

HPV (Human Papillomavirus)

Learn about the human papillomavirus (HPV) and its link to cervical cancer and many types of other cancer. You can also get information on testing for HPV and on the HPV vaccines.

What Is HPV (Human Papillomavirus)?



Types of HPV



Cancers Linked with HPV



HPV Signs and Symptoms



How to Protect Against HPV



HPV Testing



HPV Vaccines



Related Topics

[The American Cancer Society Guideline for Cervical Cancer Screening](#) →

The American Cancer Society recommends that women and other individuals with a cervix follow these recommendations to help find cervical cancer early.

[The HPV Test](#) →

Nearly all cervical cancers are caused by long-lasting infection with some high-risk types of HPV. Doctors can test for the high-risk HPV types by looking for pieces of their DNA in cervical cells. Learn more here.

[Infections that Can Lead to Cancer](#) →

Get an overview of how infections with some viruses, bacteria, and other germs may increase a person's risk for certain types of cancer.

More Resources



[HPV for Adults: Prevention, Testing, and Cancer](#) →

Learn about HPV and its link to cancer, how HPV is spread, and HPV vaccination.



Cervical Cancer: Lower Your Risk and Catch It Early



Screening can help find early cell changes which can be treated before they turn into cancer. It can also help find cervical cancer early, when treatment is more likely to be successful..



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HPV Signs and Symptoms

HPV (human papillomavirus) may not cause any symptoms. Since this virus is spread through intimate skin-to-skin contact, someone who has HPV might not know it unless they are getting routine testing or if they develop signs and symptoms.

On this page [[hide](#)]

[How does a person know if they have HPV?](#)

[What are the symptoms of HPV?](#)

How does a person know if they have HPV?

Women and other people with a cervix can be tested for HPV infection.

An [HPV test](#) looks for cervical infection from high-risk types of HPV that are more likely to cause pre-cancers and cancers of the cervix.

- HPV testing is usually done by a health care provider using a special tool to gently scrape or brush the cervix (lower part of the uterus) to remove cells for testing. This is done during a routine pelvic exam.
- Another option might be for a person to use a kit to collect a vaginal sample themselves for HPV testing, while being supervised by a health care provider. Testing in this way is called **self-collection** and does not require a pelvic exam.

A [Pap test](#) is a different test, but the sample is collected in the same way as an HPV test done by a health care provider. The difference is what the lab tests look for in the sample. A Pap test is used to find cell changes or abnormal cells in the cervix, while an HPV test is used to look for HPV infection. A Pap test cannot detect HPV.

When testing is done only for HPV, this is called a **primary HPV test**. The US Food and Drug Administration (FDA) has approved certain tests to be primary HPV tests.

When HPV testing is done at the same time as a Pap test, this is called a **co-test**.

Learn more in [HPV Testing](#).

What are the symptoms of HPV?

If a person gets HPV, the virus may or may not cause signs or symptoms, depending on which HPV type has infected the person and where the infection is. In most people, the body's immune system is able to get rid of or control the HPV infection on its own. But sometimes, the infection doesn't go away.

Certain people are at higher risk for HPV-related health problems. This means if they are infected with HPV, they are more likely to have symptoms or other problems. This includes people with weak immune systems (including those who have HIV/AIDS).

If HPV does cause symptoms, the symptoms will depend on [which type it is](#) – cutaneous (affecting the skin) or mucosal (affecting the genitals, mouth, or throat).

Possible symptoms of cutaneous HPV types

Cutaneous HPV types live on the skin. These types of HPV can cause **warts on areas such as the arms, chest, hands, or feet.**

Possible symptoms of mucosal HPV types

Mucosal HPV types live inside the body on mucous membranes. Mucous membranes are the moist surface layers that line organs and parts of the body that open to the outside, such as the lining of the vagina, anus, mouth, and throat.

Low-risk mucosal HPVs can sometimes cause **cauliflower-shaped warts around the genitals or anus.** High-risk mucosal HPVs can eventually [cause some types of cancer.](#)

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Cancers Linked with HPV

HPV (human papillomavirus) is known to cause many types of cancer in adults, including cancers of the mouth and throat, cervix, vulva, vagina, penis, and anus. More than 39,000 people get HPV-related cancers in the United States every year.

