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# Vulvar 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 vulvar cancer.

- [Risk Factors for Vulvar Cancer](#)
- [What Causes Vulvar 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 Vulvar Cancer Be Prevented?](#)

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## Risk Factors for Vulvar Cancer

A risk factor is anything that changes a person's chance of getting a disease such as cancer. Different cancers have different risk factors. For example, exposing skin to strong sunlight is a risk factor for skin cancer. Smoking is a risk factor for many cancers.

There are different kinds of risk factors. Some, such as your age or race, can't be

changed. Others may be related to personal choices such as smoking, drinking, or diet. Some factors influence risk more than others. But risk factors don't tell us everything. Having a risk factor, or even several, does not mean that a person will get the disease. Also, not having any risk factors doesn't mean that you won't get it, either.

Although several risk factors increase the odds of developing vulvar cancer, most women with these risks do not develop it. And some women who don't have any apparent risk factors develop vulvar cancer. When a woman develops vulvar cancer, it is usually not possible to say with certainty that a particular risk factor was the cause.

## Age

The risk of vulvar cancer goes up as women age. Less than 20% of cases are in women younger than age 50, and more than half occur in women over age 70. The average age of women diagnosed with invasive vulvar cancer is 70, whereas women diagnosed with non-invasive vulvar cancer average about 20 years younger.

## Human papillomavirus

HPV stands for **human papillomavirus**. HPVs are a large group of related viruses. They are called papillomaviruses because some of them cause a type of growth called a **papilloma**. Papillomas — more commonly known as warts — are not cancers. Different HPV types can cause different types of warts in different parts of the body. Some types cause common warts on the hands and feet. Other types tend to cause warts on the lips or tongue.

Certain HPV types can infect the outer female and male genital organs and the anal area, causing raised, bumpy warts. These warts may barely be visible or they may be several inches across. The medical term for genital warts is **condyloma acuminatum**. Two types of HPV (HPV 6 and HPV 11) cause most cases of genital warts, but are seldom linked to cancer and are known as **low-risk** HPV.

Other HPV types have been linked with cancers of the [cervix](#)<sup>1</sup>, [vagina](#)<sup>2</sup>, and vulva in women, cancer of the [penis](#)<sup>3</sup> in men, and cancers of the anus and [throat](#)<sup>4</sup> (in men and women). These are known as **high-risk** types of HPV and include HPV 16 and HPV 18 as well as others. Infection with a high-risk HPV may produce no visible signs until pre-cancerous changes or cancer develops.

HPV can pass from one person to another during skin-to-skin contact. One way HPV is spread is through sexual activity, including vaginal and anal intercourse and even oral sex.

Some doctors think there are 2 kinds of vulvar cancer. One kind is associated with HPV infection (more than half of all vulvar cancers are linked to infection with the high-risk HPV types) and tends to occur in younger women. The other is not associated with HPV infection, is more often found in older women, and may develop from a precursor lesion called **differentiated vulvar intraepithelial neoplasia** (discussed below).

Vaccines have been developed to help prevent infection with some types of HPV.

For more about HPV, see [HPV \(Human Papillomavirus\)](#)<sup>5</sup>.

## Smoking

Smoking exposes people to many cancer-causing chemicals that affect more than their lungs. These harmful substances can be absorbed into the lining of the lungs and spread throughout the body. Smoking increases the risk of developing vulvar cancer. Among women who have a history of HPV infection, smoking further increases the risk of developing vulvar cancer. If women are infected with a high-risk HPV, they have a much higher risk of developing vulvar cancer if they smoke.

## HIV infection

HIV (human immunodeficiency virus) causes AIDS (acquired immunodeficiency syndrome). Because this virus damages the immune system, it makes women more likely to get and to stay infected with HPV. This could increase the risk of vulvar pre-cancer and cancer. Scientists also believe that the immune system plays a role in destroying cancer cells and slowing their growth and spread.

