Dental Offices Play an Important Role in Human Papillomavirus (HPV) Cancer Prevention

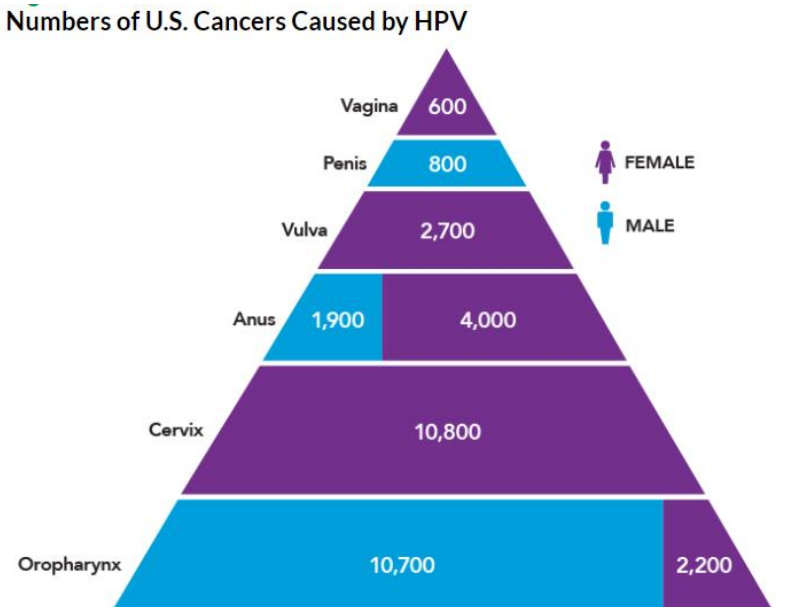
Dental Offices Play an Important Role in HPV Cancer Prevention

Human papillomavirus is a common virus that can lead to certain types of cancer. Oropharyngeal cancers are now the most common type of HPV-positive cancers, and the incidence is increasing. **Over 90% of HPV-related cancers can be prevented through vaccination with HPV vaccine. Oral health professionals should strongly and clearly recommend HPV vaccination to all age-eligible patients.** Dental offices play a key role in educating parents and age-eligible patients in dental offices about oropharyngeal and associated cancers linked to HPV in order to increase the acceptance of HPV vaccinations. In addition, early detection of oral cancer when lesions are still localized can improve survival. Oral cancer screenings, promoting HPV vaccinations, and referring patients to qualified healthcare professionals to administer HPV vaccines are all essential parts of practicing standard of care. This document includes a background on HPV, prevention of HPV associated cancers, vaccines, and collaborative efforts medical and dental professionals can take to significantly prevent more than 90% of cancers caused by HPV.

See the Quick Tips on page 4 and on Smile Habits OC that a dental office can implement to increase HPV vaccination.

About Human Papillomavirus (HPV)

- HPV infections are so common that nearly all men and women will get at least one type of HPV at some point in their lives.
- Nearly 80 million Americans are currently infected with HPV and about 14 million Americans become infected with HPV each year.
- HPV is the most common sexually transmitted infection in the United States (U.S.). It is spread through intimate skin-to-skin contact.
- HPV infections are most commonly asymptomatic. Most appear to resolve spontaneously within a few years,[1] but some HPV infections last longer and can cause cancers.
- There are over 200 types of HPV. There are about 14 HPV types that are linked to cancer, two of which HPV16 and HPV18, are responsible for most of the HPV-related cancers.[2]



Source: Centers for Disease Control and Prevention (2018).How many cancers are linked with HPV each year? https://www.cdc.gov/cancer/hpv/statistics/cases.htm