HPV vaccines can prevent more than 90% of HPV cancers when given at the recommended ages. Learn more about vaccination recommendations in [HPV Vaccines](#) and about testing options in [HPV Testing](#).

On this page [[hide](#)]

[Cervical cancer](#)

[Vulvar cancer](#)

[Vaginal cancer](#)

[Penile cancer](#)

[Anal cancer](#)

[Mouth and throat cancer](#)

Cervical cancer

[Cervical cancer](#) is the most common cancer linked to HPV in people with a cervix. In fact, nearly

all cervical cancers are caused by HPV. **Cervical cancer is preventable with the HPV vaccine and regular screening tests.**

Cervical cancer can be found early and even prevented with routine screening tests. Screening tests that are used include the **HPV test** and **Pap test**. The HPV test looks for an HPV infection. The Pap test looks for changes in cervical cells caused by HPV infection.

Vulvar cancer

HPV can cause [cancer of the vulva](#). The vulva is the outer part of the female genital organs. This cancer is much less common than cervical cancer.

There's no standard screening test for cancer of the vulva. Vulvar cancer might be found because a person notices changes or problems in their vulvar area, or because a health care professional sees signs during a routine physical exam.

Vaginal cancer

Most [cancers of the vagina](#) contain HPV.

Many vaginal pre-cancers also contain HPV, and these changes may be present for years before turning into cancer. These pre-cancers can sometimes be found with the same screening test that's used to test for cervical cancer and pre-cancers. If a vaginal pre-cancer is found, it can be treated to stop further cell changes that can lead to cancer.

Penile cancer

HPV can cause [cancer of the penis](#). Penile cancer is more common in men with HIV and those who have had sex with other men.

There's no standard screening test to find early signs of penile cancer. Because most penile cancers start on the skin of the penis, they may be noticed early.

Anal cancer

HPV can cause [cancer of the anus](#) in both men and women. Anal cancer is more common in people with HIV and in men who have sex with other men.

Screening tests for anal cancer are not recommended routinely for everyone. Some experts recommend anal cytology testing (also called an **anal Pap test**) for people at higher risk of anal cancer. This includes men who have had sex with men, people who have had cervical cancer or vulvar cancer, or anyone who may have a compromised immune system (ie. HIV-positive, anyone who has had an organ transplant).

Mouth and throat cancer

HPV is found in many oral ([mouth](#)) and [throat cancers](#). Most cancers found in the part of the throat behind the mouth are HPV-related. These are the most common HPV-related cancers in men.

There's no standard screening test to find these cancers early. Still, some can be found early during routine exams by a dentist, doctor, or dental hygienist, or by doing self-checks.

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Types of HPV

There are more than 200 types of HPV (human papillomavirus). All types of HPV can live only in certain cells called **squamous epithelial cells**. These are normal cells found on the surface of the skin (**cutaneous**) and on moist surfaces and membranes (called **mucosal membranes** or **mucosal surfaces**).

The different types of HPV are identified by numbers and are grouped based on whether they infect cutaneous (skin) cells or mucosal (genital) cells.

On this page [[hide](#)]

