



Understanding Testicular Cancer

A guide for men with cancer,
their families and friends

Cancer
information

For information & support, call

13 11 20



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Understanding Testicular Cancer is reviewed approximately every two years. Check the publication date above to ensure this copy is up to date.

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Note to reader

Always consult your doctor about matters that affect your health. This booklet is intended as a general introduction to the topic and should not be seen as a substitute for medical, legal or financial advice. You should obtain independent advice relevant to your specific situation from appropriate professionals, and you may wish to discuss issues raised in this book with them.

All care is taken to ensure that the information in this booklet is accurate at the time of publication. Please note that information on cancer, including the diagnosis, treatment and prevention of cancer, is constantly being updated and revised by medical professionals and the research community. Cancer Council Australia and its members exclude all liability for any injury, loss or damage incurred by use of or reliance on the information provided in this booklet.

Cancer Council

Cancer Council is Australia's peak non-government cancer control organisation. Through the eight state and territory Cancer Councils, we provide a broad range of programs and services to help improve the quality of life of people living with cancer, their families and friends.

Cancer Councils also invest heavily in research and prevention. To make a donation and help us beat cancer, visit cancer.org.au or call your local Cancer Council.



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Introduction

This booklet has been prepared to help you understand more about testicular cancer.

Many men feel shocked and upset when told they have testicular cancer. We hope this booklet will help you, your family and friends understand how testicular cancer is diagnosed and treated. We also include information about support services.

We cannot give advice about the best treatment for you. You need to discuss this with your doctors. However, we hope this information will answer some of your questions and help you think about other questions to ask your treatment team.

This booklet does not need to be read from cover to cover – just read the parts that are useful to you. Some medical terms that may be unfamiliar are explained in the glossary. You may also like to pass this booklet to your family and friends for their information.

How this booklet was developed

This information was developed with help from a range of health professionals and men affected by testicular cancer. It is based on international clinical practice guidelines for testicular cancer.¹

If you or your family have any questions, call Cancer Council **13 11 20**. We can send you more information and connect you with support services in your area. Turn to the last page of this book for more details.



**Cancer
Council
13 11 20**

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What is cancer?

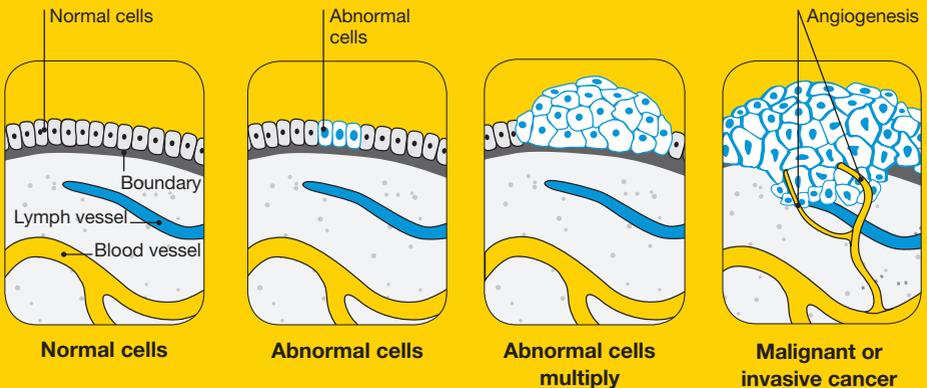
Cancer is a disease of the cells, which are the body's basic building blocks. The body constantly makes new cells to help us grow, replace worn-out tissue and heal injuries. Normally, cells multiply and die in an orderly way.

Sometimes cells don't grow, divide and die in the usual way. This may cause blood or lymph fluid in the body to become abnormal, or form a lump called a tumour. A tumour can be benign or malignant.

Benign tumour – Cells are confined to one area and are not able to spread to other parts of the body. This is not cancer.

Malignant tumour – This is made up of cancerous cells, which have the ability to spread by travelling through the bloodstream or lymphatic system (lymph fluid).

How cancer starts



The cancer that first develops in a tissue or organ is called the primary cancer. A malignant tumour is usually named after the organ or type of cell affected.

A malignant tumour that has not spread to other parts of the body is called localised cancer. A tumour may invade deeper into surrounding tissue and can grow its own blood vessels in a process called angiogenesis.

If cancerous cells grow and form another tumour at a new site, it is called a secondary cancer or metastasis. A metastasis keeps the name of the original cancer. For example, testicular cancer that has spread to the lungs is called metastatic testicular cancer, even though the person may be experiencing symptoms caused by problems in the lungs.

How cancer spreads

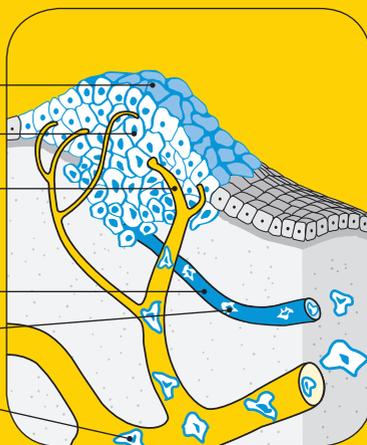
Primary cancer

Local invasion

Angiogenesis –
tumours grow their
own blood vessels

Lymph vessel

Metastasis –
cells invade other
parts of the body via
blood vessels and
lymph vessels





The testicles

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

The two small, egg-shaped glands sit behind the penis in a pouch of skin called the scrotum. They produce and store sperm. They also produce the male hormone 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.

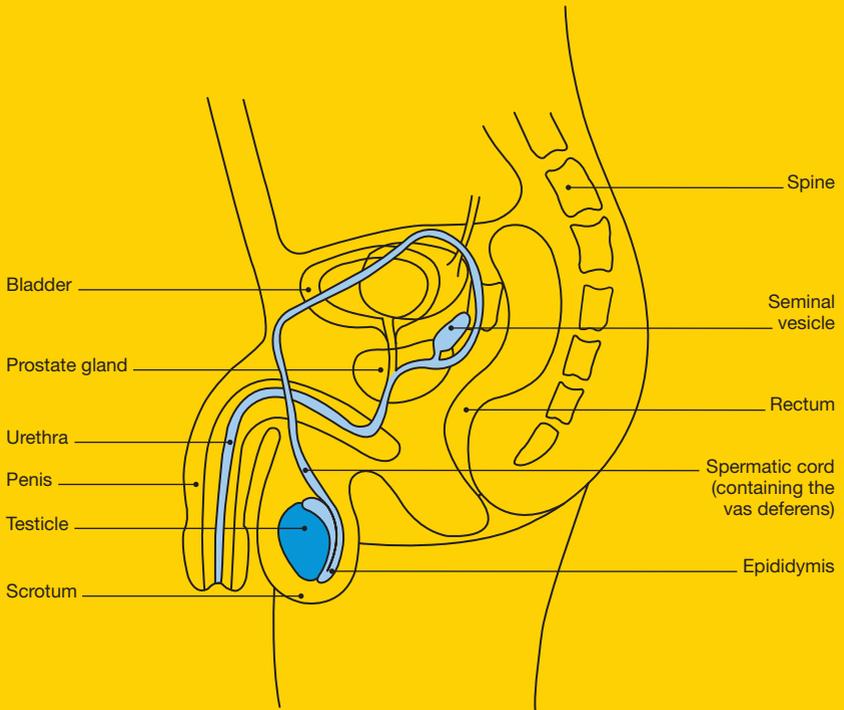
A tubular structure called the epididymis is attached to the back of each testis. The epididymis stores immature sperm and is attached to the spermatic cord, which runs from each testicle through the groin region into the pelvis (lower abdominal cavity). The spermatic cord contains blood vessels, nerves,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

The male reproductive system





Key questions

Q: What is testicular cancer?

