



SEPTEMBER 18, 2024

# Cancers Associated with Human Papillomavirus

## WHAT TO KNOW

According to data from 2017 to 2021, an estimated 47,984 new cases of human papillomavirus (HPV)-associated cancers were reported in the United States each year, including 26,280 among females and 21,704 among males

## Background

Cervical cancer is the most common HPV-associated cancer among females, and oropharyngeal cancers (cancers of the back of the throat, including the base of the tongue and tonsils) are the most common among males.

HPV is a recognized cause of cancer. Although most HPV infections are asymptomatic and clear spontaneously, persistent infections can progress to precancer or cancer. HPV causes most cervical cancers, as well as some cancers of the vagina, vulva, penis, anus, and oropharynx. Cancer registries do not routinely collect information about HPV status, so in this report, [HPV-associated cancers](#) are defined as those that occur in parts of the body where HPV is often found.

## HPV-associated cancers

An HPV-associated cancer is a specific cellular type of cancer that is diagnosed in a part of the body where HPV is often found. These parts of the body include the cervix, vagina, vulva, penis, anus, and oropharynx.

Figure 1. Number of new HPV-associated cancer cases each year

Make a selection from the filters to change the visualization information.

Sex

Female (26,280) ▾



Data Table		
Cancer Type	Percentage	
Vagina	3	
Vulva	17	
Cervix	46	
Anus*	20	
Oropharynx	14	

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\*includes anal and rectal squamous cell carcinomas.

For more information, please see [Cancers Linked With HPV Each Year](#).

Figure 2. Rate of HPV-associated cancers by a) sex and cancer type and by b) sex and race and ethnic group

The incidence rate of HPV-associated cancers varied by cancer type, sex, and race/ethnic group. Females had higher incidence than males, except for the oropharynx site. Among males, non-Hispanic White males had the highest incidence rates compared with other racial and ethnic groups, and non-Hispanic Asian/Pacific Islander males had the lowest rates. Among females, non-Hispanic American Indian/Alaska Native females had the highest incidence rates compared with other racial and ethnic groups, and non-Hispanic Asian/Pacific Islander females had the lowest rates.

Figure 2a. By sex and cancer type

Make a selection from the filters to change the visualization information.

