Prepared on 21 Jun 2012 Serial number: SAT160LL
View this prescription online http://www.nhs.uk/ipg/Pages/IPPreviewCover.aspx?ref=SAT160LL
More health information at http://www.nhs.uk

Your information prescription

Contents

Additional information

Useful organisations

British Thyroid Foundation

2nd floor, 3 Devonshire Place, Harrogate HG1 4AA
Tel : 01423 709707

http://www.btf-thyroid.org/

Thyroid UK

32 Darcy Road, St Osyth, Clacton On Sea, Essex CO16 8QF
Tel : 01255 820407

http://www.thyroiduk.org.uk/

Introduction

An underactive thyroid means your thyroid gland, located in the neck, does not produce enough hormones.

Common signs of an underactive thyroid are tiredness, weight gain and feeling depressed.

Medically known as hypothyroidism, an underactive thyroid is not usually serious. It is easily treated by taking hormone tablets to replace the hormones that your thyroid isn't making.

The thyroid produces a hormone called thyroxine, which controls how much energy your body uses. When the thyroid does not produce enough thyroxine, many of the body's functions slow down.

An underactive thyroid cannot be prevented. Most cases of underactive thyroid are caused either by your immune system attacking your thyroid or a damaged thyroid.

Find out more about the causes of underactive thyroid (http://www.nhs.uk//Conditions/Thyroid-under-active/Pages/Causes.aspx) .

When to see your GP

See your GP and ask to be tested for an underactive thyroid if you have symptoms including:

- tiredness
- weight gain
- depression
- being sensitive to the cold
- dry skin and hair
- muscle aches

Find out more about the symptoms of underactive thyroid (http://www.nhs.uk//Conditions/Thyroid-under-active/Pages/Symptoms.aspx) .

Symptoms of an underactive thyroid are often confused for something else, by patients and doctors. Symptoms also usually begin slowly and you may not notice them for several years. The only accurate way to find out if you have a thyroid problem is to get a blood test to measure your hormone levels.

Find out more about testing for an underactive thyroid (http://www.nhs.uk//Conditions/Thyroid-under-active/Pages/Diagnosis.aspx) .

Who can it affect?

Both men and women can have an underactive thyroid. However, it's more common in women. In the UK, it affects 15 in every 1,000 women and 1 in 1,000 men.

One in 4,500 babies are born with an underactive thyroid (called congenital hypothyroidism). All babies born in the UK are screened for congenital hypothyroidism by having a heel-prick blood sample taken after the first week.

Treatment

Underactive thyroid is usually not serious, and taking hormone-replacement tablets, called levothyroxine, will raise your thyroxine levels. You will usually need treatment for the rest of your life. However, with careful management, you should be able to lead a normal, healthy life.

Find out more about treatment for underactive thyroid (http://www.nhs.uk//Conditions/Thyroid-under-active/Pages/Treatment.aspx) .

If it is not treated, an underactive thyroid can lead to complications, including swelling of the thyroid (a condition called goitre (http://www.nhs.uk//Conditions/Goitre/Pages/Introduction.aspx)), heart disease, mental health problems and infertility.

Find out more about complications of underactive thyroid (http://www.nhs.uk//Conditions/Thyroid-under-active/Pages/Complications.aspx) .

Symptoms of underactive thyroid

Many symptoms of an underactive thyroid (hypothyroidism) are the same as those for other conditions, so they can easily be confused for something else.

Symptoms usually begin slowly and you may not realise you have a medical problem for several years.

Common symptoms include:

- being sensitive to cold
- weight gain
- constipation
- depression
- tiredness
- slowness in body and mind
- muscle aches and weakness
- muscle cramps
- dry and scaly skin
- brittle hair and nails
- heavy or irregular periods

Elderly people with an underactive thyroid may develop memory problems and depression. Children may experience slower growth and development. Teenagers may start puberty earlier than normal.

If you have any of these symptoms, see your GP and ask to be tested for an underactive thyroid.

Find out more about getting tested for an underactive thyroid (http://www.nhs.uk//Conditions/Thyroid-under-

active/Pages/Diagnosis.aspx) .

If underactive thyroid is not treated

It is unlikely that you would have many of the later symptoms of an underactive thyroid as the condition is often spotted before more serious symptoms appear.