A: 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 are affected. Most testicular cancers start in the cells that develop into sperm – these are called germ cells.

Sometimes testicular cancer can spread to lymph nodes in the abdomen, or to other parts of the body.

Q: What types are there?

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

Germ cell tumours

seminoma

- tends to develop more slowly 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 in their late teens and 20s
- made up of subtypes such as teratomas, yolk sac tumours, choriocarcinomas 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.

Other types of cancer, such as lymphoma, can also involve the testicles. For information, call Cancer Council 13 11 20 or visit your local Cancer Council website.

Intratubular germ cell neoplasia

Some germ cell cancers begin as a condition called intratubular germ cell neoplasia (ITGCN or IGCN). This is a non-invasive precursor to testicular cancer because the cells are abnormal, but they haven't spread outside the area where the sperm cells develop.

There is about a 50% risk that ITGCN will progress into

testicular cancer within five years. ITGCN has similar risk factors to testicular cancer.

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 have ITGCN.

Treatment includes watchful waiting and chemotherapy.

Q: What are the risk factors?

A: 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 (see box on page 9).

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 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 can ask your doctor for a referral to a family cancer clinic, genetic counsellor and/or a urologist, who can provide information about the most suitable screening for you and your family members.

Infertility – Having difficulty conceiving a baby (infertility) is associated with ITGCN (see page 9), undescended testicles and genetic abnormalities. Due to the shared risk factors with testicular cancer, infertility is also considered a risk factor 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.



Q: How common is it?

A: Testicular cancer is not a common cancer, but it is the most commonly diagnosed cancer after skin cancer in men aged 18–39. About 800 men are diagnosed with testicular cancer in Australia each year, accounting for about 1% of all cancers in men. It occurs most often in men aged 25–40.²

Q: What are the symptoms?

A: 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, which are both 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.

“ I'd been feeling unwell and strangely fatigued and, after some tests, the doctor diagnosed me with testicular cancer. ” *Matt*



Diagnosis

You will usually begin by seeing your general practitioner (GP), who will examine your testicles and scrotum for a lump or swelling. You may find the consultation embarrassing, particularly if you have never had a doctor perform this type of examination before, but doctors are used to it and it only takes a few minutes.

If the GP feels a lump, you will have an ultrasound and a blood test (see below). If the results show any sign of testicular cancer, you will be referred to a urologist, who specialises in the urinary and male reproductive systems. If further tests show there is a tumour, you may need to have your testicle removed (see page 15).

Ultrasound

An ultrasound is a painless scan that uses soundwaves to create a picture of your body. It is a very accurate way to diagnose testicular cancer. It is used to show if cancer is present and how large it is. A gel is spread over your scrotum and a small device called a transducer is pressed into the area. This sends out soundwaves that echo when they meet something dense, like an organ or a tumour. A computer creates a picture from these echoes. The scan is painless and takes about 15–20 minutes.

Blood tests

Blood tests will be taken to check your general health and how well your organs (such as your kidneys) are working. The results of these tests will also help you and your doctors make decisions about your treatment.

Tumour markers

Some types of testicular cancer produce chemicals – also known as hormones or proteins – that are released into the blood. These chemicals can be used as tumour markers, which show that cancer may be present.

If your blood test results show an increase in the levels of tumour markers, you may have testicular cancer. Raised levels are more common in mixed tumours and non-seminoma cancers. However, it is possible to have raised tumour markers due to other factors, such as liver disease or blood disease. Some men with testicular cancer don't have raised tumour marker levels in their blood. Doctors use the results of your tumour marker levels to plan treatment.

The three most common tumour markers are:

- **alpha-fetoprotein (AFP)** – raised in non-seminoma cancers
- **beta human chorionic gonadotropin (beta-hCG)** – raised in some seminoma and non-seminoma cancers
- **lactate dehydrogenase (LDH)** – raised in non-seminoma and seminoma cancers, and used to help determine the extent of the cancer.

If the diagnosis of testicular cancer is confirmed after surgery, you will have regular blood tests to monitor tumour marker levels throughout treatment and as part of follow-up appointments.

Tumour marker levels will decrease if your treatment is successful, but they will increase if the cancer is active. If this happens, you may need more treatment.

Surgery to remove the testicle (orchidectomy)

None of the tests described on pages 13–14 can definitively diagnose testicular cancer. The only way this can be done is by surgically removing and examining the affected testicle. An orchidectomy is also the main treatment for testicular cancer when it has not spread.

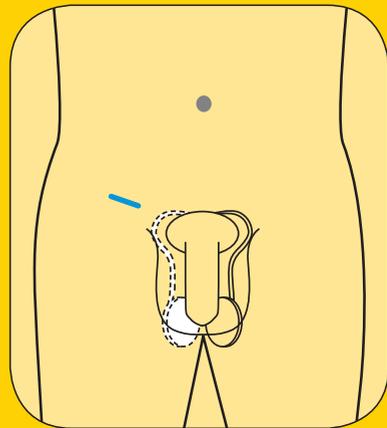
For other types of cancer, a doctor can usually make a diagnosis by removing and examining some tissue from the tumour. This is called a biopsy. However, doctors don't usually biopsy the testicle because there is a small risk that making a cut through the scrotum can cause cancer cells to spread.

What happens during an orchidectomy

You will be given a general anaesthetic before the orchidectomy.

The surgeon will make a cut (incision) in the groin above the pubic bone. This is shown on the picture opposite with a blue line.

The testicle is then pulled up and out of the scrotum through the cut. In the picture the area removed is shown by a dotted line.



If the urologist strongly suspects testicular cancer after doing a physical examination and other tests, they will usually remove the whole testicle and spermatic cord through a cut in the lower abdomen (see illustration on page 15). This is called an orchidectomy. The spermatic cord is also removed because it contains blood and lymph vessels that may act as a pathway for the cancer to spread to other areas of the body.

The operation usually takes about an hour. You will have a few stitches to close the incision. These will usually dissolve after several weeks. See the box opposite for what to expect after surgery.

Tissue that is removed during the orchidectomy is sent to a specialist called a pathologist, who examines the cells under a microscope and provides information about the cancer, such as the type, and whether and how far it has spread (the stage – see page 21).

Most men have only one testicle removed. It is rare for both testicles to be affected by cancer at the same time.

If the cancer has not spread, an orchidectomy may be the only treatment you need. However, after the operation, you will need to have regular check-ups to ensure there is no recurrence of the disease. This is called surveillance – see page 28.

Occasionally men with testicular cancer need further surgery. This may be to remove the lymph nodes at the back of the abdomen (retroperitoneal lymph node dissection). See page 36 for more information.

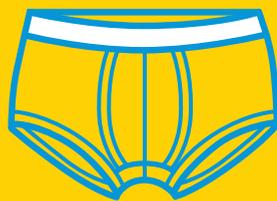
Recovery after surgery

After the orchidectomy, you may stay in hospital overnight; however, many men are able to return home the same day.



Support

You will need someone to take you home and stay with you for the first 24 hours after going home.



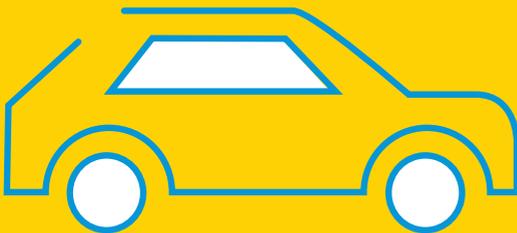
Lifting

You'll probably be advised to avoid strenuous activities, such as heavy lifting, for six weeks. Your doctor will discuss these precautions with you.



Underwear

Your surgeon will probably recommend that you wear underwear that provides cupping support of the scrotum or athletic-type underwear to increase your comfort and provide protection while you recover. This can also reduce swelling.



