included in the present report is encouraged to contact the HPV Information Centre for potential contributions.
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