## Vulvar intraepithelial neoplasia (VIN)

Squamous cell carcinoma of the vulva usually forms slowly over many years. Pre-cancerous changes often occur first and can last for several years. The medical term most often used for this pre-cancerous condition is **vulvar intraepithelial neoplasia**(VIN). Intraepithelial means that the abnormal cells are only found in the surface layer of the vulvar skin (epithelium).

VIN is typed by how the lesions and cells look: **usual-type VIN** and **differentiated-type VIN**. It is sometimes graded VIN2 and VIN3, with the number 3 indicating furthest progression toward a true cancer. However, many doctors use only one grade of VIN.

- Usual-type VIN occurs in younger women and is caused by HPV infection. When

usual-type VIN changes into invasive squamous cell cancer, it becomes the basaloid or warty subtypes.

- Differentiated-type VIN tends to occur in older women and is not linked to HPV infection. It can progress to the keratinizing subtype of invasive squamous cell cancer.

In the past, the term dysplasia was used instead of VIN, but this term is used much less often now. When talking about dysplasia, there is also a range of increasing progress toward cancer -- first, mild dysplasia; next, moderate dysplasia; then severe dysplasia; and, finally, carcinoma in situ.

Although women with VIN have an increased risk of developing invasive vulvar cancer, most cases of VIN never progress to cancer. Still, since it is not possible to tell which cases will become cancers, treatment or close medical follow-up is needed.

The risk of progression to cancer seems to be highest with VIN3 and lower with VIN2. This risk can be altered with treatment. In one study, 88% of untreated VIN3 progressed to cancer, but of the women who were treated, only 4% developed vulvar cancer.

In the past, cases of VIN were included in the broad category of disorders known as **vulvar dystrophy**. Since this category included a wide variety of other diseases, most of which are not pre-cancerous, most doctors no longer use this term.

## Lichen sclerosus

This disorder, also called **lichen sclerosus et atrophicus** (LSA), causes the vulvar skin to become very thin and itchy. The risk of vulvar cancer appears to be slightly increased by LSA, with about 4% of women having LSA later developing vulvar cancer.

## Other genital cancers

Women with [cervical cancer](#)<sup>6</sup> also have a higher risk of vulvar cancer. This is probably because these cancers share certain risk factors. The same HPV types that are linked to cervical cancer are also linked to vulvar cancer. Smoking is also linked to a higher risk of both cervical and vulvar cancers.

## Melanoma or atypical moles

Women who have had [melanoma](#)<sup>7</sup> or dysplastic nevi (atypical moles) in other places

have an increased risk of developing a melanoma on the vulva. A family history of melanoma also leads to an increased risk.

## Hyperlinks

1. [www.cancer.org/cancer/cervical-cancer.html](http://www.cancer.org/cancer/cervical-cancer.html)
2. [www.cancer.org/cancer/vaginal-cancer.html](http://www.cancer.org/cancer/vaginal-cancer.html)
3. [www.cancer.org/cancer/penile-cancer.html](http://www.cancer.org/cancer/penile-cancer.html)
4. [www.cancer.org/cancer/oral-cavity-and-oropharyngeal-cancer.html](http://www.cancer.org/cancer/oral-cavity-and-oropharyngeal-cancer.html)
5. [www.cancer.org/cancer/cancer-causes/infectious-agents/hpv.html](http://www.cancer.org/cancer/cancer-causes/infectious-agents/hpv.html)
6. [www.cancer.org/cancer/cervical-cancer.html](http://www.cancer.org/cancer/cervical-cancer.html)
7. [www.cancer.org/cancer/melanoma-skin-cancer.html](http://www.cancer.org/cancer/melanoma-skin-cancer.html)

## References

See all references for Vulvar Cancer ([www.cancer.org/cancer/vulvar-cancer/references.html](http://www.cancer.org/cancer/vulvar-cancer/references.html))

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# What Causes Vulvar Cancer?

Several [risk factors](#) for cancer of the vulva have been identified, and we are beginning to understand how these factors can cause cells in the vulva to become cancerous.