Returning to work and driving

You should be able to go back to work when you feel ready and drive after 2–4 weeks.

You can purchase scrotal support underwear at most pharmacies. It is similar to regular underwear and is not noticeable under clothing. You could also wear your usual underwear with padding placed under the scrotum.

Side effects of surgery

You may experience some of the following side effects after surgery.

Pain – Your doctor can prescribe you medication to control any pain you have after the operation. Let the doctor or nurses know if the pain worsens – don't wait until it is severe before asking for more pain relief.

Bruising – You may have some bruising around the wound and scrotum. Blood may collect inside the scrotum (intrasrotal haematoma). If this occurs, the swelling may make it feel like the testicle hasn't been removed. Scrotal support underwear helps reduce the risk of intrascrotal haematoma. Both the bruising and the haematoma will disappear over time.

Fertility effects – Losing one testicle shouldn't affect your ability to have children (fertility), as long as the remaining testicle is healthy. Your fertility may be affected if you have chemotherapy after surgery – see pages 40–41.

Emotional effects – Losing a testicle may cause some men to feel embarrassed or depressed, or suffer from low self-esteem. It may help to talk about how you are feeling with someone you trust, such as a partner or counsellor. See pages 47–48 for information about support services.

Body image concerns – Some men choose to replace the removed testicle with an artificial one (prosthesis). See opposite for more information.

Having a prosthesis

You may be given the option of replacing the removed testicle with an artificial one. This is called a prosthesis, and it is a silicone implant intended to have the weight and feel of a normal testicle.

Whether or not you have a prosthesis is a personal decision.

If you choose to have a prosthesis, you can have the operation at the same time as the orchidectomy or later. Your urologist can give you more detailed information about your options and what the procedure involves.

CT scan

If the removal of your testicle and other tests show that you have cancer, you may have a computerised tomography (CT) scan to see whether the cancer has spread to other parts of the body, such as lymph nodes or other organs. Usually your chest, abdomen and pelvis will be scanned. Sometimes this is done before the orchidectomy.

A CT scan is a type of x-ray that takes detailed, three-dimensional pictures of the inside of the body. To make the scan pictures clearer and easier to read, you may have to fast (not eat or drink) for a period of time before your appointment.

Before the scan, you may be given an injection of a dye into a vein in your arm to make the pictures clearer. The injection can make you feel hot all over for a few minutes. You may be asked to drink a liquid instead of having an injection.

You will lie flat on a table while the CT scanner, which is large and round like a doughnut, takes pictures. This painless test takes about 15 minutes.

Chest x-ray

In some cases, you may have a chest x-ray to check if the cancer has spread to the lungs or the lymph nodes in the chest.

Further tests

You may have some other tests, such as MRI or PET scans, if the doctor is not sure of the full extent of the cancer, or if your tumour markers are elevated. These scans may also be used during or after treatment.

MRI scan – An MRI (magnetic resonance imaging) scan uses a powerful magnet and radio waves to create detailed pictures of areas inside the body. Sometimes, dye will be injected into a vein before the scan to help make the pictures clearer.

You will lie on a table that slides into a metal cylinder that is open at both ends. The machine makes a series of bangs and clicks and can be quite noisy. The scan is painless, but some people feel anxious lying in the narrow cylinder. Tell your doctor or nurse beforehand if you are prone to anxiety or claustrophobia. They can suggest breathing exercises or give you medicine to help you relax. The scan takes about 30 minutes, and most people are able to go home as soon as it is over.

PET scan – Before a PET (positron emission tomography) scan, you will be injected with a small amount of a glucose (sugar) solution containing some radioactive material. You will be asked to rest for 30–60 minutes while the solution spreads throughout your body.

You will then be scanned for high levels of radioactive glucose. Cancer cells show up brighter on the scan because they absorb more of the glucose solution than normal cells do.

It may take a few hours to prepare for a PET scan, but the scan itself usually takes about 15 minutes. The radioactive material in the glucose solution is not harmful and will leave your body within a few hours.

Staging

The removal of the testicle and the results of the other tests will help to determine whether the cancer has spread (the stage). There are several staging systems for testicular cancer. A simplified description is provided in the table below.

Staging testicular cancer	
Stage I	Cancer is found only in the testicle.
Stage II or higher	Cancer has spread outside the testicle to the lymph nodes in the abdomen or pelvis, or to other areas of the body.

Prognosis

Prognosis means the expected outcome of a disease. You may wish to discuss your prognosis with your doctor, but it is not possible for anyone to predict the exact course of the disease. Instead, your doctor can give you an idea about common issues that affect men with testicular cancer.

Test results, the type of testicular cancer you have, the stage of the cancer and other factors such as your age, fitness and medical history are all important in assessing your prognosis.

Testicular cancer is the most curable solid organ tumour. Regular follow-up and review is a major factor in the high cure rates of testicular cancer, so it's important that you attend all your follow-up appointments – see page 46.

🗨️ My doctor said to me, 'If you're going to get a cancer, this is the one to get. The cure rate is high, side effects are minimal and life afterwards is pretty normal.' 🗨️ *Mark*

Which health professionals will I see?

After seeing your GP and getting a diagnosis from the urologist, you may be cared for by a range of health professionals who are responsible for different aspects of your treatment.

The health professionals you see will depend on the treatment you have. The multidisciplinary team (MDT) may include some or all of the people listed on the next page.

Health professional	Role
urologist*	specialises in treating diseases of the urinary system and the male reproductive system; performs surgery
medical oncologist*	prescribes and coordinates chemotherapy
radiation oncologist*	prescribes and coordinates radiotherapy
nurses	administer drugs and provide care, information and support throughout your treatment
cancer care coordinator or clinical nurse consultant	coordinates your care, liaises with other members of the MDT and supports your family throughout treatment
anaesthetist*	administers anaesthetic before surgery and monitors you during the operation
dietitian	recommends an eating plan for you to follow while you are in treatment and recovery
social worker	links you to support services and helps you with any emotional or practical issues
psychologist, counsellor	provide emotional support and help manage any feelings of anxiety and depression
physiotherapist, occupational therapist	assist with physical and practical problems

**Specialist doctor*



Key points

- Your doctor will do an external examination to feel your testicles and scrotum for lumps and swelling.
- An ultrasound will create a picture of your scrotum and testicles. This is a quick and painless scan.
- Blood tests will be done to monitor chemicals released into your blood (tumour markers). An increase in tumour markers may indicate that cancer is present. Some men who have testicular cancer do not have raised tumour marker levels.
- The only way to definitively diagnose testicular cancer is to remove the testicle. This operation is called an orchidectomy. For some men, no further treatment is needed.
- After an orchidectomy, you will have side effects, such as pain and bruising. These will ease over time. Wearing scrotal-supportive underwear will help.
- If the removal of the testicle shows you have cancer, you will probably have more tests to see whether the cancer has spread. You may have a CT scan, a chest x-ray and other scans.
- The doctor will tell you the stage of the cancer, which describes whether and how far it has spread.
- You will see a range of health professionals, such as a urologist and nurses. They will work together as a multidisciplinary team (MDT) to diagnose and treat you.



Making treatment decisions

Sometimes it is difficult to decide on the type of treatment to have. You may feel that everything is happening too fast. Check with your doctor how soon your treatment should start, and take as much time as you can before making a decision.

Understanding the disease, the available treatments and possible side effects can help you weigh up the pros and cons of different treatments and make a well-informed decision that's based on your personal values. You may also want to discuss the options with your doctor, friends and family.

You have the right to accept or refuse any treatment offered. Some people with more advanced cancer choose treatment even if it offers only a small benefit for a short period of time. Others want to make sure the benefits outweigh the side effects so that they have the best possible quality of life.

