



HPV Vaccination

The role of dental care providers in preventing oropharyngeal cancers

A unique role for dental care providers

As a trusted healthcare provider who sees children on a regular schedule, you are in a unique position to impact both the current and future health of your patients.

HPV is thought to cause [91% of cervical cancers and 70% of head and neck cancers](#).²⁰ You have the power to reduce the incidence of Human Papillomavirus (HPV) related cancers and pre-cancers among patients in your care. Oropharyngeal (head and neck) cancers are often caused by HPV and many are discovered by dentists and dental hygienists during routine dental care.

By recommending the HPV vaccine to your patients, starting as early as age 9, you can help protect children from a future devastating cancer diagnosis.

It's important that the entire dental office team, from the front office to the dentists themselves, be engaged with recommending HPV vaccination. All staff should be prepared to speak positively about the benefits of vaccination, answer questions and provide references to reliable information.



Nevada is working to develop all-vaccine vaccinator privileges for dentists, dental hygienists, and dental therapists, but even before that happens, you can play a vital role in protecting your patients.

6 key points to make with parents

1

You have the power to prevent your child from getting head, neck and other cancers in the future.

2

70% of head and neck cancers are caused by HPV.

3

Both girls and boys can get HPV-related cancers, so all children need to be vaccinated.

4

More than 270 million doses of HPV vaccines have been distributed worldwide since 2006, safely and effectively.

Side effects are minimal and typically limited to a sore arm, mild fever or headache that resolves in less than a day.

5

HPV is so common, **85% of people will be infected** with it during their lifetime.² The HPV vaccine, given before your child is exposed to the virus, protects them from HPV-related cancers. That's why it is recommended as early as age 9.

6

The HPV vaccine is nearly **100% effective at preventing HPV-related cancers**.¹³

Safety statements

CDC¹⁸

Findings from many vaccine safety monitoring systems and more than 160 studies have shown that the HPV vaccine has a favorable safety profile—the body of scientific evidence overwhelmingly supports their safety.



Sources

¹Centers for Disease Control & Prevention (CDC) | HPV Vaccination Recommendations ([Link](#))

²Centers for Disease Control & Prevention (CDC) | Reasons to Get HPV Vaccine ([Link](#))

³American Academy of Pediatrics | Oropharyngeal Cancer (OPC) and HPV Prevention in Children ([Link](#))

⁴National Library of Medicine (NIH) | Worldwide Trends in Incidence Rates for Oral Cavity and Oropharyngeal Cancers ([Link](#))

⁵Centers for Disease Control & Prevention (CDC) | How Many Cancers Are Linked with HPV Each Year? ([Link](#))

⁶Yale Medicine | HPV (Human Papillomavirus) ([Link](#))

⁷American Cancer Society | Key Statistics for Oral Cavity and Oropharyngeal Cancers ([Link](#))

⁸Centers for Disease Control & Prevention (CDC) | HPV Vaccine ([Link](#))

⁹Centers for Disease Control & Prevention (CDC) | National, Regional, State, and Selected Local Area Vaccination Coverage Among Adolescents Aged 13–17 Years—United States, 2016 ([Link](#))

¹⁰American Dental Association | Summary of the evidence on the safety, efficacy, and effectiveness of human papillomavirus vaccines ([Link](#))

¹¹The Oral Cancer Foundation ([Link](#))

¹²American College of Obstetricians and Gynecologists | What I Tell Every Patient About the HPV Vaccine ([Link](#))

¹³Centers for Disease Control & Prevention (CDC) | About HPV Vaccines ([Link](#))

World Health Organization¹⁷

Since licensure in 2006, over 270 million doses of HPV vaccines have been distributed. The Global Advisory Committee on Vaccine Safety first reviewed the safety data in 2007, and during multiple years after. Early on, the Committee was presented with signals related to anaphylaxis and syncope.

The risk of anaphylaxis has been characterized as approximately 1.7 cases per million doses, and syncope was established as a common anxiety or stress-related reaction to the injection. No other adverse reactions have been identified and GACVS considers the HPV vaccine to be extremely safe.