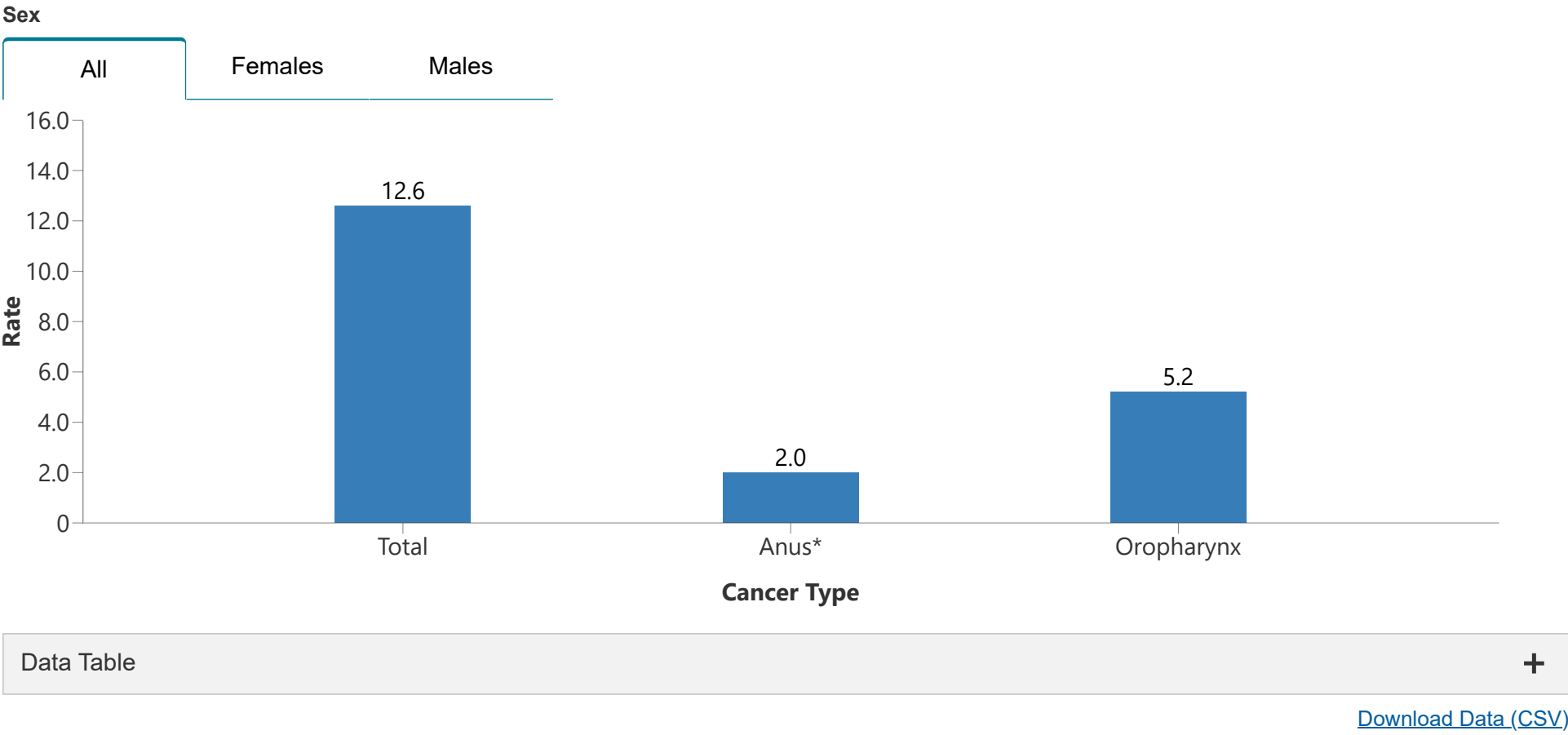
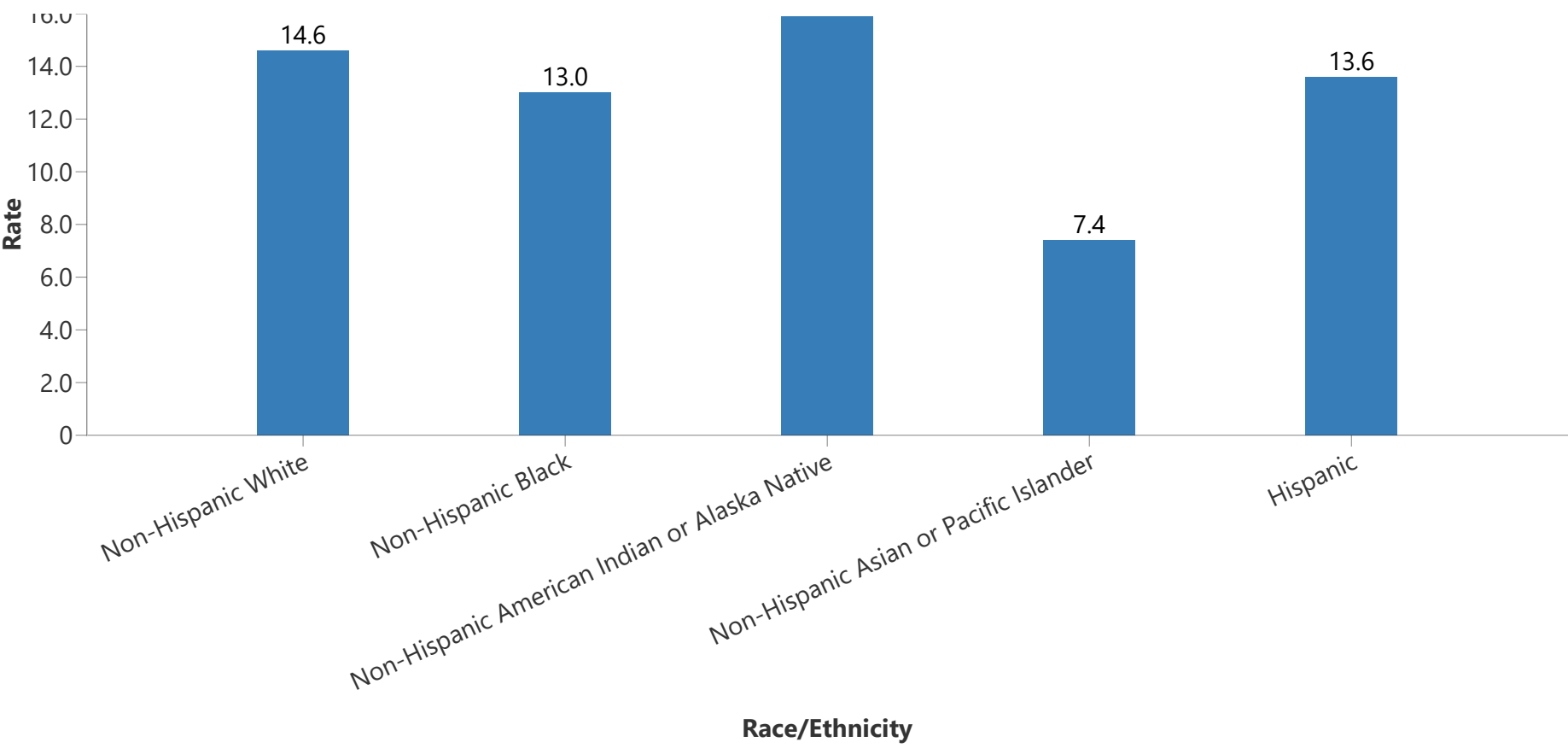


Figure 2b. By sex and race and ethnic group

Make a selection from the filters to change the visualization information.





