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# Clinical Diagnosis

**What is an orchidectomy?**

**What to expect after orchidectomy**

**Results and Confirmed Diagnosis**

**What is the lymphatic system?**



**ORCHID**   
FIGHTING MALE CANCER



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# Contents

Introduction	3
Methods of diagnosis	4
What are lymph nodes?	6
Surgery	7
After surgery	9
Tips	11
Male pelvic anatomy	12
Clinical staging	13
Types of testicular cancer	14
The TNM system	14
Stage 1	17
Stage 2	18
Stage 3	19
The MDT Process	20
Localised testicular cancer	21
Non localised testicular cancer	23
Tips	24

# Diagnosis

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An ultrasound scan is extremely accurate at diagnosing testicular cancer and if a man is suspected of having it, a referral will be made to a hospital specialist called a urologist.

If there is a strong suspicion that testicular cancer is present then a decision will be made to surgically remove the affected testicle. This decision will not be taken lightly but will be in a man's best interest. No one will want to wait around and see what happens; surgery to remove the testicle (orchidectomy) will usually be the only time that a definite cancer diagnosis can be verified or ruled out.

A number of other tests are also likely to be carried out to identify any cancer that may have potentially spread beyond the testicle to other parts of the body. Please see below.

# Methods of Diagnosis

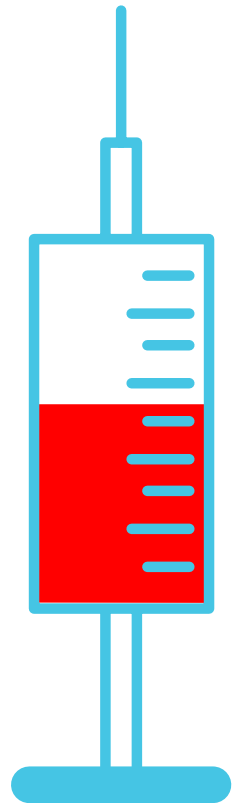
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## 1. Blood Tests

**Some testicular cancers produce chemicals, which are released into the bloodstream. These chemicals, called tumour markers, are alpha-fetoprotein (AFP), beta human chorionic gonadotrophin (BHCG) and lactate dehydrogenase (LDH). They may be abnormal in the presence of particular types of testicular cancer. For instance AFP and HCG can be raised in the presence of a particular type of testicular cancer called non seminoma.**

They can also be used to measure the effect of treatment such as an orchidectomy, in reducing cancer activity and they may be repeated after orchidectomy at 48-96 hours if they were abnormal beforehand. Blood tests to measure kidney and liver function will also usually be requested.

Occasionally if the specific blood tests for testicular cancer are very raised or abnormal or there is obvious evidence that testicular cancer is present and has spread to other areas of the body, a referral may be made to an oncologist (cancer specialist) to see if treatment such as chemotherapy should be given before surgery (orchidectomy).



## 2. Chest X-ray

This can identify any cancer which may have already spread to the lungs.



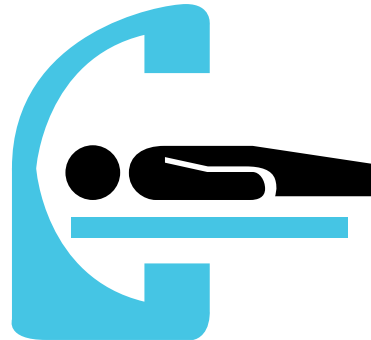
## 3. Pregnancy test

A pregnancy test can identify BHCG, however this can also be present for other reasons which are not caused by testicular cancer.

## 4. Computerised Tomography (CT) Scan

A CT scan is performed to check for any potential sign that the cancer has spread to other areas of the body; lungs or **lymph glands** in the abdomen (see below). The scan takes a series of x-rays, which are fed into a computer to build up a three-dimensional image of the inside of the body and takes from 10 to 30 minutes to perform.

A special drink or an injection of a dye into a vein which helps show areas of the body more clearly will usually be given. This may cause a warm sensation for a few minutes. The scan is painless, but involves lying still for 10-20 minutes.