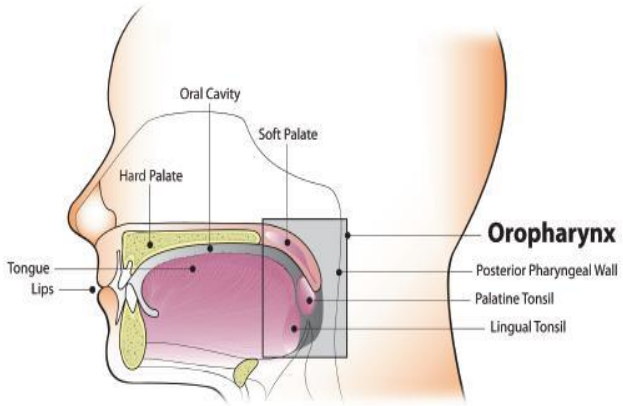
- In addition to causing cancer, HPV can cause recurrent respiratory papillomatosis, which can lead to vocal cord damage and airway problems.

[1] Centers for Disease Control and Prevention, *Human Papillomavirus (HPV)*, https://www.cdc.gov/hpv/parents/about-hpv.html, (accessed June 9, 2021).

[2] National Institute for Health, National Cancer Institute, *HPV and Cancer*, https://www.cancer.gov/about-cancer/causes-prevention/risk/infectious-agents/hpv-and-cancer, (accessed June 9, 2021).

HPV & Cancer

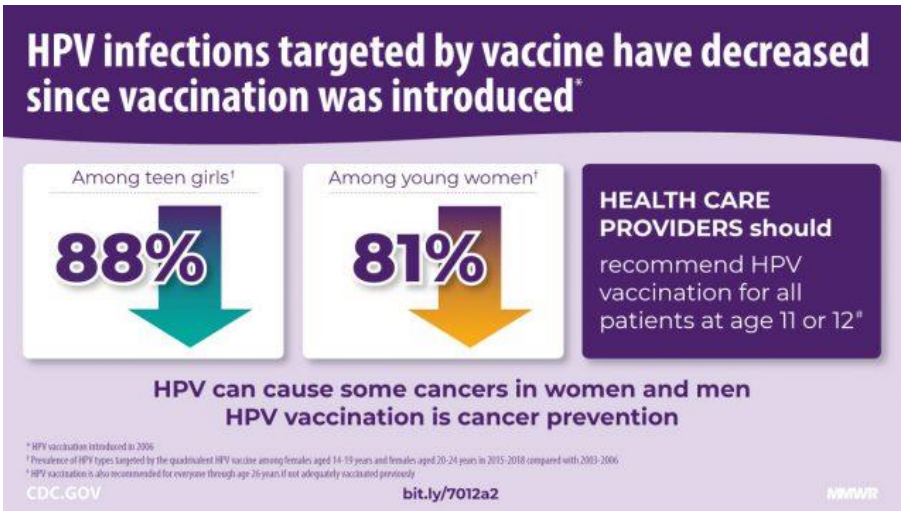
- In the U.S., HPV causes approximately 35,900 cases of cancer each year. HPV associated cancers are found in the cervix, vagina, vulva, penis, anus, rectum, and oropharynx (back of the throat, including the base of the tongue and tonsils).[3]
- HPV-positive oropharyngeal cancer has surpassed cervical cancer as the most prevalent HPV cancer. Of the 19,000 new cases of oropharyngeal cancer each year, 13,500 (71%) are attributed to HPV.[3]
- In all races and ethnicities, men had higher rates of HPV-associated cancers of the oropharynx than women.



- Black and Hispanic men and women had lower rates of HPV-associated oropharyngeal cancers than white and non-Hispanic men and women.[4]

HPV Vaccination

- **Since the introduction of HPV vaccine, the prevalence of infection by HPV types in the vaccine has declined by 88% in teen girls (aged 14-19 years) and 81% in young women (aged 20-24 years), compared to pre-HPV vaccine years.[5]**



- HPV vaccine was licensed in the United States in 2006 for females and in 2009 for males. The HPV vaccine currently licensed in the U.S. is Gardasil 9, which protects against the 9 HPV types that cause the vast majority of HPV-associated diseases in the U.S. and worldwide.