Later symptoms of underactive thyroid include:

- a low-pitched and hoarse voice
- dull facial expressions and a puffy-looking face
- thinned or partly missing eyebrows
- a slow heart rate
- deafness
- anaemia (http://www.nhs.uk//conditions/anaemia-iron-deficiency-/pages/introduction.aspx)

Find out the causes of underactive thryoid (http://www.nhs.uk//Conditions/Thyroid-under-active/Pages/Causes.aspx)

Causes of underactive thyroid

An underactive thyroid (hypothyroidism) happens when your thyroid gland doesn't produce enough of the hormone thyroxine, also called T4.

Most cases of underactive thyroid are due to either the immune system attacking the thyroid gland or a damaged thyroid.

Immune system

Most cases of underactive thyroid happen when the immune system, which normally fights infection, attacks the thyroid gland. Doctors describe this as an autoimmune reaction. This damages the thyroid, which means it is not able to make enough of the hormone thyroxine, and leads to the symptoms of an underactive thyroid.

Hashimoto's disease is the most common type of autoimmune reaction that causes an underactive thyroid.

It is not clear what causes Hashimoto’s disease, but the condition runs in families. It is also common in people with another disorder related to the immune system, such as type 1 diabetes and vitiligo.

Treatment for overactive thyroid

An underactive thyroid can also be a side effect of treatment for an overactive thyroid (http://www.nhs.uk//conditions/thyroid-over-active/pages/introduction.aspx) , a condition where the thyroid gland produces too much hormone.

Treatment for an overactive thyroid, medically known as hyperthyroidism, can involve medication, radiotherapy or surgery, all of which can cause your thyroid to become underactive.

Other rare causes

A lack of iodine in your diet may cause an underactive thyroid. This is because your body needs iodine to make

thyroxine. However, severe iodine deficiency is virtually unknown in the UK.

A viral infection or some drugs used to treat other conditions, such as depression and heart disorders, can cause the thyroid to stop working properly.

A baby may be born with an underactive thyroid if the gland does not develop properly in the womb. However, this is usually picked up during neonatal screening.

A problem with the pituitary gland could lead to an underactive thyroid. The pituitary gland is located at the base of the brain and regulates the thyroid. Therefore, damage to the pituitary may lead to an underactive thyroid.

Find out how to get a test for underactive thyroid (http://www.nhs.uk//Conditions/Thyroid-under-active/Pages/Diagnosis.aspx) .

Diagnosing underactive thyroid

If you have symptoms of an underactive thyroid (hypothyroidism), see your GP and ask for a blood test.

Find out more about the symptoms of underactive thyroid (http://www.nhs.uk//Conditions/Thyroid-under-active/Pages/Symptoms.aspx) .

A blood test measuring your hormone levels is the only accurate way to find out if there is a problem.

The test, called a thyroid function test, looks at levels of thyroid-stimulating hormone (TSH) and thyroxine in the blood.

A high level of TSH and a low level of thyroxine hormone in the blood could mean you have an underactive thyroid.

If your test shows raised TSH but normal thyroxine, it means you may be at risk of developing an underactive thyroid in the future.

Your GP may advise a repeat blood test every so often to see if you eventually develop an underactive thyroid.

For more information on testing, go to Lab Tests Online: thyroid function tests (http://www.labtestsonline.org.uk/understanding/analytes/thyroid_panel/glance.html) .

Referral

Your GP may refer you to a specialist in hormone disorders, known as an endocrinologist, if you:

- are younger than 16
- are pregnant or trying to get pregnant
- have just given birth
- have another health condition, such as heart disease, which may complicate your medication
- are taking amiodarone or lithium medication

Find out about treatment for underactive thyroid (http://www.nhs.uk//Conditions/Thyroid-under-active/Pages/Treatment.aspx) .

How thyroid hormones work

•

When thyroxine levels fall, thyroid-stimulating hormone (TSH) is released in the blood to stimulate the production of thyroxine.

- When thyroxine levels are too high, TSH production drops to allow thyroxine levels to return to normal.

Medical terms

Hypothyroidism: an underactive thyroid.

Thyroxine: a hormone produced by the thyroid, also called T4.

