



What's New with HPV?

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Objectives:

- Describe the transmission and diseases caused by HPV
- Understand the data behind HPV and the HPV vaccine
- Enact how to deal with a difficult patient regarding vaccination
- Integrate facts into an informed discussion with a patient



HPV Trivia



The HPV vaccine can be given to both males and females at any time between 9 and 45 years old



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True

Guidelines now state it can be given starting at age 9 and up to age 45 years old. Both sexes should receive the HPV vaccine.



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False

Even if you have begun sexual activity, have tested positive for the virus, or have a viral disease (including cancer) due to HPV, **you can still get the HPV vaccine.**



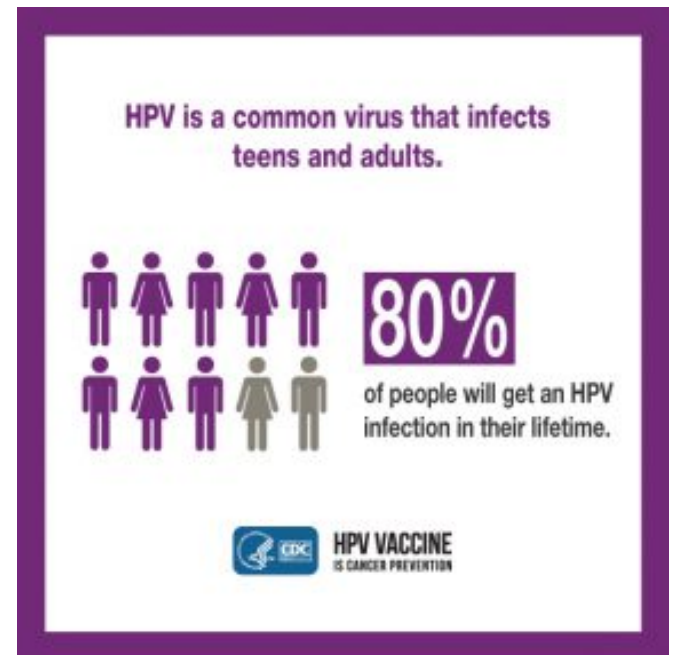
HPV is the most common cause of cervical, vaginal, penile, anal, and oropharyngeal cancers



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True

HPV is the most common cause of the above cancers, now causing **70% of all oropharyngeal cancers.**



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False

Based on data collected from 2012-2016, oropharyngeal cancer was the #1 HPV-related malignancy in the United States.



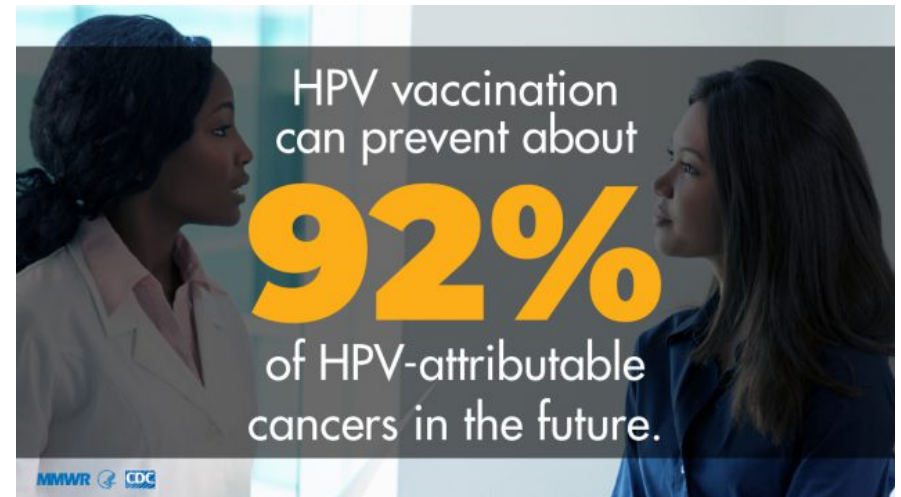
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True

Of all HPV-associated malignancies in the U.S. between 2012-2016, 92% were associated with HPV strains targeted by the 9-valent HPV vaccine.



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False

Many people infected with HPV will fight the infection off in a matter of months to years. Some people will have the disease for a longer period of time if they are not able to fight it off and may then develop cancer.



