



## Testicular Cancer

## Testosterone replacement therapy for men following testicular cancer treatment

Each year over 2,400 men in the UK are diagnosed with testicular cancer.

Fortunately treatment is usually very effective and most men will be cured by an orchidectomy alone. Even if testicular cancer is found at a later stage and has spread outside the testicle, the majority of men will be cured with the addition of chemotherapy treatment.

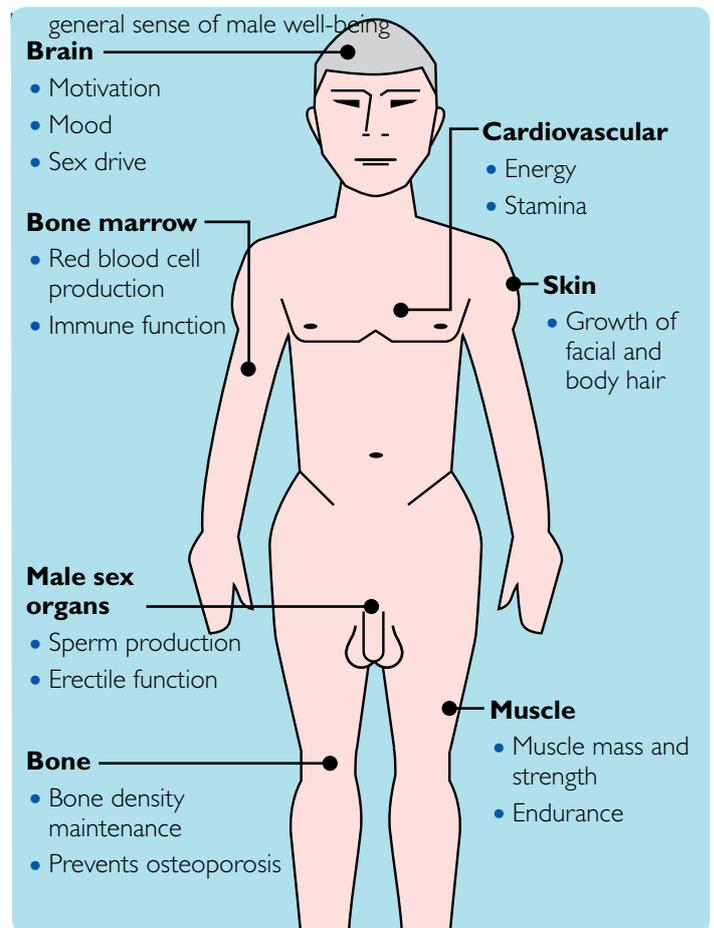
However, adjusting to life after treatment can take a while and some men may find that during this time their testosterone levels fall as a result of the treatment they have received.

This factsheet is designed for men who are having or have had testicular cancer treatment and would like more information on testosterone replacement therapy.

### What is testosterone?

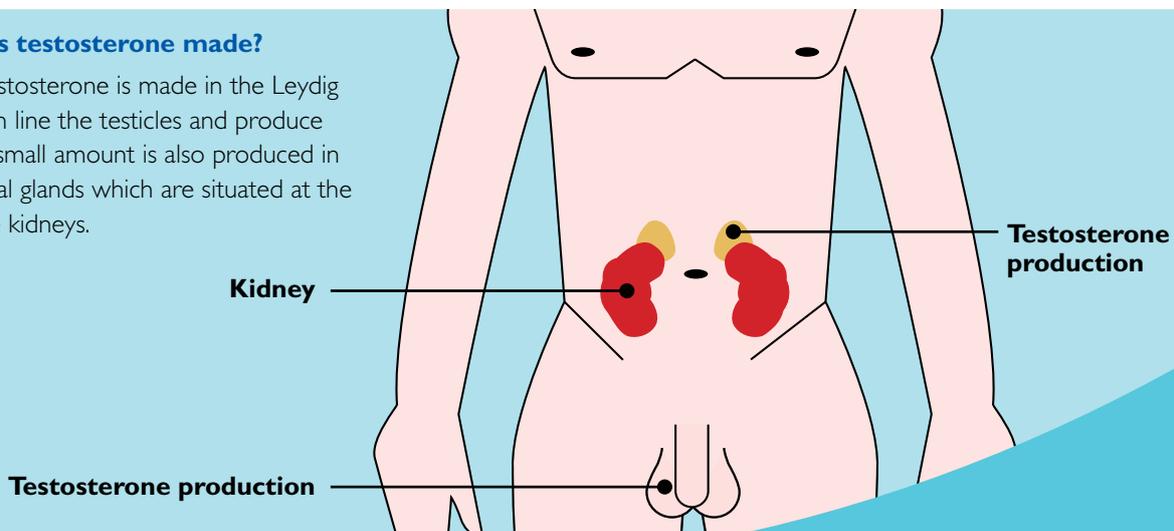
Testosterone is the male sex hormone. It is responsible for male sexual characteristics such as;