Overt hypothyroidism: where you have clear symptoms of an underactive thyroid.

Subclinical hypothyroidism: where your symptoms are mild or barely noticeable.

Levothyroxine: tablets containing the hormone thyroxine, used to treat an underactive thyroid.

Treating underactive thyroid

An underactive thyroid (hypothyroidism) is usually treated by taking hormone-replacement tablets called levothyroxine.

Levothyroxine replaces the thyroxine hormone which your thyroid does not make enough of.

A blood test measuring your levels of thyroid-stimulating hormone (TSH) will establish how much levothyroxine you need.

If the test detects high levels of TSH, it means you have an underactive thyroid and your doctor may advise you to take levothyroxine.

You may start on a low dose of levothyroxine, which may be increased gradually depending on how your body responds.

You will initially have regular blood tests until the correct dose of levothyroxine is reached. This can take a little while to get right.

If your symptoms are mild

If testing detects high levels of TSH but you do not have any symptoms or they are very mild, you may not need any treatment.

Your GP will usually monitor your hormone levels every few months and may start you on levothyroxine if you develop symptoms.

Some people start to feel better soon after beginning treatment, while others can take several months.

An underactive thyroid is a lifelong condition, so you will probably need to take levothyroxine for the rest of your life.

Levothyroxine does not usually have any side effects as the tablets simply replace a missing hormone.

Once you are taking the correct dose, you will usually have a blood test once a year to monitor your TSH levels.

Find out about the complications of an underactive thyroid (http://www.nhs.uk//Conditions/Thyroid-under-active/Pages/Complications.aspx) .

If you are pregnant

If you are pregnant and have an underactive thyroid, you should see a specialist. You are more likely to need hormone-replacement tablets and more frequent check-ups to monitor your hormone levels.

When to call your doctor

If you are being treated for underactive thyroid, call your doctor if:

- you develop chest pain
- you have an infection
- your symptoms get worse or do not improve
- you develop new symptoms

Complications of underactive thyroid

Several complications can occur if you have an underactive thyroid that is not treated.

An underactive thyroid can be caused by a problem with the immune system, the body's natural defence system, which can attack the body's own cells, including the thyroid.

This disorder may raise your risk of developing other immune conditions, although this is unusual.

These conditions include:

- B12 deficiency (http://www.nhs.uk//conditions/Anaemia-vitamin-B12-and-folate-deficiency/Pages/Introduction.aspx)
- vitiligo (http://www.nhs.uk//Conditions/vitiligo/Pages/Introduction.aspx) (patches on the skin caused by pigment loss)
- kidney failure
- premature failure of the ovaries or early menopause
- goitre (http://www.nhs.uk//Conditions/Goitre/Pages/Introduction.aspx?url=Pages/What-is-it.aspx)
- heart disease (http://www.nhs.uk//conditions/coronary-heart-disease/Pages/Introduction.aspx)

Coma risk

In very rare cases, a severe underactive thyroid may lead to a life-threatening condition known as myxedema coma.

Warning signs include:

- low body temperature
- shallow breathing
- low blood pressure
- low blood sugar
- unresponsiveness

THYROID DISORDERS

Thyroid function tests

A Quick Guide

Thyroid function tests are currently the most accurate way to diagnose and manage thyroid disorders. Your doctor will interpret the blood test results, together with your symptoms and how you feel, to reach a diagnosis to manage your treatment.

The most common thyroid function tests

- TSH - Thyroid Stimulating Hormone
- FT4 - Free T4 (the active part of thyroxine)
- FT3 - Free T3 (the active part of triiodothyronine)

Other blood tests

- Thyroid antibodies - to check the cause and severity of the thyroid disorder
- Thyroglobulin and calcitonin - to monitor people with thyroid cancer

Typical reference ranges for normal thyroids

Test	From	To	Units
TSH	0.4	4.5	mU/L (milliunits per litre)
FT4	9.0	25.0	pmol/L (picomoles per litre)
FT3	3.5	7.8	pmol/L (picomoles per litre)

These ranges are only a guide. The reference range for FT4 in particular does currently vary between methods and so any 'typical' reference range quoted will be subject to method and local interpretation.