[3] Centers for Disease Control and Prevention, *How Many Cancers Are Linked with HPV Each Year?,* https://www.cdc.gov/cancer/hpv/statistics/cases.htm*, (accessed* June 9, 2021*).*

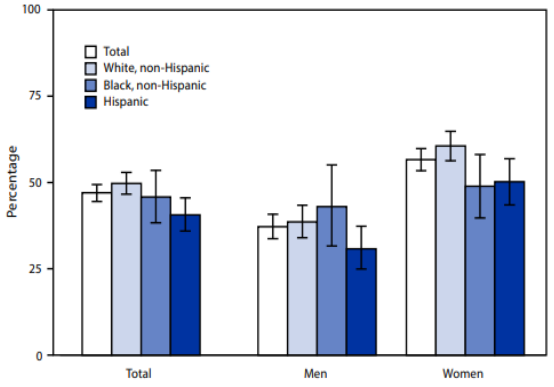
[4] Centers for Disease Control and Prevention, *HPV-Associated Oropharyngeal Cancer Rates by Race and Ethnicity*, https://www.cdc.gov/cancer/hpv/statistics/headneck.htm, (accessed June 9, 2021).

[5] Rosenblum HG, Lewis RM, Gargano JW, Querec TD, Unger ER, Markowitz LE. Declines in Prevalence of Human Papillomavirus Vaccine-Type Infection Among Females after Introduction of Vaccine — United States, 2003–2018. MMWR Morb Mortal Wkly Rep 2021;70:415–420. DOI: http://dx.doi.org/10.15585/mmwr.mm7012a2.

- **The Centers for Disease Control and Prevention (CDC) recommends all children get two doses of HPV vaccine at ages 11-12 years of age, with catch-up vaccination for all persons through age 26.**[6] HPV vaccination can be started as early as age 9 years. The HPV vaccine is most effective, before the children are ever exposed to the virus. The protection achieved from the vaccine does not wane. Unvaccinated adults aged 27 through 45 years should discuss receiving the HPV vaccine with their health care providers.[7]
- There are currently two (2) recommended dosing schedules:
    - Children under age 15 years receive two (2) doses, separated by 6-12 months.
    - Teens and young adults ages 15 years and older receive three (3) doses,[8] with the second and third doses 1-2 and 6 months after the first, respectively.

  *Note if the vaccination schedule is interrupted, the series does NOT need to be restarted.
- Over 12 years of monitoring and research have shown that HPV vaccination is very safe and effective. The most common side effects of HPV vaccines include soreness, swelling or redness at the injection site.[9]
- **Even though this vaccine is highly effective, safe and can prevent cancer, HPV vaccination rates are still below the national goals of 80% of eligible adolescents completing the vaccine series.**
    - In 2019, 71.5% of adolescents aged 13 to 17 years initiated HPV vaccination and 54.2% completed the vaccine series.
    - Overall, only 47% of adults aged 18-26 surveyed in 2019 had received one or more doses of HPV vaccine. Non-Hispanic white women (60.6%) were more likely to have received one or more doses of HPV vaccine than Hispanic (50.2%) or non-Hispanic black (48.9%) women. Women were more likely than men to have ever received one or more doses of HPV vaccine.[10]

Percentage* of Adults Aged 18–26 Years Who Ever Received a Human Papillomavirus Vaccine,† by Race and Hispanic Origin§ and Sex — National Health Interview Survey, United States, 2019¶



Abbreviation: HPV = human papillomavirus.
* With 95% confidence intervals indicated by error bars.
† Based on a response to the question, "HPV is the Human Papillomavirus. Have you ever received an HPV shot or vaccine?"
§ Adults categorized as non-Hispanic White and non-Hispanic Black indicated one race only; respondents had the option to select more than one racial group. Hispanic respondents might be of any race or combination of races. Non-Hispanic adults of multiple or other races are not shown separately but are included in the total groups.
¶ Estimates are based on household interviews of a sample of the civilian, noninstitutionalized U.S. population.