## What are lymph nodes?

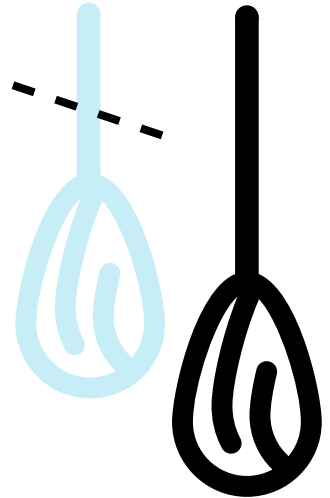


The human body is covered by a special type of drainage system called the lymphatic system. This system is responsible for transporting excess fluid from the organs and tissues of the body in a fluid called lymph. Lymph fluid will contain various types of cells and substances that are no longer needed. The lymph fluid will be transported through the lymphatic drainage system and pass through small nodules or nodes that act as filters which are responsible for filtering out these unwanted substances. Cancerous cells which break off from the an organ which has cancer can also travel along this route and become trapped at the lymph nodes where they can then accumulate and infiltrate a different area of the body.

## Surgery (orchidectomy)

Orchidectomy (unilateral) is the surgical removal of one testicle and is usually performed very quickly after a suspected diagnosis of testicular cancer. It is a simple procedure which may take about half an hour to perform and will usually be carried out as a day case procedure under general anaesthetic.

During this surgery a small incision is made into the groin region on the affected side and the testicle is removed from above. The scrotum will not be cut. A prosthetic (artificial) testicle can be inserted in place of the cancerous testicle. Men may also be offered the possibility of sperm storage before surgery.



## Falsey or not?

**The doctor may discuss the insertion of a false (prosthetic) ball to take the place of the old one. These are silicone implants that can be inflated with salt water. They come in various sizes and can make men feel whole again. They can give a very good cosmetic result and be of great psychological value but some men may experience problems with them in the longer term.**

Once inserted the neck of the scrotum is closed with stitches to prevent the prosthesis from moving back up to the groin.

**Men who are unsure of whether they want an implant or not can have the procedure performed at a later date if they wish.**

### **Some possible problems may include:**

- Scar tissue forming around the implant inside the scrotum. This can sometimes cause a thick fibrous growth of tissue which may in turn cause discomfort or give rise to worry that a second cancer has appeared.
- The overall cosmetic result may vary.
- Rupture of the implant can rarely occur due to vigorous activities such as contact sport, cycling or physical contact including sexual intercourse.
- Sometimes the implant may move out of its original position.
- Surgery can cause small spots of calcium in the testicle to appear usually some years following surgery. Although they are harmless they can sometimes be confused with the type of calcium deposits (microlithiasis), which may rarely cause testicular cancer.
- A prosthetic testicle will not react to temperature like a normal one and will stay the same size.



# After surgery

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## Dressing & Stitches

There will be a dressing covering the incision site on the groin. This can usually be removed 24 hours after the operation. The stitches (sutures) in the wound will usually be dissolvable but may take some weeks to fully disappear.

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## Washing

Men can have a bath or shower, normally after 24 hours, but it is important not to rub soap on the wound area. The wound should be dried by gently patting it with a clean towel/gauze pad.

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## Clothing

The groin and scrotal area can feel bruised and swollen after the operation. It is advisable to wear close fitting underwear, such as briefs or 'Y' fronts or a scrotal support rather than boxer shorts. This will help the bruising settle.

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## Pain

Painkillers which may have been prescribed should be taken on a regular basis, (not just when pain is felt) for the first 48 hours until comfortable. Always read the instructions to ensure they are administered correctly. Often simple paracetamol combined with an anti-inflammatory medication (such as ibuprofen) are effective at reducing discomfort.

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## Returning to Work

Although this is a minor operation, it is important to take things easy for the first week. Men should be able to return to work within a few weeks. However if they are going to be reviewed in an outpatient clinic or referred to an oncologist for further treatment; it may be a good idea to await for these arrangements to be made before returning to work as further time off may be needed.

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## Infection

Occasionally a collection of blood may form under the surgical wound (haematoma) or the wound may become infected. Men should seek medical advice if they think there may be infection. It is sometimes useful to phone the unit that performed the operation or contact a GP.

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## Physical Activity

It is important to avoid heavy lifting and or strenuous exercise for the first few weeks. Men should only start driving when they are able to do an emergency stop without hesitation.

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## Sexual Activity

Sexual activity can begin again after two weeks as long as it is not uncomfortable.

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## Sexual performance

Having an orchidectomy should not affect a man's ability to have an erection, but the psychological stress associated with a potential diagnosis of cancer may affect performance.

