About Penile Cancer

Overview and Types

If you've been diagnosed with penile cancer or are worried about it, you likely have a lot of questions. Learning some basics is a good place to start.

- What Is Penile Cancer?

Research and Statistics

See the latest estimates for new cases of penile cancer and deaths in the US and what research is currently being done.

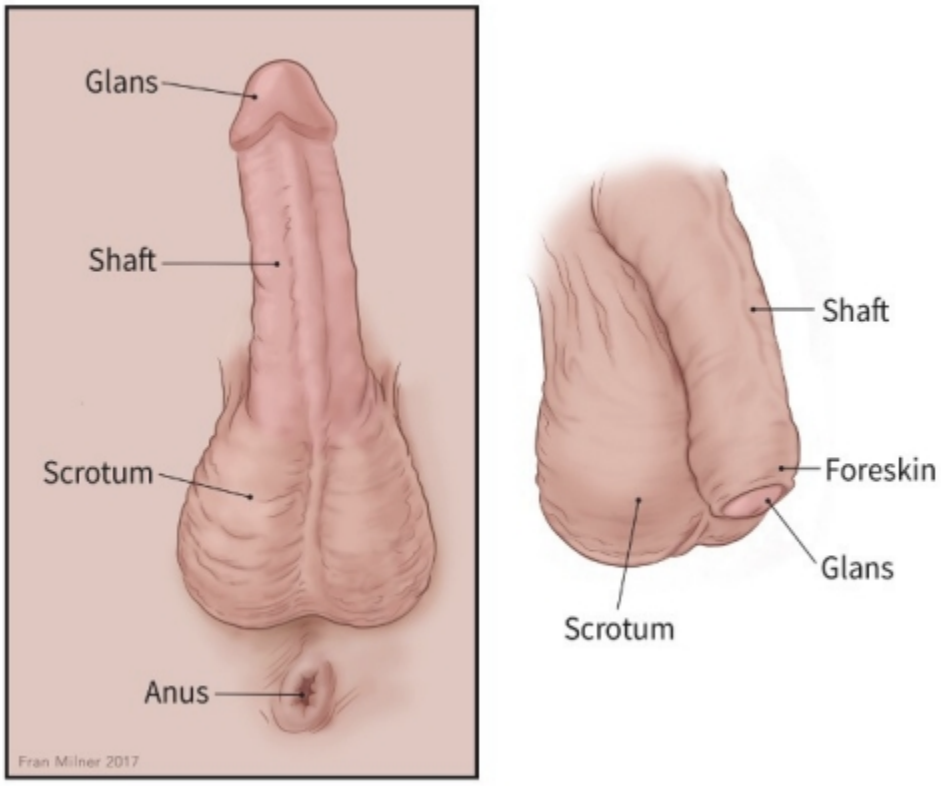
- Key Statistics for Penile Cancer
- What's New in Penile Cancer Research?

What Is Penile Cancer?

Penile cancer starts in or on the penis. Cancer starts when cells begin to grow out of control. Cells in nearly any part of the body can become cancer, and can spread to other parts of the body. To learn more about how cancers start and spread, see What Is Cancer?[1]

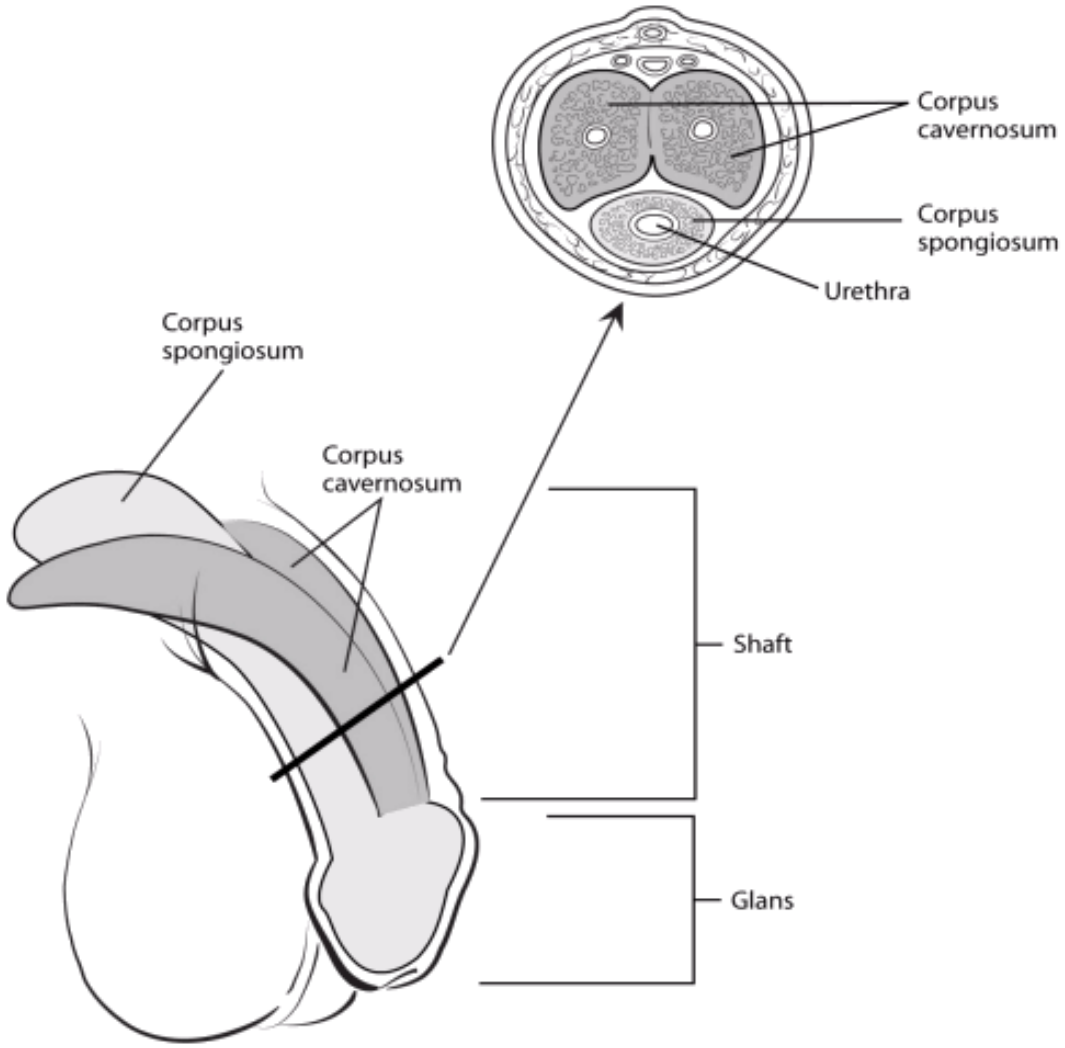
About the penis

The penis is the external male sex organ. It's also part of the urinary system. It's made up of many types of body tissues, including skin, nerves, smooth muscle, and blood vessels.



The main part of the penis is known as the **shaft**, and the head of the penis is called the **glans**. At birth, the glans is covered by a piece of skin called the **foreskin**, or prepuce. The foreskin is often removed in infant boys in an operation called a **circumcision**.

Inside the penis are 3 chambers that contain a soft, spongy network of blood vessels. Two of these cylinder-shaped chambers, known as the **corpora cavernosa**, are on either side of the upper part of the penis. The third chamber is below them and is known as the **corpus spongiosum**. This chamber widens at its end to form the glans. The corpus spongiosum surrounds the **urethra**, a thin tube thatstarts at the bladder andruns through the penis. Urine and semen travel through the urethra and leave the body through an opening in the glans of the penis, called the **meatus**.



To get an erection, nerves signal a man's body to store blood in the vessels inside the corpora cavernosa. As blood fills the chambers, the spongy tissue expands and the penis stiffens and gets longer. During ejaculation, semen (which contains sperm cells and fluids) flows through the urethra and out of the body through the meatus. After ejaculation, the blood flows back into the body, and the penis becomes soft again.

Benign conditions of the penis

Sometimes, growths can develop on the penis that are abnormal but are not cancers. (They are benign.) These lesions often look like warts or irritated patches of skin. Like penile cancer, they're most often found on the glans or on the foreskin, but they can also occur along the shaft of the penis.

Condylomas (genital warts)

These growths tend to look like tiny cauliflowers. Some are so small that they can only be seen with a magnifying lens. Others may be as large as an inch or more across. Condylomas are caused by infection with certain types of human papillomavirus (HPV)[2].

Bowenoid papulosis

This condition is also linked to infection with HPV and tends to occur in younger, sexually active men. It's seen as small, red or brown spots or patches on the shaft of the penis. These may look like genital warts, but when looked at under a microscope, dysplastic (abnormal) cells are seen in the surface layer of the penile skin.

Bowenoid papulosis can also be mistaken for an early-stage cancer called **carcinoma in situ** (CIS), also known as **Bowen disease** (described below). Usually bowenoid papulosis doesn't cause any problems, and it can even go away on its own after a few months. But if it doesn't go away and isn't treated, in rare cases it can progress to Bowen disease.

Cancers of the penis

Each type of tissue in the penis contains several types of cells. Different types of penile cancer can start from these cells. The differences are important because they determine the seriousness of the cancer and the type of treatment needed.

Almost all penile cancers start in skin cells of the penis.

Squamous cell carcinoma

About 95% of penile cancers start in flat skin cells called **squamous cells**. Squamous cell carcinoma (also known as squamous cell cancer) can start anywhere on the penis. Most of these cancers start on the foreskin (in men who have not been circumcised) or on the glans. These tumors tend to grow slowly. If they're found at an early stage, they can usually be cured.

Verrucous carcinoma:A verrucous carcinoma growing on the penis is also known as Buschke-Lowenstein tumor.This is an uncommon form of squamous cell cancer that can start in the skin in many areas. This cancer looks a lot like a large genital wart. Verrucous carcinomas tend to grow slowly but can sometimes get very large. They can grow deep into nearby tissue, but they rarely spread to other parts of the body.

Carcinoma in situ (CIS): This is the earliest stage of squamous cell cancer of the penis. In this stage, the cancer cells are found only in the top layers of skin. They have not yet grown into the deeper tissues. Depending on where the CIS is on the penis, doctors may use other names for the disease.