[6] Centers for Disease Control and Prevention, *Human Papillomavirus (HPV); For Parents; Vaccine for HPV*, https://www.cdc.gov/hpv/parents/vaccine.html, (accessed June 9, 2021).

[7] Centers for Disease Control and Prevention, Table 1. Recommended Child and Adolescent Immunization Schedule for ages 18 years or younger, United States, 2021, https://www.cdc.gov/vaccines/schedules/hcp/imz/child-adolescent.html#note-hpv, (accessed June 9, 2021).

[8] Mayo Clinic, *HPV Vaccine,* https://www.mayoclinic.org/diseases-conditions/hpv-infection/in-depth/hpv-vaccine/art-20047292 *(*accessed June 9, 2021*).*

[9] Centers for Disease Control and Prevention, *Human Papillomavirus (HPV); For Parents; Vaccine for HPV; HPV Vaccination is Safe and Effective*, https://www.cdc.gov/hpv/parents/vaccinesafety.html, (accessed June 14, 2021).

[10] Boersma P, Black LI. Percentage of Adults Aged 18-26 Years Who Ever Received a Human Papillomavirus Vaccine, by Race and Hispanic Origin and Sex – National Health Interview Survey, United States, 2019. MMWR Morb Mortal Wkly Rep 2021;70: 797.

Quick Tips

Recommendations for dental health care providers:

- **Promote HPV vaccination.** Dental providers are already involved in primary, secondary and tertiary prevention (e.g., sealants, nutrition and tobacco counseling). Broaden primary prevention in dental offices to promote HPV vaccination.
- **Update Medical History Form.** Update the medical history form to include HPV vaccinations. Dental providers should obtain an updated medical, social, and dental history yearly including questions about HPV vaccinations.
- **Educate parents/caregivers on how HPV vaccination can prevent cancers**. Parents/caregivers may be unaware of the link between HPV and oral cancer. Educate them about the risks of HPV and the importance of their adolescent child getting the HPV vaccine. Reinforce that the HPV vaccine is cancer prevention.
- **Provide clear and concise messaging.** The entire dental team should be educated on HPV and oropharyngeal cancers and have simple messages that can be shared with parents.
- **Refer patients to get vaccinated.** Refer patients to their primary care provider or a local pharmacist for HPV vaccination or to answer any follow up questions.

A standalone Quick Tips document that can be distributed as a handout or displayed for staff can be found by clicking on the following link: (link to be added once documented is added to SmileHabitsOC)

Relevant Policies and Guidelines

- In 2017, the American Academy of Pediatric Dentistry (AAPD) approved policies and guidelines to educate and assist dental professionals in screening for HPV and to promote the HPV vaccine (https://www.aapd.org/media/Policies_Guidelines/P_HPV_Vaccinations.pdf).
- In 2018 ,the American Dental Association in 2018 approved policies and guidelines to educate and assist dental professionals in screening for HPV and to promote the HPV vaccine (https://www.ada.org/en/press-room/news-releases/2018-archives/october/ada-adopts-policy-on-hpv-vaccination-for-the-prevention-of-oral-hpv-infection).

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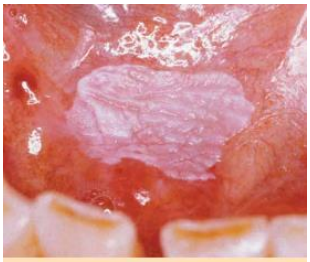
Screening for HPV in the Oropharynx Area

- A screening of all patients should follow the National Institute for Dental and Craniofacial Research's (NIDCR) protocol for dental practitioners for an oral cancer examination (https://www.nidcr.nih.gov/sites/default/files/2017-09/detecting-oral-cancer-poster.pdf).
- Examples:[11]



Homogenous leukoplakia in the floor of the mouth in a smoker. Biopsy showed hyperkeratosis.