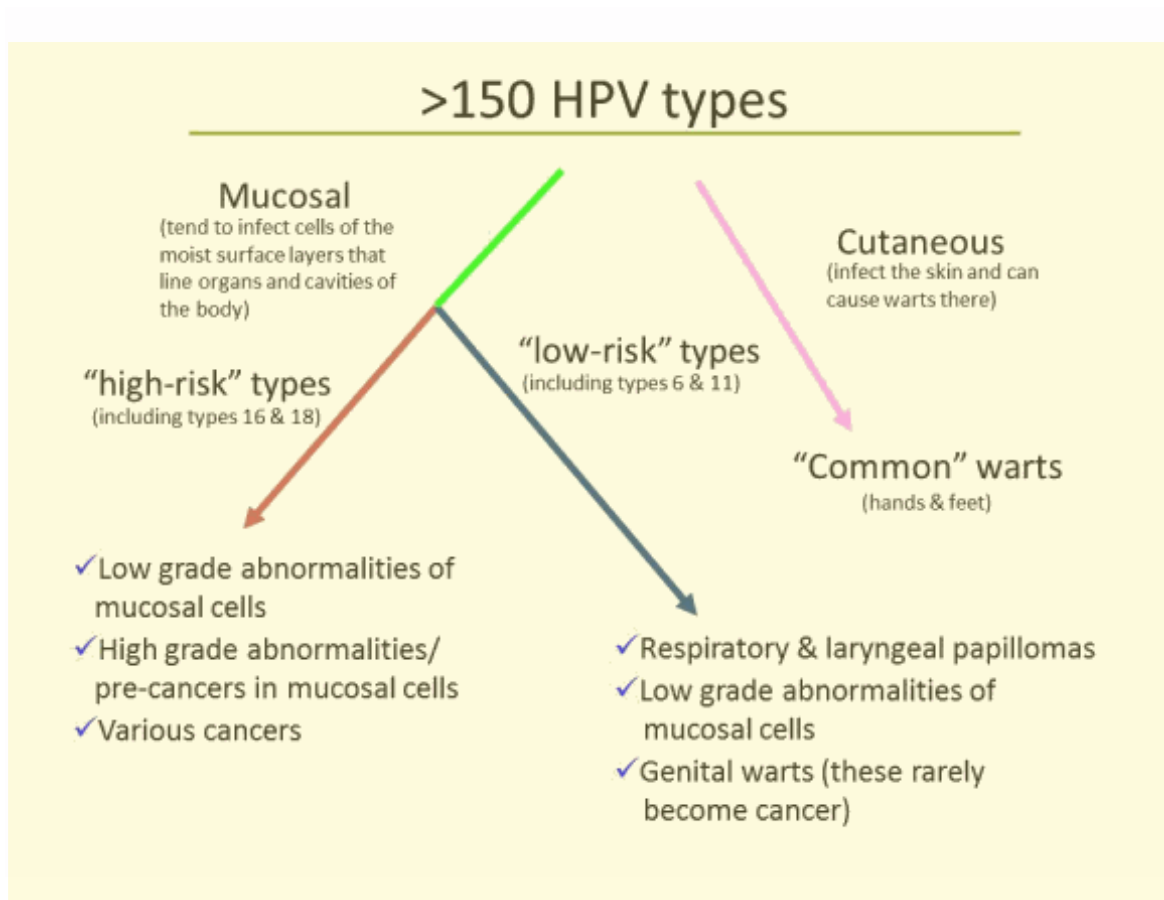
[Cutaneous \(skin\) HPV types](#)

[Mucosal \(genital\) HPV types](#)

[Low-risk mucosal types](#)

[High-risk mucosal types](#)

This diagram shows the different groups of HPV types and the problems each group can cause.



Cutaneous (skin) HPV types

Many HPVs are cutaneous types, meaning they invade and live in cells on the skin.

Cutaneous HPVs can cause warts on top of the skin in areas such as hands, feet, arms, and legs. These are common warts that are only on the skin. They are not the same as genital warts.

Mucosal (genital) HPV types

Mucous or mucosal membranes are moist surface layers that line organs and parts of the body that open to the outside, such as the:

- Vagina, anus, cervix, and vulva (area around the outside of the vagina)
- Inner foreskin and urethra of the penis
- Inner nose, mouth, and throat
- Trachea (windpipe) and bronchi (smaller breathing tubes branching off the trachea)
- Inner eyelids

Mucosal HPV types invade and live in cells on mucosal surfaces. They are also called **genital** (or **anogenital**) HPV types because they often affect the anal and genital areas that have mucosal surfaces. But these types can also infect the lining of the mouth and throat that also have mucosal membranes.

Mucosal or genital HPV types are further broken down into **low-risk** and **high-risk** types, depending on their ability to cause cancer.

Low-risk mucosal types

HPV 6 and HPV 11 are low-risk HPV types. They tend to cause genital warts and rarely cause cancer. Some of these types may have proteins in them, such as **E6 and E7** that might add to their ability to cause cancer. Having a low-risk genital HPV infection can cause cauliflower-shaped warts on or around the genitals or anus. Warts may appear in areas that aren't always noticed, such as the cervix and vagina.