- CIS of the glans is sometimes called **erythroplasia of Queyrat**.
- CIS on the shaft of the penis (or other parts of the genitals) is called **Bowen disease**.

Melanoma

Melanoma is a type of skin cancer that starts in melanocytes, the cells that make the brownish color in the skin that helps protect it from the sun. These cancers tend to grow and spread quickly. They're more dangerous than the more common basal and squamous cell types of skin cancer. Melanomas are most often found in sun-exposed skin, but rarely they occur in other places like the penis. Only a very small portion of penile cancers are melanomas. For more information about melanoma and its treatment, see Melanoma Skin Cancer[3].

Basal cell carcinoma

Basal cell carcinoma (also known as basal cell cancer) is another type of skin cancer that can develop on the penis. It makes up only a small portion of penile cancers. This type of cancer is slow-growing and rarely spreads to other parts of the body.

Adenocarcinoma (Paget disease of the penis)

This very rare type of penile cancer can develop from sweat glands in the skin of the penis. It can be very hard to tell apart from carcinoma in situ (CIS) of the penis.

Sarcoma

A small number of penile cancers are sarcomas. These cancers develop from blood vessels, smooth muscle, or other connective tissue cells of the penis. For more about this type of cancer, see Soft Tissue Sarcoma[4].

Hyperlinks

1. www.cancer.org/cancer/cancer-basics/what-is-cancer.html

2. www.cancer.org/cancer/cancer-causes/infectious-agents/hpv.html
3. www.cancer.org/cancer/melanoma-skin-cancer.html
4. www.cancer.org/cancer/soft-tissue-sarcoma.html

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Cancer Research UK. About penile cancer. 10 Mar 2016. Accessed at www.cancerresearchuk.org/about-cancer/penile-cancer on May 24, 2018.

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Key Statistics for Penile Cancer

The American Cancer Society estimates for penile cancer in the United States for 2018 are:

- About 2,080 new cases of penile cancer diagnosed
- About 410 deaths from penile cancer

For statistics related to survival, see Survival Rates for Penile Cancer[1].

Penile cancer is rare in North America and Europe. It's diagnosed in less than 1 man in 100,000 each year and accounts for less than 1% of cancers in men in the United States. Penile cancer is much more common in some parts of Asia, Africa, and South America.

Visit the American Cancer Society's Cancer Statistics Center[2] for more key statistics.

Hyperlinks

1. www.cancer.org/cancer/penile-cancer/detection-diagnosis-staging/survival-rates.html
2. https://cancerstatisticscenter.cancer.org/

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See all references for Penile Cancer (www.cancer.org/cancer/penile-cancer/references.html)

American Cancer Society. *Cancer Facts & Figures 2019*. Atlanta, Ga: American Cancer Society; 2019.

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What's New in Penile Cancer Research?

Penile cancer is rare in this country, so it's hard to study. Still, research on penile cancer is being done in many university hospitals, medical centers, and other institutions around the world. Most experts agree that treatment in a clinical trial should be considered for any type or stage of penile cancer. This way men can get the best treatment available now and may also get the new treatments that are thought to be even better. The new and promising treatments discussed here are only available in clinical trials.

Drugs to treat penile cancer

Doctors are also looking at different chemotherapy drugs to treat penile cancer, especially later-stage cancers and those that don't respond to or come back[1] after treatment.

Learning more about the gene changes linked to penile cancer might help guide use of targeted therapies. Targeted therapy[2] is a term used for drugs that target certain cell changes and signals that are needed for a cancer to develop and keep growing. Targeted therapies might sometimes work when standard chemo drugs don't, and they tend to have different (and often less severe) side effects from most standard chemo

drugs.

But it's not yet clear how useful these or other targeted drugs might be for penile cancer. Early results suggest some benefit, but more research is needed.

Treating lymph nodes

At this time, there's no known best way to treat penile cancer that has spread to nearby lymph nodes[3]. International studies are looking at how to best combine surgery, radiation, and chemo, as well as the best order in which to use these treatments.

Another research interest is finding good ways to find even tiny bits of cancer in the lymph nodes. Studies are looking at imaging tests[4] like PET scans, MRIs, and ultrasound to find affected nodes. This would help direct treatment and potentially improve treatment outcomes.

Hyperlinks

1. www.cancer.org/treatment/survivorship-during-and-after-treatment/understanding-recurrence.html
2. www.cancer.org/treatment/treatments-and-side-effects/treatment-types/targeted-therapy.html
3. www.cancer.org/cancer/cancer-basics/lymph-nodes-and-cancer.html
4. www.cancer.org/treatment/understanding-your-diagnosis/tests/imaging-radiology-tests-for-cancer.html

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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.

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Penile 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 penile cancer.

Prevention

There's no way to prevent penile cancer for sure. But there are things you can do that might help lower your risk.

Risk Factors for Penile Cancer

A risk factor is anything that affects your chance of getting a disease like cancer. Different cancers have different risk factors. Some cancer risk factors, like smoking or sun exposure, can be changed. Others, like a person’s age or family history, can’t be changed.

But having a risk factor, or even many, doesn't mean that you will get the disease. On the other hand, some men who develop penile cancer have no known risk factors.

Scientists have found certain risk factors that make a man more likely to develop penile cancer.

Human papillomavirus (HPV) infection

Human papillomavirus (HPV) is a group of more than 150 related viruses. They are called papillomaviruses because some of them cause growths called**papillomas** (more commonly called warts). Different HPV types cause different types of warts in various parts of the body. Certain HPV types can infect the genital organs and the anal area, causing raised, bumpy warts called **condyloma acuminata**(or just condylomas).

Other HPV types have been linked with certain cancers. For example, infection with some types of HPV appears to be an important risk factor for penile cancer. In fact, HPV is found in about half of all penile cancers.

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 – but sex doesn’t have to occur for the infection to spread. All that's needed is skin-to-skin contact with an area of the body infected with HPV. Infection with HPV can also spread from one part of the body to another. For example, infection may start in the penis and then spread to the anus.

HPV infection is common. In most men, the body clears the infection on its own. But in some, the infection doesn't go away and becomes chronic. Over time, chronic infection, especially with certain HPV types, can cause some types of cancer, including penile cancer. Men who are not circumcised may be more likely to get and stay infected with HPV.

To learn a lot more, see our HPV[1] section.

Not being circumcised

Circumcision removes all (or part) of the foreskin. This procedure is most often done in infants, but it can be done later in life, too. Men who were circumcised as children may have a much lower chance of getting penile cancer than those who were not. In fact, some experts say that circumcision as an infant prevents this cancer. The same protective effect is not seen if circumcision is done as an adult.

The reason for the lower risk in circumcised men is not entirely clear, but it may be related to other known risk factors. For example, men who are circumcised can't develop the condition called phimosis, and they don't accumulate material known as smegma (see the next section). Men with smegma or phimosis have an increased risk of penile cancer. The later a man is circumcised, it's more likely that one of these conditions will occur first.

In weighing the risks and benefits of circumcision, doctors consider the fact that penile cancer is very uncommon in the United States, even in uncircumcised men. Although the American Academy of Pediatrics has stated that the health benefits of circumcision in newborn males outweigh the risks, it also states these benefits are not great enough to recommend that all newborns be routinely circumcised. In the end, decisions about circumcision are highly personal and often depend more on social and religious factors than on medical evidence.

Phimosis and smegma

Uncircumcised men with certain conditions are at higher risk for penile cancer.

Phimosis

In men who are not circumcised, the foreskin can sometimes become tight and difficult to retract. This is known as **phimosis**. Penile cancer is more common in men with phimosis. The reason for this is not clear, but it might be related to the build-up of smegma or from inflammation that results from phimosis.

Smegma

Sometimes secretions can build up underneath an intact foreskin. If the area under the foreskin isn't cleaned well, these secretions build up enough to become a thick, sometimes smelly substance called **smegma**. Smegma is more common in men with phimosis, but can occur in anyone with a foreskin if the foreskin isn't retracted regularly to clean the head of the penis.

In the past some experts were concerned that smegma might contain compounds that can cause cancer. Most experts now believe that smegma itself probably doesn't cause penile cancer. But it can irritate and inflame the penis, which can increase the risk of cancer. It might also make it harder to see very early cancers.

Smoking and other tobacco use

Men who smoke[2] and/or use other forms of tobacco are more likely to develop penile cancer. Tobacco users who have HPV infections have an even higher risk. Tobacco use exposes your body to many cancer-causing chemicals. These harmful substances are inhaled into the lungs, where they are absorbed into the blood, or they're absorbed through mouth tissues into the blood. They can travel in the bloodstream throughout the body to cause cancer in many different areas. Researchers believe that these substances damage genes in cells of the penis, which can lead to penile cancer.

UV light treatment of psoriasis

Men who have a skin disease called psoriasis are sometimes treated with drugs called **psoralens** and then an ultraviolet A (UVA) light source. This is called **PUVA**therapy. Men who have had this treatment have been found to have a higher rate of penile cancer. To help lower this risk, men being treated with PUVA now have their genitals covered during treatment.

Age

The risk of penile cancer goes up with age. In the US, the average age of a man when he is diagnosed is about 68. About 4 out of 5 penile cancers are diagnosed in men over age 55.

AIDS

Men with AIDS have a higher risk of penile cancer. This higher risk seems to be linked to their weakened immune system, which is a result of this disease. But it might also be linked to other risk factors that men with HIV (the virus that causes AIDS)[3] are more likely to have. For example, men with HIV are more likely to smoke and be infected with HPV.

Hyperlinks

1. www.cancer.org/cancer/cancer-causes/infectious-agents/hpv.html
2. www.cancer.org/cancer/cancer-causes/tobacco-and-cancer.html
3. www.cancer.org/cancer/cancer-causes/infectious-agents/hiv-infection-aids.html

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What Causes Penile Cancer?

The exact cause of most penile cancers is not known. But scientists have found that it's linked with a number of other conditions. Research is being done around the world to learn more about how these risk factors might cause cells of the penis to become cancer.

