

Patient information

Hypothyroidism

Diabetes and Endocrinology Department

What is hypothyroidism?

Hypothyroidism is the term used to describe an under-active thyroid gland. The thyroid gland sits at the front of your neck, just above your collarbone. In normal health it produces enough of the hormone thyroxine (T4) to keep you well.

Thyroxine is the hormone involved in the body's metabolism, ensuring we use our energy at the correct rate and that all our organs and cells can work normally. It is made by the Thyroid gland in response to another hormone, Thyroid stimulating hormone (TSH) being produced by the pituitary gland. By stopping or releasing TSH the pituitary gland is able to maintain normal levels of thyroxine.

Most of the thyroxine (T4) in the blood is attached to a protein called thyroxine binding globulin (TBG) which prevents thyroxine from entering the cells. When it is not attached to a protein it is known as Free T4 and is available for uptake by the body's cells. Free T4 is an important indicator in determining how active the thyroid gland is.

Hypothyroidism is the most common thyroid disorder and affects mainly women after the ages of 40-50yrs. However it can occur at any age and can affect anyone.

How does hypothyroidism happen?

Most cases of hypothyroidism happen because the immune system, which normally fights infections, attacks the thyroid gland. This is known as an auto-immune response.

In auto-immune disease, the cells in the thyroid gland are slowly destroyed and because of this, the level of thyroid hormone falls. The pituitary gland will send out higher and higher levels of thyroid stimulating hormone (TSH) as it tries to get the level of thyroxine back to normal, but the thyroid gland cannot respond.

This means when you have your blood test taken your TSH level is increased, often over the normal range and your free T4 level is reduced to below the normal range.

The most common type of auto-immune reaction which causes hypothyroidism is known as Hashimoto's disease.

Sometimes an under-active thyroid happens as a result of treatment for an over-active thyroid. This may have been surgery or treatment with radio-iodine.

What will I feel like with an under-active thyroid?

There are many symptoms of an under-active thyroid gland and not everyone will have all the symptoms. The symptoms occur gradually and may not at first be recognised as an under-active thyroid.

The thyroid hormones normally stimulate the body's metabolism and most of the symptoms of hypothyroidism reflect slowing of the metabolism.

Generally the symptoms include a variety of the following:

- Weight gain even though your appetite may be normal.
- Tiredness, sleepiness and a general slowing down.
- Speech, your voice may become husky and slow, or your speech may be slurred.
- Sensitivity to the cold, you may feel the cold much more than before, needing extra clothing and increased heating.
- Skin can become dry and rough, with swelling of your eyelids, hands and feet.
- Hair can become dry and brittle and you may lose the outer part of your eyebrows.
- Constipation can occur.
- Heart rate can become slow, blood pressure may increase and some patients may experience angina.
- Women may find that their menstrual periods become heavier and irregular.
- Hearing and balance may become impaired and you may have tingling in your fingers due to carpal tunnel syndrome.
- You may experience painful joints and muscle pain.

How is it diagnosed?

Your doctor will listen to your symptoms and examine you. He will arrange for blood tests to be taken to measure your TSH and free T4 levels. These will show the raised TSH and reduced free T4 levels discussed above.

Doctors can also measure antibodies to confirm auto-immune disease; this marker is called thyroid peroxidase antibodies, otherwise known as TRAB.

How is hypothyroidism treated?

When the diagnosis is confirmed, treatment is fairly easy. It involves giving you thyroxine tablets each day.

You may need to be on more than one tablet a day to give you the correct replacement dose. Blood tests will be taken to monitor your TSH and free T4 levels.

As you take thyroxine regularly the freeT4 level should increase to within the normal range and the TSH level should fall back to within the normal range.

Most adults will be in the treatment range of 50mcgs (micrograms) to 200mcgs daily. You would generally start treatment on a low dose and build up to your maintenance dose over several months, so it is important to attend regularly for blood tests so that the correct dose can be found for you.

You may find it helpful to read our separate information leaflet on thyroxine replacement medication. (PIF 504).

How long will I need to take the treatment for?

Treatment is usually for life, although if you developed hypothyroidism soon after having a baby this can reverse within a few months. Once your level is stabilised you will be discharged from clinic to the care of your GP (General Practitioner).

It is recommended that you attend your GP each year for a blood test to assess that your dose of thyroxine tablets remains adequate for you.

What side effects are there?

Usually these are very rare. The treatment is aimed at replacing the hormone you are no longer able to produce.

Too much thyroxine will give the symptoms of an over-active thyroid such as irritability, palpitations, diarrhea, sweating and weight loss. This is why the dose is built up slowly and why you need regular blood tests to check the dose is correct.

What else do I need to know?

- Once you start treatment it will be continued for life.
- You should carry identification with you to alert people to the fact that you take thyroxine, either a card or bracelet/pendant, which you will need to purchase yourself. This can be important if you are ever in an accident.
- When you are taking thyroxine you are exempt from prescription charges for this medicine. You can get a form from your family doctor (GP) to arrange for an exemption certificate.
- It might also be useful to carry a list of your medicines and their doses with you and to leave a copy with your partner and/or parents.

Please be sure to read carefully any information provided by your pharmacist.

What will happen if I don't take the tablets?

If not treated, hypothyroidism can increase your risk of developing heart disease, mental health problems and infertility. Your thyroid gland may also enlarge, causing a swelling in your neck which is known as a goitre.

If you are pregnant you have an increased risk of developing complications including pre-eclampsia, placental abnormalities, miscarriage and postpartum bleeding. The baby may also be born with low birth weight or even still born.

In severe circumstances, an untreated underactive thyroid can cause a potentially life threatening condition called myxoedema coma.

However, with treatment the outlook is excellent, the symptoms usually go and you are very unlikely to develop any complications.

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 leaflets:

- **Thyroxine Replacement Therapy (PIF 504)**
- **Hypothyroidism and Pregnancy (PIF 1712)**

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Medical alert jewellery (some examples)

- **www.medicalert.org.uk**
- **www.medicaltags.co.uk (SOS talisman)**
- **www.theidbandco.com**

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