- ▶ deep voice
- ▶ muscle tone
- ▶ bone strength
- ▶ hair pattern and balding
- ▶ sex drive
- ▶ achieving and maintaining erections



### Where is testosterone made?

90% of testosterone is made in the Leydig cells which line the testicles and produce sperm. A small amount is also produced in the adrenal glands which are situated at the top of the kidneys.



## How will men be affected by an orchidectomy?

Having an orchidectomy should not affect the overall circulating testosterone level in the body as the remaining testicle, providing it is healthy and has not had any previous abnormalities, should be able to produce enough testosterone to make up for both. However in some men such as those who have had, or are having chemotherapy, the remaining testicle may not function abnormally for a while afterwards.

Bilateral orchidectomy means the removal of both testicles.

After bilateral orchidectomy, the body will not be able to produce sperm and only very low levels of testosterone will be made from the adrenal glands.

In this situation testosterone will fall to a minimal level and men will need to start testosterone replacement therapy.

## How will men know if their testosterone is low?

If testosterone levels fall below normal men will often feel tired, low in mood and can sometimes develop hot flushes. Weight gain and a loss of muscle strength can also occur. These 'symptoms' can often be quite vague and difficult to recognise.

More specifically low testosterone levels may stop men from getting erections (for instance in the morning) or erections not strong enough for masturbation or sexual intercourse.

If testosterone levels are very low for a prolonged time, breast swelling (gynaecomastia), thinning of the bones (osteoporosis) and an increased risk of cardiovascular disease can also occur.

## How else could men be affected by their treatment?

Because treatment for testicular cancer is intense and occurs in a fairly short space of time, men not only have to recover from the physical and mental strain of their illness but may find themselves struggling with the symptoms of low testosterone as well.

Although low mood and sometimes depression can occur after testicular cancer treatment, men should consider asking their specialist team or GP to check them for possible testosterone deficiency.

A simple way of identifying potentially low testosterone levels is to have a blood test performed which can measure the level of testosterone that the body is producing.

## The blood test to measure testosterone levels

It is important that this particular blood test is performed in the morning. Men can eat and drink normally. Testosterone levels are at their highest in the morning, and this is when the test will be more accurate. The results should only take a few days to be fully processed in most areas.

## What is the normal level?

A normal level of testosterone is usually considered to be between approximately 9 - 30 nmol/L (nanomoles per litre).

A level below 8 nmol/L is considered to be low and the blood test should be repeated. If it is low on 2 occasions taken at the right time of the day, then men will usually benefit from starting testosterone replacement therapy.

Men who think that they may have a low testosterone level should speak to their specialist hospital team who can arrange for them to be assessed for this problem. If low testosterone is diagnosed they may be referred to a hormone specialist (endocrinologist).

Borderline levels are between 9 - 12 nmol/L and will often be monitored. Treatment is not usually started in this range as it does not tend to make a difference to how most men feel.

However if men do have borderline levels it may still be possible to try testosterone replacement therapy for a period of time (for instance for 6 months) to see if it improves their symptoms.

## Types of testosterone replacement

There are several methods of testosterone replacement therapy;