Researchers have made a lot of progress in understanding how certain changes in DNA can cause normal cells to become cancerous. DNA is the chemical that carries the instructions for nearly everything our cells do. We usually look like our parents because they are the source of our DNA. However, DNA affects more than our outward appearance. Some genes (parts of our DNA) contain instructions for controlling when our cells grow and divide.

- Certain genes that promote cell division are called **oncogenes**.
- Others that slow down cell division or cause cells to die at the right time are called

## tumor suppressor genes.

Cancers can be caused by DNA mutations (defects) that turn on oncogenes or turn off tumor suppressor genes. Usually DNA mutations related to cancers of the vulva occur during life rather than having been inherited before birth. Acquired mutations may result from cancer-causing chemicals in tobacco smoke. Sometimes they occur for no apparent reason. For more on genes and cancer, see [Oncogenes and Tumor Suppressor Genes](#)<sup>1</sup>.

Studies suggest that squamous cell cancer of the vulva (the most common type) can develop in at least 2 ways. In up to half of cases, human papillomavirus (HPV) infection appears to have an important role. Vulvar cancers associated with HPV infection (the basaloid and warty subtypes) seem to have certain distinctive features. They are often found along with several other areas of vulvar intraepithelial neoplasia(VIN). The women who have these cancers tend to be younger and often smoke.

The second process by which vulvar cancers develop does not involve HPV infection. Vulvar cancers not linked to HPV infection (the keratinizing subtype) are usually diagnosed in older women (over age 55). These women may have lichen sclerosis and may also have the differentiated type of VIN. DNA tests from vulvar cancers in older women rarely show HPV infection, but often show mutations of the *p53* tumor suppressor gene. The *p53* gene is important in preventing cells from becoming cancerous. When this gene has undergone mutation, it is easier for cancer to develop. Younger vulvar cancer patients with HPV infection rarely have *p53* mutations.

These discoveries have not yet affected treatment. But they may help in finding ways to prevent cancer of the vulva and at some point might lead to changes in treatment.

Because vulvar melanomas and adenocarcinomas are so rare, much less is known about how they develop.

## Hyperlinks

1. [www.cancer.org/cancer/cancer-causes/genetics/genes-and-cancer/oncogenes-tumor-suppressor-genes.html](http://www.cancer.org/cancer/cancer-causes/genetics/genes-and-cancer/oncogenes-tumor-suppressor-genes.html)

## References

See all references for Vulvar Cancer [www.cancer.org/cancer/vulvar-](http://www.cancer.org/cancer/vulvar-)

[cancer/references.html](#))

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## Can Vulvar Cancer Be Prevented?

The risk of vulvar cancer can be lowered by avoiding certain [risk factors](#) and by having pre-cancerous conditions [treated](#) before an invasive cancer develops. Taking these steps cannot guarantee that all vulvar cancers are prevented, but they can greatly reduce your chances of developing vulvar cancer.

### Avoid HPV infection

Infection with human papillomavirus (HPV) is a risk factor for vulvar cancer. In women, HPV infections occur mainly at younger ages and are less common in women over 30. The reason for this is not clear.

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 intercourse, anal intercourse, and oral sex -- but sex doesn't have to occur for the infection to spread. All that is needed is skin-to-skin contact with an area of the body infected with HPV. The virus can be spread through genital-to-genital contact. It is even possible to spread a genital infection through hand-to-genital contact.

An HPV infection also seems to be able to be spread from one part of the body to another. This means that an infection may start in the cervix and then spread to the vagina and vulva.

It can be very hard to avoid being exposed to HPV. If you are sexually active, limiting the number of sex partners and avoiding sex with people who have had many other sex partners can help lower your risk of exposure to HPV. But again, HPV is very common, so having sex with even one other person can put you at risk.

Infection with HPV is common, and in most cases your body is able to clear the infection on its own. But in some cases, the infection does not go away and becomes chronic. Chronic infection, especially with high-risk HPV types, can eventually cause certain cancers, including vulvar cancer.

A person can be infected with HPV for years and not have any symptoms, so the absence of visible warts cannot 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 the virus to somebody else.

