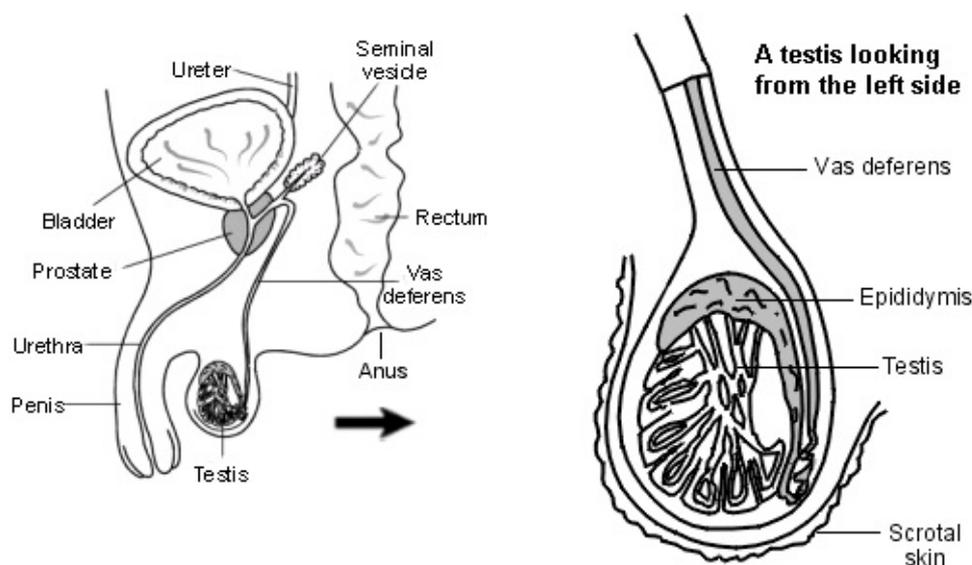


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Testicular Cancer

The common early symptom of testicular cancer is a painless lump that develops in a testicle (testis). Treatment involves surgery to remove the affected testis. Chemotherapy and/or radiotherapy may also be advised depending on the exact type and stage of the cancer when diagnosed. Treatment often works well, even for testicular cancer that has spread. More than 9 in 10 men with testicular cancer can be cured.

What are the testes?



The testes are more commonly known as the testicles. They hang down behind the penis and make sperm. It is normal for one testicle (testis) to be slightly bigger than the other, and for one to hang slightly lower than the other. The testes themselves feel like smooth, soft balls inside the baggy scrotum. At the top and to the back of each testis is the epididymis (this stores the sperm). This feels like a soft swelling attached to the testis, and can be quite tender if you press it firmly.

Leading from the epididymis is the vas deferens. You can feel each vas deferens at each side at the back and top of the scrotum. They feel like soft, narrow tubes which pass up and into the groin. (The vas deferens carries the sperm to the penis.) Some people confuse the normal epididymis or vas deferens with an abnormal lump.

What is cancer?

Cancer is a disease of the cells in the body. The body is made up from millions of tiny cells. There are many different types of cell in the body, and there are many different types of cancer which arise from different types of cell. What all types of cancer have in common is that the cancer cells are abnormal and multiply out of control.

A malignant tumour is a lump or growth of tissue made up from cancer cells which continue to multiply. Malignant tumours invade into nearby tissues and organs, which can cause damage. Malignant tumours may also spread to other parts of the body. This happens if some cells break off from the first (primary) tumour and are carried in the bloodstream or lymph channels to other parts of the body. These small groups of cells may then multiply to form secondary tumours (metastases) in one or more parts of the body. These secondary tumours may then grow, invade and damage nearby tissues, and spread again.

Some cancers are more serious than others. Some are more easily treated than others (particularly if diagnosed at an early stage). Some have a better outlook (prognosis) than others. So, cancer is not just one condition. In each case it is important to know what type of cancer has developed, how large it has become, and whether it has spread. This will enable you to obtain reliable information on treatment options and outlook. (See separate leaflet called [What is Cancer?](#) for details about cancer in general.)

What is testicular cancer?

Testicular cancer is a cancer that arises from a testicle (testis). Around half of all cases occur in men aged under 35 but testicular cancer rarely occurs before puberty. It is the most common cancer in men aged 15-44 years. There are about 2,000 new cases in the UK each year.