Test results outside the reference range

- A **high** TSH level with a **low** FT4 level**: Hypothyroidism** (under-active thyroid)
- A **low** TSH level with a **high** FT4 level and a **high** FT3 level**: Hyperthyroidism** (over-active thyroid)
- Abnormal TSH levels together with normal FT4 levels indicate you may be at risk of developing a thyroid disorder
- A low TSH level together with a low FT4 level can indicate a disorder of the pituitary gland

Management of thyroid disorders

- If you have a diagnosed thyroid disorder, thyroid function tests will
  - check that your treatment is working
  - help to fine-tune your treatment

Other points

- Treatment aims to get your TSH levels back within the reference range
- Ask your doctor for a blood test if you have symptoms of a thyroid disorder
- You should have an annual blood test if you have had previous treatment for an overactive thyroid
- If you have a diagnosed thyroid disorder you should have a blood test
  - once a year, or more often if your doctor advises
  - in early pregnancy or if you are planning a pregnancy

It is well recognised that 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.

This Quick Guide is one in a series about thyroid disorders. Quick Guides may be obtained from the British Thyroid Foundation's office and website.

*A leaflet containing comprehensive information about **thyroid function tests** is available through membership of the British Thyroid Foundation. For a membership pack please telephone, or write to our postal address:*

BRITISH THYROID FOUNDATION
Registered Charity No. 1006391

The British Thyroid Foundation
2nd Floor, 3 Devonshire Place, Harrogate HG1 4AA
Tel: 01423 709707 or 709448
Website: www.btf-thyroid.org

Registered Charity Number 1006391

Endorsed by:
The British Thyroid Association – medical professionals encouraging the highest standards in patient care and research
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

First issued: February 2008. Revised: August 2011
Our literature is reviewed every two years and revised if necessary.

THYROID DISORDERS

Hypothyroidism

A Quick Guide

Hypothyroidism is a condition where the thyroid gland produces too little thyroxine for the body's needs. It is also known as an under-active thyroid.

- Hypo - means "under-"
- Hyper - means "over-"

Causes

- Auto-immune thyroid disease
- Radioactive iodine or surgery to correct hyperthyroidism or cancer
- Over-treatment of hyperthyroidism with antithyroid drugs
- Some medicines, eg lithium
- Some health foods, eg kelp

Common Symptoms

A slowing down of mental and physical processes of the whole body, such as

- fatigue and tiredness
- sensitivity to the cold
- physical and mental slowness
- dry skin and hair
- low mood or depression
- fertility problems

Diagnosis

- By a physical examination and blood tests
- A high thyroid stimulating hormone (TSH) level with a low thyroxine (T4) level indicate hypothyroidism
- A slightly raised TSH with a normal T4 is called subclinical hypothyroidism
- Subclinical hypothyroidism can develop into clinical or overt hypothyroidism

Treatment

- Levothyroxine tablets (a synthetic version of thyroxine) taken daily, for life
- Tell your doctor if you are taking any other medicines or special foods as some can interfere with levothyroxine absorption
- If you are pregnant or planning a baby, tell your doctor as soon as possible. You will probably need to increase your levothyroxine dose in the first three months

Follow-up

Blood tests are carried out

- approximately every eight weeks after the start of therapy or after a dose change until the correct dose of levothyroxine is established (i.e. the serum TSH is within the normal reference range)
- once a year thereafter (except in special circumstances such as pregnancy when more frequent testing is required)

It is well recognised that 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

This Quick Guide is one in a series about thyroid disorders. Quick Guides may be obtained from the British Thyroid Foundation's office and website.

*A leaflet containing comprehensive information about **hypothyroidism** is available through membership of the British Thyroid Foundation. For a membership pack please telephone, or write to our postal address:*

BRITISH THYROID FOUNDATION
Registered Charity No. 1006391

The British Thyroid Foundation
2nd Floor, 3 Devonshire Place, Harrogate HG1 4AA
Tel: 01423 709707 or 709448
Website: www.btf-thyroid.org

Registered Charity Number 1006391

Endorsed by the British Thyroid Association – medical professionals encouraging the highest standards in patient care and research
www.british-thyroid-association.org

First issued: February 2008
Revised: May 2010
Our literature is reviewed every two years and revised if necessary.