High-risk mucosal types

HPV 16, HPV 18, HPV 31, HPV 33, and HPV 42 are examples of high-risk HPV types that can cause cancer. These HPV types can sometimes avoid the body's immune system, so the body can't get rid of the HPV. The infection can linger over time, causing

damage to normal cells that can turn them into abnormal cells, which might later become cancer. In fact, high-risk HPV types are known to cause 6 different types of cancer. Learn more in [Cancers Linked with HPV](#).

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What Is HPV (Human Papillomavirus)?

HPV is a virus and is short for **human papillomavirus**. There are many types of HPV that are part of a large group of related viruses.

On this page [[hide](#)]

[What is a virus?](#)

[Are there different types of HPV?](#)

[How common is HPV?](#)

[How is HPV different from herpes?](#)

[What is the treatment for HPV?](#)

What is a virus?

A virus is a very small organism – so small that most cannot be seen even with a regular microscope.

Viruses cannot reproduce on their own. To make more viruses, they need to be in a **host environment**, such as a living person. When a virus enters the host's body, it invades some of the host's cells. These host cells contain the tools that the virus needs to reproduce and make more viruses.

Viruses can enter the body in different ways, including:

- Through the mucous membranes (such as the inner lining of the nose or mouth, the lining of the eyes, or the lining of the genitals)
- Through the digestive system (such as the lining of the stomach or intestines)
- Through insect bites, needle sticks, wounds, or other breaks in the skin
- Through unbroken skin

Once inside the body, the virus infects a specific type of cell, where it can live and reproduce. For example, HPVs can live only in certain cells called **squamous epithelial cells**, which are found on the surface of the skin and on moist surfaces and membranes (called **mucous or mucosal membranes** or **mucosal surfaces**).

The signs and symptoms of a viral infection depend on the type of virus. They tend to be mostly in the areas where the virus has invaded and reproduced. For example, cold and flu viruses enter the body and then invade the cells that line the respiratory tract (nose, sinuses, breathing tubes, and lungs).

Are there different types of HPV?

HPVs are a group of more than 200 related viruses. Each **HPV type** has a number. For example, HPV 6, HPV 11, HPV 16, and HPV 18 are just 4 types of HPV that a person might have. If a person tests positive for HPV, knowing the HPV type is important. It helps doctors and nurses decide what kind of follow-up testing is needed. See [Types of HPV](#) to learn more.

HPVs are called **papillomaviruses** because some HPV types cause **papillomas**. Papillomas are warts and are not cancer. But some types of HPV are known to cause cancer, including cancers of the cervix (the base of the womb at the top of the vagina), vagina, vulva (the area around the outside of the vagina), penis, anus, and parts of the mouth and throat. See [Cancers Linked with HPV](#) for more about this.

How common is HPV?

HPV is very common. The Centers for Disease Control (CDC) estimates that about 43 million people are currently infected with HPV in the United States, and about 13 million people in the US get a new HPV infection every year. This includes teenagers and adults.

In most people infected with HPV, the body gets rid of or controls the infection on its own. But sometimes, the infection doesn't go away. Chronic, or long-lasting HPV infection, especially when it's caused by certain high-risk types, can cause some types of cancer over time.

How is HPV different from herpes?

HPV and herpes are both viruses that affect the skin and mucous membranes, but they are not the same. HPV is caused by the human papillomavirus (HPV) while herpes is caused by the herpes simplex virus (HSV). Certain types of herpes can cause sores in or around the mouth and on genitals.

What is the treatment for HPV?

There is no treatment for the HPV infection itself. But there are treatments for the warts, cell changes, pre-cancers, and cancers that HPV can cause.

Treating genital warts: If HPV causes visible genital warts, they can be treated by a health care provider. Treatment options include surgery, laser therapy, or cryotherapy (freezing the warts) in a clinic or office. A lotion or cream may also be prescribed to be used at home. Many times genital warts come back after being treated, but they can be treated again.

Finding and treating cell changes and pre-cancers: Having regular cervical cancer screening tests can find early cell changes and pre-cancers in the cervix that are caused by HPV. If needed, the cell changes and pre-cancers can be treated by removing or freezing them before they become cancer.