**Men should be given a follow up appointment within a few weeks of orchidectomy to see a hospital specialist (oncologist) where the results of the operation will be discussed along with the need for any further recommended treatment.**

About 5% of men with testicular cancer may also have pre-cancerous or cancerous cells in the opposite testicle. If this is suspected a biopsy of the opposite (contralateral) testicle may be taken at the same time as the orchidectomy.

# Tips

## Key workers & professionals

Men who are diagnosed or suspected of having testicular cancer will usually be given the details of a urology specialist nurse or "Key worker" who will act as their point of contact during and after treatment and who can provide them with relevant information and advice. They will usually also have access to other medical professionals who may be involved in a man's care and may be able to liaise with them if there are any problems.

## Sick certificates

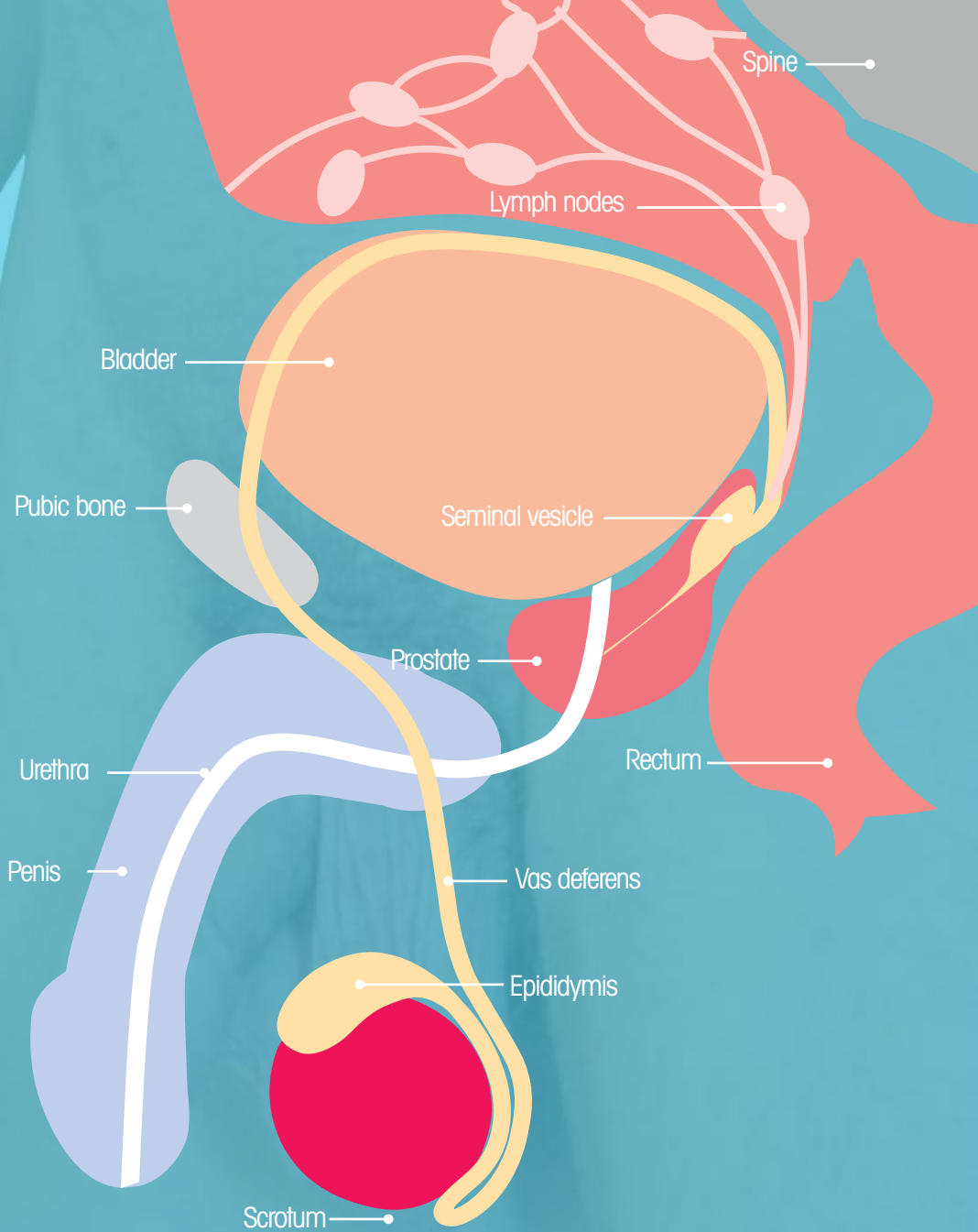
Although the hospital where a man has been treated can issue you a sick certificate to cover stay in hospital they will not be able to provide a long term sick certificate. This will need to be obtained from a G.P.

