



[cancer.org](https://www.cancer.org) | 1.800.227.2345

Anal Cancer Causes, Risk Factors, and Prevention

Risk Factors

A risk factor is anything that affects 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 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

A risk factor is anything that affects 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, can't.

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 never develop anal cancer, while others with this disease may have few or no known risk factors.

Human papillomavirus (HPV) infection

Most squamous cell anal cancers are linked to infection with the human papillomavirus (HPV), the same virus 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 is a group of more than 150 related viruses. They are called papillomaviruses because some of them cause papillomas, which are more commonly known as warts. There are many subtypes of HPV, but the one most likely to cause anal cancer is HPV-16. Other subtypes of HPV can cause warts in the genital and anal areas, but not cancer. The 2 types of HPV that cause most cases of anal and genital warts are HPV-6 and HPV-11. **While anal warts themselves are unlikely to develop into anal cancer, 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 HPV subtypes that cause anal cancer.

HPV is passed from one person to another during skin-to-skin contact with an infected area of the body. HPV can be spread during sexual activity – including vaginal, anal, and oral sex – but sex doesn't have to occur for the infection to spread. All that's needed is for there to be skin-to-skin contact with an area of the body infected with HPV. The virus can be spread through genital-to-genital contact, or even hand-to-genital contact. An HPV infection can also spread from one part of the body to another. For example, an HPV infection might start in the genitals and then spread to the anus.

It can be very hard to avoid being exposed to HPV. It might be possible to prevent genital HPV infection by not allowing others to have contact with your anal or genital area, but even then there could be other ways to become infected that aren't yet clear.

Infection with HPV is common, and in most cases the body can clear the infection on its own. But in some people the infection doesn't go away and becomes chronic. Chronic infection, especially with high-risk HPV types, can cause certain cancers over time, including anal cancer.

For more information, see [HPV](#)³ and [HPV Vaccines](#)⁴.

Having certain other cancers

Women who have had cancer of the [cervix](#)⁵, [vagina](#)⁶, or [vulva](#)⁷ are at increased risk of anal cancer. This is probably because these cancers are also caused by infection with HPV.

In men, it would seem likely that having had [penile cancer](#)⁸, which is also linked to HPV infection, would increase the risk of anal cancer, but this link has not been shown in studies.

HIV infection

People infected with the human immunodeficiency virus (HIV), the virus that causes AIDS, are much more likely to get anal cancer than those not infected with this virus. For more information about HIV and AIDS, see [HIV Infection, AIDS, and Cancer](#)⁹.

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. Current smokers are several times more likely to have cancer of the anus compared with people who do not smoke. [Quitting smoking](#)¹⁰ seems to reduce the risk. People who used to smoke but have quit are only slightly more likely to develop this cancer compared with people who never smoked.

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.

Gender and race/ethnicity

Anal cancer is more common in women than men overall, but this varies in racial/ethnic groups and can vary with age. For instance, in African Americans younger than age 60, it's more common in men than in women, but after age 60 it's more common in women.

Hyperlinks

1. www.cancer.org/cancer/cervical-cancer.html
2. www.cancer.org/cancer/cancer-causes/infectious-agents/hpv/hpv-and-cancer-info.html
3. www.cancer.org/cancer/cancer-causes/infectious-agents/hpv.html
4. www.cancer.org/cancer/cancer-causes/infectious-agents/hpv/hpv-vaccines.html
5. www.cancer.org/cancer/cervical-cancer.html
6. www.cancer.org/cancer/vaginal-cancer.html
7. www.cancer.org/cancer/vulvar-cancer.html
8. www.cancer.org/cancer/penile-cancer.html
9. www.cancer.org/cancer/cancer-causes/infectious-agents/hiv-infection-aids.html
10. www.cancer.org/healthy/stay-away-from-tobacco/guide-quitting-smoking.html

References

See all references for Anal Cancer (www.cancer.org/cancer/anal-cancer/references.html)

Last Medical Review: November 13, 2017 Last Revised: July 8, 2020

What Causes Anal Cancer?

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.

HPV infection

Most anal cancers seem to be linked to infection with the [human papillomavirus](#)¹ (HPV). 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 cancerous 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 cancerous.

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 few realize that the cancer-causing chemicals in tobacco smoke can travel from the lungs to the rest of the body, causing other types of cancer. 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 smokers, and the effect of smoking is especially important in people with other risk factors for anal cancer.

It's important to remember that some people with anal cancers do not have any known risk factors and the causes of their cancers are not known.

Hyperlinks

1. www.cancer.org/cancer/cancer-causes/infectious-agents/hpv.html
2. www.cancer.org/cancer/cancer-causes/tobacco-and-cancer/health-risks-of-

[smoking-tobacco.html](#)

References

See all references for Anal Cancer (www.cancer.org/cancer/anal-cancer/references.html)

Last Medical Review: November 13, 2017 Last Revised: November 13, 2017

Can Anal Cancer Be Prevented?

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.

Infection with [HPV](#)¹ increases the risk of anal cancer. HPV infection can be present for years without causing any symptoms, so the absence of visible warts can't be used to tell if someone has HPV. Even when someone doesn't have warts (or any other symptom), he (or she) can still be infected with HPV and pass it on to somebody else.

HPV vaccines

Vaccines 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 before a person becomes sexually active.

To learn more, see [HPV Vaccines](#)².

Condom use

Condoms may provide some protection against HPV (and HIV), but they don't prevent infection completely.

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 can't protect completely because they don't 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 in both women and men.

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

Treating HIV

For people infected with [HIV³](#), it's very important to take medicines (known as *highly active antiretroviral therapy*, or *HAART*) to help keep the infection under control and prevent it from progressing to AIDS. This also lowers 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.

Not smoking

Smoking is a known risk factor for anal cancer. [Stopping smoking⁴](#) greatly reduces the risk of developing anal cancer and many other cancers.

Hyperlinks

1. www.cancer.org/cancer/cancer-causes/infectious-agents/hpv/hpv-and-hpv-testing.html
2. www.cancer.org/cancer/cancer-causes/infectious-agents/hpv/hpv-vaccines.html
3. www.cancer.org/cancer/cancer-causes/infectious-agents/hiv-infection-aids.html
4. www.cancer.org/healthy/stay-away-from-tobacco/guide-quitting-smoking.html

References

See all references for Anal Cancer (www.cancer.org/cancer/anal-cancer/references.html)

Last Medical Review: November 13, 2017 Last Revised: July 8, 2020

Written by

The American Cancer Society medical and editorial content team
(www.cancer.org/cancer/acs-medical-content-and-news-staff.html)

Our team is made up of doctors and oncology certified nurses with deep knowledge of cancer care as well as journalists, editors, and translators with extensive experience in medical writing.

American Cancer Society medical information is copyrighted material. For reprint requests, please see our Content Usage Policy (www.cancer.org/about-us/policies/content-usage.html).

cancer.org | 1.800.227.2345