The HPV vaccine is approved to prevent tonsillar cancer



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True

As of June 2020, the FDA approved the HPV vaccine to prevent HPV-related malignancies in the head & neck, including the oropharynx (which houses the tonsils).



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False

If the vaccine schedule is interrupted, vaccine
doses do not need to be repeated.



The HPV vaccine is always given in 3 doses.



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False

A two-dose schedule is recommended for those who receive the first dose before their 15th birthday.

A three-dose schedule is recommended for those who receive the first dose after or on their 15th birthday.



You can spread HPV through a handshake



David Geffen
School of Medicine

UCLA Health

You can spread HPV through a handshake

True

Low risk -> warts spread through cutaneous contact

High risk -> malignancy spread through sexual contact, salivary-salivary transmission



HPV causes warts in the following areas:

- A. Anal region
- B. Vulvar & penile region
- C. Hands & feet
- D. Larynx & airway
- E. Answers A-C
- F. All of the above



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Head and neck cancers can be caused by the following:

- A. Tobacco use
- B. Alcohol use
- C. Betel nut chewing
- D. HPV
- E. Epstein-Barr virus
- F. Answers A, B, and C
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What Does the Data Say?



How safe is the vaccine?

>With over **100 million doses** distributed in the US, the HPV vaccine has a reassuring safety record that is backed by over **10 years** of monitoring and research.

Like any vaccine, HPV vaccination can have side effects. The most common side effects are mild and include pain, redness, or swelling in the arm where the shot is given; dizziness, fainting, nausea, and headache. Fainting after any vaccine, including the HPV vaccine, is more common among adolescents. **The benefits of HPV vaccination far outweigh any potential risk of side effects.**

There is no evidence to suggest that HPV vaccine causes fertility problems.



How many people actually get HPV?

Human papillomavirus (HPV) is the most common sexually transmitted disease in the US.

Almost all U.S. adults will become infected with HPV at some point in their lives.

It infects about **14 million people, including adolescents, each year.**

While many HPV infections go away on their own, infections that don't go away can lead to certain types of cancer.



How many people get HPV-related cancer each year?

Every year, 42,000 men and women develop a cancer caused by HPV in the United States.

HPV vaccination could prevent more than 90% of these cancers from ever developing.

Oropharyngeal cancer (14,000) has now surpassed cervical cancer (11,000) to be the most common HPV-related malignancy in the U.S. (other anogenital cancers <10,000)



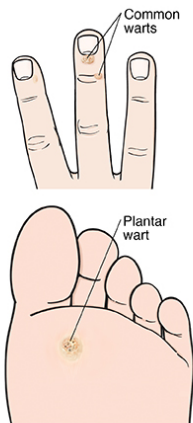
How many people need to be vaccinated to prevent one case of cancer?

Number needed to vaccinate (NNV) has been proposed to be around **130 for cervical cancer**.

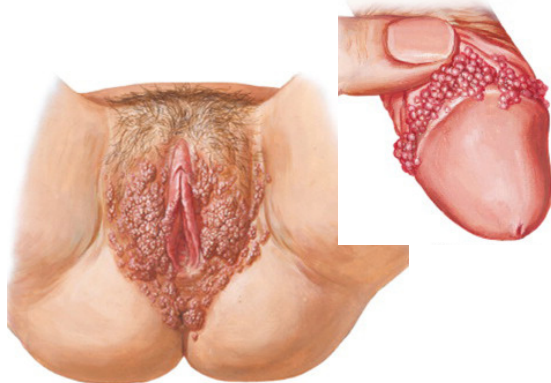
That means that for every 130 people who receive the vaccine, one person may potentially not develop cervical cancer. NNV has not been yet established for the other types of cancers.

Once someone completes the series, studies show that this confers lifelong immunity. The vaccine has been shown to be 95% effective at preventing disease caused by HPV.