## Timeframes

Once a diagnosis of testicular cancer is suspected things will begin to move very quickly; surgery will be booked and scans arranged usually within a two-week period. Men should try and plan ahead and involve all of their family so that they can help with any arrangements that need to be made while having treatment (childcare, work etc.).

## Time off work

Men will need to take time off work during and after treatment. It is advisable to keep any correspondence/ letters and contact details of the health professionals involved or procedures performed as proof of treatment in case an employer wants evidence. It may also be a good idea to talk to a human resources department if available and inform them of the situation.



# Male pelvic anatomy

# Clinical Staging

## Seminoma

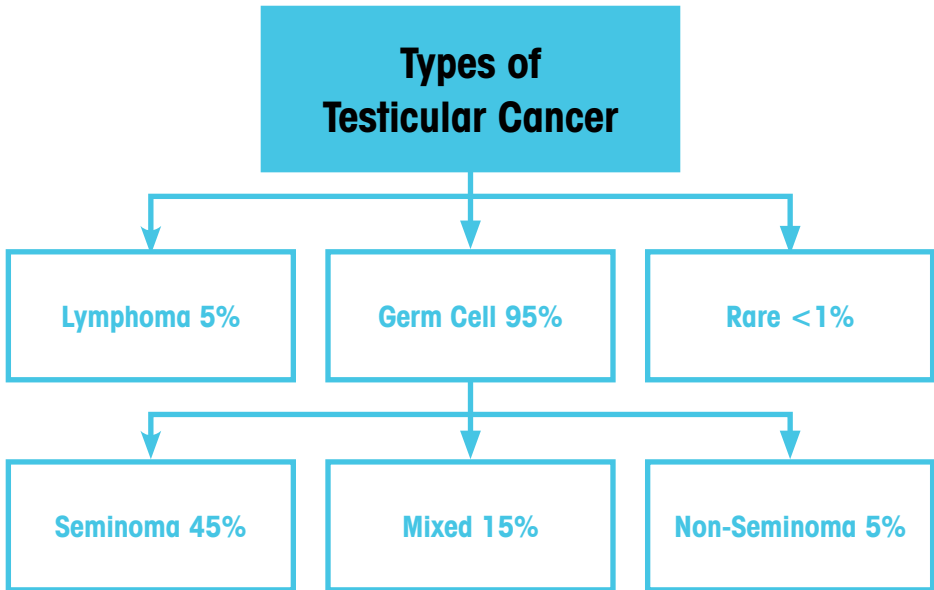
The most common type of testicular cancer is called a seminoma, a slow progressing type of cancer that does not usually spread to other areas of the body. This type of cancer is more common in men between the ages of 25-55, with a peak age of 35 years old.

## Non-Seminoma

A rarer type of testicular cancer is called a non-seminomatous germ cell tumour (NSGCT). It used to be called a teratoma. This tends to affect men between the ages of 15-35, with a peak age of 25 years old.

Both of these tumours are also known as germ cell tumours. About 95% of testicular cancers will be germ cell cancers. Germ in this term means "seed" and refers to the sperm making process. Other tumours (mixed cell tumours) may contain elements of both types of the above.

Other rarer, non-germ cell tumours (Sertoli, Leydig) account for only a small percentage of testicular cancers. In addition 4% of men with lymphoma, usually over the age of 50 years may also have similar symptoms to testicular cancer with testicular swelling.



The type of testicular cancer that is present will be diagnosed when the results of the removed testicle have been analysed in the laboratory. This analysis will be able to differentiate between the various types of testicular cancer and in combination with the blood tests and scans that have been performed, can be used to give an accurate picture of the extent of testicular cancer. This is known as a clinical stage and can be described using a medical method of categorising the extent of cancer called the TNM system, where:

**T** stands for tumour size (given a value of 1-4 indicating how big it is).

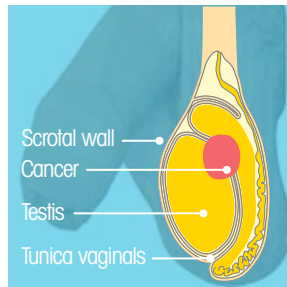
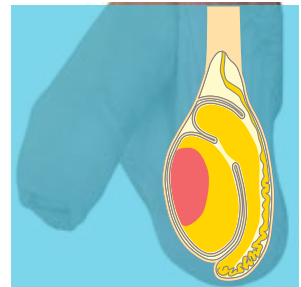
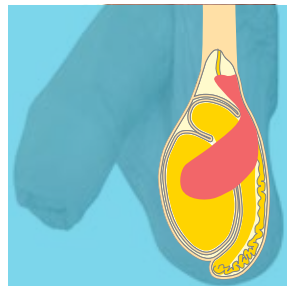
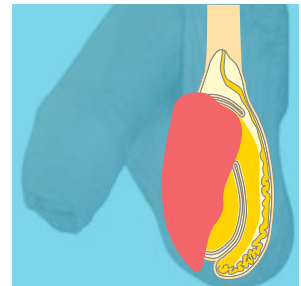
**N** stands for affected (positive) lymph nodes.

**M** stands for metastases

# The TNM System

**T** stands for tumour size (given a value of 1-4 indicating how big it is).

<b>TIS</b>	(testicular carcinoma insitu). Cancer cells are within the testes but they have not invaded the surrounding testicular tissue
<b>T1</b>	Tumour confined to testicle and epididymis
<b>T2</b>	Tumour has begun to infiltrate the blood vessels or lymph nodes close to the testicle
<b>T3</b>	Tumour has grown as far as the spermatic cord and possibly blood vessels and lymph nodes
<b>T4</b>	Tumour has invaded the scrotum.

**T<sub>1</sub>****T<sub>2</sub>****T<sub>3</sub>****T<sub>4</sub>**

**N** stands for affected (positive) lymph nodes.

<b>N0</b>	Lymph nodes do not contain cancer cells
<b>N1</b>	Lymph nodes are smaller than 2cm wide
<b>N2</b>	At least one lymph node is larger than 2cm but smaller than 5cm wide
<b>N3</b>	At least one affected lymph node is bigger than 5cm

**M** stands for metastases

Metastases are deposits of cancer which form as a result of the primary cancer travelling to other organs in the body or bones. They are sometimes referred to as “secondaries”. Testicular cancer which has spread from its primary site in this way tends to be deposited in the lungs, liver or brain.

<b>M0</b>	There is no evidence that the cancer has spread to other organs
<b>M1a</b>	The cancer has spread to the lungs or distant lymph nodes furthest away from the testicle.
<b>M1b</b>	Organs such as the liver or brain have been affected.

A further way of categorising testicular cancer is to split it into 3 stages (see below). The results of tumour markers can also be added to either of these systems to predict possible treatment success. This is denoted as S where S stands for Serum markers.

<b>S0</b>	Tumour marker levels within normal limits
<b>S1</b>	LDH < 1.5 X Normal and HCG < 5,000 and AFP < 1,000
<b>S2</b>	LDH 1.5-10 X Normal or HCG 5,000-50,000 or AFP 1,000-10,000
<b>S3</b>	LDH > 10 X Normal or HCG > 50,000 or AFP > 10,000