While there aren't screening guidelines for other HPV-related cancers, dentists may check for oral (mouth) cancers, and doctors might recommend that high-risk men and women get anal HPV testing.

Treating HPV-related cancers: Cancers caused by HPV have different treatment options depending on the type and stage of the cancer. Cancers caused by HPV are typically easier to treat when they are found early, are small, and have not yet spread. See our [list of cancer types](#) for information on how each type of cancer is treated.

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How to Protect Against HPV

HPV (human papillomavirus) is a viral infection that can be passed from one person to another.

On this page [[hide](#)]

[How is HPV spread?](#)

[Can HPV and HPV-related cancers be prevented?](#)

[Vaccinate against HPV](#)

[Protect yourself during sex and skin-to-skin contact](#)

[Can a person get HPV more than once?](#)

How is HPV spread?

HPV can be passed from one person to another by intimate skin-to-skin contact. It's not spread through blood or body fluids.

HPV can be spread to someone else even when an infected person has no signs or symptoms. In fact, a person can have HPV for years without it causing any symptoms or problems.

Sexual contact

There are different [types of HPV](#). The main way the mucosal types of HPV are spread is through sexual activity, including vaginal, anal, and oral sex. HPV infections are more likely in people who have had many sex partners.

However, it's important to know that anyone who has sexual activity with another person can be at risk for HPV if their partner has been exposed to HPV.

The virus can also be spread by genital contact without sex, but this is not common.

Childbirth

Transmission from mother to newborn during birth is rare, but it can happen, too. When it does, it can cause warts (papillomas) in the infant's breathing tubes (windpipe and bronchi) and lungs, which is called **respiratory papillomatosis**. These papillomas can also grow in the voice box, which is called **laryngeal papillomatosis**. Both of these infections can cause life-long problems.

You cannot get HPV from:

- Toilet seats
- Hugging or holding hands
- Swimming pools or hot tubs
- Sharing food or utensils
- Being unclean

You can have HPV even if:

- It has been months or years since you were sexually active.
- You do not have any signs or symptoms.

There may be other ways to become infected with HPV that aren't yet clear. It's important to know that someone can have the virus and pass it on without knowing it.

Can HPV and HPV-related cancers be prevented?

There's no sure way to prevent infection with the different types of HPV. But there are things people can do to lower their chances of being infected and to protect children from getting [HPV-related cancers](#) as adults.

The best way to prevent HPV, and future diseases due to HPV, is to get vaccinated.

Vaccinate against HPV

HPV vaccines can prevent infection with certain types of HPV. They are approved for use in males and females, mainly boys and girls. They can only be used to prevent HPV infection – they don't treat an existing infection. On-time vaccination protects young people from the most common mucosal HPV types that can cause genital warts and cancer later in life.

- To work best, the HPV vaccines should be given to boys and girls between the ages of 9 and 12.
- Teens and young adults ages 13 through 26 years who have not been vaccinated or who have not received all of their shots should get the vaccine as soon as possible. Vaccination of young adults will not prevent as many cancers as vaccination of children and teens.
- The American Cancer Society (ACS) does not recommend HPV vaccination for persons older than 26 years.

Learn more about HPV vaccination in [HPV Vaccines](#).

Protect yourself during sex and skin-to-skin contact

It might be possible to keep from becoming infected with HPV by completely avoiding any contact of the areas of your body that can become infected (like the mouth, anus, and genitals). This means not having vaginal, oral, or anal sex.

If you are sexually active, **limiting the number of sex partners** and avoiding sexual activity with people who have had many other sex partners can help lower your risk of exposure to genital HPV. But again, HPV is very common, so having sexual contact with even one other person can put you at risk.

Condoms can offer some protection from HPV infection, but it might still be possible to pass HPV on areas that are not blocked by the condom. And condoms must be used every time, from start to finish. The virus can spread during direct skin-to-skin contact before the condom is put on, and male condoms don't protect the entire genital area, especially for women. The female condom covers more of the vulva in women, but it hasn't been studied as carefully for its ability to protect against HPV. Condoms are very helpful, though, in protecting against other infections that can be spread through sexual activity.

