

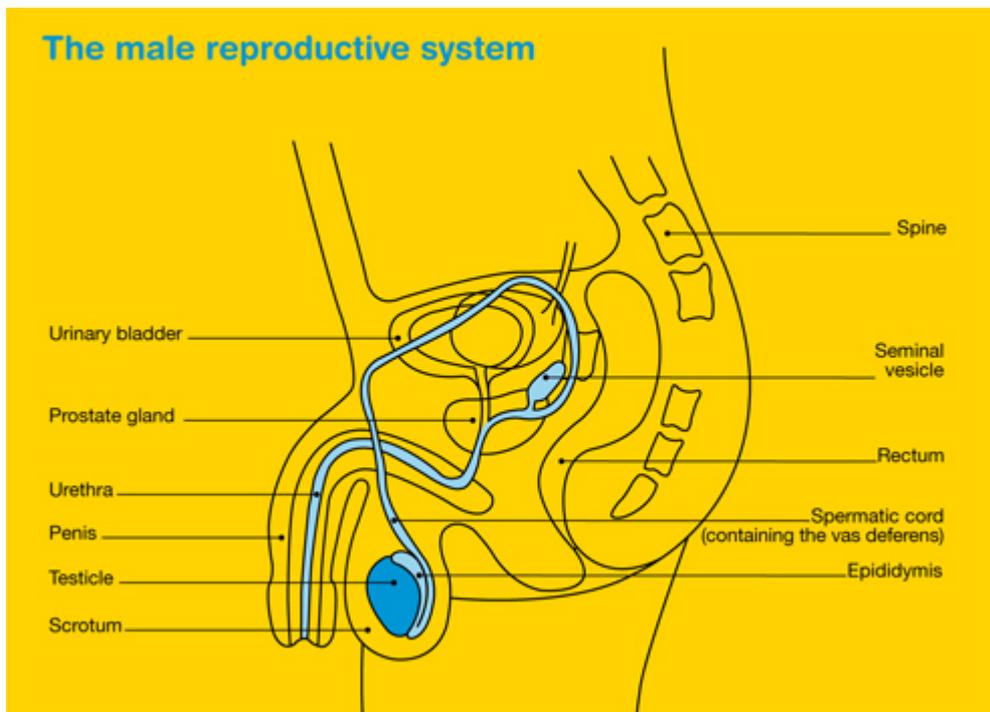
What is testicular cancer?

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The testes

The testicles are part of the male reproductive system. They are also called testes (or a testis, if referring to one).



Testicles are two small, egg-shaped glands that sit behind the penis in a pouch of skin known as the scrotum. Their job is to produce and store sperm. They also produce the male hormone called testosterone which is responsible for the development of male characteristics such as facial hair growth, a deeper voice than women, muscle development, sexual drive (libido) and the ability to have an erection.

A tubular structure called the epididymis is attached to the back of each testis. The epididymis stores immature sperm and is attached to the spermatic cord, which runs from each testicle through the groin region into the pelvis (lower abdominal cavity). The spermatic cord contains blood vessels,

nerves, lymph vessels and a tube called the vas deferens which carries sperm from the epididymis to the prostate gland.

Seminal vesicles, prostate gland and lymph nodes

Two sac-like pouches called seminal vesicles sit above the prostate gland. The seminal vesicles and prostate gland produce fluid which, along with sperm from the testicles, makes up a large part of semen. Semen is ejaculated from the penis during sexual climax.

There are many lymph nodes (glands) and lymphatic vessels around the testicles and in the abdomen. These are part of the lymphatic system and are important for resisting and fighting disease (immunity). The nodes and vessels also drain lymphatic fluid (lymph) from the tissues back into the bloodstream.

What is testicular cancer?

Cancer that develops in a testicle is called testicular cancer or cancer of the testis.

Usually only one testicle is affected but in some cases both testicles are affected. Most testicular cancers start in the cells that develop into sperm which are called germ cells.

Sometimes testicular cancer can spread to lymph nodes in and around the testicles and abdomen, as well as to other parts of the body.