For instance, research has shown that normal cells control themselves by making substances called **tumor suppressor gene products** to keep them from growing too fast and becoming cancers. Two proteins (E6 and E7) made by high-risk types of human papillomavirus (HPV)[1] can block the way tumor suppressor gene products work in cells. This allows the cells to start growing out of control, which might make them more likely to become cancer.

Tobacco use has been linked to penile cancer. It creates cancer-causing chemicals that

spread throughout the body and can damage the DNA inside cells, such as the cells of the penis. DNA is the chemical in our cells that makes up our genes. (Genes control how our cells grow and divide.) When DNA damage affects the genes that control cell growth, it can lead to cancer.

See Genetics and Cancer[2] to learn more about the complex link between genes and cancer.

Hyperlinks

1. www.cancer.org/cancer/cancer-causes/infectious-agents/hpv.html
2. www.cancer.org/cancer/cancer-causes/genetics.html

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See all references for Penile Cancer (www.cancer.org/cancer/penile-cancer/references.html)

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Can Penile Cancer Be Prevented?

The large variations in penile cancer rates throughout the world suggest that many penile cancers can be prevented. The best way to reduce the risk of penile cancer is to avoid known risk factors. (See Risk Factors for Penile Cancer.) But some men with

penile cancer have no known avoidable risk factors, so it’s not possible to prevent this disease completely..

Circumcision

In the past, circumcision (removing the foreskin on the penis) was suggested as a way to lower penile cancer risk. This was based on studies that reported much lower penile cancer rates among circumcised men than among uncircumcised men. But in some studies, the protective effect of circumcision wasn't seen after factors like smegma and phimosis were taken into account. Still, some experts have said that circumcision prevents penile cancer.

In the US, the risk of penile cancer is low even among uncircumcised men. Men who aren’t circumcised can help lower their risk of penile cancer by practicing good genital hygiene.

Genital hygiene

Perhaps the most important factor in preventing penile cancer in uncircumcised men is good genital hygiene. Uncircumcised men need to pull back (retract) the foreskin and clean the entire penis. If the foreskin is constricted and hard to retract (this is called **phimosis**), a doctor may be able to prescribe a cream or ointment that can make it easier to do so. If this doesn’t work the doctor may cut the skin of the foreskin in a procedure called a **dorsal slit** to make retraction easier.

HPV infection

HPV is very common, so having sex with even one other person can put you at risk. A man can have an HPV infection for years without 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 the virus to somebody else.

To earn a lot more about HPV, including what you can do to help prevent it, see the HPV section[1] of our website.

Tobacco use

Tobacco use also increases penile cancer risk, so not using any form of tobacco might

lower that risk. Quitting tobacco[2] or never starting to use it in the first place is a good way to reduce your risk of many diseases, including penile cancer.

Hyperlinks

1. www.cancer.org/cancer/cancer-causes/infectious-agents/hpv.html
2. www.cancer.org/healthy/stay-away-from-tobacco/guide-quitting-smoking.html

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Penile Cancer Early Detection, Diagnosis, and Staging

Detection and Diagnosis

Finding cancer early, when it's small and before it has spread, often allows for more treatment options. Some early cancers may have signs and symptoms that can be noticed, but that's not always the case.

- Can Penile Cancer Be Found Early?
- Signs and Symptoms of Penile Cancer
- Tests for Penile Cancer

Stages of Penile Cancer

After a cancer diagnosis, staging provides important information about the extent of cancer in the body and the likely response to treatment.

- Penile Cancer Stages

Outlook (Prognosis)

Doctors often use survival rates as a standard way of discussing a person's outlook (prognosis). These numbers can’t tell you how long you will live, but they might help you better understand your prognosis. Some people want to know the survival statistics for people in similar situations, while others might not find the numbers helpful, or might even not want to know them.

- Survival Rates for Penile Cancer

Questions to Ask About Penile Cancer

Here are some questions you can ask your cancer care team to help you better understand your cancer diagnosis and treatment options.

- Questions To Ask About Penile Cancer

Can Penile Cancer Be Found Early?

There are no widely recommended screening tests for penile cancer, but many penile cancers can be found early, when they're small and before they have spread to other parts of the body.

Almost all penile cancers start in the skin, so they're often noticed early. Cancers that start under the foreskin may not be seen as quickly, especially if a man has phimosis (constriction of the foreskin). Some penile cancers cause symptoms that could also be caused by a disease other than cancer.

Even if a man sees or feels something abnormal, he may not recognize it as something that needs medical attention right away. You should see a doctor if you find a new redness, growth, or other change in your penis, even if it's not painful. Things like warts, blisters, sores, ulcers, white patches, or other abnormal areas need to be checked by a doctor. Most are not cancer, but they may be caused by an infection or some other condition that needs to be treated.

Some men avoid going to the doctor for lesions (changes) on their penis. In fact, many put off seeking treatment for a year or more after they first notice the problem. Don't let embarrassment or fear keep you from having these changes checked. Most penile cancers are easy to treat in the early stages.

If a cancer is found early, it can often be removed with little or no damage to the penis. But if it's not diagnosed until later, part of or all of the penis may need to be removed to treat the cancer. More advanced cancers are also more likely to require other, more invasive treatments, and may even be life threatening.

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Signs and Symptoms of Penile Cancer

The signs and symptoms below don't always mean a man has penile cancer. In fact, many are more likely to be caused by other conditions. Still, if you have any of them, see a doctor right away so their cause can be found and treated, if needed. The sooner a diagnosis is made, the sooner you can start treatment and the better it is likely to work.

Skin changes

The first sign of penile cancer is most often a change in the skin of the penis. This is most likely to be on the glans (tip) of the penis or on the foreskin (in uncircumcised men), but it can also be on the shaft. These changes may include:

- An area of skin becoming thicker
- Changes in the skin color
- A lump
- An ulcer (sore) that might bleed
- A reddish, velvety rash under the foreskin

- Small, crusty bumps
- Flat, bluish-brown growths
- Smelly discharge (fluid) or bleeding under the foreskin

Sores or lumps from penile cancer usually don't hurt, but they might. You should see a doctor if you find any kind of new growth or other abnormality on your penis, even if it's not painful. Any change that doesn't get better in about 4 weeks, or gets worse, should be checked by a doctor.

Swelling

Swelling at the end of the penis, especially when the foreskin is constricted, is another possible sign of penile cancer. It may be harder to draw back the foreskin.

Lumps under the skin in the groin area

If the cancer spreads from the penis, it most often travels first to lymph nodes[1] in the groin. This can make those lymph nodes swell. Lymph nodes are collections of immune system cells. Normally, they are bean-sized and can barely be felt at all. If they're swollen, the lymph nodes may feel like smooth lumps under the skin.

But swollen lymph nodes don’t always mean that cancer has spread there. More commonly, lymph nodes swell in response to an infection. The skin in and around a penile cancer can often become infected, which might cause the nearby lymph nodes to swell, even if the cancer hasn’t reached them.

Hyperlinks

1. www.cancer.org/cancer/cancer-basics/lymph-nodes-and-cancer.html

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Tests for Penile Cancer

If you have possible symptoms of penile cancer you should go to a doctor. A physical exam will be done and you might also need some tests to find out what's causing your symptoms.

Medical history and physical exam

The doctor will talk to you about your medical history and the details of your symptoms, like when they started and if they've changed. You'll also discuss any possible risk factors you have.

The doctor will also look at your genital area carefully for possible signs of penile cancer or other health problems. Penile lesions (sores) usually affect the skin on the penis, so a doctor often can find cancers and other problems by looking closely at the penis. The doctor may look at and feel the lymph nodes[1] in your groin to see if they are swollen.

If symptoms and/or the exam suggest you might have penile cancer, other tests[2]will be needed. These might include a biopsy and imaging tests.

Biopsy

A biopsy is the only sure way to know if a change is penile cancer. To do this, a small piece of tissue is taken from the changed area and sent to a lab. There, it's looked at

with a microscope to see if it contains cancer cells. The results are usually available in a few days, but may take longer in some cases There are many ways a biopsy can be done:

Incisional biopsy

For an incisional biopsy only a part of the changed area is removed. This type of biopsy is often done for lesions that are big, ulcerated (the top layer of skin is missing or the lesion appears as a sore), or that appear to grow deeply into the penis.

These biopsies are usually done with local anesthesia (numbing medicine) in a doctor's office, clinic, or outpatient surgical center.

Excisional biopsy

In an excisional biopsy, the entire lesion is removed. This type of biopsy is most often used if the lesion is small, such as a nodule (lump) or plaque (raised, flat area).

These biopsies are usually done in a hospital or outpatient surgical center. Local anesthesia (numbing medicine) or general anesthesia (where you are asleep) may be used.

Lymph node biopsy

If the cancer has spread deep within the penis, nearby lymph nodes usually will need to be checked for cancer spread. This is done to help find the stage (extent) of the cancer after the diagnosis. These lymph nodes can be checked either with fine needle aspiration or by doing surgery to remove them.

Fine needle aspiration (FNA): To do this type of biopsy, the doctor puts a thin, hollow needle right into the lymph node and uses a syringe to pull out cells and a few drops of fluid. Local anesthesia may be put into the skin over the node to numb the area first.

If the enlarged lymph node is deep inside your body and the doctor can't feel it, imaging methods such as ultrasound or CT scans can be used to guide the needle into the node.

This type of biopsy is often done to see if enlarged lymph nodes contain cancer. It's not used to sample lesions on the penis itself. This procedure can be done in a doctor's office or clinic.

Surgical biopsy: In some cases, the lymph nodes are not checked with FNA, but instead surgery is done to remove one or more lymph nodes. These surgical lymph node biopsies, which include sentinel lymph node biopsy and lymphadenectomy, are described in Surgery for Penile Cancer[3].

To learn more, see Testing Biopsy and Cytology Specimens for Cancer[4].

Imaging tests

Imaging tests[5] use x-rays, magnetic fields, or sound waves to create pictures of the inside of your body. If the doctor thinks the cancer has spread, then one or more of these tests may be used to help find the stage of the cancer.

Computed tomography (CT)

A CT scan uses x-rays to make detailed cross-sectional images of your body. It can show how big the tumor is and can also help see if the cancer has spread to lymph nodes or other parts of the body.