Clinically, a leukoplakia on left buccal mucosa. However, the biopsy showed early squamous cell carcinoma. The lesion is suspicious because of the presence of nodules.

Nodular leukoplakia in right commissure. Biopsy showed severe epithelial dysplasia.

Erythroleukoplakia in left commissure and buccal mucosa. Biopsy showed mild epithelial dysplasia and presence of candida infection. A 2-3 week course of anti-fungal treatment may turn this type of lesion into a homogenous leukoplakia.

- All screenings include an inspection of the lips, labial mucosa, buccal mucosa, gingiva, tongue, floor, and palate.
- The following symptoms require a more thorough screening:
  - A sore in the mouth that does not heal (the most common symptom)
  - Pain in the mouth that doesn't go away (also very common)
  - A lump or thickening in the cheek
  - A white or red patch on the gums, tongue, tonsil, or lining of the mouth
  - A sore throat or a feeling that something is caught in the throat that doesn't go away
  - Trouble chewing or swallowing
  - Trouble moving the jaw or tongue
  - Numbness of the tongue or other area of the mouth
  - Swelling of the jaw that causes dentures to fit poorly or become uncomfortable
  - Loosening of the teeth or pain around the teeth or jaw
  - Voice changes
  - A lump or mass in the neck
  - Weight loss
  - Constant bad breath.

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[11] National Institute for Dental and Craniofacial Research, *Detecting Oral Cancer*, https://www.nidcr.nih.gov/sites/default/files/2017-09/detecting-oral-cancer-poster.pdf (accessed February 26, 2020).

Resources

- HPV Vaccine
  - Since 2016, California has allowed pharmacies to administer HPV vaccines under a pharmacist's precscriptive authority pursuant to CDC recommendations. Below are some of the pharmacies that provide vaccinations including HPV.
    - CVS: https://www.cvs.com/minuteclinic/clinic-visit
    - Walgreens: https://www.walgreens.com/pharmacy/immunization/immunization_index.jsp
    - Rite Aid: https://www.riteaid.com/pharmacy/services/vaccine-central
    - Albertsons: https://www.albertsons.com/pharmacy/pharmacy-services/immunizations.html
    - Costco: https://www.costco.com/pharmacy/adult-immunization-program.html

- HPV information
  - Centers for Diseace Control and Prevention (CDC) HPV Information for Healtcare Professionals: https://www.cdc.gov/hpv/hcp/index.html
  - American Academy of Pediatrics (AAP) HPV Champion Toolkit: https://www.aap.org/en-us/advocacy-and-policy/aap-health-initiatives/immunizations/HPV-Champion-Toolkit/Pages/HPV-Champion-Toolkit.aspx
  - American Academy of Pediatric Dentistry Policy and Guidelines on HPV: https://www.aapd.org/media/Policies_Guidelines/P_HPV_Vaccinations.pdf

- Talking to Patients/Parents
  - CDC HPV Vaccine Tipsheet (page 2): https://www.cdc.gov/hpv/hcp/for-hcp-tipsheet-hpv.pdf (English)
  - HPV Guide for Dental Professionals from the American Academy of Pediatrics (AAP): https://www.aap.org/en-us/Documents/AAP_OPCHPV_WhatDentalProsNeedToKnow_final.pdf
  - American Dental Association HPV Action Guide for Dental Health Care Providers: https://ebd.ada.org/~/media/EBD/Files/DENTAL-Action-Guide-WEB_ADA.pdf

- Patient Handouts
  - CDC HPV Information: https://www.cdc.gov/hpv/parents/index.html
  - Merck HPV Information: https://www.hpv.com/static/pdf/MKHPV_FACT_SHEET.pdf
  - American Cancer Society, HPV Vaccination: Just the facts: https://www.cancer.org/content/dam/cancer-org/online-documents/en/pdf/flyers/hpv-vaccination-just-the-facts-for-parents.pdf