
Anal Cancer Causes, Risk Factors, and Prevention

Learn about the risk factors for anal cancer and what you might be able to do to help lower your risk.

Risk Factors

A risk factor is anything that increases your chance of getting a disease such as cancer. Learn more about the risk factors for anal cancer.

- [Risk Factors for Anal Cancer](#)
- [What Causes Anal Cancer?](#)

Prevention

There is no way to completely prevent anal cancer. But there are things you can do that might lower your risk. Learn more.

- [Can Anal Cancer Be Prevented?](#)

Risk Factors for Anal Cancer

- [HPV \(human papillomavirus\) infection](#)
- [Anal warts](#)

- [Having certain other cancers](#)
- [HIV infection](#)
- [Sexual activity](#)
- [Smoking](#)
- [Lowered immunity](#)
- [Sex and race/ethnicity](#)

A risk factor is anything that increases your chance of getting a disease such as cancer. Different cancers have different risk factors. Some risk factors, like smoking or diet, can be changed. Others, like a person's age or family history, cannot.

Several factors can affect your risk of anal cancer. But having a risk factor, or even several risk factors, does not mean that you will get cancer. Many people with risk factors will never develop anal cancer, while others with this disease may have few or no known risk factors.

HPV (human papillomavirus) infection

Infection by the human papillomavirus (HPV) is the most important risk factor for anal cancer. **Most squamous cell anal cancers are linked to infection with HPV.** HPV is a group of more than 150 related viruses, the same group of viruses that causes [cervical cancer](#),¹ as well as [other kinds of cancer](#)². In fact, women with a history of cervical cancer (or pre-cancer) have an increased risk of anal cancer.

- HPV can infect cells on the surface of the skin, and those lining the genitals, anus, mouth and throat, but not the blood or internal organs such as the heart or lungs.
- HPV can spread from one person to another during skin-to-skin contact. One way HPV spreads is through sexual activity, including vaginal, anal, and even oral sex.
- Different types of HPV cause warts on different parts of the body. Some cause common warts on the hands and feet; others tend to cause warts on the lips or tongue.

Infection with HPV is common, and in most cases, the body can clear the infection by itself. Sometimes, however, the infection does not go away and becomes chronic. Chronic infection, especially when it is caused by certain high-risk HPV types, can eventually cause certain cancers, such as anal cancer.

Certain types of HPV are called *high-risk* because they are strongly linked to cancers including anal cancer, as well as cancer of the cervix, vulva, and vagina in women,

penile cancer in men, and cancers of the anus, mouth, and throat in both men and women. The high-risk subtype most likely to cause anal cancer is HPV-16. Another high-risk type is HPV-18, but this is seen less often with anal cancer.

Other types of HPV may cause warts in or around the anal area and on the female and male genital organs. These are called *low-risk types* of HPV because they are seldom linked to cancer.

Although there is currently no cure for HPV infection, there are ways to treat the warts and abnormal cell growth that HPV causes. Also, [HPV vaccines](#)³ are available to help prevent infection by certain types of HPV and some of the cancers linked to those types.

Anal warts

People who have had anal warts are more likely to get anal cancer. This is because people who are infected with HPV subtypes that cause anal and genital warts are also more likely to be infected with HPV subtypes that cause anal cancer.

Having certain other cancers

Women who have had cancer of the cervix, [vagina](#)⁴, or [vulva](#)⁵ are at increased risk of anal cancer. This is probably because these cancers are also caused by infection with HPV.

HIV infection

People infected with HIV (the human immunodeficiency virus), the virus that causes AIDS, are much more likely to get anal cancer than those not infected with this virus. For more information see [HIV Infection, AIDS, and Cancer](#)⁶.

Sexual activity

Having multiple sex partners increases the risk of infection with HIV and HPV. It also increases the risk of anal cancer.

Receptive anal sex also increases the risk of anal cancer in both men and women. Because of this, men who have sex with men have a high risk of this cancer.

Smoking

Smoking increases the risk of anal cancer. The higher a person's pack-year history of smoking, the higher their risk of developing anal cancer. People who currently smoke are more likely to have cancer of the anus compared with people who do not smoke or have quit smoking. [Quitting smoking](#)⁷ seems to reduce the risk.

Lowered immunity

Higher rates of anal cancer occur among people with reduced immunity, such as people with AIDS or people who have had an organ transplant and must take medicines that suppress their immune system.

Sex and race/ethnicity

Anal cancer is more common in White women and Black men.

Hyperlinks

1. www.cancer.org/cancer/types/cervical-cancer.html
2. www.cancer.org/cancer/risk-prevention/hpv/hpv-and-cancer-info.html
3. www.cancer.org/cancer/risk-prevention/hpv/hpv-vaccine.html
4. www.cancer.org/cancer/types/vaginal-cancer.html
5. www.cancer.org/cancer/types/vulvar-cancer.html
6. www.cancer.org/cancer/risk-prevention/infections/hiv-infection-aids.html
7. www.cancer.org/cancer/risk-prevention/tobacco/guide-quitting-smoking.html

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SEER Cancer Stat Facts: Anal Cancer. National Cancer Institute. Bethesda, MD, <https://seer.cancer.gov/statfacts/html/anus.html>

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What Causes Anal Cancer?