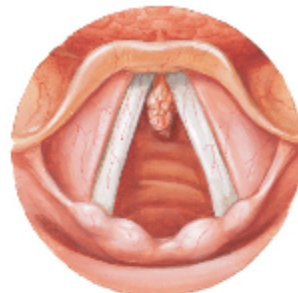




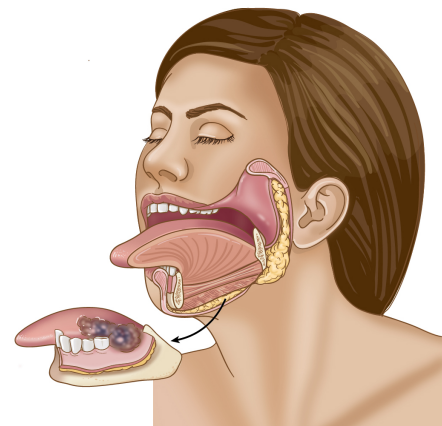
Common Warts



Anogenital Warts



Vocal Cord Papillomas



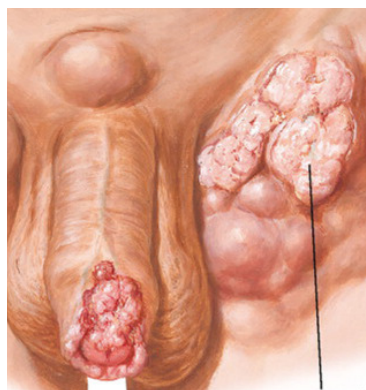
Head & Neck Cancer



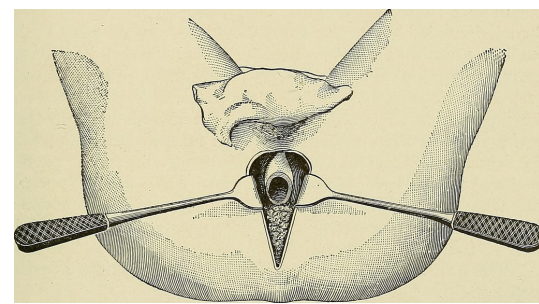
Cervical Cancer



Vaginal/Vulvar Cancer



Penile Cancer



Anal Cancer

HPV Diseases & Strains

Anogenital warts	6 and 11 (90% of cases), 42, 43, 44, 55, and others
Cervical cancer, vulvar squamous cancer	16 and 18 (70% of cases), 31, 33 , 35, 39, 45, 51
Common & plantar warts	2, 1, 4, 7
Oral & respiratory papillomas	6, 7, 11, 16 , 32
Oropharyngeal squamous cell carcinoma	16 and others

Gardasil 9 vaccine protects against 9 high risk strains: **6,11, 16,18, 31, 33, 45, 52, 58**



HPV Prevention

Pre-cancerous lesions of the cervix can be identified and treated early to prevent progression to cancer (Pap test, Pap smear).

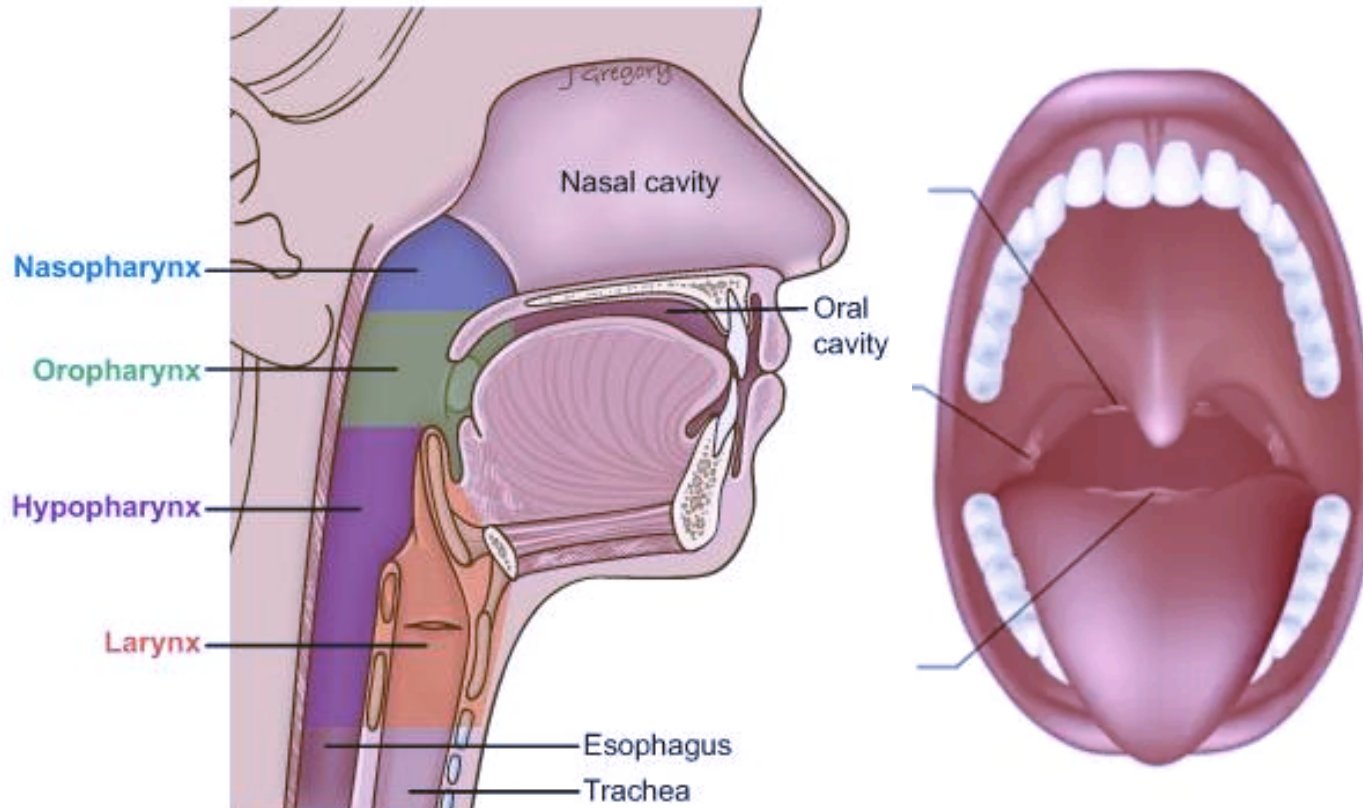
However, there is no known pre-cancerous lesion in the oropharynx that can be detected. The HPV vaccine is currently the only available method of preventing cancers of the head and neck, along with risk reduction strategies such as smoking cessation.