Can a person get HPV more than once?

Yes. Since there are many types of HPV, it's possible to be infected more than once in your lifetime. You may have one type that goes away, but you can get another type. It's also possible to get the same type again, but the risk of this is low.

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HPV Testing

Nearly all cervical cancers are caused by long-lasting infection with certain types of human papillomavirus (HPV). Testing for HPV is recommended as part of cervical cancer screening. Screening tests for HPV are used to check for the virus in people who have no symptoms.

On this page [[hide](#)]

[How are HPV tests and Pap tests different?](#)

[What is mRNA E6/E7 detection?](#)

[What does the American Cancer Society recommend about HPV tests for cervical cancer screening?](#)

[What about testing for HPV in other parts of the body?](#)

How are HPV tests and Pap tests different?

An HPV test is different from a Pap test, the other test that can be used to screen for cervical cancer.

What they test for

- An [HPV test](#) looks for cervical HPV infection. It detects high-risk types of HPV that are more likely to cause precancers and cancers of the cervix. But an HPV test cannot detect precancer or cancer itself.
- A [Pap test](#) is used to find cell changes or abnormal cells in the cervix. A Pap test cannot detect HPV.

How the samples are collected for testing

- The sample for a Pap test is collected from the cervix during a speculum exam.
- The sample for an HPV test can also be collected during a speculum exam. **This is the preferred way to screen for cervical cancer.**
- Another option for HPV testing is for a person to use a kit to collect a vaginal sample themselves, either at home or while being supervised by a health care provider. This is called [self-collection](#), and it doesn't require a pelvic exam.
- An HPV test can be done either by itself (**primary HPV testing**) or at the same time as the Pap test (**co-testing**).

What happens if a test result is positive (abnormal)

- If a Pap test is done by itself and the result is positive (abnormal), the same sample can be used to test for HPV.
- If an HPV test is collected by a health care provider and the result is positive (abnormal), the same sample can then be used to test for cell changes or abnormal cells.
- If a self-collected HPV test result is positive, you will need to see your health care provider again for a speculum exam to collect cervical cells for further tests or follow-up procedures.

If test results show you might have cervical cancer or precancer, further [tests or procedures](#) will be needed.

What is mRNA E6/E7 detection?

E6 and E7 are proteins found on high-risk types of HPV viruses. Some HPV tests work by checking a sample for mRNA E6/E7, the instructions the virus uses to create these proteins.

If the results of an HPV test say that mRNA E6/E7 was detected, it means the test is positive for HPV.

Not all HPV tests look for these proteins. Some tests work by looking for the DNA of specific types of high-risk HPVs.

What does the American Cancer Society recommend about HPV tests for cervical cancer screening?

The American Cancer Society (ACS) recommends that women and other individuals with a cervix who are at average risk of cervical cancer should **start screening at age 25 and continue until at least age 65**.

Screening should be done every 3 to 5 years, depending on the test:

- **The preferred option** is a primary HPV test done on a sample collected from your cervix by a health care provider. This should be done every 5 years.
- A primary HPV test done on a self-collected sample from your vagina is another option.* A health care provider still needs to order the test, and it should be done every 3 years.
- A co-test (HPV test combined with a Pap test) is an option every 5 years.
- If HPV tests are not available, a Pap test every 3 years is still an option.

*Self-collection should only be done using tests and collection devices approved by the US Food and Drug Administration (FDA). These are only available through your health care provider. Learn more in [In-clinic and At-home HPV Self-collection Test](#).

Getting screened regularly is the most important thing, no matter which test you get.

Who should get screened?

You are at average risk for cervical cancer and should be screened if you have a cervix, you don't have symptoms that could be related to cervical cancer, and you've never had an abnormal cervical cancer screening test (or if you did, your results have been

normal for many years).

You should be screened even if:

- You've received the HPV vaccine.
- You're in a long-term relationship with the same partner, have stopped having children, do not have sex with men, or are not sexually active.
- You're in menopause.

People at higher risk of cervical cancer might need a different screening plan, such as being screened more often.

When can screening be stopped?