## T<sub>1-4</sub> N<sub>0</sub> M<sub>0</sub>

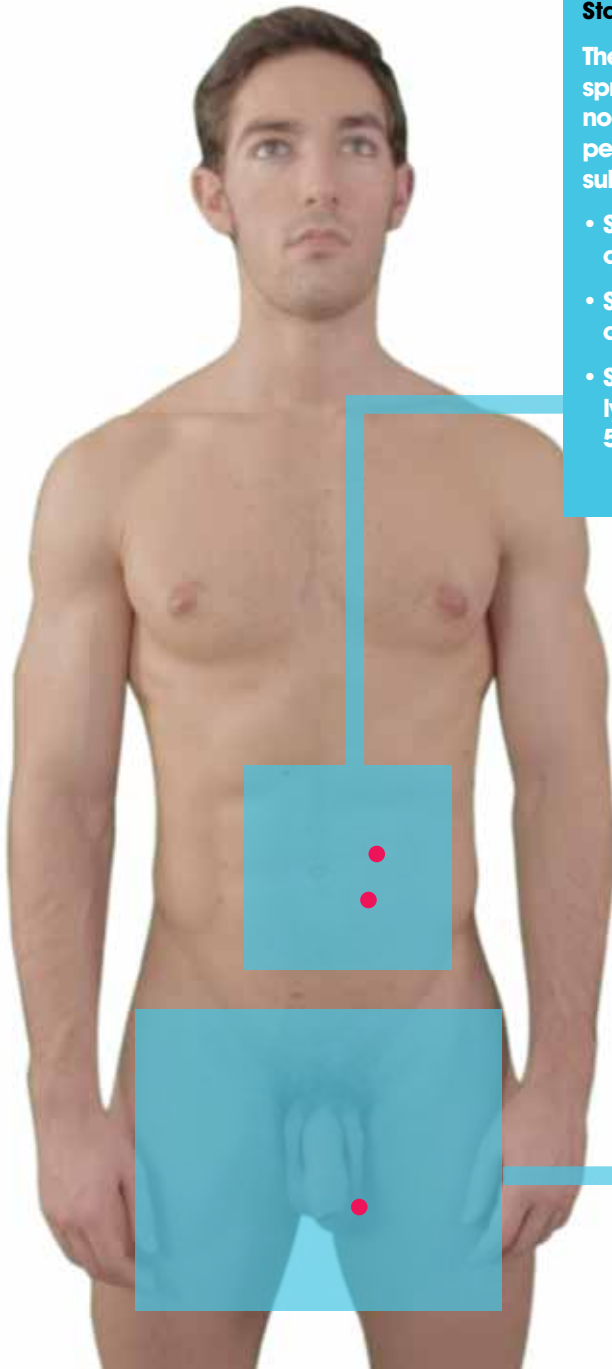


### Stage 1

This is the earliest stage of testicular cancer

- The cancer is contained within the testicle and has not spread to nearby lymph nodes or other organs

## T<sub>1-4</sub> N<sub>1-3</sub> M<sub>0</sub>

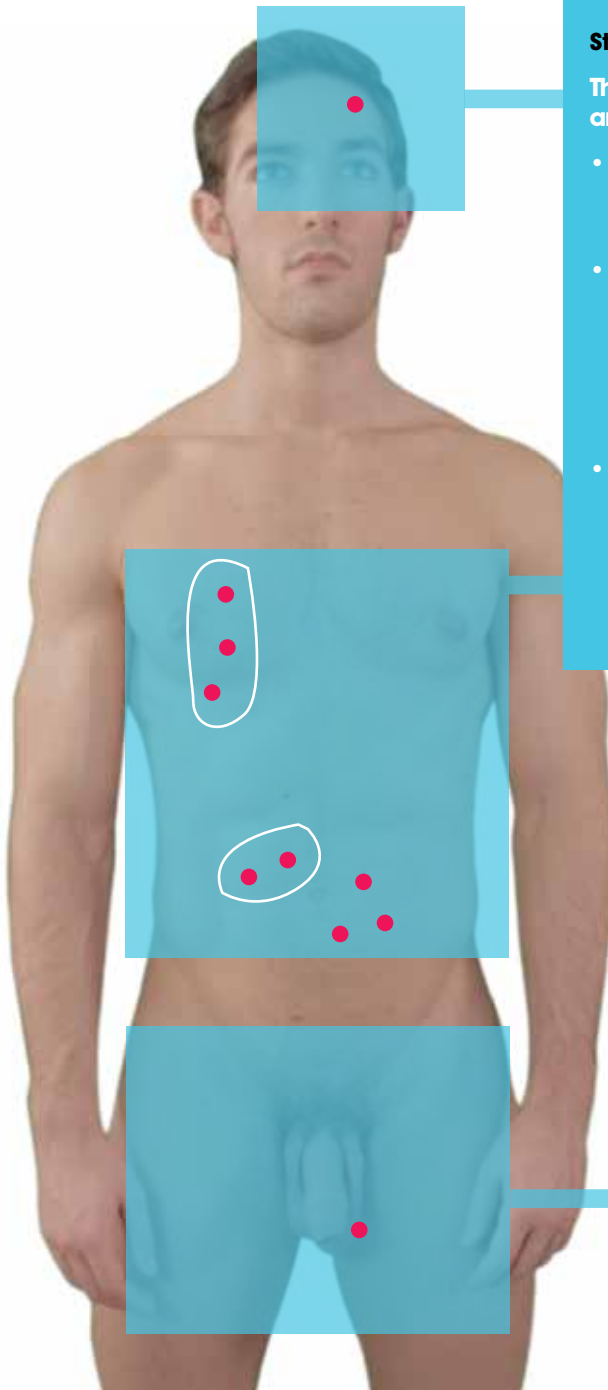


### Stage 2

The cancer cells have spread into nearby lymph nodes in the abdomen or pelvis. This is further split into sub stages 2A, 2B and 2C.