Type	Tips
<b>Gels (Testim<sup>®</sup>, Testogel<sup>®</sup>, Tostran<sup>®</sup>)</b> These are gels that are applied in a thin layer to a clean, dry and healthy area of the skin such as the shoulders, chest or back, usually on a daily basis.	<ul style="list-style-type: none"><li>• These are applied daily usually after a shower or bath, and men need to wait at least 5 minutes before dressing afterwards.</li><li>• It is very important that men wash their hands before and after use to avoid any transfer to their wife or partner; or if someone else applies it for them, they need to wear gloves to stop testosterone being absorbed into their body.</li></ul>
<b>Injections (Nebido<sup>®</sup>, Sustanon 250<sup>®</sup>, Virormone<sup>®</sup>)</b> Sustanon or virormone are given as an injection into the muscle of the buttocks (or thickest part of the leg) every 2 or 3 weeks. Nebido is an injection which will release testosterone into the body over a certain length of time and is called a depot injection. It is given deep into the muscle of the buttocks every 10 - 14 weeks. The injection is more oily and a little deeper so can be more uncomfortable. Testosterone injections are usually given by GP practice nurses.	<ul style="list-style-type: none"><li>• The injections themselves can be uncomfortable and the vial should always be warmed up for a few minutes before the injection is given (see instructions on packaging).</li><li>• Possible skin irritation or soreness can occur around the site of the injections.</li><li>• Nebido tends to give very steady levels of testosterone.</li><li>• Other testosterone injections lead to a rapid rise for the first week as the testosterone kicks in, then the levels usually fall off and men may feel it wear off completely before the next injection is due.</li></ul>
<b>Patches (Andropatch<sup>®</sup>, Intrinsa<sup>®</sup>)</b> These are patches that can be applied to clean dry skin like a nicotine patch.	<ul style="list-style-type: none"><li>• Can cause skin irritation or reactions.</li><li>• <b>Not currently available in the UK.</b></li></ul>
<b>Capsules (Restadol<sup>®</sup>/Testocaps<sup>™</sup>)</b> Three or four capsules are usually taken daily for the first 2 - 3 weeks, reduced to 1 - 3 capsules daily. They should be taken with a meal and swallowed not chewed.	<ul style="list-style-type: none"><li>• These provide much lower levels of testosterone than other preparations so may not be recommended.</li></ul>
<b>Mucoadhesive Buccal tablets (Striant<sup>™</sup> SR)</b> These are tablets that are placed on the gum above the front teeth and dissolve gradually.	<ul style="list-style-type: none"><li>• Buccal tablets can become dislodged from the gum.</li><li>• <b>Not currently available in the UK.</b></li></ul>

### How do men know if the treatment is working?

If men start any of these treatments their testosterone levels will have to be checked on a regular basis to ensure a normal level is achieved. Most men start to feel better within a few weeks of treatment, but it may take at least 3 months or feel the full effects.

If testosterone replacement therapy does improve a man's symptoms following treatment for testicular cancer then it can be continued indefinitely. In some men who have had a unilateral orchidectomy, testosterone levels may eventually return to normal and testosterone replacement therapy can be discontinued.

Some men may also find that it will take a little while to find the best treatment for them and may need to try different types of replacement therapy.

### Are there any side effects?

Although testosterone is commonly thought to cause aggression and hostility, it is actually responsible for helping the body adapt to challenging and stressful events or situations. However like all medications testosterone replacement therapy may cause some side effects and it is important to read the information supplied with any medication.

Common side effects are oily skin and spots. Less often, people complain of headaches, nausea, excess sweating, tiredness and mood changes. Long term, testosterone levels will need to be monitored to make sure they stay within the normal range, and check that the testosterone has not affected their liver, blood count (circulating blood level) or prostate gland.

**Men should not stop testosterone treatment without consulting their GP or specialist team.**

## Testosterone and the Prostate Gland

The prostate gland is located just below the bladder. It is only found in men and is responsible for helping to produce the fluid found in semen. The gland is tiny at birth, but grows in size after puberty due to rising levels of testosterone.

Testosterone stimulates prostate growth and can cause enlargement. Although testosterone does not cause prostate cancer, it can cause active disease to progress, so treatment is not started in people who are being treated for prostate cancer. People at high risk of prostate cancer, or with a high prostate blood test (prostate specific antigen or PSA) may need to see a urologist to decide whether testosterone will be safe for them. Monitoring with PSA blood tests and an examination of the prostate is also necessary for everyone over 40 who commences testosterone replacement treatment.

**It is extremely important that men do not take supplements of testosterone (such as those used in weight training, body building or available online) other than what has been medically prescribed. Too much testosterone can cause medical problems.**