Talking with doctors

When your doctor first tells you that you have cancer, you may not remember the details about what you are told. Taking notes or recording the discussion may help. Many people like to have a family member or friend go with them to take part in the discussion, take notes or simply listen.

If you are confused or want clarification, you can ask for further explanation – see page 51 for a list of suggested questions. If you have several questions, you may want to talk to a nurse or ask the office manager if it is possible to book a longer appointment.

A second opinion

You may want to get a second opinion from another specialist to confirm or clarify your doctor's recommendations or reassure you that you have explored all of your options. Specialists are used to people doing this.

Your doctor can refer you to another specialist and send your initial results to that person. You can get a second opinion even if you have started treatment or still want to be treated by your first doctor. You might decide you would prefer to be treated by the doctor who provided the second opinion.

Taking part in a clinical trial

Your doctor or nurse may suggest you take part in a clinical trial. Doctors run clinical trials to test new or modified treatments and ways of diagnosing disease to see if they are better than current methods. For example, if you join a randomised trial for a new treatment, you will be chosen at random to receive either the best existing treatment or the modified new treatment.

Over the years, trials have improved treatments and led to better outcomes for people diagnosed with cancer.

It may be helpful to talk to your specialist or clinical trials nurse, or to get a second opinion. If you decide to take part, you can withdraw at any time. For more information, call Cancer Council 13 11 20 for a free copy of *Understanding Clinical Trials and Research* or visit australiancancertrials.gov.au.

Treatment

Your medical team will advise you on the best treatment for you. They will consider:

- your general health
- the type of testicular cancer you have
- the size of the tumour
- the number and size of any lymph nodes involved
- whether the cancer has spread to other parts of your body. If testicular cancer does spread, it most commonly spreads to the lymph nodes in the pelvic and lower abdominal regions.

In almost all cases, an orchidectomy is done to remove the affected testicle (see pages 15–16). Additional treatments for testicular cancer may include chemotherapy, radiotherapy or a combination of treatments to kill any remaining cancer cells or prevent the cancer from coming back.

Further surgery may be required if the cancer does not respond to chemotherapy (see *Retroperitoneal lymph node dissection* – pages 36–37).

Sperm banking

Chemotherapy, radiotherapy and RPLND can cause temporary or permanent infertility. If you would like to have children in the future, ask your doctor for a referral to a fertility specialist before treatment starts, as you may be able to store sperm for later use. For more information about sperm banking, call Cancer Council **13 11 20** and ask for a copy of *Fertility and Cancer*, or download a digital version from your local Cancer Council website.

Surveillance

If you had an orchidectomy and the cancer was completely removed along with your testicle, you may not need further treatment. Instead, your doctor will monitor you with regular blood tests (checking tumour markers), chest x-rays and CT scans for at least five years. This is called surveillance.

Surveillance can detect if there is any cancer remaining (residual cancer). It can also help determine if the cancer has come back (recurrence) – see page 46.

The number of check-ups and scans will depend on the type of testicular cancer you have – seminoma and non-seminoma cancers have different patterns of recurrence, so surveillance will be tailored to your circumstances.



It's important to follow the surveillance schedule outlined by your doctor. While it may be tempting to skip appointments if you are feeling better or if you were diagnosed with stage I cancer, surveillance is more likely to find the cancer early if it comes back.

Chemotherapy

Chemotherapy is the treatment of cancer with anti-cancer (cytotoxic) drugs. It aims to kill cancer cells or slow their growth while causing the least possible damage to healthy cells. If the cancer is contained in the testicle, it can usually be treated with surgery alone and chemotherapy is not needed.

This treatment may be given:

- if the cancer has spread outside your testicle
- after surgery or, less commonly, with radiotherapy (adjuvant treatment) if there is a moderate risk of the cancer spreading or returning
- as the primary treatment if the cancer has spread to other parts of your body.

There are many types of chemotherapy drugs. Some men are given a drug called carboplatin, which is often used for early-stage seminoma cancer after surgery. Other drugs commonly used in testicular cancer are bleomycin, etoposide and cisplatin. When these three drugs are used together, it is called BEP chemotherapy.

Chemotherapy is administered into a vein (intravenously) through a drip. Bleomycin may also be given by injection into a muscle (intramuscularly). In either case, chemotherapy is given in cycles, which means you will receive the drugs for a period of time and then have a rest period of a few weeks before starting a new cycle.

Treatment schedules vary – your doctor will give you more information. You will probably have to visit the hospital as an outpatient each time you have chemotherapy.

For ways to prevent or reduce the side effects of chemotherapy, see pages 31–32. For more information about chemotherapy, call Cancer Council 13 11 20 and ask for a free copy of *Understanding Chemotherapy*, or download a digital version from your local Cancer Council website.



Bradley's story

I was 24 when I started feeling lethargic and developed a lot of pimples on my back, which was unusual for me. My left testicle was also increasing in size and felt hard. At first I thought it was some kind of hormonal change but as the testicle was becoming heavy and uncomfortable, I told my dad. He took me straight to the doctor, who did a physical examination and sent me for an ultrasound.

After the ultrasound, the technician said to see my doctor right away. So my dad and I went back to my GP, and he told me I had testicular cancer. I was shocked and emotional, but tried to keep calm.

The GP referred me to a urologist who said the testicle would need to be removed. Within 12 hours of seeing him I'd had the operation. It was sent to the lab for testing and it was confirmed as stage I seminoma testicular cancer. I had a little

inflammation but otherwise I felt good. I only had to stay in hospital overnight.

A month after the surgery I had two rounds of chemotherapy in case the cancer spread. The chemotherapy made me feel tired and left a funny taste in my mouth. These side effects passed quickly and it helped to drink a lot of water. My urologist suggested I store some sperm before the chemotherapy because there was a small chance the treatment would make me sterile.

I saw my doctor every 3–6 months and had blood tests as well as a CT scan and ultrasound. I also examined the other testicle regularly for any hardness. It's been five years now and there's been no recurrence.

My life has now returned to normal and I don't really think about the cancer much.

Side effects of chemotherapy

Chemotherapy can affect the healthy, fast-growing cells in your body, such as hair cells or cells lining the mouth and stomach, causing side effects. Everyone reacts differently to chemotherapy. Some men don't experience any side effects, while others have a few.

Side effects are usually temporary, and medication can often help reduce your discomfort. Talk to your doctor or nurse about any side effects you have and ways to manage them.

Tiredness – Most men feel tired during chemotherapy, particularly as treatment progresses.

Low white blood cell count – About a week after a treatment session, your white blood cell levels may drop, making you more prone to infections. If you feel unwell or have a fever higher than 38°C, call your doctor immediately or, if after hours, go to the nearest hospital emergency department.

Nausea and vomiting – It is common to feel ill or vomit within a few hours of chemotherapy treatment. However, anti-nausea medicine can prevent or reduce this feeling. Medication is available in many forms, including oral tablets, wafers that dissolve on the tongue, and suppositories. Tell your medical team if you feel nauseated.

Constipation – Medication taken to prevent nausea and vomiting can cause constipation. Your medical team can prescribe something for this.

Hair loss – Chemotherapy often causes hair loss from the head and body, but it usually grows back once treatment is over.

Erection problems – Chemotherapy can affect erections, but this is usually temporary. You may also find you have a lower sex drive (libido). For information about sexuality, see pages 42–43.

Lower sperm production – The drugs may reduce the number of sperm you produce and their ability to move (motility). This can cause temporary or permanent infertility. Speak with your doctor about sperm banking before starting chemotherapy.

Peripheral neuropathy – Some drugs affect the nerves, causing numb or tingling fingers or toes. This is called peripheral neuropathy. It typically improves after treatment is finished.

ringing in the ears – Some chemotherapy drugs can cause short-term ringing or buzzing in the ears, known as tinnitus.