¹⁴National Cancer Institute | Human Papillomaviruses (HPVs) ([Link](#))

¹⁵American Academy of Pediatrics | Human Papillomavirus Vaccines ([Link](#))

¹⁶The Reference Manual of Pediatric Dentistry | Policy on Human Papilloma Virus Vaccinations ([Link](#))

¹⁷World Health Organization (WHO) | Safety of HPV vaccines ([Link](#))

¹⁸Centers for Disease Control & Prevention (CDC) | Human Papillomavirus (HPV) Vaccine ([Link](#))

²⁰Centers for Disease Control & Prevention (CDC) | How Many Cancers Are Linked with HPV Each Year? ([Link](#))

²¹Nevada Division of Public and Behavioral Health | HPV Associated Cancers and Vaccination Rates in Nevada ([Link](#))

²²National Library of Medicine (NIH) | Efficacy of Quadrivalent HPV Vaccine against HPV Infection and Disease in Males ([Link](#))

²³American Cancer Society | HPV Vaccine Facts ([Link](#))

²⁴Centers for Disease Control & Prevention (CDC) | Questions about HPV Vaccine Safety ([Link](#))

²⁵Centers for Disease Control & Prevention (CDC) | Vaccines (Shots) ([Link](#))

²⁶National Library of Medicine (NIH) | Human Papillomavirus and Rising Oropharyngeal Cancer Incidence in the United States ([Link](#))

²⁷Centers for Disease Control & Prevention (CDC) | Administering HPV Vaccine ([Link](#))

Research on safety and efficacy

HPV vaccination works. The HPV vaccine prevents infection by types of HPV which cause the vast **majority of HPV-related cancers and genital warts**.

- Among teen girls, infections with HPV types that cause most HPV cancers and genital warts have **dropped 88%**.⁸
- Among vaccinated women, the percentage of cervical pre-cancers caused by the HPV types most often linked to cervical cancer has dropped by 40%.
- The quadrivalent HPV vaccine **reduced the incidence of external genital lesions related to HPV by 90%**.²²

The vaccine has since been updated and approved to address additional HPV types that are known to cause additional cancer types—including oropharyngeal (OPC) cancers. While there is not yet data available on the impact of HPV vaccination on OPC cancers, we expect to see similar drops in related infection rates overall.

90%
of cancers caused by HPV could be prevented with the HPV vaccination.⁹

Efficacy statements from trusted organizations:

CDC¹³

The HPV vaccine has been found to have high efficacy (close to 100%) for prevention of infection from the specific HPV virus types targeted by the vaccine, cervical intraepithelial neoplasia (CIN) 2/3, and adenocarcinoma in situ (AIS), in clinical trials.

American Academy of Pediatrics¹⁵

Almost all adults will be infected with some type of HPV during their lives. HPV is spread by skin-to-skin contact and is the leading cause of at least six types of cancer. HPV vaccination during adolescence protects against over 90% of the cancers caused by the virus.

The Oral Cancer Foundation¹¹

Mouth cancers will be newly diagnosed in about 145 new individuals each day in the U.S. alone, and a person dies from oral cancer every hour of every day. The Oral Cancer Foundation promotes use of the HPV vaccine to change the increasing rate of HPV oropharyngeal cancers over the next generation.

American College of Obstetricians and Gynecologists¹²

If you are vaccinated before being exposed to the virus, the HPV vaccine is 97% effective in preventing cervical cancer and cell changes that could lead to cancer. Plus, it's almost 100% effective in preventing external genital warts.



Efficacy statements from trusted organizations (continued):

[The Journal of the American Dental Association](#)¹⁰

Summary of the evidence on the safety, efficacy, and effectiveness of the HPV vaccine

The collective evidence of the efficacy of the HPV vaccine demonstrates that the vaccine is effective against infection from the specific HPV virus types that cause cellular changes, including precancerous and benign lesions.

Furthermore, the collective evidence from systematic reviews of safety data from randomized controlled trials and observational studies shows a consistent association between the HPV vaccine and no increased risk of serious adverse events.