CT-guided needle biopsy: CT scans can be used to guide a biopsy needle into an enlarged lymph node or other area that might be cancer spread. To do this, you stay on the CT table while a doctor moves a biopsy needle through your skin and toward the mass. CT scans are repeated until the needle is inside the mass. A biopsy sample is then removed and sent to be checked under a microscope.

Magnetic resonance imaging (MRI)

Like CT scans, MRIs show detailed images of soft tissues in the body. But MRI scans use radio waves and strong magnets instead of x-rays.

MRI pictures are better if the penis is erect. The doctor might inject a hormone-like substance called **prostaglandin** into the penis to make it erect.

Ultrasound

Ultrasound uses sound waves to make pictures of internal organs or masses. It can be useful to find out how deeply the cancer has spread into the penis. It can also help find enlarged lymph nodes in the groin.

This test is painless and does not expose you to radiation. For most ultrasound exams,

the skin is first lubricated with gel. Then a technician moves the transducer over the skin of the penis.

Chest x-ray

An x-ray might be done to see if the cancer has spread to the lungs.

Hyperlinks

1. www.cancer.org/cancer/cancer-basics/lymph-nodes-and-cancer.html
2. www.cancer.org/treatment/understanding-your-diagnosis/tests.html
3. www.cancer.org/cancer/penile-cancer/treating/surgery.html
4. www.cancer.org/treatment/understanding-your-diagnosis/tests/testing-biopsy-and-cytology-specimens-for-cancer.html
5. www.cancer.org/treatment/understanding-your-diagnosis/tests/imaging-radiology-tests-for-cancer.html

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Penile Cancer Stages

After a man is diagnosed with penile cancer, doctors will try to figure out if it has spread,

and if so, how far. This process is called **staging**. The stage of a cancer describes how much cancer is in the body. It helps determine how serious the cancer is and how best to treat[1] it. Doctors also use a cancer's stage when talking about survival statistics.

The earliest stage of penile cancer is stage 0, which means the cancer hasn't spread beyond the top layer of skin. The other stages range from I (1) through IV (4). Some stages also use capital letters (A, B, etc.). As a rule, the lower the number, the less the cancer has spread. A higher number, such as stage IV, means cancer has spread more. Cancers with similar stages tend to have a similar outlook and are often treated in much the same way.

How is the stage determined?

The staging system most often used for penile cancer is the American Joint Committee on Cancer (AJCC) **TNM** system, which is based on 3 key pieces of information:

- The extent of the main **tumor (T):** How far has the cancer grown into the penis, and has it reached nearby tissues or organs?
- The spread to nearby lymph **nodes (N):** Has the cancer spread to nearby lymph nodes (in the groin and pelvic area)? If so, how many are affected?
- The spread (**metastasis**) to distant sites **(M):** Has the cancer spread to distant parts of the body? (The most common sites of spread are distant lymph nodes or organs like the lung, liver, or bones.)

Numbers or letters after T, N, and M provide more details about each of these factors. Higher numbers mean the cancer is more advanced.

Another factor that can affect the stage of some cancers is the **grade** of the cancer cells. This is a measure of how different the cancer cells look from normal cells. The grade is often noted with a number, from 1 to 3. The higher the number, the more abnormal the cells look. Higher-grade cancers tend to grow and spread faster than lower-grade cancers.

Once the T, N, and M categories (and grade) of the cancer have been determined, this information is combined in a process called **stage grouping** to assign an overall stage. For more on this, see Cancer Staging[2].

The system described below is the most recent AJCC system, effective January 2018. It's used for squamous cell carcinoma of the penis[3], which is by far the most common type of penile cancer. Other types of cancer starting on the penis, such as melanomas[4]

and sarcomas[5], are much less common and are staged with different systems.

Penile cancer is typically given a **clinical stage** based on the results of a physical exam, biopsy, and any imaging tests that might have been done. If surgery has been used to check nearby lymph nodes for cancer, the **pathologic stage** (also called the surgical stage) can be determined. The pathologic stage is typically more accurate, and is what's used in the table below.

Penile cancer staging can be complex, so ask your doctor to explain your stage to you in a way you understand.

Stages of penile cancer

AJCC stage	Stage grouping	Stage description*
0 (0is or 0a)	**Tis or Ta N0 M0**	Also called carcinoma in situ or CIS. The tumor is only in the top layer of the skin and has not grown any deeper (Tis or Ta). The cancer has not spread to nearby lymph nodes (N0) or to distant parts of the body (M0).
I	**T1a N0 M0**	The tumor has grown into tissue just below the top layer of skin. It hasn't grown into nearby blood vessels, lymph vessels, or nerves, and it's not high grade (grade 3) (T1a). The cancer has not spread to nearby lymph nodes (N0) or to distant parts of the body (M0).
IIA	**T1b N0 M0**	The tumor has grown into tissue just below the top layer of skin. It has grown into nearby blood vessels, lymph vessels, or nerves, and/or it's high grade (grade 3) (T1b). The cancer has not spread to nearby lymph nodes (N0) or to distant parts of the body (M0).
	OR	
	T2 N0 M0	The cancer has grown into the corpus spongiosum (an internal chamber that runs along the bottom and into the head of the penis). The cancer has not spread to nearby lymph nodes (N0) or to distant parts of the body (M0).

IIB	**T3 N0 M0**	The cancer has grown into the corpus cavernosum (either of 2 internal chambers that run along the top of the shaft of the penis). The cancer has not spread to nearby lymph nodes (N0) or to distant parts of the body (M0).
IIIA	**T1-T3 N1 M0**	The tumor has grown into tissue below the top layer of skin and may have grown into the corpus spongiosum and/or the corpus cavernosum (T1 to T3). The cancer has spread to 1 or 2 nearby inguinal (groin) lymph nodes on the same side of the body (N1). It has not spread to distant parts of the body (M0).
IIIB	**T1-T3 N2 M0**	The tumor has grown into tissue below the top layer of skin and may have grown into the corpus spongiosum and/or the corpus cavernosum (T1 to T3). The cancer has spread to 3 or more nearby inguinal (groin) lymph nodes on the same side of the body, or to inguinal lymph nodes on both sides of the body (N2). It has not spread to distant parts of the body (M0).
IV	**T4 Any N M0**	The tumor has grown into nearby structures such as the scrotum, prostate, or pubic bone (T4). The cancer might or might not have spread to nearby lymph nodes (any N). It has not spread to distant parts of the body (M0).
	OR	
	Any T N3 M0	The tumor might or might not have grown into deeper layers of the penis or nearby structures (any T). The cancer has spread to nearby lymph nodes in the pelvis, or it has grown outside of a lymph node and into the surrounding tissue (N3). The cancer has not spread to distant parts of the body (M0).

	OR	
	Any T **Any N M1**	The tumor might or might not have grown into deeper layers of the penis or nearby structures (any T). The cancer might or might not have spread to nearby lymph nodes (any N). The cancer has spread to distant parts of the body (M1).

* The following additional categories are not listed on the table above:

- TX: Main tumor cannot be assessed due to lack of information.
- T0: No evidence of a primary tumor. The N categories are described in the table above, except for:
- NX: Regional lymph nodes cannot be assessed due to lack of information.

Hyperlinks

1. www.cancer.org/cancer/testicular-cancer/treating.html
2. www.cancer.org/treatment/understanding-your-diagnosis/staging.html
3. www.cancer.org/cancer/testicular-cancer/about/what-is-testicular-cancer.html
4. www.cancer.org/cancer/melanoma-skin-cancer.html
5. www.cancer.org/cancer/soft-tissue-sarcoma.html

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Survival Rates for Penile Cancer

Survival rates can give you an idea of what percentage of people with the same type and stage of cancer are still alive a certain amount of time (usually 5 years) after they

were diagnosed. They can't tell you how long you will live, but they may help give you a better understanding of how likely it is that your treatment will be successful.

Keep in mind that survival rates are estimates and are often based on previous outcomes of large numbers of people who had a specific cancer, but they can't predict what will happen in any particular person's case. These statistics can be confusing and may lead you to have more questions. Talk with your doctor about how these numbers may apply to you, as he or she is familiar with your situation.

What is a 5-year relative survival rate?

A **relative survival rate** compares men with the same type and stage of penile cancer to men in the overall population. For example, if the **5-year relative survival rate** for a specific stage of penile cancer is 80%, it means that men who have that cancer are, on average, about 80% as likely as men who don't have that cancer to live for at least 5 years after being diagnosed.

Where do these numbers come from?

The American Cancer Society relies on information from the SEER* database, maintained by the National Cancer Institute (NCI), to provide survival statistics for different types of cancer.

The SEER database tracks 5-year relative survival rates for penile cancer in the United States, based on how far the cancer has spread. The SEER database, however, does not group cancers by AJCC TNM stages (stage 1, stage 2, stage 3, etc.). Instead, it groups cancers into localized, regional, and distant stages:

- **Localized:** The cancer is confined to the penis.
- **Regional:** The cancer has spread outside of the penis to nearby structures or nearby lymph nodes.
- **Distant:** The cancer has spread to distant parts of the body such as the lungs, liver or bones.

5-year relative survival rates for penile cancer

(Based on men diagnosed with penile cancer between 2008 and 2014.)

SEER Stage	5-Year Relative Survival Rate

Localized	82%
Regional	48%
Distant	(not available)
All SEER stages combined	67%

Understanding the numbers

- **These numbers apply only to the stage of the cancer when it is first diagnosed.** They do not apply later on if the cancer grows, spreads, or comes back after treatment.
- **These numbers don't take everything into account.** Survival rates are grouped based on how far the cancer has spread, but your age, overall health, how well the cancer responds to treatment, and other factors can also affect your outlook.
- **Men now being diagnosed with penile cancer may have a better outlook than these numbers show.** Treatments improve over time, and these numbers are based on men who were diagnosed and treated at least five years earlier.