- [HPV infection](#)
- [Lowered immunity](#)
- [Smoking](#)

Researchers have found some [risk factors](#) that increase a person's risk of anal cancer, but the exact cause of anal cancer is not known. It's also important to remember that

some people with anal cancers do not have any known risk factors and the causes of their cancers are also unknown.

HPV infection

Most anal cancers seem to be linked to infection with HPV (the [human papillomavirus](#)¹). While HPV infection seems to be important in the development of anal cancer, the vast majority of people with HPV infections *do not* get anal cancer.

A great deal of research is now being done to learn how HPV might cause anal cancer. There is good evidence that HPV causes many anal squamous cell carcinomas. But the role of this virus in causing anal adenocarcinomas is less certain.

More than 150 subtypes of HPV have been found. The subtype known as HPV-16 is often found in squamous cell carcinoma and is also found in some anal warts. Another subtype, HPV-18, is found less often. Most anal warts are caused by HPV-6 and HPV-11. Warts containing HPV-6 or HPV-11 are much less likely to become cancer than those containing HPV-16.

HPV makes proteins (E6 and E7) that can shut down 2 important tumor suppressor proteins in normal cells. These proteins – p53 and Rb – normally work to keep cells from growing out of control. When these proteins are not active, cells are more likely to become cancer.

Lowered immunity

When the body is less able to fight off infections, viruses like HPV can become more active, which might trigger the development of anal cancer. HIV, the virus that causes AIDS, weakens the body's immune system, as can medicines used to prevent rejection in patients with organ transplants.

Smoking

Most people know that [smoking](#)² is the main cause of lung cancer. But the cancer-causing chemicals in tobacco smoke can travel from the lungs to the rest of the body, causing other types of cancer as well. Smoking also seems to make the immune system less effective in fighting HPV infections. Many studies have noted an increased rate of anal cancer in people who smoke, and the effect of smoking is especially important in people with other risk factors for anal cancer.

Hyperlinks

1. www.cancer.org/cancer/risk-prevention/hpv.html
2. www.cancer.org/cancer/risk-prevention/tobacco/health-risks-of-tobacco/health-risks-of-smoking-tobacco.html

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Can Anal Cancer Be Prevented?

- [HPV vaccines](#)
- [Not smoking](#)
- [Treating HIV](#)
- [Condom use](#)

Since the cause of many cases of anal cancer is unknown, it's not possible to prevent this disease completely. But there are things you can do that might lower your risk of anal cancer.

HPV vaccines

Infection with [HPV](#)¹ increases the risk of anal cancer. HPV infection can be present for years without causing any symptoms, so even if warts are not seen by the naked eye, that can't be used to tell if someone has HPV. Even when someone does not have warts (or any other symptom), they can still be infected with HPV and pass it on to somebody else.

[Vaccines](#)² are available that protect against certain HPV infections. They protect against infection with HPV subtypes 16 and 18. Some can also protect against infections with other HPV subtypes, including some types that cause anal and genital warts.

These vaccines can only be used to help prevent HPV infection – they do not help treat an existing infection. To work best, the vaccine should be given to children at a young age before they become sexually active.

To learn more, see [HPV Vaccines](#)³.

Not smoking

Smoking is a known risk factor for anal cancer. [Stopping smoking](#)⁴ greatly reduces the risk of developing anal cancer and many other cancers.

Treating HIV

For people infected with [HIV](#)⁵, it's very important to take medicines (known as *highly active antiretroviral therapy*, or *HAART*) to help keep the HIV infection under control and prevent it from progressing to AIDS. This can also lower the risk of long-term HPV infection and anal intraepithelial neoplasia (a kind of anal pre-cancer), which might help lower the risk of anal cancer. Compared to other HIV-related cancers, the number of people with HIV who have developed anal cancer while on HAART has actually increased over the years. The reasons for this is unknown, but may be because people with HIV on HAART are living longer.

Condom use

Condoms may provide some protection against HPV (and HIV), but they do not prevent infection completely. Given this, it is unclear if condom use can reduce the risk of anal cancer.

One study found that when condoms are used correctly they can lower the genital HPV infection rate in women – but they must be used every time sex occurs. This study did not look at the effect of condom use on anal HPV infection.

Condoms cannot protect completely because they do not cover every possible HPV-infected area of the body, such as skin of the genital or anal area. HPV can still be passed from one person to another by skin to skin contact with an HPV-infected area of the body that is not covered by a condom. Still, condoms may provide some protection against HPV. Male condom use also seems to help genital HPV infections clear (go away) faster.

Condom use is also important because it can help protect against AIDS and other sexually transmitted diseases that can be passed on through some body fluids.

Hyperlinks

1. www.cancer.org/cancer/risk-prevention/hpv/hpv-and-hpv-testing.html
2. www.cancer.org/cancer/risk-prevention/hpv/hpv-vaccines.html
3. www.cancer.org/cancer/risk-prevention/hpv/hpv-vaccines.html
4. www.cancer.org/cancer/risk-prevention/tobacco/guide-quitting-smoking.html
5. www.cancer.org/cancer/risk-prevention/infections/hiv-infection-aids.html

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