Almost all testicular cancers are classed as germ cell cancers, as the cells which become cancerous (malignant) are those involved with making sperm. Germ cell testicular cancers are divided into two main types (depending on the exact type of cell causing the cancer):

- Seminomas, which occur in about half of cases. They most commonly occur in men aged between 25 and 55 years.
- Non-seminomas - sometimes called non-seminomatous germ cell tumours (NSGCTs). Non-seminomas usually affect men aged between 15 and 35 years.

Non-germ cell testicular cancers are rare. The rest of this leaflet deals only with germ cell testicular cancers.

What causes testicular cancer?

A cancerous (malignant) tumour starts from one abnormal cell. The exact reason why a cell becomes cancerous is unclear. It is thought that something damages or alters certain genes in the cell. This makes the cell abnormal and multiply out of control. (See separate leaflet called [What Causes Cancer?](#) for more detail.)

In many cases, testicular cancer develops for no apparent reason. However, certain risk factors increase the chance that testicular cancer may develop. These include:

- Geography. The highest rate of testicular cancer occurs in white men in northern Europe. So, some genetic or environmental factor may be involved. 'Genetic' means that the condition is passed on through families through special codes inside cells called genes.
- Family history. Brothers and sons of affected men have an increased risk.
- [Undescended testicles \(testes\)](#). The testes develop in the tummy (abdomen) and usually move down (descend) into the scrotum before birth. Some babies are born with one or both testes which have not come down into the scrotum. This can be fixed by a small operation. There is a large increased risk in men who have not had their undescended testis surgically fixed. There is still some increased risk in men who had an undescended testis fixed when they were a baby.
- Infertility. [Infertile men with an abnormal sperm count](#) have a slight increased risk.
- [Klinefelter's syndrome](#).
- [HIV/AIDS](#). [Men who have HIV or AIDS have an increased risk](#).

[Vasectomy does not increase the risk of testicular cancer](#). (Several years ago there was a scare linking vasectomy with testicular cancer. Studies have ruled out this link.)

What are the testicular cancer symptoms?

Lump on a testicle (testis)

In most cases, the first symptom noticed is a lump that develops on one testis. The lump is often painless but some people notice some pain or discomfort coming from the affected testis. (**Note:** most swellings and lumps in the scrotum are **not** due to cancer. There are various other causes. However, you should always tell a doctor if you discover a swelling or lump in one of your testicles (testes). It needs checking out as soon as possible.)

Other testicular cancer symptoms

Sometimes there is general swelling in one of the testes. If the cancer is not treated and spreads to other parts of the body then various other symptoms can develop. These may include back pain or shortness of breath.

How is testicular cancer diagnosed and assessed?

To confirm the diagnosis

Your doctor will examine your testicles (testes) and refer you to a specialist if he or she suspects that the lump is a tumour. A specialist will examine you again and may advise:

- An ultrasound scan. This is a simple painless test which uses sound waves to scan the testes. (See separate leaflet called [Ultrasound Scan](#) for more detail.) This test can tell if the lump is:
 - A solid mass (likely to be a tumour).
 - A non-cancerous (benign) cyst (a fluid-filled lump which is common in the testes).
- Blood tests. Testicular cancers often make chemicals which can be detected in a blood sample. The presence of one or more of these chemicals can help to confirm a testicular cancer. However, raised levels do not necessarily mean you have testicular cancer. Also, you can still have a testicular cancer without being able to detect marker chemicals in the blood. So, a negative result does not rule out cancer.

On the basis of the examination, and the above tests, a specialist can be confident whether you have cancer or some other cause for the swelling. If cancer is diagnosed then the usual advice is to have an operation to remove the affected testicle (testis). The testis which is removed is examined under the microscope to confirm cancer.

Note: if you have one testis removed, it should not affect your sex life. You should still have normal erections, make sperm and hormones from the other testis and so can still father children. However, if you have chemotherapy or radiotherapy (see below) it may affect your fertility. But, many men find that their fertility returns to normal a year after they have received their chemotherapy or radiotherapy treatment.

Assessing the extent and spread

If you are confirmed to have testicular cancer then further tests are usually advised to assess if the cancer has spread. This assessment is called staging of the cancer and aims to find out:

- Whether the cancer has spread to nearby lymph nodes and lymph nodes in the tummy (abdomen).
- Whether the cancer has spread to other areas of the body (metastasised).

By finding out the stage of the cancer it helps doctors to advise on the best treatment options. It also gives a reasonable indication of outlook (prognosis). (See separate leaflet called [Staging and Grading Cancer](#) for more detail.)

