

Hypogonadism and testosterone replacement therapy

This leaflet is for patients diagnosed with hypogonadism who are considering testosterone replacement therapy. It explains what this involves and outlines the risks and benefits.

What is hypogonadism?

Hypogonadism is a lack of the male sex hormone testosterone and affects about 5 in every 1000 men. Testosterone is required by all men for a healthy life, physically and psychologically. It is a hormone produced by the testes and is regulated by the pituitary gland and hypothalamus in the brain.

Hypogonadism in men can be due to a problem with the testes themselves or the pituitary gland or hypothalamus. This includes disorders of the testes such as Klinefelter's syndrome (a genetic disorder), inflammation of the testes (orchitis), radiation or chemotherapy and alcohol abuse. Removal of both testicles, injury to both testicles and undescended testicles are all causes of hypogonadism. Any disease of the pituitary gland or hypothalamus can also result in hypogonadism.

What are the symptoms of hypogonadism?

- Fatigue and lethargy.
- Depression, anxiety, irritability.
- Reduced sex drive, erectile dysfunction.
- Decreased shaving frequency.
- Reduced exercise tolerance and strength.
- Excessive sweating and night sweats.
- Poor concentration and/or memory.

What are the long-term risks of hypogonadism?

Osteoporosis (brittle bones) can occur, leading to increased risk of hip and spine fractures.

How is hypogonadism treated?

Treatment is aimed at restoring the normal level of testosterone to improve wellbeing, sexual function, quality of life and to prevent development of osteoporosis. There are now several preparations of testosterone available, all of which require a doctor's prescription. The table overleaf lists the types commonly available and the benefits and risks of each.

What investigations will I have?

- Blood tests to check the level of the hormones that are controlled by the pituitary.
- You may need a special test to measure some of the pituitary hormones before and after stimulation to find out which are working normally and which are not.
- Visual field check. The optic nerve, which relays images from your eye to your brain, passes very close to the pituitary gland. Tumours of the pituitary gland can expand causing pressure on this nerve and this will cause impaired vision initially involving the periphery (edge) of the vision. This is checked by a special computerised light-screen. Dots of light appear on the screen and the patient has to identify when they see them.
- Special scans such as MRI can detect the site and extent of the tumour and any pressure on the surrounding structures.

What are the side effects of testosterone replacement therapy?

Occasional side effects include:

- Spots, usually on the back or chest.
- Prolonged painful erection.
- Thickening of blood by overproduction of red blood cells.
- Disturbed liver function.
- Aggression.
- There is no conclusive evidence to link testosterone treatment to an increased risk of prostate cancer but monitoring your PSA level (a marker of prostate cancer) is still recommended.

Whichever type of testosterone replacement therapy you take, you will need blood tests at regular intervals to check testosterone levels and ensure you do not develop potentially serious side effects of treatment.

Available testosterone preparations

Preparation	Advantages	Disadvantages
Testosterone Gel (<i>Testogel, Testim, Tostran</i>): this is a clear gel that is rubbed onto the shoulders, chest or back once a day. It dries within a few minutes.	<ul style="list-style-type: none"> • Stable blood levels of testosterone throughout the day. • No operation necessary. 	<ul style="list-style-type: none"> • Skin irritation (rare). • Testosterone may be transferred to partner by touch.
Testosterone injection (<i>Nebido</i>): this is injected deep into the muscles in the buttocks every three months.	<ul style="list-style-type: none"> • Steady level of testosterone for up to three months. 	<ul style="list-style-type: none"> • Local pain.

How is the treatment monitored?

- Baseline blood tests would be done before starting the treatment. These include full blood count, PSA, liver function, testosterone and lipid profile.
- You will be reviewed after three months, and then every year. Your review will include checking on your symptoms and looking at any potential side effects of the therapy. You will also have regular checks, including a full blood count, PSA, lipid profile, liver function, testosterone levels and blood pressure. The doctor may also examine your prostate gland via a rectal (back passage) examination.

Where can I learn more?

Contact the Pituitary Foundation Tel: 0845 450 0375 e-mail: helpline@pituitary.org.uk

Website: www.pituitary.org.uk

Contact us

Diabetes, Endocrine and Metabolism Department

Melrose House, Royal Berkshire NHS Foundation Trust, Reading RG1 5BS

Telephone 0118 322 7969

To find out more about our Trust visit www.royalberkshire.nhs.uk

Please ask if you need this information in another language or format.

Centre for Diabetes and Endocrinology, January 2023.

Next review due: January 2025