
PATIENT INFORMATION ON HYPOTHYROIDISM

What is hypothyroidism?

Hypothyroidism is the name given to the condition resulting from an underactive thyroid gland. This means that the thyroid is not producing enough thyroid hormone for the body's needs.

What causes hypothyroidism?

Hypothyroidism can be caused by:

- Autoimmune thyroid disease – the most common cause. This is a self-destructive process in which the body's immune system attacks the thyroid cells as though they were foreign cells. The most common form is known as 'Hashimoto's thyroiditis'
- Radioactive iodine treatment, or thyroidectomy, to correct hyperthyroidism or to treat thyroid cancer
- Antithyroid drugs if given for an overactive thyroid disorder in too large a dose
- Medicines such as lithium (used for certain mental health problems), amiodarone (used for heart problems), checkpoint inhibitors such as pembrolizumab and nivolumab (used to treat certain cancers)
- Some health foods containing iodine taken in excess, e.g. kelp (seaweed)
- A malfunction of the pituitary gland (a gland in the brain that regulates the thyroid hormones)
- Radiation for head and neck cancers (not common in the UK)

Sometimes hypothyroidism is present from birth. In a few babies, the thyroid does not develop or does not form the thyroid hormones properly. This is known as congenital hypothyroidism.

What are the symptoms of hypothyroidism?

The symptoms begin so gradually that you and your doctor might not notice them until the condition is well advanced. Low levels of thyroid hormone result in a slowing down of the mental and physical processes of the whole body. Once treatment has started these symptoms will improve over time, but if not, you should talk to your doctor. These are the most common symptoms:

- Fatigue and tiredness
- Increased awareness of the cold
- Dry and coarse skin
- Dry and thinning hair
- Hoarse or croaky voice

- Constipation
- Muscle weakness, cramps and aches
- Pins and needles in the fingers and hands (carpal tunnel syndrome)
- Heavier and longer periods
- Fertility problems
- Low libido
- Weight gain
- Puffy face and bags under the eyes
- Slow speech, movements and thoughts
- Low mood or depression
- Memory problems
- Difficulty in concentration
- Slow heartbeat
- Slightly raised blood pressure
- Raised cholesterol
- Slowed growth (in children)

How is hypothyroidism diagnosed?

By a physical examination and blood tests. A thyroid function blood test is a simple and accurate way to check whether your thyroid gland is working properly. An underactive thyroid is typically associated with a thyroid-stimulating hormone (TSH) level above the reference range and a free thyroxine (FT4) level that is below the reference range. It is reasonable to have a test for thyroid antibodies to confirm that the cause is autoimmune. Other factors, such as common illnesses that can temporarily alter blood test readings, will need to be ruled out. Some medicines - prescribed and over the counter - can affect results, so it is important to tell your doctor about any medication you are taking.

What is mild thyroid failure or subclinical hypothyroidism?

Sometimes the level of hypothyroidism is so slight that there are no obvious symptoms, and it can only be detected by blood tests. It may be discovered because of blood tests for another autoimmune disorder or because there is a history of thyroid disorders in the family.

A blood test result showing a slightly raised TSH level with a normal FT4 level indicates that you may have mild thyroid failure, also known as subclinical hypothyroidism, and that you may have an increased risk of eventually developing hypothyroidism. You should have a regular thyroid function test and consult your doctor if you notice any symptoms, as you may benefit from treatment.

What is the treatment for hypothyroidism?

Your doctor will prescribe levothyroxine, a synthetic version of the thyroxine produced by the thyroid gland. Levothyroxine is very pure and has negligible side-effects when taken in the correct dose.

Levothyroxine doses are dependent upon the person's body weight and their blood test results. Most patients require between 100 and 150mcg a day, but the dose can be lower than 50mcg or up to 300mcg a day, depending on your needs. If you have severe hypothyroidism or are at risk of heart problems, you can expect your doctor to start cautiously and increase the dose gradually. Patience is needed as it can take several months before you feel better and for the thyroid function tests to return to normal or be judged satisfactory by your doctor. During this period, you will have regular thyroid function tests, usually every three months, and your dose may need to be adjusted according to the results of the tests.

Levothyroxine is best taken in the morning, with water, on an empty stomach, at least half an hour before eating and drinking anything. It is also best taken at least four hours apart from calcium, iron, cholesterol-lowering drugs (cholestyramine, colestipol), and multivitamin tablets, as these too can decrease absorption. Grapefruit on the other hand is known to increase the absorption of levothyroxine as it increases acidity in the stomach. There are a number of other drugs that interact with levothyroxine. Always check with your doctor or pharmacy if you are on any other prescription or over the counter medication.