- Stage 2A - lymph nodes are all smaller than 2cm
- Stage 2B - lymph nodes are between 2cm and 5cm
- Stage 2C - at least one lymph node is bigger than 5cm

## T<sub>1-4</sub> N<sub>1-3</sub> M<sub>1</sub>



### Stage 3

This can be split into 3A, 3B and 3C.

- Stage 3A - cancer has spread to distant lymph nodes or lungs
- Stage 3B - cancer has spread to nearby lymph nodes or distant lymph nodes and lungs and there is a moderately high marker level
- Stage 3C - can be the same as stage 3B but you have a very high marker level or your cancer has spread to another body organ, such as the liver or brain



## The MDT Process

**An MDT will consist of a group of medical experts including urologists, oncologists, radiologists (X-ray specialists) and other healthcare professionals.**

When the results of the orchidectomy (type of cancer present), blood tests and scans are known they will be reviewed at a Multi Disciplinary Team Meeting (MDT). The MDT team will then come up with a consensus opinion as to what if any, further treatment is needed. This will then be explained to men when they attend a follow up clinic appointment. Any decision made by this team will reflect their experience in dealing with similar cases to and will be based on the latest medical research and techniques. The recommendation or outcome of the meeting will be in a man's best interest.

Some hospitals will have nurses who specialise in testicular cancer (germ cell tumour nurse specialists) who will be able to guide men through their treatment or answer any specific questions they may have. They may also know of local support groups for men with testicular cancer which men may find helpful.

# Localised testicular cancer

**Early stage seminoma or non-seminoma which is confined to the testicle with no evidence of spread outside of it can usually be treated with a policy of surveillance. This means regular CT scans and blood tests will be performed to detect any recurrence.**

Should testicular cancer reoccur then chemotherapy will be given and the chances are that a man will be cured.

However some men may find that they want to get on with their lives and not keep returning for scans as frequently as surveillance requires. In this situation a limited dose of chemotherapy can be given after surgery to reduce the risk of cancer returning. Chemotherapy is the use of anti-cancer (cytotoxic) drugs to destroy cancer cells. It works by disrupting the growth of cancer cells as they circulate in the blood.

If men opt for up front chemotherapy it will usually be a one off dose which may take around 1-2 hours to administer. Men may feel tired and suffer some minor side effects for a few weeks after.

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Traditionally radiotherapy has been used to treat the lymph nodes at the back of the abdomen which may still harbour some testicular cancer for seminoma. This treatment will usually involve around 21 days of treatment every day, 5 days a week for around 10 minutes a day. Again the oncologist will discuss this treatment. It is not used for non-seminoma. Some studies have indicated that radiotherapy may increase the chance of a second cancer occurring many years after treatment.

Both chemotherapy and radiotherapy (for seminoma) are as successful as each other in curing early testicular cancer.

After having treatment for testicular cancer, men will be reviewed on a regular basis with visits to clinic every 6-8 weeks. These visits will gradually become less but men will still need to be monitored for around 10 years.

Most testicular cancer that reoccurs does so within 2 years of treatment. Only 5% reoccur after this. Men will of course need to regularly perform testicular self-examination of their remaining testicle.

## Non Localised testicular cancer

Testicular cancer tends to spread to the lymph nodes in the abdomen and to other areas of the body such as the lungs. Other more serious organs, to which the cancer can spread, include the liver and brain.

If there is evidence of testicular cancer which has spread to these or other areas then a course of chemotherapy treatment will be recommended. (See Chemotherapy Information Sheet).

Testicular cancer that has spread to the lungs liver or brain is still testicular cancer and not a separate cancer.

Recent research has shown that 96% of men diagnosed with testicular cancer at any stage will be alive 10 years after treatment.

# Tips

## Recovery

Men may feel tired or exhausted following treatment for testicular cancer and should take this into account when considering going back to work or a busy lifestyle.

## Family & Friends

It may also take family and friends time to adjust to long term changes in a man's health so do not be surprised if they are acting a bit strange or distant.

## Having children

Although there is no definite evidence that radiotherapy or chemotherapy can affect children that are fathered after treatment it is usually advisable for you to use contraception for 6-12 months afterwards.



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