Tests which may be advised to stage the cancer include a [CT scan](#), an [MRI scan](#), [chest X-ray](#) or other tests. (See separate leaflets which describe each of these tests in more detail.)

Another useful test is the marker blood test described above. If you had a positive test before an operation to remove the cancerous testis, the test may be repeated after the operation. If the test becomes negative, it means that the cancer was probably confined to the testis. If it remains positive, it means that some cancer cells have spread to somewhere else in your body. The tumour markers commonly tested for are alpha-fetoprotein (AFP), beta human chorionic gonadotrophin (beta-hCG), lactic dehydrogenase (LDH) and placental alkaline phosphatase (PALP).

What is the treatment for testicular cancer?

Treatment options which may be considered include surgery, chemotherapy and radiotherapy. The treatment advised for each case depends on various factors such as the stage of the cancer, the type of cancer (seminoma or non-seminoma), and your general health.

Surgery

Surgery to remove the affected testicle (testis) is normally advised in all cases. This alone may be curative if the cancer is in an early stage and has not spread. If the cancer has spread then further surgery may also be needed for some men after radiotherapy or chemotherapy, to remove any cancer cells present in the lymph nodes of the tummy (abdomen) or chest.

Chemotherapy

Chemotherapy is a treatment of cancer by using anti-cancer medicines which kill cancer cells, or stop them from multiplying. Your doctor will advise if you should have chemotherapy in addition to having the affected testis removed. Whether you need chemotherapy and the length and type of treatment schedule depends on the type and stage of the cancer when diagnosed.

Radiotherapy

Radiotherapy is a treatment which uses high-energy beams of radiation which are focused on cancerous tissue. This kills cancer cells, or stops cancer cells from multiplying. Again, your doctor will advise if radiotherapy is needed in addition to having the affected testis removed.

When chemotherapy or radiotherapy are used in addition to surgery it is known as adjuvant chemotherapy or adjuvant radiotherapy.

Follow-up after treatment

You will normally be followed up for several years following successful treatment to check that the cancer has not come back. This may include regular blood tests which check for marker chemicals (see above). You may also have regular chest X-rays or other scans or tests to check that you are free of any return of the cancer (recurrence).

Studies have shown that people who are successfully treated for testicular cancer have an increased risk of cardiovascular diseases. Therefore, not smoking and other ways to prevent cardiovascular diseases are particularly important. See separate leaflet called [Preventing Cardiovascular Diseases](#).

What is the outlook (prognosis)?

The outlook is usually very good. Treatment for testicular cancer is usually successful. During the period of 40 years, testicular cancer has become a curable cancer in over 95% of cases.

- If your testicular cancer is diagnosed and treated at an early stage, you can expect to be cured. Most testicular cancers are diagnosed at an early stage.
- Even if the cancer has spread to other parts of the body, there is still a good chance of a cure. For testicular cancer that has spread to other parts of the body, the chance of being cured is much higher than for many other types of cancers which have spread. This is because the cancerous (malignant) cells of testicular cancer often respond well to chemotherapy.

The treatment of cancer is a developing area of medicine. New treatments continue to be developed and the information on outlook above is very general. You should ask the specialist who knows your case about your particular outlook.

Detecting testicular cancer early

Young men and teenage boys should get to know how their testicles (testes) normally feel. Report any changes or lumps to your doctor. (See separate leaflet called [Get To Know Your Testicles \(Testes\)](#) for more detail on how to check for testicular cancer.)

Further help & information

Orchid

St Bartholomew's Hospital, Dominion House, London, EC1A 7BE

Tel: 0203 465 5766

Web: www.orchid-cancer.org.uk

Everyman

Web: www.everymancancer.org

Cancer Research UK

Angel Building, 407 St John Street, London, EC1V 4AD

Tel: (Nurse team) 0808 800 4040, (Switchboard) 020 7242 0200

Web: www.cancerresearchuk.org

Macmillan Cancer Support

89 Albert Embankment, London, SE1 7UQ

Tel: (Support Line) 0808 808 00 00

Web: www.macmillan.org.uk

Further reading & references

- [Management of adult testicular germ cell tumours](#); Scottish Intercollegiate Guidelines Network - SIGN (March 2011)
- [Guidelines on Testicular Cancer](#); European Association of Urology (2011)
- [Horwich A, Nicol D, Huddart R; Testicular germ cell tumours. BMJ. 2013 Sep 24;347:f5526. doi: 10.1136/bmj.f5526.](#)

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