*SEER= Surveillance, Epidemiology, and End Results

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See all references for Penile Cancer (www.cancer.org/cancer/penile-cancer/references.html)

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Questions To Ask About Penile Cancer

It's important to have honest, open discussions with your cancer care team. You should ask any question, no matter how small it might seem. Here are some you might want to ask:

- What kind of penile cancer do I have?
- How deep has the cancer grown into my penis? Has it spread to lymph nodes or other organs?
- What is the stage of my cancer and what does that mean?
- Do I need more tests before we can decide on treatment?
- Do I need to see any other types of doctors?
- How much experience do you have treating this type of cancer?
- What are my treatment choices[1]?
- What do you recommend and why?
- What's the goal of treatment? To cure the cancer? Keep it under control?
- How quickly do we need to decide on treatment?
- What should I do to be ready for treatment?
- How long will treatment last? What will it be like? Where will it be done?
- Will treatment change how my penis looks or the size of my penis?
- Will treatment affect how I urinate?
- Will I be able to have sex or have children after treatment?
- Will I need surgery on my groin lymph nodes?
- Willl my insurance cover treatment? How much will I have to pay?
- How long will it take me to recover from treatment?
- When can I go back to my regular activities after treatment?
- What are the risks or side effects to the treatments you suggest?
- What are the chances that my cancer will come back[2] after treatment? What would we do if that happens?
- What type of follow-up[3] will I need after treatment?

Along with these sample questions, be sure to write down some of your own. For instance, you may want to ask about getting a second opinion[4] or about clinical trials[5] that might be right for you.

Keep in mind that doctors aren't the only ones who can give you information. Other health care professionals, such as nurses and social workers, may have the answers to some of your questions. You can find out more in The Doctor-Patient Relationship[6].

Hyperlinks

1. www.cancer.org/cancer/penile-cancer/treating.html
2. www.cancer.org/treatment/survivorship-during-and-after-treatment/understanding-recurrence.html
3. www.cancer.org/cancer/penile-cancer/after-treatment.html
4. www.cancer.org/treatment/finding-and-paying-for-treatment/choosing-your-treatment-team/seeking-a-second-opinion.html
5. www.cancer.org/treatment/treatments-and-side-effects/clinical-trials.html
6. www.cancer.org/treatment/understanding-your-diagnosis/talking-about-cancer/the-doctor-patient-relationship.html

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Treating Penile Cancer

If you've been diagnosed with penile cancer, your treatment team will discuss your options with you. It's important to weigh the benefits of each treatment option against the possible risks and side effects.

How is penile cancer treated?

Surgery is the main treatment for most men with penile cancers, but sometimes radiation therapy may be used, either instead of or in addition to surgery. Other local treatments might also be used for early-stage tumors. Chemotherapy may be given for some larger tumors or if the cancer has spread.

- Surgery for Penile Cancer
- Radiation Therapy for Penile Cancer
- Local Treatments (Other than Surgery) for Penile Cancer
- Chemotherapy for Penile Cancer

Common treatment approaches

The goal of your cancer care team is to treat the cancer while limiting the treatment's effects on how your penis looks and works.

If the cancer can't be cured, the goal may be to remove or destroy as much of the cancer as possible and prevent the tumor from growing, spreading, or returning for as long as possible. Sometimes treatment is aimed at relieving symptoms, such as pain or bleeding, even if you might not be cured.

- Treatment of Penile Cancer, by Stage

Who treats penile cancer?

Based on your treatment options, you might have different types of doctors on your treatment team. These doctors could include:

- A **urologist:** a surgeon who specializes in diseases of the male genitals and urinary tract
- A **radiation oncologist:** a doctor who uses radiation to treat cancer
- A **medical oncologist:** a doctor who uses chemotherapy and other medicines to treat cancer

Many other specialists might be part of your treatment team, too, including other doctors, physician assistants (PAs), nurse practitioners (NPs), nurses, psychologists, social workers, rehabilitation specialists, and other health professionals.

- Health Professionals Associated With Cancer Care[1]

Making treatment decisions

It's important to discuss all treatment options, including their goals and possible side effects, with your doctors to help make the decision that best fits your needs. You may feel that you need to make a decision quickly, but it's important to give yourself time to absorb the information you have learned. Ask your cancer care team questions.

If time permits, it is often a good idea to seek a second opinion. A second opinion can give you more information and help you feel more confident about the treatment plan you choose.

- Questions To Ask About Penile Cancer[2]
- Seeking a Second Opinion[3]

Thinking about taking part in a clinical trial

Clinical trials are carefully controlled research studies that are done to get a closer look at promising new treatments or procedures. Clinical trials are one way to get state-of-the art cancer treatment. In some cases they may be the only way to get access to newer treatments. They are also the best way for doctors to learn better methods to treat cancer. Still, they're not right for everyone.

If you would like to learn more about clinical trials that might be right for you, start by asking your doctor if your clinic or hospital conducts clinical trials.

- Clinical Trials[4]

Considering complementary and alternative methods

You may hear about alternative or complementary methods that your doctor hasn't mentioned to treat your cancer or relieve symptoms. These methods can include vitamins, herbs, and special diets, or other methods such as acupuncture or massage, to name a few.

Complementary methods refer to treatments that are used along with your regular medical care. Alternative treatments are used instead of a doctor's medical treatment. Although some of these methods might be helpful in relieving symptoms or helping you feel better, many have not been proven to work. Some might even be harmful.

Be sure to talk to your cancer care team about any method you are thinking about using. They can help you learn what is known (or not known) about the method, which can help you make an informed decision.

- Complementary and Alternative Medicine[5]

Help getting through cancer treatment

Your cancer care team will be your first source of information and support, but there are other resources for help when you need it. Hospital- or clinic-based support services are an important part of your care. These might include nursing or social work services, financial aid, nutritional advice, rehab, or spiritual help.

The American Cancer Society also has programs and services – including rides to treatment, lodging, and more – to help you get through treatment. Call our National Cancer Information Center at 1-800-227-2345 and speak with one of our trained specialists.

- Find Support Programs and Services in Your Area[6]

Choosing to stop treatment or choosing no treatment at all

For some people, when treatments have been tried and are no longer controlling the cancer, it could be time to weigh the benefits and risks of continuing to try new treatments. Whether or not you continue treatment, there are still things you can do to help maintain or improve your quality of life.

Some people, especially if the cancer is advanced, might not want to be treated at all. There are many reasons you might decide not to get cancer treatment, but it's important to talk to your doctors and you make that decision. Remember that even if you choose not to treat the cancer, you can still get supportive care to help with pain or other symptoms.

- If Cancer Treatments Stop Working[7]
- Palliative or Supportive Care[8]

The treatment information given here is not official policy of the American Cancer Society and is not intended as medical advice to replace the expertise and judgment of your cancer care team. It is intended to help you and your family make informed decisions, together with your doctor. Your doctor may have reasons for suggesting a treatment plan different from these general treatment options. Don't hesitate to ask him or her questions about your treatment options.

Surgery for Penile Cancer

Surgery is the most common treatment for all stages of penile cancer. If the cancer is found when it's small and hasn't spread, the tumor can often be treated without having to remove part of the penis. If the cancer is found at a more advanced stage, part of or all of the penis might have to be removed with the tumor. Your cancer care team will talk with you about the treatment options that give you the best chance of curing the cancer while saving as much of your penis as possible.

Men with tumors that have grown deep within the penis (stage T2 or higher) usually need to have some nearby lymph nodes in the groin taken out to check for cancer spread. Instead of removing all of the groin lymph nodes to look for cancer, some doctors prefer to do a sentinel lymph node biopsy, which is covered later in this section.

Many different kinds of surgery are used to treat penile cancers. Penile-sparing techniques are used as often as possible. These include local treatments and limited surgeries, to save as much of the penis as possible to preserve sexual function, the way the penis looks, and the ability to urinate while standing up.

Circumcision

If the cancer is only on the foreskin, circumcision can often cure the cancer. This operation removes the foreskin and some nearby skin.

Circumcision is also done before radiation therapy to the penis. Radiation can cause swelling and tightening of the foreskin, which can lead to other problems.

Simple excision

In **simple excision** surgery, the tumor is cut out, along with some nearby normal skin. If the tumor is small, the remaining skin can then be stitched back together. This is the same as an excisional biopsy.

In a **wide local excision**, the tumor is removed along with a large amount of normal tissue around it (called wide margins). Removing this healthy tissue makes it less likely that any cancer cells are left behind. If there's not enough skin left to cover the area, a skin graft may be taken from another part of the body and used over the area.

Mohs surgery (microscopically controlled surgery)

This may be an option instead of wide local excision in select cases. Using the Mohs technique, the surgeon removes a layer of the skin that the tumor may have invaded and then checks the sample under a microscope right away. If it contains cancer, another layer is removed and examined. This process is repeated until the skin sample doesn't have cancer cells in it.

This process is slow, but it means that more normal tissue near the tumor can be saved. This means the penis looks and works better after surgery. This is a highly specialized technique that should only be done by doctors who have been trained in this specific type of surgery. It can be used for carcinoma in situ (CIS), where the cancer is in only the top layers of the skin, and for some early-stage cancers that haven't grown deeply into the penis.

Glansectomy

If the tumor is small and only on the glans (the tip of the penis), part or all of it may be removed. Skin grafts may be used rebuild the glans after surgery.

Partial or total penectomy

This operation removes part or all of the penis. It's the most common and best known way to treat penile cancer that has grown deeply inside the penis. The goal is to remove all of the cancer. To do this the surgeon needs to remove some of the normal looking penis as well. The surgeon will try to leave as much of the shaft as possible.

The operation is called a **partial penectomy** if only the end of the penis is removed (and some shaft remains).

If not enough of the shaft can be saved for the man to urinate standing up without dribbling (at least 2 to 3 cm) , a **total penectomy** will be done. This means the entire penis is removed, including the roots that extend into the pelvis. The surgeon creates a new opening for urine to drain from the perineum, which is the area between the scrotum (sac for the testicles) and the anus. This is called a **perineal urethrostomy**. Urination can still be controlled because the sphincter muscle (the “on-off” valve) in the urethra is left behind, but the man will have to sit to urinate.

For very advanced tumors, sometimes the penis is removed along with the scrotum (and testicles). This operation is called **emasculation**. Since this operation removes the testicles, which are the body’s main source of the male hormone testosterone, men who have this procedure must take testosterone supplements for the rest of their lives.