Breathlessness, cough or unexplained symptoms – Some drugs can damage the lungs or kidneys. You may have lung and kidney function tests to check the effects of the drugs on your organs before and after treatment.

Risk of other cancers – Men who have chemotherapy for testicular cancer are at a slightly higher risk of developing secondary leukaemia. This is extremely rare, so the benefit of receiving treatment outweighs this risk. However, you will have regular check-ups after treatment to test for cancer.

Using contraception during treatment

Chemotherapy drugs may remain in your body for a few days after treatment, and they can be passed into body fluids, such as urine and semen.

If you have sex within seven days after a treatment session, protect your partner from your body fluids by using a condom. Your doctor or nurse can give you more information about how long you need to use this protection – it may be 6–12 months.

Although chemotherapy drugs and radiation can affect sperm production and damage sperm, you may still be fertile and able to father a child. As the treatments can harm an unborn baby, it is important that your partner does not become pregnant while you're having treatment and for a period of time afterwards as advised by your doctor. Some men want to have children after treatment. For more information about fertility, see pages 40–41.

Radiotherapy

Radiotherapy uses high-energy x-rays to kill cancer cells or damage them so they cannot multiply. It is sometimes given to men with seminoma cancer after surgery to prevent the cancer from coming back or to destroy any cancer cells that may have spread.

Treatment is carefully planned to make sure as many cancer cells as possible are destroyed while causing the least possible harm to normal tissue. During a radiotherapy session, you will lie under a machine called a linear accelerator, which directs the x-ray beams at the cancer site.

The unaffected testicle may be covered with a lead barrier to help preserve your fertility.

Radiotherapy is painless and can't be felt. The treatment itself takes only a few minutes, but each session may last 10–20 minutes because of the time it takes the radiation therapists to set up the equipment and place you in the correct position. Most men have outpatient treatment sessions at a radiotherapy centre from Monday to Friday for 2–4 weeks. Your doctor will advise you on the number of sessions you need to have.

Side effects of radiotherapy

Radiotherapy most commonly causes skin reactions, fatigue and stomach problems. However, side effects usually disappear within a few days of finishing treatment.

Skin reaction – The skin in the treatment area may become red or irritated. Moisturising cream, such as sorbolene or calendula, should be applied to the skin when treatment starts – talk to your medical team about any other products they recommend.

Fatigue – This can build up over time. Plan your activities during the day so you can rest regularly. It may also help to talk to your family, friends or employer about how they can help you.

Stomach problems – The radiotherapy area may include your abdomen and this may cause stomach pain, nausea and bloating. Your doctor may prescribe medication to prevent these symptoms from occurring, or to treat them if they do occur.

Bowel problems – Bowel irritations, including diarrhoea and cramping, are common. Medication and watching what you eat can help. Call 13 11 20 for information about nutrition and cancer.

Hair loss – You may lose pubic and abdominal hair in the treatment area. After treatment, your hair will usually grow back.

Bladder irritation – Your bladder and urinary tract may become irritated and inflamed. Drinking plenty of fluids will help, but you should avoid alcoholic or caffeinated beverages, as they can irritate the bladder further.

Infertility – Radiotherapy may cause reduced sperm production or damage to sperm. This may be temporary or permanent – see pages 40–41. Speak with your doctor about sperm banking before starting radiotherapy.

Secondary cancers – Rarely, men who have radiotherapy for seminoma cancer are at a slightly increased risk of developing secondary cancers in the area of the body exposed to radiation. If you do have radiotherapy, you will have regular check-ups after treatment to test for cancer.

You will see your radiation oncologist at least once a week to monitor and treat any side effects during the course of your treatment. You can also talk to a nurse if you are concerned about side effects. For more information about radiotherapy, call 13 11 20 and ask for a free copy of *Understanding Radiotherapy*, or download a digital version from your local Cancer Council website.

Retroperitoneal lymph node dissection

In some cases, an operation called a retroperitoneal lymph node dissection (RPLND or lymphadenectomy) is done to remove lymph nodes containing any remaining cancer cells or other abnormal tissue.

Men with non-seminoma cancer – May have an RPLND if scans after chemotherapy show remaining cancer cells. An RPLND will also detect whether another type of abnormal tissue called mature teratoma is present. Teratoma is not cancer, but it may turn into cancer later on, so it should be removed.

Men with seminoma cancer – An RPLND is usually not needed as the cancer cells in the lymph nodes can be destroyed through chemotherapy or radiotherapy. However, some men with more advanced seminoma cancer have this procedure.

An RPLND can be done in two ways, depending on the stage of the cancer: a large incision may be made from the breastbone (sternum) to below the bellybutton (an open procedure), or the surgeon may make a smaller cut and insert the surgical tools (laparoscopy or keyhole surgery). During the operation, your organs are moved out of the way and the affected lymph nodes are removed.

Side effects of RPLND

It can take many weeks to recover from an RPLND – at first, you will probably be very tired and may not be able to do as much as you are used to. The main side effects are abdominal pain and tenderness. Tell your doctor or nurses if you are in pain, as they can prescribe medication to make you more comfortable.

An RPLND may also damage the nerves that control ejaculation. This can cause a problem known as retrograde ejaculation, which is when sperm travels backwards into the bladder, rather than forwards out of the penis. Although this is not harmful to the body, it causes infertility.

If having children is important to you, it's advisable to store some sperm before an RPLND. It may also be possible for your surgeon to use a nerve-sparing surgical technique to protect the nerves that control ejaculation. Talk to your doctor for more information.

Palliative treatment

Sometimes cancer that has spread to other parts of the body cannot be cured. Palliative treatment helps to reduce symptoms of cancer without trying to cure the disease. It can be given at any stage of advanced cancer to improve quality of life. It is not just for people who are about to die and does not mean you have given up hope. Rather, it is about living for as long as possible in the most satisfying way you can.

As well as slowing the spread of cancer, palliative treatment can relieve pain and help manage other physical and emotional symptoms. Treatment may include radiotherapy, chemotherapy or other medication.

For more information, call Cancer Council 13 11 20 or visit your local website to download *Understanding Palliative Care*.



Key points

- Your medical team will advise you on treatment based on the type of testicular cancer, its stage, your general health and your preferences.
- After surgery to remove the testicle (orchidectomy), you may not need any further treatment. Instead, your doctor will monitor you with regular blood tests, chest x-rays and CT scans for about five years. This is called surveillance.
- Some men also have chemotherapy, radiotherapy, surgery or a combination of these treatments.
- Chemotherapy is the use of drugs to kill cancer cells or slow their growth. Different drugs may be used – one common combination is called BEP chemotherapy.
- Most side effects of chemotherapy are temporary. They include a risk of infection, fatigue, nausea, hair loss and erection problems.
- Radiotherapy uses x-rays to damage or kill cancer cells. It is not used commonly, but it may be used to treat men with seminoma cancer.
- Common side effects of radiotherapy include fatigue and abdominal pain. These usually disappear soon after treatment finishes.
- If the cancer has spread to the lymph nodes in the abdomen, you may have an operation to remove the affected nodes after chemotherapy is finished. This is a retroperitoneal lymph node dissection (RPLND).
- If the cancer has spread, palliative treatment may help control symptoms and stop the cancer from spreading further. It can include treatments such as chemotherapy or medication.



Looking after yourself

Cancer can cause physical and emotional strain. It's important to try to look after your wellbeing as much as possible.

Nutrition – Eating healthy food can help you cope with treatment and side effects. A dietitian can help you manage special dietary needs or eating problems, and choose the best foods for your situation. Call 13 11 20 for a free copy of *Nutrition and Cancer*.