The most common testicular cancers are called germ cell tumours. There are two main types, which look different under a microscope.

Seminoma

- Tends to develop slower than non-seminoma cancers.
- Usually occurs in men aged 25-45, but also occurs in men over 60.

Non-seminoma

- Rarer cancers that tend to develop more quickly than seminoma cancers.
- More common in younger men, usually in their late teens and 20s.
- They are made up of subtypes such as teratoma, yolk sac tumour, choriocarcinoma and embryonal carcinomas.

Sometimes a testicular cancer can include a mix of seminoma cells and non-seminoma cells or a combination of the different subtypes of non-seminoma cells (mixed tumours). When there are seminoma and non-seminoma cells mixed together doctors treat the cancer as if it were a non-seminoma cancer.

A small number of testicular tumours start in cells that make up the supportive (structural) and hormone producing tissue of the testicles. These are called stromal tumours. The two main types are Sertoli cell tumours and Leydig cell tumours. They are usually benign and are removed by surgery.

Intratubular germ cell neoplasia

- Some germ cell cancers begin as a condition known as intratubular germ cell neoplasia (ITGCN) or carcinoma in situ (CIS). This is a non-invasive precursor to testicular cancer because the cells are abnormal, but haven't spread outside of the area where the sperm cells develop.
- There is about a 50% risk that ITGCN will progress into testicular cancer within a five-year period.
- ITGCN is difficult to diagnose because there are no symptoms and it can only be found by biopsy. However about 5–10% of men diagnosed with testicular cancer had ITGCN. ITGCN has similar risk factors to testicular cancer.

Risk factors for testicular cancer

The causes of testicular cancer are unknown, but certain factors may increase a man's risk of developing it:

Personal history – men who have previously had cancer in one testicle are about 25 times more likely to develop cancer in the other testicle. ITGCN is also a risk factor.

Undescended testicles – before birth testicles develop inside a male baby's abdomen. By birth, or within the first year of life, the testicles usually move down into the scrotum.

If the testicles don't descend by themselves, doctors perform an operation to bring them down. Although this reduces the risk of developing testicular cancer men born with undescended testicles are still about 16 times more likely to develop testicular cancer than men born with descended testicles.

Family history – sometimes gene mutations are passed on in families. A man with a father or a brother who has had testicular cancer is slightly more at risk of cancer. However family history is only a factor in a small number (about 2%) of men who are diagnosed with testicular cancer. If you are concerned about your family history of testicular cancer you may ask your doctor for a referral to a family cancer clinic, genetic counsellor and/or a urologist who can provide information on the most suitable screening for you and your family members.

Infertility – having difficulty conceiving a baby (infertility) is associated with ITGCN, undescended testicles and genetic abnormalities. Due to the shared risk factors with testicular cancer, infertility is also considered a risk for testicular cancer.

HIV and AIDS – there is some evidence that men with HIV (human immunodeficiency virus) and AIDS (acquired immune deficiency syndrome) have an increased risk of testicular cancer although the reasons are unknown.

Some congenital defects – some men are born with an abnormality of the penis called hypospadias. This causes the urethra to open on the underside of the penis rather than at the end. Men with this condition are about twice as likely to develop testicular cancer.

There is no known link between testicular cancer and injury to the testicles, sporting strains, hot baths, wearing tight clothes, sexual activity or having a vasectomy.

Symptoms of testicular cancer

In some men testicular cancer does not cause any noticeable symptoms and it may be detected during tests for other conditions.

Other men may notice one or more of the following symptoms:

- swelling or a lump in the testicle both of which are usually painless
- a feeling of heaviness in the scrotum
- a change in the size or shape of the testicle (e.g. hardness or swelling)
- a feeling of unevenness between the testicles
- aches or pain in the lower abdomen, testicle or scrotum
- enlargement or tenderness of the breast tissue (gynaecomastia)
- back pain
- stomach-aches.

These symptoms don't necessarily mean you have testicular cancer. They are common to other conditions, such as cysts, which are harmless lumps. However if you have any of these symptoms you should have them checked by your doctor without delay.

This website page was last reviewed and updated January 2017.

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