Any of these operations can affect a man’s self-image, as well as his ability to have sex. For more on this, seeLiving as a Penile Cancer Survivor.[1]

Lymph node surgery

Men with cancer that has grown deep within the penis (stage T2 or higher) usually need to have some nearby lymph nodes in the groin removed so they can be checked for cancer spread.

Sentinel lymph node biopsy (SLNB)

This operation can sometimes help the surgeon see if the groin lymph nodes contain cancer without having to remove all of them. It's most often done when lymph nodes are not enlarged but there's a chance that the cancer reached them. See Types of Biopsies[2]Used to Look for Cancer[3] for details on how SLNB is done.

The surgeon finds the first lymph node that drains the tumor (called the **sentinel node**) and removes it. If the cancer has spread outside the penis, this lymph node is the one the cancer is most likely to go to first. If the sentinel node contains cancer, a more extensive operation, known as a **lymph node dissection** or **inguinal**

lymphadenectomy, is done (see below). If the sentinel node does not have cancer cells, the surgeon doesn't have to remove any more lymph nodes.

Using this approach, fewer patients need to have many lymph nodes removed. The more lymph nodes that are removed, the higher the risk of side effects such as lymphedema[4] and problems with wound healing. (Side effects are covered below.)

Not all doctors agree on how useful this type of operation is for penile cancer. Early studies showed that SLNB was helpful in finding those men whose cancer had spread to their lymph nodes, but later studies did not show that it was very accurate, and some men with lymph node spread could be missed if the SLNB was used.

If your doctor is considering a SLNB, it might be useful to find out how many he/she has done. Experience is very important to the success of this procedure.

Inguinal lymphadenectomy (groin lymph node dissection)

Many men with penile cancer have swollen groin lymph nodes when they're first diagnosed. These lymph nodes need to be removed if they contain cancer cells, but sometimes, the swelling is from infection or inflammation, not cancer. If the problem might be infection, doctors may give a course of antibiotics. If the swelling goes away, it was likely caused by infection or inflammation. If it doesn't go away, an inguinal lymphadenectomy is done to remove the lymph nodes. Higher stage and grade cancers are more likely to have spread to the lymph nodes.

If the lymph nodes are big enough to feel, most experts recommend a biopsy to check them for cancer cells in higher stage and grade cancers. Antibiotics might also be used just in case there is an infection.

This operation may also be done if cancer is found during a SLNB (see above).

In this procedure, the surgeon makes an incision about 4 inches long in your groin and carefully takes out the lymph nodes. This is a serious surgery because important muscles, nerves, and blood vessels run through the groin and the nodes can be deep inside the body. The nodes are then sent to a lab, where they're checked with a microscope to see if they have cancer cells in them.

Pelvic lymph node surgery

If cancer is found in 2 or more inguinal (groin) lymph nodes, pelvic lymph nodes will also be removed and checked. This may be done at the same time the groin nodes are

removed, or later as a separate surgery.

This surgery is done through an incision (cut) in the lower belly. The risk of lymphedema goes up if these nodes are also removed.

Side effects of lymph node surgery

The groin lymph nodes help fluid drain out of the legs and back into the bloodstream. Removing many lymph nodes in an area can lead to problems with fluid drainage and cause abnormal swelling. This condition is called lymphedema. In the past, this was a common problem after treatment because the lymph nodes from groin areas on both sides were removed to check for cancer spread. Now fewer lymph nodes are usually removed, which lowers the chance that lymphedema will occur. Still, lymphedema can occur even when only one lymph node or the lymph nodes from only one part of the groin are removed. For more on this, see Lymphedema.[5]

Other side effects, such as problems with wound healing, infection, blood clots, and skin breakdown (necrosis) can occur after lymph node surgery .

Hyperlinks

1. www.cancer.org/cancer/penile-cancer/after-treatment/follow-up.html
2. www.cancer.org/treatment/understanding-your-diagnosis/tests/testing-biopsy-and-cytology-specimens-for-cancer/biopsy-types.html
3. www.cancer.org/treatment/understanding-your-diagnosis/tests/testing-biopsy-and-cytology-specimens-for-cancer/biopsy-types.html
4. www.cancer.org/treatment/treatments-and-side-effects/physical-side-effects/lymphedema.html
5. www.cancer.org/treatment/treatments-and-side-effects/physical-side-effects/lymphedema.html

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Radiation Therapy for Penile Cancer

Radiation therapy uses high-energy rays or particles to destroy cancer cells. It can be used to treat penile cancer in these ways:

- It can be used to treat some smaller penile cancers instead of surgery.
- If the cancer has spread to many lymph nodes , radiation may be used after surgery to remove the lymph nodes to try to reduce the risk the cancer will come back.
- It can be used when surgery isn't an option.
- Radiation can be used for advanced cancer to try to slow the growth of the cancer or to relieve symptoms it causes.
- It can be given along with chemo before surgery to help shrink the tumor and make

it easier to remove with less damage to the penis.
- Men at high risk of cancer coming back in nearby lymph nodes might get radiation to those nodes to help lower this risk. (Not all experts agree that this works.)

For uncircumcised men who are going to get radiation to the penis, the foreskin is removed first. They're circumcised because radiation can cause swelling and tightening of the foreskin, which could lead to other problems.

There are 2 main ways to get radiation therapy for penile cancer: external beam and brachytherapy.

External beam radiation therapy

The most common way to get radiation therapy is from carefully focused beams of radiation aimed at the tumor from a machine. The treatment is a lot like getting an x-ray, but the radiation is much stronger. The treatments don't hurt. Each one lasts only a few minutes, but the set-up time – getting you into place for treatment – usually takes longer. Treatments are usually given 5 days a week for 6 weeks or so.

A wax or plastic block or mold may be used to hold the penis in the exact same position for each treatment. Shields may be used to protect the groin and testicles.

Brachytherapy

For brachytherapy, a radioactive source is placed into or next to the penile tumor. The radiation travels only a short distance, so nearby healthy tissues don’t get much radiation. The patient stays in the hospital, often on bed rest, for this type of treatment. A soft tube, called a Foley catheter, is put through the penis and into the bladder to drain out urine while brachytherapy is done. There are 2 ways to get brachytherapy for penile cancer.

Interstitial radiation

In this method, hollow needles are first put into the penis in the operating room. Pre-drilled plastic templates lock onto both ends of the needles to hold them in place. The needles are kept in for several days. Tiny pellets of radioactive materials are put into the needles to treat the tumor. The pellets can be left in the needles for different lengths of time. They may be put in many times a day to release radiation. After the treatment is over, all the pellets are taken out and the needles are removed.

Plesiobrachytherapy

This type of brachytherapy puts the radiation source close to (but not into) the tumor. In this method, a plastic cylinder is fitted around the penis. Then another cylinder holding the radiation source is placed on top of the first cylinder. Another way to do this is to make a sponge-like mold of the penis and put the radioactive material into hollowed-out spaces in the mold. Treatment is usually given for several days in a row.

This treatment can only work for tumors near the surface of the penis. It's not often used in the US.

Possible side effects of radiation therapy

The main drawback of radiation therapy is that it can destroy or damage nearby healthy tissue along with the cancer cells. The skin in the treated area often becomes red and sensitive. There may be patches of skin that are oozing and tender. For some, the skin may even peel. For a while, you may feel a burning sensation when you urinate. The area may also swell for a time.

Patients treated with brachytherapy will find their side effects tend to be worst about 3 weeks into treatment and last after treatment is finished. It can take up to 12 weeks to heal.

If external beam radiation is used, the side effects tend to slowly start during treatment and then get better over time after radiation is stopped. Most go away over a couple of months.

Over time, men treated with radiation may notice the skin of the penis has become darker or less elastic. They may be able to see tiny web-like blood vessels (called telangiectasia).

Good hygiene and skin care are key to keeping the area from getting infected.

Some less common but more serious side effects can include:

- Some of the skin or tissue at the end of the penis might die (called **necrosis**).
- The urethra (the tiny tube that carries urine out of the penis) might become narrow from scar tissue (called **stenosis**), leading to problems urinating.
- An abnormal opening (fistula) might form between the urethra and skin, which could result in urine leaking out through the opening.

Radiation to the shaft of the penis might affect a man's ability to have erections. But in cases where the tumor has not grown beyond the glans, radiation is directed only at the tip of the penis, so erections should not be affected.

In many cases, the function and appearance of the penis slowly goes back to normal in the months and years after radiation therapy.

Other possible side effects of radiation to the pelvic area and groin lymph nodes include tiredness, nausea, or diarrhea.

For more information, see Radiation Therapy[1].

Hyperlinks

1. www.cancer.org/treatment/treatments-and-side-effects/treatment-types/radiation.html

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See all references for Penile Cancer (www.cancer.org/cancer/penile-cancer/references.html)

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Local Treatments (Other than Surgery) for Penile Cancer

Some very early-stage, low-grade penile cancers, especially carcinoma in situ (CIS, where the cancer is only in the top layers of the skin) can be treated with techniques other than surgery. These include radiation therapy (described in Radiation Therapy for Penile Cancer), laser ablation, cryotherapy, and putting drugs right on the skin of penis to kill the cancer cells (called **topical therapy**). These treatments may be called **penile sparing** techniques. Of all the treatments available, they tend to cause the least damage to the penis. But again, they can only treat small cancers that haven't spread

deeply into the penis or to other parts of the body.

Laser ablation

The doctor uses a beam of laser light to destroy (ablate) cancer cells. This can be useful for squamous cell carcinoma in situ (CIS) and for very thin or shallow basal cell carcinomas. It also may be used for men who refuse surgery.

Drugs are used so the patient sleeps and doesn't feel pain while laser treatment is done. It leaves a shallow wound that heals over a few months, just like any other skin wound. Careful follow-up is needed to check healing and watch for signs that the cancer has come back. Laser treatment can be repeated if the cancer comes back.

Cryosurgery

While not used as often as laser ablation, cryosurgery works much the same way, but uses liquid nitrogen to freeze and kill the cancer cells. It may also be called **cryoablation** or **cryotherapy**. It's useful for some verrucous penile cancers and carcinoma in situ (CIS) of the glans.