Staying active – Physical activity may help to reduce tiredness, improve circulation and elevate mood. The amount and type of exercise you do depends on what you are used to, how you feel and your doctor's advice. If your only treatment was an orchidectomy, you may be able to resume vigorous exercise (such as playing sport) 6–8 weeks after the operation. Men who've had chemotherapy, radiotherapy or other types of surgery may need longer to recover from treatment. Your doctor can give you advice about this. Cancer Council's *Exercise for People Living with Cancer* booklet provides more information about the benefits of exercise, and outlines simple exercises that you may want to try.

Complementary therapies – These therapies are used with conventional medical treatments. You may have therapies such as massage, relaxation and acupuncture to increase your sense of control, decrease stress and anxiety, and improve your mood. Let your doctor know about any therapies you are using or thinking about trying, as some may not be safe or evidence-based. Alternative therapies are used instead of conventional medical treatments. These therapies, such as coffee enemas and magnet therapy, can be harmful.

For more information, call 13 11 20 for a free copy of the *Understanding Complementary Therapies* booklet or visit your local Cancer Council website.

Relationships with others

Having cancer can affect your relationships with family, friends and colleagues. This may be because cancer is stressful, tiring and upsetting, or as a result of more positive changes to your values, priorities, or outlook on life.

Give yourself time to adjust to what's happening, and do the same for others. People may deal with the cancer in different ways – for example by being overly positive, playing down fears, or keeping a distance. It may be helpful to discuss your feelings with each other.

Fertility

Most men treated for testicular cancer – especially men with one testicle remaining – can go on to have children naturally.

Your doctor may advise you to use certain types of contraception, such as condoms, during and after treatment (see page 33). This is to protect your partner and avoid pregnancy, as chemotherapy and radiotherapy can be toxic to your partner or harm a developing baby.

Ask your doctors how long you should use contraception as the amount of time will depend on the treatment you receive. It may be for up to 6–12 months.

Chemotherapy and radiotherapy can temporarily decrease sperm production – particularly radiotherapy to the pelvis. Sperm counts usually increase when treatment is over, but sometimes it can take one or more years before there's enough healthy sperm to conceive. In some cases, infertility can be permanent. For this reason, some men choose to store (bank) sperm before treatment starts for use at a later date.

Sperm banking is one of the easiest and most effective methods of preserving fertility, and samples can be stored for many years. Although there is a cost involved, most sperm-banking facilities have various payment options to make it more affordable.

Men who have both testicles removed, which is rarely required, will no longer produce sperm and will be infertile. Men who experience retrograde ejaculation will also be infertile.

“ I think there should be strong encouragement to bank sperm just in case. Being a father of twins, thanks to banked sperm, I cannot recommend this enough. ” Chris

Infertility can be very upsetting for you and your family, and you may have many mixed emotions about the future. It may help to talk to a counsellor or family member about how you are feeling.

For more information, call Cancer Council 13 11 20 and ask for a free copy of *Fertility and Cancer*, or download a digital version from your local Cancer Council website.

Sexuality and intimacy

A common question asked by men with testicular cancer is whether their sex life will be affected by treatment.

Having cancer can affect your sexuality in both physical and emotional ways. The impact of these changes depends on many factors, such as treatment and side effects, your self-confidence, the way you see your changed body, and whether you have a partner. The changes can be temporary or permanent.

Knowing the potential challenges and addressing them will help you adjust to these changes. Different cancer treatments have different effects on sexuality:

Surgery (orchidectomy) – The removal of one testicle will not affect your ability to have an erection or an orgasm.

Chemotherapy – This may cause your erections or orgasms to decrease for a few weeks because the drugs can lower your testosterone levels. It can also affect fertility (see pages 40–41).

Radiotherapy – Treatment to the abdomen is unlikely to affect semen production, but treatment to the pelvis may temporarily stop semen production. This means that you will still feel the sensations of an orgasm, but little or no semen will be ejaculated. This is called a dry orgasm. Some men say that a dry orgasm does not feel as strong or long-lasting as an orgasm with semen, while others say it is more intense. Semen production usually returns to normal after a few months.

Retroperitoneal lymph node dissection (RPLND) – This may damage the nerves that control ejaculation, causing sperm to travel backwards into the bladder instead of forwards into the penis (retrograde ejaculation). You will still feel like you are having an orgasm, but it will permanently affect your fertility. See pages 40–41 for information about preserving your fertility.

All treatments – Tiredness, anxiety and worry are common during all types of cancer treatment. These effects can lower your interest in sex, but sex drive usually returns when treatment ends. For more information, read Cancer Council’s booklet *Sexuality, Intimacy and Cancer*.



Dealing with changes to your sexuality

- If you have a partner, discuss what has changed physically and emotionally to help reassure both of you about your affection and desire for each other.
- If you are starting a new relationship, try practising what you might say to the person about how your body has changed and how it makes you feel.
- Explore your own ability to enjoy sex through masturbation. This can help you find out if treatment has changed your sexual response.
- Be gentle the first few times you are sexually active after treatment. Start with touching, and tell your partner what feels good.
- Talk openly with your doctor or sexual health counsellor about any challenges you are facing. They may be able to help and reassure you.

Changing body image

Cancer treatment can change the way you feel about yourself (your self-esteem). You may feel less confident about who you are and what you can do, particularly if your body has changed physically.

Give yourself time to adapt to the changes. Try to see yourself as a whole person (body, mind and personality) instead of focusing on the parts of you that have changed.

If you have lost a testicle, it will probably not affect your ability to have sex, but it may influence how you feel about yourself as a man. You may have less confidence and feel less sexually desirable. Getting used to having one testicle will take time. Talk to your partner, if you have one, and explain how you are feeling.

If you continue to be concerned about your appearance, you may wish to speak to your medical team about getting a prosthesis (artificial testicle). For more information, see page 19.



Adjusting to body changes

- Give yourself time to get used to any changes to your body. Look at yourself naked in the mirror and feel your genitals to see if you notice any differences or if anything is sore or tender.
- Talk to other men who have had a similar experience. See pages 47–48 for more details.
- Show your partner any body changes and let them touch your body, if you are both comfortable.

Life after treatment

For most people, the cancer experience doesn't end on the last day of treatment. Life after cancer treatment can present its own challenges. You may have mixed feelings when treatment ends, and worry that every ache and pain means the cancer is coming back.

Some people say that they feel pressure to return to 'normal life', but they don't want life to return to how it was before cancer. Take some time to adjust to the physical and emotional changes, and re-establish a new daily routine at your own pace.

Cancer Council 13 11 20 can help you connect with other people who have had cancer, and provide you with information about the emotional and practical aspects of living well after cancer.

Dealing with feelings of sadness

If you have continued feelings of sadness, have trouble getting up in the morning, or have lost motivation to do things that previously gave you pleasure, you may be experiencing depression. This is quite common among people who have had cancer.

Talk to your GP, as counselling or medication – even for a short time – may help. Some people are able to get a Medicare rebate for sessions with a psychologist. Ask your doctor if you are eligible. Your local Cancer Council may also run a counselling program.

The organisation [beyondblue](http://beyondblue.org.au) has information about coping with depression and anxiety. Go to beyondblue.org.au or call 1300 22 4636 to order a fact sheet.

Follow-up after treatment

Treatment for testicular cancer usually has a good outcome. Only about 2–3% of men who have had cancer in one testicle develop cancer in the other testicle. However, some men have a recurrence of cancer in another part of the body, such as the lymph nodes.

After treatment, you will need regular check-ups to confirm that the cancer hasn't come back (surveillance – see page 28). A physical examination, blood tests, chest x-rays and/or CT scans may be done. Check-ups will become less frequent if you have no further problems. If you have health concerns between follow-up appointments, let your doctor know immediately.