It is easy to miss a levothyroxine tablet, but because your body has a big reservoir of thyroxine, you will not notice a difference. However, it is important to take the tablets consistently every day as this can affect your blood test results and your health. Try and devise a system to help you take them every day, for example by setting up a regular reminder on your phone or by using a pill box.

Levothyroxine tablets may deteriorate if subjected to extreme temperatures.

Once the correct dose has been established it is unlikely to vary, although it is still important to have a blood test each year just to make sure. Too much levothyroxine will cause symptoms of an overactive thyroid and too little levothyroxine will not completely resolve symptoms of an underactive thyroid.

Around the time of menopause, and in postmenopausal women who are not prescribed hormone replacement therapy (HRT), some women may require their levothyroxine dose to be reduced. This is due to declining levels of oestrogen at this time.

It is preferable to avoid having TSH levels that are either below or above the reference range during treatment for hypothyroidism. This is because population studies show that there is a slightly lower life expectancy and a small increased risk of health problems in the long-term for people who are both overtreated and undertreated with levothyroxine. If you have thyroid blood tests that are outside the reference range over a long period of time, you should discuss these small risks with your doctor.

Within the limits described above, it is recommended that you and your doctor set individual targets that are right for your circumstances.

Some patients treated with levothyroxine have persistent complaints despite serum TSH readings in the reference range. Combination therapy of levothyroxine and triiodothyronine (LT4 and LT3) may be considered as an experimental approach under the supervision of an accredited endocrinologist but LT3 is not always available on the NHS.

Levothyroxine is produced by several manufacturers and your pharmacy may not always give you the same brand; most people will not be aware of any difference between brands. Very rarely people may feel less well with certain brands of levothyroxine. The reason for this is not clear but might relate to differences in fillers and bulking agents between the various brands of tablets. If this is the case, you should discuss this with your doctor, and recent MHRA guidance advises prescription of a consistent brand of levothyroxine.

If you are planning a pregnancy, you should let your doctor know and ideally have a blood test before you conceive. As soon as you know you are pregnant, and if you are already taking levothyroxine, it is recommended that the dosage is increased immediately. This is often achieved by doubling the dose on two days of the week or by a daily 25-50mcg increase. You should then arrange to have a thyroid function test as soon as possible. Even if your thyroid function test is not ideal at the start of pregnancy, your risk of pregnancy complications is only

slightly higher than normal, and you will still have a good chance of a successful pregnancy outcome. However, your levothyroxine treatment should be adjusted to normalise your thyroid function as soon as possible

Some important points....

- You will normally be looked after by your GP, but will be referred to an endocrinologist - a doctor specialising in thyroid and other endocrine disorders - if there are problems
- Once stable you should have a blood test once a year to check your thyroid hormone levels
- It is important to take your tablets consistently every day as failure to do this can affect your blood test results and your health
- You will need to take levothyroxine for life. Continue taking your tablets, unless advised by a doctor, even if other illness develops
- Once you know you are pregnant it is recommended that the levothyroxine dosage is increased immediately. This is often achieved by doubling the dose on two days of the week or by a daily 25-50mcg increase. You should then arrange follow up blood tests
- Check with your doctor whether your prescription is exempt from charges

Thyroid problems often run-in families and if family members are unwell, they should be encouraged to discuss with their own GP whether thyroid testing is warranted.

If you have questions or concerns about your thyroid disorder, you should talk to your doctor or specialist as they will be able to advise you. You may also contact the British Thyroid Foundation for further information and support, or if you have any comments about the information contained in this leaflet.

Useful contacts

- Ask your pharmacist
- Patient UK - www.patient.co.uk
- NHS Choices, www.nhs.uk/conditions/
- The British Thyroid Foundation. www.btf-thyroid.org tel: 01423 810093, www.british-thyroid-association.org
- The British Association of Endocrine and Thyroid Surgeons - the representative body of British surgeons who have a specialist interest in surgery of the endocrine glands (thyroid, parathyroid and adrenal), www.baets.org.uk

If you have further questions:

Call the **practice** on *01285 653184 or 01285 653122*

If you require **urgent** medical advice, call *111 (24 Hrs)*

In an **emergency** call **999**