You can stop screening at age 65 if one of the following applies to you:

- You've had HPV testing collected by a provider or co-testing (using HPV and Pap tests) every 5 years and your last 2 tests were normal.
- You've had self-collected HPV testing every 3 years and your last 2 tests were normal.
- You've had Pap tests every 3 years and your last 3 Pap tests were normal.

People with limited life expectancy can stop screening for cervical cancer at any time.

To learn more, see the [American Cancer Society Guideline for Cervical Cancer Screening](#).

What about testing for HPV in other parts of the body?

The FDA has only approved tests to find HPV in the cervix.

Research is still being done on HPV tests for other parts of the body. For example:

- There are commercially available oral HPV tests that are not yet FDA-approved or included in screening guidelines. However, some dentists use them.
- Doctors often recommend that high-risk men and some high-risk women get anal HPV testing.
- Research is being done on options for male genital testing for HPV.

There's no useful test to find out a person's "HPV status" because HPV can infect different parts of the body, and an HPV test result can change over a period of months or years.

Written by References



[The American Cancer Society medical and editorial content team](#)

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HPV Vaccines

HPV (human papillomavirus) vaccination is cancer prevention. This is why it is important that all children get vaccinated against HPV.

On this page [[hide](#)]

[What is the HPV vaccine?](#)

[What does the HPV vaccine do?](#)

[When should the HPV vaccine be given and who should get it?](#)

[What are the American Cancer Society recommendations for HPV vaccination?](#)

[Does the HPV vaccine work?](#)

[Is the HPV vaccine safe?](#)

[How long does the HPV vaccine last?](#)

[Does the HPV vaccine affect fertility?](#)

[Do people who were vaccinated for HPV need to be tested for HPV?](#)

[How much does the HPV vaccine cost?](#)

What is the HPV vaccine?

HPV vaccines can help protect children and young adults from some HPV infections. These vaccines are used to prevent some types of cancer that can result from an HPV infection. They will not treat an HPV infection. And they will not protect against cancer if a person already has an HPV infection.

Gardasil 9 is the only HPV vaccine available in the US. Other HPV vaccines are available outside the US, but these don't protect against as many types of HPV as Gardasil 9 does.

Each vaccine requires a series of injections (shots) – either 2 or 3 depending on a person's age. The injections are most often given in the muscle of the upper arm. Research is still being done on giving just 1 dose of HPV vaccine.

What does the HPV vaccine do?

Giving the vaccine to boys and girls between 9 and 12 years old can prevent more than 90% of HPV-related cancers when they get older.

The vaccine helps prevent infection from 2 low-risk cutaneous HPV types: HPV-6 and HPV-11.

It also protects against several high-risk mucosal HPV types, including:

- HPV-16 and HPV-18, which cause most [cervical cancers](#) and pre-cancers, as well as many cancers of the [anus](#), [penis](#), [vulva](#), [vagina](#), and [mouth and throat](#)
- Other high-risk HPV types: 31, 33, 45, 52, and 58

Research is being done to test a vaccine that will protect against other cancer-causing types of HPV as well.

When should the HPV vaccine be given and who should get it?

The HPV vaccine is strongly recommended for all boys and girls. Since vaccines are used to help prevent diseases, children are vaccinated for diseases before being exposed to the infection that causes the disease.

Most people in the US have skin-to-skin contact that can spread HPV during their teens and early twenties. So, it's best to get the vaccine before this. The body also produces the strongest immune response against HPV when the vaccine is given in this age range.

The HPV vaccine works best in children and pre-teens. Vaccination at the recommended ages of 9 to 12 will prevent more cancers than vaccination at older ages, with cancer prevention decreasing as age at vaccination increases.

Pregnant women should not get any HPV vaccine at this time, even though they appear to be safe for both mother and the unborn baby. If a woman who is pregnant does get an HPV vaccine, it's not a reason to consider ending the pregnancy. Women who started a vaccine series before they learned they were pregnant should complete the series after the pregnancy.

Make sure the health care provider knows about any **severe allergies**. The following people should not get an HPV vaccine:

- Those with a severe allergy to yeast should not receive Gardasil 9.
- Anyone who has ever had a life-threatening allergic reaction to anything else contained in the vaccine
- Anyone who has had a serious reaction to an earlier dose of HPV vaccine

What are the American Cancer Society recommendations for HPV vaccination?