Data Table



[Download Data \(CSV\)](#)

HPV-attributable cancers

Figure 3. Estimated annual number of cancer cases attributable to HPV by sex, cancer type, and HPV type

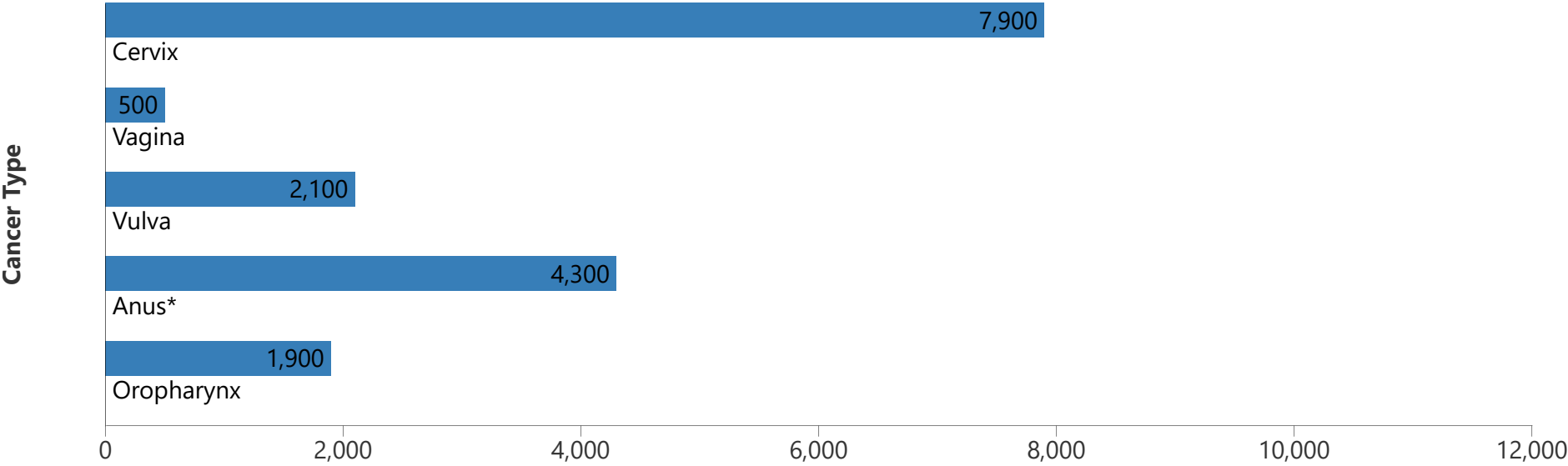
Make a selection from the filters to change the visualization information.

Sex

Female

HPV Type

Caused by HPV types 16 and 18



Data Table



Cancer Type	Cases
Cervix	7,900
Vagina	500
Vulva	2,100
Anus*	4,300
Oropharynx	1,900

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An HPV-attributable cancer is a cancer probably caused by HPV. HPV-attributable cancers are estimated by multiplying the number of HPV-associated cancers by the percentage attributable to HPV according to [a CDC genotyping study](#). We estimated that 37,800 cancers (79%) were attributable to HPV each year during 2017 to 2021. Of these, we estimated that 35,000 cancers could have been prevented by the 9-

valent HPV vaccine, including 30,700 caused by HPV types 16 and 18 and 4,300 caused by HPV types 31, 33, 45, 52, and 58. It is estimated that about 10% of cervical and anal cancers, 30% of oropharyngeal, vaginal, and vulvar cancers, and 40% of penile cancers are HPV-negative.

[HPV vaccination](#) is recommended for all preteens at ages 11 to 12 years old, and catch-up HPV vaccination for all adults through age 26 years. Catch-up vaccination is not recommended for people who are 27 years old or older because the benefit of HPV vaccination decreases in older age groups, but vaccination can be based on shared clinical decision-making for people who are 27 to 45 years old.

## Suggested citation

Centers for Disease Control and Prevention. Cancers Associated with Human Papillomavirus. Centers for Disease Control and Prevention, U.S. Department of Health and Human Services; 2024.

SOURCES

**CONTENT SOURCE:**  
[National Center for Chronic Disease Prevention and Health Promotion; Division of Cancer Prevention and Control](#)

SOURCES

- Data in this brief come from U.S. Cancer Statistics, the official federal cancer statistics.
- U.S. Cancer Statistics incidence data are from population-based registries that participated in CDC's National Program of Cancer Registries and/or the National Cancer Institute's Surveillance, Epidemiology, and End Results Program and met [high-quality data criteria](#) for data submitted in 2023, covering 98% of the U.S. population (excluding data from Indiana). Population-based cancer registries do not routinely collect information about HPV status; however, the data can be used to monitor the number and trends of cancers associated with HPV and estimate the number probably caused by HPV. The analysis and methods were based on Viens et al. [Human papillomavirus-associated cancers—United States, 2008–2012](#). [MMWR Morb Mortal Wkly Rep.](#) 2016;65(26):661–666.