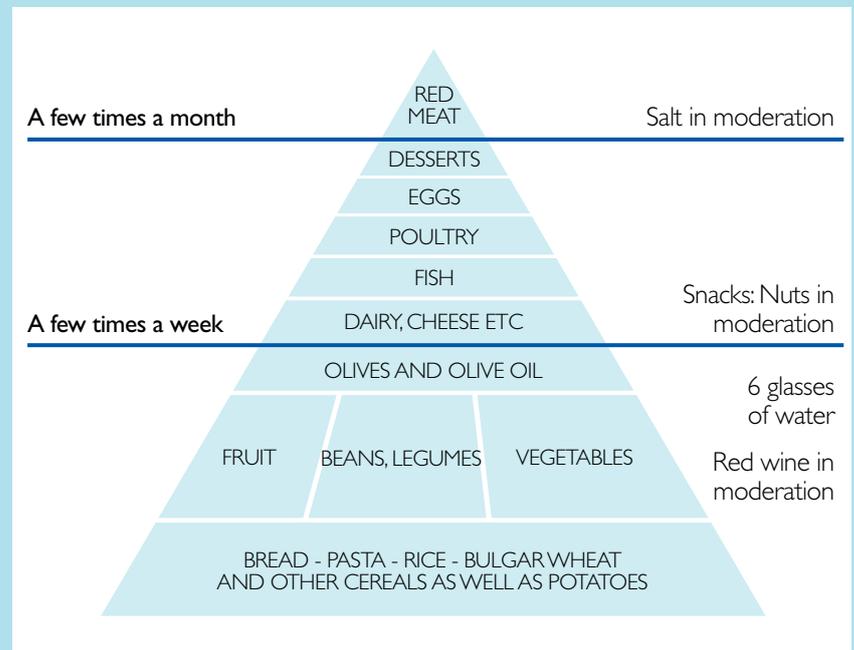
## Tips

- ▶ Physical exercise is very good for improving energy levels; reducing anxiety and low moods as well as promoting feelings of general well-being. A few seconds sprinting can increase testosterone levels and graduated exercise such as brisk walking or supervised cardiovascular training may also help.
- ▶ Sleep - a good night's sleep can help increase testosterone levels naturally.
- ▶ Avoid stressful situations. Practice relaxation techniques such as deep breathing or other natural ways to reduce stress levels. Stress will lower testosterone levels.
- ▶ Avoid excessive alcohol intake. Alcohol can lower testosterone levels.
- ▶ Try and eat a healthy mixed diet and keep to a healthy weight. Being overweight leads to a fall in testosterone.

Several foods which contain minerals that are thought to be important for normal testicular health include:

- ▶ Asparagus.
- ▶ Almonds and nuts.
- ▶ Eggs and avocado.
- ▶ Brown rice, white meat (chicken), salmon, oysters, peanuts, beans and cheeses.
- ▶ Bananas.
- ▶ Blueberries, cantaloupe, pineapple, citrus fruits, spinach, cabbages, tomatoes and red peppers.

## A good all round diet for health is the Mediterranean diet.



Information on all the above can be found on the NHS Choices website [www.nhs.uk](http://www.nhs.uk)

## Testosterone level reference

The table below can be used to record your testosterone levels.

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Testosterone level												

### General Information and support.

More information with links to health and support can be found on [www.yourprivates.org.uk](http://www.yourprivates.org.uk)

#### **Cancer Research UK** information and support

[www.cancerresearchuk.org](http://www.cancerresearchuk.org)

Cancer Research UK

Angel Building

407 St John Street

London EC1V 4AD

Helpline 0808 800 4040

#### **Macmillan Cancer Support**

[www.macmillan.org.uk](http://www.macmillan.org.uk)

Telephone: 020 7840 7840

Fax: 020 7840 7841

Macmillan Cancer Support

89 Albert Embankment, London SE1 7UQ

Questions/helpline: 0808 808 00 00

### Useful websites;

*Regional support groups run by men who have been affected by testicular cancer;*

#### **Check em lads (Merseyside)**

[www.checkemlads.com](http://www.checkemlads.com)

A website with an online forum.

#### **It's in the Bag (Bristol)**

[www.itsinthebag.org.uk](http://www.itsinthebag.org.uk) Sue

Brand 0117 342 3472 or

Pete Styles 07771710733

#### **It's on the ball (Norwich)**

[www.itsontheball.org](http://www.itsontheball.org)

Phone: 01603 288115

E-mail: [info@itsontheball.org](mailto:info@itsontheball.org)

#### **Baggy Trousers: (Manchester)**

[baggytrousersuk.org/](http://baggytrousersuk.org/)

Contact: Jack Broadley (via website).

#### **The Robin Cancer Trust (North East Essex)**

[www.therobincancertrust.org](http://www.therobincancertrust.org)

[therobincancertrust@gmail.com](mailto:therobincancertrust@gmail.com)



## About Orchid

Over 50,000 men are diagnosed with a male cancer every year. Orchid is the UK's leading charity dedicated to testicular, prostate and penile cancer.

Established in 1996 by a young testicular cancer patient, Colin Osborne and the oncologist who saved his life, Professor Tim Oliver, Orchid works to improve the lives of people affected by male cancers through a range of dedicated support services, education and awareness campaigns and a pioneering research programme.

Orchid has a **Male Cancer Helpline** staffed by specialist nurses on Mondays and Wednesdays 9.30am-5pm **0808 802 0010** or email **[helpline@orchid-cancer.org.uk](mailto:helpline@orchid-cancer.org.uk)**

If you have any queries regarding the information contained in this factsheet please contact the Orchid Team on:

**0203 745 7310**

References are available on request.

To be reviewed 2019



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