The American Cancer Society recommends:

- Girls and boys should get 2 doses of the HPV vaccine between the ages of 9 and 12.
- Teens and young adults ages 13 through 26 who have not been vaccinated, or who haven't gotten all their doses, should get the vaccine as soon as possible. Vaccination of young adults will not prevent as many cancers as vaccination of children and teens.
- The ACS does not recommend HPV vaccination for people older than age 26 years.

Does the HPV vaccine work?

The HPV vaccine works very well. Studies have shown that the vaccine provides nearly total protection against infections and pre-cancers caused by the types of HPV that cause 90% of HPV cancers as well as 90% of genital warts.

Research done so far shows that the protection against HPV infection does not seem to decrease with time. Research will continue to look at how long protection against HPV lasts, and if booster shots will be needed.

Is the HPV vaccine safe?

HPV vaccines have been used since 2006. HPV vaccines went through extensive safety testing before becoming available. Hundreds of million doses of the HPV vaccine have been given worldwide.

Like any vaccination, there may be common mild side effects from the HPV vaccine that usually go away quickly, like headache or fever. There can be pain, redness, and/or swelling where the shot was given. A small number of people may have a more serious side effect that could occur with any vaccine, such as an allergic reaction or fainting when the vaccine is given. Anyone who has a severe allergy to yeast or any other ingredient in the vaccine should not receive the HPV vaccine.

The HPV vaccine is safe. The ingredients in the HPV vaccine, like all vaccines, help make sure that it is effective and safe. These ingredients occur naturally in the environment, the human body, and foods. For example, the HPV vaccine contains aluminum like the hepatitis B and Tdap vaccines. Aluminum boosts the body's immune response to the vaccine. People are exposed to aluminum every day through food, cooking utensils, water, and even breast milk. Aluminum-containing vaccines have been used for decades and have been given safely to many billions of people.

Scientists and health organizations around the world closely monitor the safety of HPV vaccines. Hundreds of studies in millions of people worldwide have shown that the HPV vaccine is safe.

In the US, vaccine safety is watched by several national systems that work together to make sure that any harmful effects of vaccines can be found early. The US Centers for Disease Control and Prevention (CDC) and the US Food and Drug Administration (FDA) review all serious side effects reported to the Vaccine Adverse Event Reporting System (VAERS) to watch for potential safety concerns that may need further study.

How long does the HPV vaccine last?

When a child gets the HPV vaccine, their body makes proteins called antibodies. Antibodies provide protection against the virus when a person is exposed to HPV. The antibodies give strong and long-lasting protection.

Does the HPV vaccine affect fertility?

The HPV vaccine is a safe way to help protect health and the ability to have healthy babies later in life. Research reviews do not suggest that getting the HPV vaccine leads to having fertility problems later in life. In fact, the HPV vaccine can help protect

women from future fertility problems that are linked to treatment for cervical cancer and pre-cancer.

Do people who were vaccinated for HPV need to be tested for HPV?

People who have a cervix, even if they have gotten the HPV vaccine, still need regular screening for cervical cancer. This is because the vaccine does not prevent all of the types of HPV that can cause cervical cancer.

See [The American Cancer Society Guidelines for the Prevention and Early Detection of Cervical Cancer](#) to learn more.

How much does the HPV vaccine cost?

Most insurance plans cover the HPV vaccine cost if it is given according to national guidelines, between ages 9 and 26. But it's a good idea to check with your insurance plan to be sure.

The federal [Vaccines for Children \(VFC\) program](#) [↗](#) covers vaccine costs, including the HPV vaccine, for children and teens who don't have insurance. The VFC program provides free vaccines to children and teens until 19 years of age, who are either Medicaid-eligible, American Indian or Alaska Native, underinsured, or uninsured.

The VFC program also allows children and teens to get VFC vaccines through federally qualified health centers or rural health centers. For more on the VFC program or to find the VFC contact where you live, visit [cdc.gov](https://www.cdc.gov), or call 1-800-232-4636.

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