Drugs are used to numb the skin of the penis for this treatment. Treatment is often repeated a couple of times in the same office visit. After the dead area of skin thaws, it will swell, blister and crust over. The wound may drain fluid for a while and take a couple months to heal. It can leave a pale scar.

Topical treatments

Topical chemotherapy

Topical chemotherapy means that a cancer-killing drug is put right on the skin instead of taken as a pill or injected into a vein. The drug used most often to treat penile cancer this way is 5-fluorouracil (5-FU). It's a cream that's put on at home twice a day for several weeks.

When put right on the skin, 5-FU kills cancer cells in the top layers of skin, but it can't reach cancer cells that have grown deeply into the skin or spread to other organs. For this reason, treatment with 5-FU is mostly used for pre-cancers or carcinoma in situ (CIS).

Because the chemo doesn't spread throughout the body, the side effects often seen

with systemic chemotherapy do not happen with topical chemotherapy. Still, treatment with 5-FU cream makes the treated skin red and very sensitive for a few weeks. Other topical medicines or creams can help relieve this.

Careful follow-up is needed to watch for signs that the cancer has come back[1].

Imiquimod

Imiquimod is a drug that's sometimes used as a cream to treat CIS of the penis. It causes the immune system to react to the cancer and destroy it. It's put on the skin about 3 to 7 times a week for many weeks, but schedules can vary. It can irritate the skin, which can be severe in some people, but can be treated. It can also cause flu-like symptoms, but this isn't common.

Photodynamic therapy (PDT)

PDT is not widely used for penile cancer, but may be an option in some cases. This treatment uses special drugs and laser light to treat cancer near the surface of the penis. SeePhotodynamic Therapy[2] for details on how this treatment works.

Hyperlinks

1. www.cancer.org/treatment/survivorship-during-and-after-treatment/understanding-recurrence.html
2. www.cancer.org/treatment/treatments-and-side-effects/treatment-types/photodynamic-therapy.html

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Chemotherapy for Penile Cancer

Chemotherapy (chemo) is the use of drugs to treat cancer. Two types of chemotherapy can be used in treating penile cancer:

- Topical
- Systemic

Topical chemotherapy is described in Local Treatments (Other than Surgery) for Penile Cancer.

Systemic chemotherapy

Systemic chemo uses cancer-killing drugs that are injected into a vein or given by mouth. These drugs go through the bloodstream and reach cancer cells throughout the body. This treatment is most often used for penile cancers that have spread to lymph nodes or distant organs. Chemo might also be used to shrink tumors before surgery to make them easier to remove. It's being studied to see if giving it after surgery (called **adjuvant** chemotherapy) will help keep the cancer from coming back[1] and improve survival.

Doctors give chemo in cycles, with each cycle of treatment followed by a rest period to give the body time to recover. Chemo cycles generally last about 3 to 4 weeks. Some of

the drugs used to treat penile cancer include:

- Cisplatin
- Fluorouracil (5-FU)
- Paclitaxel (Taxol®)
- Ifosfamide (Ifex®)
- Mitomycin C
- Capecitabine (Xeloda®)

Often, 2 or more of these drugs are used together to treat penile cancer that has spread to lymph nodes or other organs. Some common combinations include:

- Cisplatin plus 5-FU
- TIP: paclitaxel (Taxol), ifosfamide, and cisplatin ("platinum")

Possible side effects of chemotherapy

Chemo drugs attack cells that are dividing quickly, which is why they work against cancer cells. But other cells in the body, such as those in the bone marrow (where new blood cells are made), the lining of the mouth and intestines, and the hair follicles, divide quickly, too. These cells can also be affected by chemo, which can lead to some side effects.

The side effects[2] of chemo depend on the type and dose of the drugs and how long they are used. Common side effects can include:

- Hair loss
- Mouth sores
- Loss of appetite
- Nausea and vomiting
- Diarrhea or constipation
- Increased chance of infections (from low white blood cell counts)
- Easy bruising or bleeding (from low blood platelet counts)
- Fatigue (from low red blood cell counts)

These side effects usually go away over time after treatment ends. There are often ways to lessen chemo side effects. For instance, you can get medicine to help prevent or reduce nausea and vomiting.

Some of the drugs used to treat penile cancer can have other side effects.

- Cisplatin and paclitaxel can cause nerve damage[3] (neuropathy), which can lead to numbness and tingling in the hands and feet.
- Cisplatin can also cause and kidney damage (nephropathy). Doctors give a lot of intravenous (IV) fluid with cisplatin to help prevent this.
- 5-fluorouracil (5-FU) and capecitabine can cause sores in the mouth (mucositis) that can make it hard to eat. These drugs can also cause diarrhea.
- Ifosfamide can damage the lining of the bladder (hemorrhagic cystitis). A drug called **mesna** is often given with ifosfamide to help keep this from happening.

Be sure to ask your doctor or nurse about ways to help reduce side effects, and let them know when you do have side effects so they can be managed.

For more details, see Chemotherapy[4].

Hyperlinks

1. www.cancer.org/treatment/survivorship-during-and-after-treatment/understanding-recurrence.html
2. www.cancer.org/treatment/treatments-and-side-effects/physical-side-effects.html
3. www.cancer.org/treatment/treatments-and-side-effects/physical-side-effects/peripheral-neuropathy.html
4. www.cancer.org/treatment/treatments-and-side-effects/treatment-types/chemotherapy.html

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Treatment of Penile Cancer, by Stage

The treatment options for penile cancer are based mainly on the stage[1] (extent) and grade of the cancer, but other factors can also be important. Here are the most common treatment options based on the stage of the cancer.

Stage 0

Stage 0 includes 2 types of tumors: carcinoma in situ (CIS) and verrucous carcinoma. Both of these tumors are only in the top layers of skin. There are some different treatment options.

Patients with CIS that's only on the foreskin can often be treated with circumcision. If the tumor is in the glans and doesn't affect other tissues, it might be treated with a type of local therapy (laser ablation, topical 5-FU or imiquimod, or cryotherapy). Other options might include some type of surgery, such as glansectomy, Mohs surgery, or wide local excision.

Verrucous carcinoma can often be treated with laser therapy, Mohs surgery, wide excision, or cryotherapy. Only rarely will a partial penectomy be needed.

Stage I

These tumors have grown below the skin of the penis but not into deeper layers.

Options for treatment may include circumcision (for tumors confined to the foreskin) or a more extensive surgery (Mohs surgery, wide excision, glansectomy, or removal of part of the penis). Radiation therapy or laser ablation in a clinical trial may also be an option.

Stage II

Stage II penile cancer includes tumors that have grown deep into the tissues of the penis (such as the corpus spongiosum or cavernosum) or the urethra, but have not spread to nearby lymph nodes.

These cancers are usually treated with a partial or total penectomy, with or without surgery to remove the lymph nodes. A less common approach is to use radiation as the first treatment followed by surgery. Radiation may also be used as the main treatment in men who can’t have surgery because of other health problems.

Some doctors recommend checking groin lymph nodes for cancer, even if they're not enlarged. This may be done with a sentinel lymph node biopsy or with a more extensive lymph node dissection. If the lymph nodes show cancer spread, then the cancer is not really a stage II. It's a stage III or IV (and is treated as such).

Stage III

Stage III penile cancers have reached nearby lymph nodes in the groin. The main tumor may have grown into the deeper tissues of the penis (the corpus spongiosum or corpus cavernosum) or urethra, but has not grown into nearby structures like the bladder or prostate.

Stage III cancers are treated with a partial or total penectomy. In some cases, chemotherapy (chemo) or chemo plus radiation may be used first to shrink the tumor so that it's easier to remove with surgery.

An inguinal lymphadenectomy is also needed to remove lymph nodes in the groin. Radiation therapy to the groin may be used, too, either after surgery or instead of surgery in some cases. If lymph nodes are very large, chemo (with or without radiation) might be used as well.

These cancers can be hard to cure, so men may want to consider taking part in clinical trials[2] of new treatments.

Stage IV

Stage IV penile cancer includes different groups of more advanced cancers.

In some stage IV cancers, the main tumor has grown into nearby tissues, like the prostate, bladder, scrotum, or abdominal (belly) wall. Treatment includes surgery, which is often a total penectomy. If the tumor is in the scrotum or parts of the abdominal wall, the testicles and/or the scrotum may also need to be removed. A new opening can be made in the abdomen or the perineum (space between the scrotum and anus) to allow urine to pass out of the body.

If the tumor has grown into the prostate or bladder, these may need to be removed, too. Chemo (sometimes with radiation) may be given before surgery to try to shrink the tumor and make it easier to remove. The inguinal (groin) lymph nodes on both sides will be removed as well. This area may also be treated with radiation after surgery (unless it was given before surgery).

Stage IV also includes cancers that have spread more extensively in the lymph nodes, such as cancer in groin lymph nodes that has grown through the nodes and into nearby tissues or cancer that has spread to lymph nodes inside the pelvis. These cancers are treated with surgery to remove the main tumor in the penis, such as total penectomy.

The lymph nodes in both groin areas are also removed. The lymph nodes inside the pelvis will be removed if they're thought to contain cancer spread (if they are enlarged, for example). After the lymph nodes are removed, those areas may be treated with radiation to try to kill any cancer cells that may be have left behind. Chemo might be part of this treatment, too.

Penile cancer that has spread to distant organs and tissues is also stage IV. These cancers can’t be removed or destroyed completely with surgery and radiation. Treatment is aimed at keeping the cancer in check and preventing or relieving symptoms as much as possible. Choices to treat the penile tumor usually include wide local excision, penectomy, or radiation therapy.

Surgery or radiation therapy (sometimes along with chemo) may also be considered to treat nearby lymph nodes. Radiation may be used to treat cancer that has spread to the bones or to the brain or spinal cord.

Chemo is often used to treat cancer that has spread to other areas, like the lungs or liver.

Stage IV cancers are very hard to cure, so men may want to think about taking part in

clinical trials[3] of new treatments.