It's important to make surveillance a priority, as the tests can detect cancer recurrence early, when it is most likely to be cured.

What if testicular cancer returns?

For some men, testicular cancer does come back after treatment, which is known as a recurrence. This is why it is important to have regular check-ups.

Treatment will depend on whether the cancer is in the other testicle, whether it has spread, and what type of testicular cancer it is. Men with advanced cancer may have surgery and/or high-dose chemotherapy. Your doctor will discuss your treatment options with you.

Unlike many other cancers, there is still a good chance that a recurrence of testicular cancer may be cured.



Seeking support

Cancer may cause you to experience a range of emotions, such as fear, sadness, anxiety, anger or frustration. It can also cause practical and financial problems.

Practical and financial help

There are many services that can help deal with practical or financial problems caused by the cancer. Benefits, pensions and programs can help pay for prescription medicines, transport costs or utility bills. Home care services, aids and appliances can also be arranged to help make life easier.

Ask the hospital social worker which services are available in your local area and if you are eligible to receive them.

If you need legal or financial advice, you should talk to a qualified professional about your situation. Cancer Council offers free legal and financial services in some states and territories for people who can't afford to pay – call 13 11 20 to ask if you are eligible.

Talk to someone who's been there

Coming into contact with other people who have had similar experiences to you can be beneficial. You may feel supported and relieved to know that others understand what you are going through and that you are not alone.

People often feel they can speak openly and share tips with others who have gone through a similar experience.

In a support setting, you may find that you are comfortable talking about your diagnosis and treatment, relationships with friends and family, and hopes and fears for the future. Some people say they can be even more open and honest in these support settings because they aren't trying to protect their loved ones.

Types of support

There are many ways to connect with others for mutual support and to share information. These include:

- **face-to-face support groups** – often held in community centres or hospitals
- **telephone support groups** – facilitated by trained counsellors
- **peer support programs** – match you with someone who has had a similar cancer experience, e.g. Cancer Connect
- **online forums** – such as cancerconnections.com.au.

Talk to your nurse, social worker or Cancer Council 13 11 20 about what is available in your area.

“ My family members don't really understand what it's like to have cancer thrown at you, but in my support group, I don't feel like I have to explain. ” *Sam*



Caring for someone with cancer

You may be reading this booklet because you are caring for someone with cancer. Being a carer can be stressful and cause you much anxiety. Try to look after yourself – give yourself some time out and share your worries and concerns with somebody neutral such as a counsellor or your doctor.

Many cancer support groups and cancer education programs are open to carers, as well as people with cancer. Support groups and programs can offer valuable opportunities to share experiences and ways of coping.

Support services such as Home Help, Meals on Wheels or visiting nurses can help you in your caring role. You can find local support services, as well as practical information and resources, through the Carer Gateway. Visit carergateway.gov.au or call 1800 422 737.

There are also many groups and organisations that can provide you with information and support, such as Carers Australia, the national body representing carers in Australia. Carers Australia works with the Carers Associations in each of the states and territories. Phone 1800 242 636 or visit carersaustralia.com.au for more information and resources.

You can also call Cancer Council 13 11 20 to find out more about carers' services and support groups and to get a copy of the *Caring for Someone with Cancer* booklet.



Useful websites

The internet has many useful resources, although not all websites are reliable. The websites listed below are good sources of support and information.

Australian

Andrology Australia	andrologyaustralia.org
ANZUP Cancer Trials Group Limited.....	anzup.org.au
beyondblue.....	beyondblue.org.au
Cancer Council Australia.....	cancer.org.au
Cancer Australia	canceraustralia.gov.au
Carer Gateway.....	carergateway.gov.au
Carers Australia	carersaustralia.com.au
Department of Health	health.gov.au
healthdirect Australia.....	healthdirect.gov.au
MensLine Australia	mensline.org.au
Radiation Oncology Targeting Cancer.....	targetingcancer.com.au

International

American Cancer Society.....	cancer.org
Cancer Research UK.....	cancerresearchuk.org
Macmillan Cancer Support (UK).....	macmillan.org.uk
National Cancer Institute (US)	cancer.gov
Testicular Cancer Resource Network.....	tc-cancer.com



Question checklist

You may find this checklist helpful when thinking about the questions you want to ask your doctor about your disease and treatment. If your doctor gives you answers that you don't understand, ask for clarification.

- What type of testicular cancer do I have?
- What treatment do you recommend and why?
- Are there other treatment choices for me? If not, why not?
- What are the risks and possible side effects of each treatment?
- How long will treatment take? Will I have to stay in hospital?
- How much will treatment cost?
- Will I have a lot of pain with the treatment? What will be done about this?
- Are the latest tests and treatments for this type of cancer available in this hospital?
- Are there any clinical trials or research studies I could join?
- Will my fertility be affected by the treatment? What are my options for preserving fertility?
- How frequently will I need check-ups after treatment?
- Who should I go to for my follow up appointments?
- Are there any complementary therapies that might help?
- Should I change my diet during or after treatment?
- If the cancer comes back, how will I know?



Glossary

abdomen

The part of the body between the chest and hips, which includes the stomach, pancreas, liver, gall bladder, bladder, bowel and kidneys.

adjuvant treatment

A treatment given with or shortly after another treatment to enhance its effectiveness.

alpha-fetoprotein (AFP)

A chemical found in the blood of some men with non-seminoma testicular cancer.

anaesthetic

A drug that stops a person feeling pain during a medical procedure. A local anaesthetic numbs part of the body; a general anaesthetic causes a temporary loss of consciousness.

benign

Not cancerous or malignant.

beta human chorionic gonadotropin (beta-hCG)

A chemical found in the blood of some men with either seminoma or non-seminoma testicular cancer.

biopsy

The removal of a small sample of tissue from the body for examination under a microscope to help diagnose a disease.

cells

The basic building blocks of the body. A human is made of billions of cells that are adapted for different functions.

chemotherapy

The use of cytotoxic drugs to treat

cancer by killing cancer cells or slowing their growth.

congenital defect (birth defect)

A problem that happens while a baby is still developing in the womb. This may affect how the body looks and/or functions.

CT scan

Computerised tomography scan. This scan uses x-rays to create a picture of the inside of the body.

dry orgasm

Sexual climax without the release of semen from the penis (ejaculation).

epididymis

A tube that runs from the back of each testicle through the vas deferens and the groin region into the abdominal cavity, and attaches to the spermatic cord. The epididymis stores immature sperm.

fertility

The ability to conceive a child.

germ cells

Cells that produce sperm in males and eggs in females. Germ cell cancers can occur in the testicles and ovaries.

gynaecomastia

The enlargement of male breast tissue. Often referred to as 'man boobs'. It can be a symptom of testicular cancer.

haematoma

A collection of blood that clots to form a solid swelling.

HIV (human immunodeficiency virus)

The virus that causes AIDS (acquired immune deficiency virus).

hormones

Chemicals in the body that send information between cells to bring about changes in the body.

hypospadias

A birth defect in males and females in which the opening of the urethra is not in its normal place.

infertility

The inability to conceive a child.

intrascrotal haematoma

Blood that collects in the scrotum.

intratubular germ cell neoplasia (ITGCN or IGCN)

A non-invasive precursor to testicular cancer.

lactate dehydrogenase (LDH)

A chemical found in the blood of some men with seminoma or non-seminoma testicular cancer.

libido

Sex drive/sexual desire.

lymphadenectomy

See retroperitoneal lymph node dissection.

lymphatic system

A network of tissues, capillaries, vessels, ducts and nodes that removes excess fluid from tissues, absorbs fatty acids, transports fat and produces immune cells.

lymph nodes

Small, bean-shaped glands that form part of the lymphatic system.

