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## 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.

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.

### Symptoms

#### Lump on a testicle (testis)

In most cases, the first symptom noticed is a lump that develops on one testicle. The lump is often painless but some people notice some pain or discomfort coming from the affected testis.

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.

*"The best time to feel your testes is after a bath or shower when you are relaxed. Hold each testicle (testis) in turn in the palm of a hand and use your finger and thumb gently to feel the testes and nearby structures."*

Source: Dr Laurence Knott (<https://patient.info/health/scrotal-lumps-pain-and-swelling/features/getting-to-know-your-testicles>)

#### Other testicular cancer symptoms

Sometimes there is general swelling in one of the testicles. 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.

### Causes

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

- **Race and ethnicity.** The risk of testicular cancer among white men is about 4 to 5 times that of African and Asian men.
- **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.)

## 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 testicles. This test can tell if the lump is a solid mass (likely to be a tumour), or a non-cancerous (benign) cyst (a fluid-filled lump which is common in the testicles).

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. The testicle which is removed is examined under the microscope to confirm cancer.

If you have one testicle removed, it should not affect your sex life. You should still have normal erections, make sperm and hormones from the other testicle 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 the separate leaflet called [Stages of Cancer](#) for more detail.)

Tests which may be advised to stage the cancer include a [computerised tomography \(CT\) scan](#), a [magnetic resonance imaging \(MRI\) 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 testicle, the test may be repeated after the operation. If the test becomes negative, it means that the cancer was probably confined to the testicle. 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).

## Treatment

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.

### 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 (recurrence) of the cancer.

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 the separate leaflet called [Cardiovascular Disease \(Atheroma\)](#).

## What is the outlook?

The outlook (prognosis) 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 [Getting To Know Your Testicles](#) for more detail on how to check for testicular cancer.)

## 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 (2016)
- [PDQ Cancer Information Summaries: National Cancer Institute \(US\)](#); Testicular Cancer Treatment (PDQ(R)): Patient Version.
- Gilbert K, Nangia AK, Dupree JM, et al; Fertility preservation for men with testicular cancer: Is sperm cryopreservation cost effective in the era of assisted reproductive technology? Urol Oncol. 2017 Nov 20. pii: S1078-1439(17)30585-9. doi: 10.1016/j.urolonc.2017.11.002.

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Document ID: 4814 (v44)	Last Checked: 09/03/2018	Next Review: 08/03/2021

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