[American Academy of Pediatric Dentistry Policy on the HPV Vaccine](#)¹⁶

The AAPD supports measures that prevent oral and oropharyngeal (OOPC) cancers, including the prevention of HPV infection, a critical factor in the development of oral squamous cell carcinoma.

The AAPD encourages oral health care providers to: educate patients, parents, and guardians on the serious health consequences of OOPC and the relationship of HPV to OOPC; and counsel patients, parents, and guardians regarding the HPV vaccination, in accordance with CDC recommendations, as part of anticipatory guidance for adolescent patients.

[World Health Organization](#)¹⁷

Where HPV vaccination programs have been implemented effectively, the benefits are already very apparent. Several countries that have introduced the HPV vaccine to their immunization program have reported a 50% decrease in the incidence rate of uterine cervix precancerous lesions among younger women.

In contrast, the mortality rate from cervical cancer in Japan, where HPV vaccination is not proactively recommended, increased by 3.4% from 1995 to 2005 and is expected to increase by 5.9% from 2005 to 2015. This acceleration in disease burden is particularly evident among women aged 15–44 years.

[Cancer.gov](#)¹⁴

Clinical trials have shown that the HPV vaccine is highly effective at preventing cervical infection with the types of HPV they target when given before first exposure to the virus—that is, before individuals begin to engage in sexual activity. The HPV vaccine has also been found to reduce infections in other tissues that HPV infects, including the anus and oral region.



Common parent questions and answers

Why does my child need the HPV vaccine?

HPV is extremely common—most people will have HPV during their life. By vaccinating your child, you can protect them from several types of cancer caused by HPV.

Is the HPV vaccination safe?

More than 270 million doses of vaccines have been distributed worldwide, with more than 120 million doses in the US. HPV vaccine safety is constantly monitored, and studies continue to show that HPV vaccination is safe. All medications and vaccines can have side effects. Common side effects from the HPV vaccine are mild and can include headache, pain, and soreness in the arm where the vaccine was given.

All ingredients in a vaccine undergo extensive testing before they are put into use. Like the Hepatitis B and Tdap vaccines, the HPV vaccine contains aluminum, which boosts the body's immune response to the vaccine. [People are exposed to aluminum every day](#) through food and cooking utensils. Aluminum-containing vaccines have been used for decades and have safely been given to more than 3 billion people.²³

Does the HPV vaccination cause fertility issues?

There is [no evidence that HPV vaccination causes fertility or reproductive problems](#). In fact, getting vaccinated and protecting against cervical cancer can help ensure a woman's ability to get pregnant and have healthy babies.²⁴

How can a shot prevent cancer?

HPV vaccination is one of the rare opportunities we have to prevent cancer with a shot. (The other vaccine is the [Hepatitis B vaccine which protects against liver cancer](#).²⁵)

Research has shown that the [HPV vaccine provides close to 100% protection](#) against infections and pre-cancers caused by the types of Human Papillomavirus targeted by the vaccine.¹³



Common parent questions and answers (continued)

Why does my son need an HPV vaccine?

The HPV vaccine is recommended for all children. Both males and females can get HPV and the cancers it causes. HPV is so common that [85% of people will be infected](#) with at least one type of HPV in their lifetime.² The vaccine prevents both cervical and head and neck cancers caused by HPV. **In fact, head and neck cancers are now more common than cervical cancer and are more likely to impact men.**

If my child isn't sexually active, why do they need an HPV vaccine?

HPV is so common that almost everyone will be exposed at some point in their lives. For a vaccine to be effective, a person needs to receive it before they are exposed to an infection—just like with measles or pneumonia. So children need to be vaccinated against HPV infection before they are exposed to HPV. Vaccinating children between ages 9 and 12 offers the best immune response and HPV cancer prevention. **So even if your child delays sexual activity until they are older, or limits sexual partnerships, they could still be exposed if their partner has been exposed.**

Why does my child need all these shots now?

You can protect your child from many serious illnesses and diseases, including meningitis, whooping cough, and HPV cancers by giving them vaccines. **The timing of the vaccines matters as children need protection before they're exposed.** [The best time to get the HPV vaccine is between ages 9 and 12.](#)²⁷ This is because children have a stronger immune response. After age 15, they will need three doses to be fully protected.

