What is testosterone?

Testosterone is a hormone produced by the testicles in men. The production of testosterone is controlled by other hormones (called gonadotrophins), which are released from the pituitary gland inside the brain. If you have low levels of testosterone you may have symptoms such as tiredness, loss of sex drive, difficultly achieving or maintaining an erection, a loss of muscle mass, reduced exercise tolerance, reduced beard growth, night sweats and poor concentration. In some men, a low level of testosterone can contribute to thinning of the bones (osteoporosis) making fractures more likely.

However, all these symptoms can be caused by many other factors and so the presence of one or more of these symptoms does not necessarily mean that you have a lack of testosterone.

Why are my testosterone levels low?

Testosterone levels in men fall gradually from the age of 40 years. This is a normal part of getting older. However, testosterone levels can fall to very low levels if there has been damage to the testicles (due for example to infection or treatment for cancer) or surgical removal of the testicles. Damage to the pituitary gland can cause low levels of gonadotrophins and in turn that will result in a lack of testosterone. Gonadotrophins can also be low in men who are overweight or have type 2 diabetes.

How is testosterone replacement therapy given?

Testosterone replacement therapy (TRT) is usually either given as an *injection* or as a *gel*. The injection into a muscle in the buttock is usually given by a healthcare professional at your GP practice. To begin with, you receive an initial injection followed by another after six weeks; thereafter, injections are given every three months. You may feel some tenderness for a few days at the site of the injection.

The gel comes either in a container with a pump-dispenser or a sachet and is absorbed through the skin. It is applied once per day usually in the morning to the skin of the chest, back or upper arm. It is important to let the gel dry completely. It is especially important not to have skin to skin contact with females prior to the gel drying; this will prevent transfer of the gel, which can have unpleasant side effects in women.

Occasionally the gel can cause skin irritation. The dose of the gel may need to be adjusted depending on your symptoms and blood test results.

Like any medical treatment, TRT has both potential benefits and potential risks.

What are the benefits of taking testosterone replacement therapy?

TRT can be helpful for some men. It can increase sex drive and improve erectile function. TRT can also improve energy levels and, in theory, reduce the risk of fractures in men with osteoporosis. However, not all men notice an improvement in their symptoms with TRT, probably because in these instances their symptoms are caused by factors other than a lack of testosterone.

What are the risks of testosterone replacement therapy?

TRT can increase the production of red blood cells, which carry oxygen around the body. This can make the blood sticky and, in theory, increase the risk of heart attack and

stroke. If you are taking TRT, you should have a blood test every year to check the number of red blood cells in your body. If this number goes too high your doctor will have a discussion with you about reducing or stopping your TRT.

Some studies have also shown an increased risk of heart attacks in men on testosterone replacement. These studies were carried out in men who already had a higher risk of heart disease. If you have a history of heart disease, your doctor will have a discussion about the risks and benefits, before prescribing TRT.

Some men find they are more prone to anger and aggression when on TRT. If this has been a problem for you in the past, it may be a good idea to make someone you know aware you are receiving TRT and that this is a possible side effect.

TRT can increase the size of the prostate gland. Many men already develop an enlarged prostate gland as they get older and this can cause symptoms in passing urine such as a weak stream of urine. TRT can, therefore, sometimes make such symptoms worse.

There is no evidence that TRT causes cancer of the prostate, but in men who may have undetected prostate cancer and are started on TRT, it can make the cancer grow faster. To help detect early growth of prostate cancer, you should have a blood sample to check your PSA levels prior to starting TRT and every year you are on it. If your PSA starts to rise, you will be referred to a specialist (urologist) and your TRT will be stopped. You may require further investigations by a scan or a prostate biopsy. We would not start TRT in someone who has untreated prostate cancer. However, it is important to note that PSA is not a perfect test for prostate cancer; it can be normal in some men with prostate cancer, while many men with a raised PSA do not have prostate cancer.

If you have any further questions about testosterone replacement therapy please speak to your doctor.

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Testosterone Replacement Therapy