Recurrent cancer

The treatment of cancer that comes back[4] after treatment (recurrent cancer) depends on where the cancer comes back (recurs) and which treatments were used before. If penectomy was not done before, a recurrent penile cancer may be treated with surgical removal of part or all of the penis. Radiation therapy may also be an option. Surgery, radiation therapy, and/or chemotherapy may be options for some cancers that recur in the lymph nodes. Chemo may also be helpful in treating penile cancers that come back in other parts of the body.

These tumors can be hard to treat, so men may want to think about taking part in a clinical trial of a newer treatment.

Hyperlinks

1. www.cancer.org/cancer/penile-cancer/detection-diagnosis-staging/staging.html
2. www.cancer.org/treatment/treatments-and-side-effects/clinical-trials.html
3. www.cancer.org/treatment/treatments-and-side-effects/clinical-trials.html
4. www.cancer.org/treatment/survivorship-during-and-after-treatment/understanding-recurrence.html

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After Penile Cancer Treatment

Living as a Cancer Survivor

For many people, cancer treatment often raises questions about next steps as a survivor.

- Living As a Penile Cancer Survivor

Cancer Concerns After Treatment

Treatment may remove or destroy the cancer, but it's very common to have questions about cancer coming back or treatment no longer working.

- Long-Term Side Effects of Penile Cancer Treatment

Living As a Penile Cancer Survivor

For most people with penile cancer, treatment can remove or destroy the cancer. The end of treatment can be both stressful and exciting. You may be relieved to finish treatment, but it’s hard not to worry about cancer coming back. This is very common if you’ve had cancer.

For some people, the cancer might never go away completely. Some people may get regular treatment with chemotherapy or other treatments to try and help keep the cancer in check. Learning to live with cancer that doesn't go away can be difficult and

very stressful.

Life after cancer means returning to some familiar things and also making some new choices.

Follow-up care

If you've completed treatment, your doctors will still want to watch you closely. It's very important to go to all of your follow-up appointments. During these visits, your doctors will ask about any problems you're having and may do exams, lab tests, and/or imaging tests (like CT scans) to look for signs of cancer or treatment side effects. Almost any cancer treatment can have side effects. Some may last for a few weeks to months, but others can last the rest of your life. This is the time for you to talk to your cancer care team about any changes or problems you notice and discuss any questions or concerns you have.

You'll need to still see your cancer doctor for many years. Doctor visits and exams will be more frequent at first, often every 3 to 6 months for the first 2 years, then every 6 to 12 months for 3 to 5 years. The time between visits will get longer over time. The time between visits and the follow-up tests done depend on the stage of the cancer and the type of treatment you had. Ask what kind of follow-up schedule you can expect.

Ask your doctor for a survivorship care plan

Talk with your doctor about developing a survivorship care plan[1] for you. This plan might include:

- A suggested schedule for follow-up exams and tests
- A schedule for other tests you might need in the future, such as early detection (screening) tests[2] for other types of cancer, or tests to look for long-term health effects from your cancer or its treatment
- A list of possible late- or long-term side effects from your treatment, including what to watch for and when you should contact your doctor
- Diet and physical activity suggestions
- Reminders to keep your appointments with your primary care provider (PCP), who will monitor your general health care

Keeping health insurance and copies of your medical records

Even after treatment, it's very important to keep health insurance. Tests and doctor visits cost a lot, and even though no one wants to think of their cancer coming back, this could happen.

At some point after your cancer treatment, you might find yourself seeing a new doctor who doesn't know about your medical history. It's important to keep copies of your medical records to give your new doctor the details of your diagnosis and treatment. Learn more in Keeping Copies of Important Medical Records[3].

Can I lower my risk of the penile cancer progressing or coming back?

If you have (or have had) penile cancer, you probably want to know if there are things you can do that might lower your risk of the cancer growing or coming back, such as exercising, eating a certain type of diet, or taking nutritional supplements. Unfortunately, it's not yet clear if there are things you can do that will help.

Adopting healthy behaviors such as not smoking[4], eating well[5], getting regular physical activity[6], and staying at a healthy weight[7] might help, but no one knows for sure. Still, we do know that these types of changes can have positive effects on your health that can extend beyond your risk of penile cancer or other cancers.

About dietary supplements

So far, no dietary supplements[8] (including vitamins, minerals, and herbal products) have been shown to clearly help lower the risk of penile cancer progressing or coming back. This doesn't mean that no supplements will help, but it's important to know that none have been proven to do so.

Dietary supplements are not regulated like medicines in the United States – they do not have to be proven effective (or even safe) before being sold, although there are limits on what they're allowed to claim they can do. If you're thinking about taking any type of nutritional supplement, talk to your health care team. They can help you decide which ones you can use safely while avoiding those that might be harmful.

If the cancer comes back

If the cancer does come back (recur) at some point, your treatment options will depend on where the cancer is, what treatments you've had before, your overall health, and your preferences. For more information on how recurrent cancer is treated, see Treatment of Penile Cancer, by Stage[9].

For more general information on recurrence, you may also want to see Understanding Recurrence[10].

Could I get a second cancer after treatment?

People who've had penile cancer can still get other cancers. So far, penile cancer and it's treatment have not been linked to the risk of specific second cancers. (You can learn more general information about this in Second Cancers in Adults[11].)

Still, it's important to see your primary care provider and get recommended check-ups and screening tests, including cancer screening tests. You can find details about cancer screening tests that might be right for you in Cancer Screening Guidelines[12].

Getting emotional support

Some amount of feeling depressed, anxious, or worried[13]is normal when cancer is a part of your life. Some people are affected more than others. But everyone can benefit from help and support from other people, whether friends and family, religious groups, support groups, professional counselors, or others. Learn more in Life After Cancer[14].

Hyperlinks

1. www.cancer.org/treatment/survivorship-during-and-after-treatment/survivorship-care-plans.html
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11. www.cancer.org/treatment/treatments-and-side-effects/physical-side-effects/second-cancers-in-adults.html

12. www.cancer.org/healthy/find-cancer-early/cancer-screening-guidelines.html
13. www.cancer.org/treatment/treatments-and-side-effects/physical-side-effects/changes-in-mood-or-thinking/anxiety-and-fear.html
14. www.cancer.org/treatment/survivorship-during-and-after-treatment/be-healthy-after-treatment/life-after-cancer.html

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See all references for Penile Cancer (www.cancer.org/cancer/penile-cancer/references.html)

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Long-Term Side Effects of Penile Cancer Treatment

Penile cancer and its treatment can sometimes lead to long-term, life-changing side effects. Penile-sparing treatments are used whenever possible to limit these changes, but in some cases they can't be avoided.

Urination

Most men can still control the start and stop of urine flow after surgery. They're still **continent** because the ring of muscle (called the **sphincter muscle**) that controls urine flow is close to the bladder and is not affected by penile surgery. But if the surgery removes part of the penis (partial penectomy) or the entire penis (total penectomy), how a man urinates might change. In some cases, a partial penectomy leaves enough of the penis to allow relatively normal urination. But men who have had a total penectomy often must sit to urinate.

Sexuality

If cancer of the penis is diagnosed early, treatments other than penectomy can often be used. Conservative techniques such as circumcision, local therapy[1] other than surgery (laser ablation, topical chemotherapy), or Mohs surgery[2] may have little effect on sex and sexual pleasure once you have fully recovered.

Some of the changes caused by treatment affect the way a man thinks about sex. Though he may be physically able to have sex, thoughts and feelings may keep it from happening. For example, changes in the way the penis looks can cause decreased interest and problems having sex due to shame or embarrassment, Many men worry that they won't be able to satisfy their partner. And sometimes depression and anxiety can cause them to avoid sex.

Removing all or part of the penis can have a huge effect on a man’s self-image and ability to have sex. You and your sex partner may wish to consider counseling to help understand the impact of penile cancer treatment and to explore other methods of sexual satisfaction.

Satisfying sex is possible for many, but not all men after partial penectomy. The remaining shaft of the penis can still become erect with arousal. It usually gets enough length for penetration. The most sensitive area of the penis (the glans, or “head”) is gone, but a man can still reach orgasm and ejaculate normally. His partner should also still be able to enjoy sex and often reach orgasm.

Intercourse is not possible after total penectomy. Some men give up sex after this surgery. Since cancer of the penis is most common in elderly men, some are already unable to have sex because of other health problems. But if a man is willing to put some effort into his sex life, pleasure is possible after total penectomy. He can learn to reach orgasm when sensitive areas such as the scrotum, skin behind the scrotum, and the area around the surgical scars are caressed. Having a sexual fantasy or looking at erotic pictures or stories can also increase excitement.

A man can help his partner reach orgasm by caressing the genitals, by oral sex, or by stimulation with a sexual aid like a vibrator.

After total penectomy, surgical reconstruction of the penis might be possible in some cases. If you're interested in this, ask your doctor if this might be an option for you.

Removing all or part of the penis can also have a devastating effect on a man’s self-image. Some men might feel stressed or depressed, or might not feel “whole” after the operation. These are valid and understandable feelings, but they can often be helped

with counseling or talking with others. For more information, see Sex and the Man with Cancer[3].

Lymphedema

Thelymph nodes[4] in the groin and the vessels that connect them help fluid drain out of the groin and lower part of the body and back into the bloodstream. If the groin lymph nodes are removed or treated with radiation, it can sometimes lead to problems with fluid drainage in the legs or scrotum, causing abnormal swelling. This condition is called lymphedema. The chances of it developing vary greatly.

This problem was more common in the past because more lymph nodes were removed to check for cancer spread. Today, fewer lymph nodes are usually removed, which lowers the risk of lymphedema. But lymphedema can still happen, even with less treatment. And it can be a life-long risk. For more on this, see our Lymphedema[5] section.

Hyperlinks

1. www.cancer.org/cancer/penile-cancer/treating/topical-therapy.html
2. www.cancer.org/cancer/penile-cancer/treating/surgery.html
3. www.cancer.org/treatment/treatments-and-side-effects/physical-side-effects/fertility-and-sexual-side-effects/sexuality-for-men-with-cancer.html
4. www.cancer.org/cancer/cancer-basics/lymph-nodes-and-cancer.html
5. www.cancer.org/treatment/treatments-and-side-effects/physical-side-effects/lymphedema.html

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See all references for Penile Cancer (www.cancer.org/cancer/penile-cancer/references.html)

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