Patient information

Male Hypogonadism

Diabetes and Endocrinology Department

What is Hypogonadism?

Hypogonadism is a failure of the sex glands, the gonads (testes), to function properly. This can be due to a failure of the glands themselves (primary) or because the chemical messages (hormones) that tell the glands to work are missing (secondary). In both cases this means testosterone cannot be produced at the levels needed for good health.

What causes Male Hypogonadism?

Testosterone is made in the testes in response to hormones sent from the pituitary gland. The pituitary gland is a small 'pea' size structure that sits up at the base of your brain, just behind your eyes and is connected by a stalk to its control centre, the hypothalamus.

In normal health, the hypothalamus releases pulses of gonadotrophic releasing hormone (GnRH). This stimulates the pituitary gland to produce the hormones leutenising hormone (LH) and follicular stimulating hormone (FSH).

Both of these act on the testes, but with different effects. LH acts on the cells responsible for the production of testosterone while FSH acts on the cells that produce sperm.

Primary Hypogonadism

If the signals are sent from the hypothalamus and pituitary gland but the testes fail to respond, this is known as primary hypogonadism. A blood test would show higher than normal levels of LH/FSH and lower than normal levels of testosterone. The increase in LH/FSH is the body trying harder and harder to get the testes to produce testosterone.

The testes may be unable to respond for a variety of causes, some of which are genetic such as Klinefelter's syndrome.

Infections such as mumps can inflame the testes and so destroy their ability to produce testosterone.

Some medicines used to treat other diseases e.g. chemotherapy can also have an effect on testosterone production as can alcohol excess. Undescended testes will affect testosterone production in later life if not corrected at an early age. Surgical removal of the testes will mean you will be unable to produce testosterone.

Secondary Hypogonadism

When the signals from the hypothalamus and/or pituitary gland are low or absent this is known as secondary hypogonadism. A blood test will show either normal or low levels of LH and FSH and lower than normal levels of testosterone. This means the testes are not ‘told’ to produce testosterone and so the level falls. This can happen for many reasons some of which include genetic disorders such as Kallman’s syndrome, prescribed medicines or recreational drug use or as a result of surgery to the pituitary gland or head trauma.

What symptoms may I have?

Generally, the symptoms will be similar for both primary and secondary hypogonadism, as they relate to the low level of testosterone. Some causes will have specific symptoms of their own. Patients with Kallman’s syndrome for instance will have little if any sense of smell.

You may find you experience some or all of the following:

- Sweating and flushing
- Tiredness and lethargy
- Muscle aches and pains
- Lack of or reduction in body hair
- Need to shave is reduced or stopped
- Mood swings, depression
- Increased body fat, reduced muscle strength
- Breast development, reduced testicular size
- Reduced sex drive (libido)
- Erectile dysfunction.

Over a long period reduced testosterone levels can also lead to osteoporosis, or thinning of the bones, which can mean your bones may break more easily.

How is it diagnosed?

The doctors will listen to your symptoms and examine you. They will look for physical changes such as breast development, changes in body hair distribution and reduced testicular size.

Blood tests will be taken to measure the LH/FSH and testosterone. It is best if these bloods are taken in the morning as men have a peak of testosterone between 8 - 10am.

More involved blood tests can be performed in our investigation unit. These involve a series of blood tests taken before and after the injection of a synthetic (man made**)** GnRH. This helps the doctors identify fully the cause for your low testosterone.

If the doctors feel your pituitary gland may not be working fully then other tests may also be performed at the same time to check your production of hormones such as Thyroxine, Cortisol, Growth Hormone and Prolactin. This would be discussed in more detail with you at the time.

They may also arrange for an MRI (magnetic resonance imaging) scan of your head to look at the pituitary gland and hypothalamus more closely.

What treatment is there and how is it given?

Treatment deals with replacing your testosterone to a normal level. There are a variety of methods we can use to achieve this.

Injections

Nebido injections are oil based. It is a long acting injection that is given anywhere between 10 to 14 weeks. The dose is fixed at 1000mg per injection. Again this needs to be given into a muscle in your buttock.

You can sometimes get injection site reactions such as pain, redness or swelling. Mood changes can happen over the time period between injections; you may start to feel low when your next injection is due.

A Pulmonary Oily Microembolism (POME) is a reaction that can occur following a Nebido injection due to its 'oily solution'. You can develop symptoms of a cough, shortness of breath, chest pain, dizziness and paraesthesia (tingling, numbness) and syncope (loss of consciousness). These symptoms may occur during or immediately after the injection. If these symptoms occur, they are reversible.

Gels

These are applied daily to the skin of the upper arms, shoulders and abdomen or inner thighs. The gel comes in an easy to open sachet, tube or pump dispenser. The gel should then be applied as directed. For men whose use the pump dispenser your doctor will advise you how many pump depressions to use each day.

You will need to give approximately five minutes for the gels to dry before getting dressed and you should not bath, shower or go swimming for between two and six hours after applying the gel, depending on which one is used.

This is so the full dose of testosterone can be absorbed into your skin without being washed off.

Generally, the gel is easy to use and many men accept this as a form of replacement. It can cause skin irritation and occasionally there can be a slight residue visible on the skin.

Tablets

Tablets which are swallowed are not very often used as a form of replacement for testosterone. This is because the liver will 'see' the testosterone as a toxin and filter it out of the blood system. You would need to take a large amount of tablets several times each day to get anywhere near a normal level of testosterone replacement.

Will I have to be on treatment for life?

The treatment is usually for life although you may find that you change the type of replacement therapy form time to time to one that suits your situation best.

What side effects are there?

The side effects specific to each type of replacement have been included in the treatment description above. General side effects of testosterone replacement include headaches, nausea, changes in libido or sex drive, increase in prostate abnormalities, hypertension, polycythaemia (changes in the way your blood cells are made) and acne.

Is there any alternative to testosterone replacement?

There is not currently any approved alternative to testosterone replacement.

What happens if I don't have the treatment?

Your symptoms would continue with lethargy, mood swings weight gain and sweating being common. Loss of interest in sex and erectile difficulties can occur. Body hair would be sparse and shaving would reduce or cease. You would continue to be at risk of osteoporosis and break bones easily.

Is there anything else I should know?

Most men will have testosterone replacement without any problem. As part of your clinic visits to our team you will be monitored regularly for any side effects especially those affecting your blood pattern and prostate gland.

If any abnormalities are found, this may mean we stop your testosterone replacement for a short time or that we change to a different preparation.

Feedback

Your feedback is important to us and helps us influence care in the future.

Following your discharge from hospital or attendance at your outpatient appointment you will receive a text asking if you would recommend our service to others. Please take the time to text back, you will not be charged for the text and can opt out at any point. Your co-operation is greatly appreciated.

Further Information

Please feel free to contact the Endocrine Specialist Nurses with any questions you may have. There is an answer machine where you can leave your name and contact details. We will return all calls.

The Endocrinology Specialist Nurses
Tel: 0151 706 2417
Text phone number: 18001 0151 706 2417

Related Patient information leaflet:

Testosterone replacement therapy (PIF 503)

Useful addresses:

National Support Office
The Pituitary Foundation
86 Colston Street
Bristol
BS1 5BB
Tel: 0117 370 1320
Email: helpline@pituitary.org.uk
www.pituitary.org.uk

The Klinefelter's Syndrome Association UK
56 Little Yeldham Road
Little Yeldham
Halstead Essex CO9 4QT
Tel: 0300 111 47 48
www.ksa-uk.net
Email: chair@ksa-uk.net
www.kallmans.org

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