Will my child have to keep getting the HPV vaccine?

No, once your child has received all doses of the vaccine, they are done and will have long-term protection against infections and pre-cancers.

How much does the HPV vaccine cost?

Like other vaccines, **the HPV vaccine is covered by most insurance plans.** There are resources to pay for vaccines if you are uninsured. See [HPV Free NV](#) for more information.

HPV vaccination is the best protection against certain cancers caused by HPV.

14,800
cases

Oropharyngeal cancer

No routine screenings or tests available, not detectable until it causes serious health problems

11,400
cases

Genital cancers

No screenings available, not detectable until it causes serious health problems

10,800
cases

Cervical cancer

The only HPV-related cancer that can be screened for at an early stage, but can still cause serious health problems

HPV vaccination by age 13 could prevent over 90% of these cancers.

Annual cases, source: [CDC](#)²⁰



Protecting Nevada children



The HPV vaccine is cancer prevention. Children should get the HPV vaccine series as early as age 9. The vaccine is most effective when given by age 13, before children are exposed to HPV, to achieve the best immune response and provide long-lasting protection. **For patients who were not vaccinated on time before age 13, vaccination may be provided up to age 26.**

The HPV vaccine

Individuals who start the series before their 15th birthday are **recommended to receive 2 doses, with the doses spaced 6 to 12 months apart.** If those 2 doses are given less than 5 months apart, a 3rd is recommended.

Individuals who start the series at or after age 15 years of age are recommended to receive 3 doses.

See [CDC website](#) for more details.¹

What is HPV?

Human Papillomavirus (HPV) is a common virus that spreads from skin-to-skin contact. HPV is so common that scientists estimate between **80 to 90% of people will be infected** with at least one type of HPV in their lifetime.²

HPV usually has no symptoms, so most people with HPV don't know they have it. Most cases of HPV go away on their own, but other cases can go on to cause health problems like cancers and genital warts.

While we understand some of the risk factors, there is no way to predict who will heal and who will end up with cancer.

HPV causes cancer



HPV can cause cancer—including cancers at the base of the tongue and tonsils—as well as cancers of the vulva, vagina, penis, and anus. Incidence of oropharyngeal cancer (OPC), also known as squamous cell carcinoma of the pharynx, is on the rise and has **overtaken that of cervical cancer.**³

OPC incidence significantly increased from 1983 to 2002, predominantly in developed countries and at younger ages.⁴ These results underscore a potential role for HPV infection in increasing OPC incidence, particularly among men.

As OPC cancers are becoming increasingly prevalent, dental care providers can play a vital role in identifying these cancers early, when they are most treatable, by performing oral cancer screenings during routine exams.

Each year in the United States, about **46,711 new cases of cancer** are found in parts of the body where HPV is often found.⁵ Because HPV is so common, HPV-related oropharyngeal cancers have increased by more than **200% since the 1980s.**²⁶

HPV is linked with²⁰

91%

Of cervical and anal cancers

70%

Of head and neck cancers

63%

Of penile cancers

All Oropharyngeal Cancers in the US⁷

54,540

New cases of oropharyngeal cancer

11,580

Deaths from oropharyngeal cancer

Nevada kids at risk

While 70% of 13–17-year-old Nevadans initiate receiving the HPV vaccination, only 45% complete the series by getting the required second, and sometimes third, dose.²¹ This leaves thousands of Nevada children vulnerable to HPV-related cancers later in life.

Why do more than half of Nevada children not complete vaccination? Some parents don't understand that vaccine efficacy requires multiple doses. Some have vaccine safety concerns—which safety studies show are unwarranted. Some parents are simply uncomfortable thinking about a vaccine that is related to future sexual activity. The reasons vary, but we do know **when a trusted provider makes a strong recommendation, follow-through is much more likely.**



55%

of Nevadans 13–17 years old do not complete their HPV vaccination series and are not fully protected from HPV-related cancers.²¹