HPV in the Head and Neck



HPV-associated Head and Neck Cancer



Headandneckcancerguide.org



HPV-associated Head and Neck Cancer

- Oropharynx (tonsils, base of tongue)
 - Present most commonly as a neck mass
 - Neck mass can be large, cystic
- HPV-associated: nonsmoker, nondrinker, younger age (50s-60s), male
- HPV+ oropharyngeal cancer behaves differently
 - Better prognosis, easily treatable
 - Radiation, transoral robotic surgery
 - 80% 5-year survival
- Sequelae and morbidity of cancer treatments



HPV Vaccine: How are we doing?



HPV Vaccine Completion

- As of 2017, US adolescents age 13-16 years:
 - 53% in females, 44% in males
- First dose: 69% females, 63% males
- California: 58% females, 40% males as of 2016.
- Initiated first dose of vaccine in US aged 19-26 as of 2015:
 - 42% of females, 10% of males
- Healthy People 2020 goal: 80% vaccination (female)
- Racial, ethnic and socioeconomic disparities in HPV cancer burden and vaccination rates.

(Walker et al., 2017; Holman et al., 2014; Williams et al., 2017; McGhee et al. 2017)



Barriers to HPV Vaccination

- Parents not aware of HPV or vaccine
- Provider recommendations for vaccination
 - 38% of pediatricians and 20% of internists knew about role of HPV in head and neck cancer (Berkowitz et al. 2012, *Prev Med*)
 - 53% of pediatric residents never discussed oropharyngeal cancer in HPV vaccine counseling (Gnagi et al. 2016, *Otolaryngol Head Neck Surg*)
 - 34% of medical students were aware HPV caused oropharyngeal cancer (Evans et al. 2019, *J Cancer Educ*)
- Association with sexual behavior
- Multiple doses
- Cost, not mandatory
- Anti-vaccine beliefs, distrust of healthcare



Provider Counseling Best Practices



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The vaccine protects against nine different strains of HPV, so even if you/your child is exposed to some, it may protect them from other strains.



Role Playing Scenarios



You will be assigned to a break-out room for small group scenarios



Scenario 1: Parent presents with her 12-year-old daughter for annual check-up

Please talk to the parent about allowing the **HPV** vaccine to be given to their 12-year-old daughter

Please also recommend the other required **meningococcal (MCV)**, & **pneumococcal** vaccines at this visit



Scenario 2: Parent presents with her 16-year-old son for sports physical

Please talk to the parent about allowing the **HPV** vaccine to be given to their 16-year-old son

Please recommend the **influenza** vaccine & second dose of **meningococcal** (MCV), both of which would also be due at this visit



Thank you!



Questions? Feedback?

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