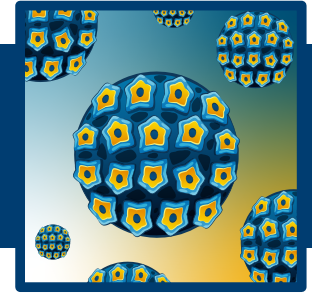


## Parent's Perspective

### UNIT: GOING VIRAL!

### LESSON 3: YOUR VOICE MATTERS!

#### Activity 3A: Time for T!



**TEXAS BIOMEDICAL  
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HEALTH STARTS WITH SCIENCE

#### Parent

An active PTA member and advocate for parental rights. As a parent of a child with asthma, they are concerned about preventable diseases spreading in schools.

#### Brief Perspective:

- › Parents, not schools, should decide on children's healthcare.
- › Public schools already require other vaccines (MMR, polio).

#### From the Centers for Disease Control (CDC)

Vaccines protect against two types of HPV. Genital human papillomavirus (HPV) is the most common sexually transmitted infection in the United States; an estimated 14 million persons are newly infected every year. Although most infections cause no symptoms and are self-limited, persistent HPV infection can cause cervical cancer in women as well as other anogenital cancers, oropharyngeal cancer, and genital warts in men and women. More than 150 HPV types have been identified, including approximately 40 that infect the genital area. Genital HPV types are categorized according to their epidemiologic association with cervical cancer. High-risk types have the potential to act as carcinogens. Low-risk types (e.g., types 6 and 11) can cause benign or low-grade cervical cell changes, genital warts, and recurrent respiratory papillomatosis. High-risk types (e.g., types 16 and 18) can cause low-grade cervical cell abnormalities, high-grade cervical cell abnormalities that are precursors to cancer, and cancers. Essentially all cervical cancers are attributable to high-risk HPV types, and approximately 70% of cervical cancer cases worldwide are caused by types 16 and 18. In addition to cervical cancer, HPV infection also is the cause of some other anogenital cancers such as cancer of the vulva, vagina, penis, and anus, as well as cancer of the oropharynx. Two HPV vaccines, bivalent HPV vaccine (HPV2) and quadrivalent HPV vaccine (HPV4) are licensed for use in the United States. Both vaccines protect against HPV types 16 and 18, which cause 70% of cervical cancers. HPV type 16 also causes the majority of other cancers attributable to HPV. HPV4 also protects against HPV types 6 and 11, which cause >90% of genital warts and recurrent respiratory papillomatosis. This report summarizes the epidemiology of HPV and associated diseases, describes the licensed HPV vaccines, provides updated information on vaccines from clinical trials and post licensure safety studies and monitoring, and compiles recommendations from CDC's Advisory Committee on Immunization Practices (ACIP) for use of HPV vaccines.



There is not approved testing for HPV for males. Laboratory Testing for HPV Because HPV infections are not treated, the clinical indications for HPV testing are to identify women at risk for HPV-associated cervical

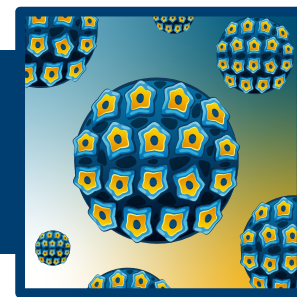
#### MIDDLE & HIGH SCHOOL LEVEL

Teacher Enrichment Initiatives (TEI) | NIH SEPA | ©2025 | [TxBiomed.org](https://TxBiomed.org)  
NIH SEPA Project #1R25GM142021-01A1 | Some graphic elements courtesy of [Freepik](https://www.freepik.com)

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disease and to guide follow-up decisions for those with disease. HPV cannot be cultured directly from patient specimens, so tests require detecting HPV genetic information. Most commercially available assays detect DNA. Because HPV is cell-associated, cellular samples are required. The Food and Drug Administration (FDA) has approved clinical HPV tests for detecting clinically significant levels of any of 14 high-risk HPV types (HPV 16, 18, 31, 33, 35, 39, 45, 51, 52, 56, 58, 59, 66, and 68) from cervical specimens (see Cervical Cancer Screening). HPV tests are approved either for use with the Papanicolaou (Pap) test for routine screening in women aged >30 years or for following up certain abnormal Pap test results. One HPV test has been approved for primary cervical cancer screening but is not currently part of national recommendations. There are no other approved indications for clinical HPV testing. HPV tests are not recommended or approved for use in men or adolescents, for detection of HPV in partners, or at anatomic sites other than the cervix.

Abstaining from sexual activity (i.e., refraining from any genital contact with another person) is the surest way to prevent genital HPV infection. Persons also can lower their chances of becoming infected with HPV by being in a monogamous relationship with one partner, limiting their number of sex partners, and choosing a partner who has had no or few previous sex partners. However, even persons with only one lifetime sex partner can be infected with HPV. Consistent and correct condom use can reduce the risk for HPV and HPV-associated diseases (e.g., genital warts and cervical cancer). A limited number of prospective studies have been conducted evaluating male condom use and HPV; one prospective study among newly sexually active women attending university demonstrated a 70% reduction in HPV infection when their partners used condoms consistently and correctly. Randomized clinical trials of male circumcision demonstrate a lower risk of HPV infection among circumcised males as well as among their female partners. Neither routine surveillance for HPV infection nor partner notification is useful for HPV prevention. Genital HPV infection is so prevalent that most partners of HPV-infected persons have already acquired HPV themselves.

### Article in PubMed, a peer-reviewed journal

The HPV vaccination is the main preventative approach for HPV. Head and neck cancers of the oropharyngeal subsite can be driven by the human papillomavirus (HPV). In countries such as the United States, the incidence of HPV-associated oropharyngeal cancer has exceeded that of HPV-associated cervical cancer. HPV vaccination is currently the main preventative approach for HPV-associated oropharyngeal cancer. North America has the highest incidence of HPV-associated OPSCC (Oropharyngeal Squamous Cell Carcinoma) in the world. In the USA the HPV-positive oropharyngeal cancers increased by 225% from 1988 to 2004. In a systematic review of data from seven European countries, the distribution of HPV positivity among patients with OPSCC varied from 18% to 65% between 2014 and 2018.

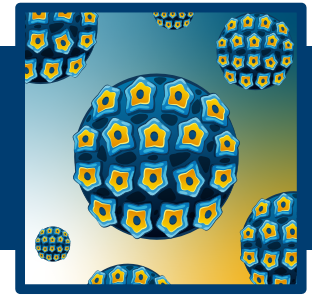


The North American region has the highest incidences of HPV-associated OPSCC in the world. The ASIR is estimated to be 3.41 per 100,000 in males and 0.71 in females, with an estimated 63% AF. Particularly in the United States, the prevalence of HPV among OPSCC is an estimated 66.3% (CI 56.1–75.9); these trends have additionally been increasing. The population-level incidence of HPV-positive oropharyngeal cancers

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increased by 225% (95% confidence interval 208–242%) from 1988 to 2004 [10]. During the early phase of the HPV epidemic for head and neck cancers, individuals diagnosed were typically younger, white men.

Oropharyngeal cancer (throat Cancer) is higher on males not women. The incidence of HPV-associated OPSCC varies both regionally and between sexes. Across studies, the age-standardized incidence rate (ASIR) has been highest in North America, Europe, and Oceania [2,4]. Additionally, while HPV-associated OPSCC affects both sexes, the ASIR is consistently higher in men compared to women [2,4]. Finally, globally, the attributable fraction (AF) or proportion of oropharyngeal cancers driven by HPV has ranged from 30.8% to 42.7% [2,4].