## **Condoms**

Condoms (rubbers) provide some protection against HPV, but they do not completely prevent infection. Condoms cannot protect completely because they don't cover every possible HPV-infected area of the body, such as the skin on the genital or anal area. Still, condoms do provide some protection against HPV, and they also protect against HIV and some other sexually transmitted diseases.

## **Get vaccinated**

Vaccines that protect against certain HPV infections are available. All of them 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 prevent HPV infection --they do not help treat an existing infection. To be most effective, the vaccine should be given before a person becomes exposed to HPV (such as through sexual activity).

All of these vaccines can help prevent cervical cancer and pre-cancers. They are also approved to help prevent anal and genital warts, as well as other cancers.

More [HPV vaccines](#)<sup>1</sup> are being developed and tested.

For more information, see [HPV \(Human Papillomavirus\)](#)<sup>2</sup>.

## **Don't smoke**

Not smoking is another way to lower the risk for vulvar cancer. Women who don't smoke are also less likely to develop a number of other cancers, like those of the lungs, mouth, throat, bladder, kidneys, and several other organs.

## **Get regular pelvic checkups**

Pre-cancerous vulvar conditions that are not causing any symptoms can be found by



regular gynecologic checkups. It is also important to see your health care provider if any problems come up between checkups. Symptoms such as vulvar itching, rashes, moles, or lumps that don't go away could be caused by vulvar pre-cancer and should be checked out. If vulvar intraepithelial neoplasia (VIN) is found, treating it might help prevent invasive squamous cell vulvar cancer. Also, some vulvar melanomas can be prevented by removing atypical moles.

The vulva is examined at the same time a woman has a pelvic examination. Cervical cancer screening with a Pap test and HPV test is often done at the same time. Neither the Pap test nor the HPV test is used to screen for vulvar cancer. The purpose of these tests is to find cervical cancers and pre-cancers early. For more information about these tests and the American Cancer Society guidelines for the early detection of cervical cancer, see [Cervical Cancer](#)<sup>3</sup>.

### **How pelvic examinations are done**

First, the skin of the outer lips (labia majora) and inner lips (labia minora) is examined for any visible abnormalities. The health care professional then places a speculum inside the vagina. A speculum is a metal or plastic instrument that keeps the vagina open so that the cervix can be seen clearly. If a Pap test or HPV test are being done during a pelvic exam, a sample of cells and mucus is lightly scraped from the exocervix (the surface of the cervix that is closest to the vagina) and the endocervix (the inside part of the cervix that is closest to the body of the uterus). Then, the speculum is removed. The doctor then will check the organs of the pelvis by inserting 1 or 2 gloved fingers of one hand into the vagina while the lower abdomen is palpated (felt), just above the pubic bone, with the other hand. The doctor may do a rectal exam at this time also. It is very important to know that a Pap test and HPV test are not always done when a pelvic exam is done, so if you are uncertain, you should ask if one was done.

### **Self-exam of the vulva**

For most women, the best way to find VIN and vulvar cancer is to report any signs and symptoms to their health care provider and have a yearly well-woman exam. If you have an increased risk of vulvar cancer, you may also want to check your vulva regularly to look for any of the signs of vulvar cancer. This is known as self-examination. Some women choose to examine themselves monthly using a mirror. This can allow you to become aware of any changes in the skin of your vulva. If you do this, look for any areas that are white, darkly pigmented, or red and irritated. You should also note any new growths, nodules, bumps, or ulcers (open sores). Report any of these to a doctor, since they could indicate a vulvar cancer or pre-cancer.

## Hyperlinks

1. [www.cancer.org/cancer/cancer-causes/infectious-agents/hpv/hpv-vaccines.html](http://www.cancer.org/cancer/cancer-causes/infectious-agents/hpv/hpv-vaccines.html)
2. [www.cancer.org/cancer/cancer-causes/infectious-agents/hpv.html](http://www.cancer.org/cancer/cancer-causes/infectious-agents/hpv.html)
3. [www.cancer.org/cancer/cervical-cancer.html](http://www.cancer.org/cancer/cervical-cancer.html)

## References

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