They collect and destroy bacteria and viruses. Also called lymph glands.

lymph vessels

Thin tubes that carry the body's tissue fluid (lymph) all over the body.

malignant

Cancer. Malignant cells can spread (metastasis) and can eventually cause death if they cannot be treated.

metastasis (plural: metastases)

A cancer that has spread from a primary cancer in another part of the body. Also known as secondary cancer.

MRI scan

Magnetic resonance imaging scan.

A scan that uses magnetism and radio waves to take detailed cross-sectional pictures of the body.

nerve-sparing surgery

A type of surgery to save the nerves that affect ejaculation and urination.

non-seminoma cancer

A type of testicular cancer. Non-seminomas include teratoma, yolk sac tumour, choriocarcinoma and embryonal carcinoma.

orchidectomy

An operation to remove a testicle and spermatic cord through an incision in the lower abdomen.

palliative treatment

Medical treatment for people with advanced cancer to help them manage pain and other symptoms of cancer.

pathologist

A specialist doctor who interprets the results of tests (such as blood tests and biopsies).

PET scan

Positron emission tomography scan. A scan in which a person is injected with a small amount of radioactive glucose solution. Cancerous areas show up brighter in the scan because they take up more of the glucose.

primary cancer

The original cancer. Cells from the primary cancer may break away and be carried to other parts of the body, where secondary cancers may form.

prognosis

The expected outcome of a person's disease.

prostate

A gland in the male reproductive system that produces most of the fluid that makes up semen.

prosthesis

An artificial replacement for a lost body part.

radiotherapy

The use of radiation, such as x-rays, gamma rays, electron beams or protons, to kill cancer cells or injure them so they cannot grow and multiply. Also called radiation therapy.

remission

When the symptoms and signs of the cancer reduce or disappear.

residual cancer

Cancer that remains after treatment has been given.

retrograde ejaculation

A condition where the sperm travels backwards into the bladder, instead of forwards out of the penis.

retroperitoneal lymph node dissection (RPLND)

Surgery to remove the retroperitoneal lymph nodes. Also called lymphadenectomy.

retroperitoneal lymph nodes

Lymph nodes in the area outside or behind the peritoneum (the tissue lining the abdominal wall).

scrotum

The external pouch of skin behind the penis that contains the testicles.

semen

The fluid ejaculated from the penis during sexual climax. It contains sperm from the testicles and secretions from the prostate gland and seminal vesicles.

seminal vesicles

Glands that lie very close to the prostate and produce secretions that form part of the semen.

seminoma cancer

A type of testicular cancer.

side effect

Unintended effect of a drug or treatment.

sperm

The male sex cell, which is made in the testicles and is required for reproduction.

spermatic cord

A cord that runs from the testicles to the abdomen. The spermatic cord contains

the tube that carries sperm, blood vessels, nerves and lymph vessels.

staging

Performing tests to determine how far a cancer has spread.

stromal tumour

A rare type of testicular tumour that is not usually cancerous. May include Sertoli cell tumours and Leydig cell tumours.

surveillance

Regular check-ups after the cancer is removed to make sure it has not returned.

testicles

Two egg-shaped glands that produce sperm and the male sex hormone, testosterone. They are found in the scrotum. Also called testes.

testosterone

Major male sex hormone produced by the testicles. Testosterone promotes the development of male sex characteristics.

tumour

A new or abnormal growth of tissue on or in the body. A tumour may be benign or malignant.

tumour markers

Chemicals produced by cancer cells and released into the blood. These may suggest the presence of a tumour. Markers can be found by blood tests or by testing tumour samples.

ultrasound

A non-invasive scan that uses soundwaves to create a picture of part of the body. An ultrasound scan can be used to measure the size and position of a tumour.

urethra

The tube that carries urine from the bladder to the outside of the body. For men, the urethra also carries semen.

vas deferens

Tubes in the male reproductive system that carry sperm from the testicles to the prostate.

Can't find a word here?

For more cancer-related words, visit:

- cancerCouncil.com.au/words
- cancervic.org.au/glossary
- cancersa.org.au/glossary

References

1. J Oldenburg et al., 'Testicular seminoma and non-seminoma: ESMO Clinical Practice Guidelines for diagnosis, treatment and follow-up', *Annals of Oncology*, vol. 24 (suppl. 6), 2013, pp. vi125–vi132.
2. Australian Institute of Health and Welfare (AIHW), *Australian Cancer Incidence and Mortality (ACIM) books: Testicular cancer*, AIHW, Canberra, 2016.



How you can help

At Cancer Council, we're dedicated to improving cancer control. As well as funding millions of dollars in cancer research every year, we advocate for the highest quality care for cancer patients and their families. We create cancer-smart communities by educating people about cancer, its prevention and early detection. We offer a range of practical and support services for people and families affected by cancer. All these programs would not be possible without community support, great and small.

Join a Cancer Council event: Join one of our community fundraising events such as Daffodil Day, Australia's Biggest Morning Tea, Relay For Life, Girls' Night In and Pink Ribbon Day, or hold your own fundraiser or become a volunteer.

Make a donation: Any gift, large or small, makes a meaningful contribution to our work in supporting people with cancer and their families now and in the future.

Buy Cancer Council sun protection products: Every purchase helps you prevent cancer and contribute financially to our goals.

Help us speak out for a cancer-smart community: We are a leading advocate for cancer prevention and improved patient services. You can help us speak out on important cancer issues and help us improve cancer awareness by living and promoting a cancer-smart lifestyle.

Join a research study: Cancer Council funds and carries out research investigating the causes, management, outcomes and impacts of different cancers. You may be able to join a study.

To find out more about how you, your family and friends can help, please call your local Cancer Council.



Cancer Council 13 11 20

Being diagnosed with cancer can be overwhelming. At Cancer Council, we understand it isn't just about the treatment or prognosis. Having cancer affects the way you live, work and think. It can also affect our most important relationships.

When disruption and change happen in our lives, talking to someone who understands can make a big difference. Cancer Council has been providing information and support to people affected by cancer for over 50 years.

Calling 13 11 20 gives you access to trustworthy information that is relevant to you. Our cancer nurses are available to answer your questions and link you to services in your area, such as transport, accommodation and home help. We can also help with other matters, such as legal and financial advice.

If you are finding it hard to navigate through the health care system, or just need someone to listen to your immediate concerns, call 13 11 20 and find out how we can support you, your family and friends.

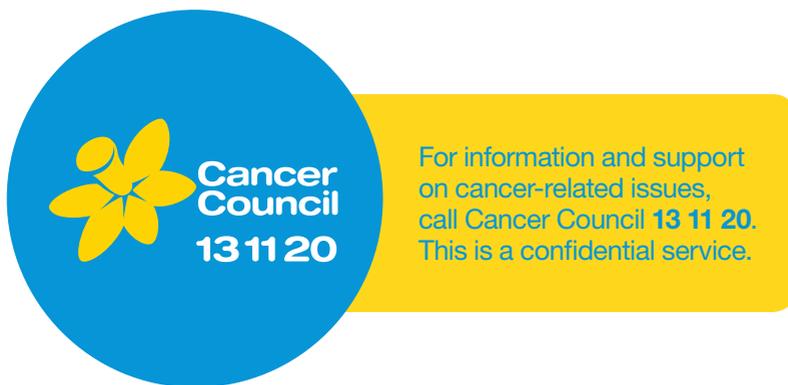
Cancer Council services and programs vary in each area.
13 11 20 is charged at a local call rate throughout Australia (except from mobiles).



If you need information in a language other than English, an interpreting service is available. Call 13 14 50.



If you are deaf, or have a hearing or speech impairment, contact us through the National Relay Service.
www.relayservice.gov.au



Visit your local Cancer Council website

Cancer Council ACT
actcancer.org

Cancer Council NSW
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