



Thyroid disease and osteoporosis

What is osteoporosis?

Osteoporosis occurs when the struts that form the mesh-like structure inside bones become thin. This causes the bone to become fragile and break easily, even after a minor bump or fall. You might hear these breaks described as 'fragility fractures'. The terms 'fracture' and 'broken bone' mean the same thing.

Fractures can occur in many parts of the body, but they are most common in the wrists, hips and spine. It's these broken bones that can cause pain, rather than osteoporosis itself. Spinal fractures can also cause height loss and a curved spine.

What does the thyroid gland do?

The thyroid gland can be found in the neck just in front of the windpipe (trachea) and its main function is to produce a hormone known as thyroxine.

This hormone regulates the rate of the body's metabolism, which is the process of turning food into energy. It is also necessary for normal mental and physical development and for maintenance of good health generally.

What is hyperthyroidism ('overactive thyroid')?

Hyperthyroidism, often called an overactive thyroid, is a condition where too much of the hormone thyroxine is released by the thyroid. This can cause symptoms such as weight loss, nervousness, anxiety, hyperactivity, palpitations, tiredness and increased sweating. In some people a swelling of the thyroid, known as a goitre, may develop in the throat.

How is hyperthyroidism diagnosed and treated?

A diagnosis of this condition is made following a full clinical assessment by the doctor and some simple blood tests, known as thyroid function tests, will confirm any suspicion.

Generally patients diagnosed with hyperthyroidism are referred to a specialist for treatment. There are three main treatment options – drug treatments that stop the thyroid from producing too much thyroxine hormone, radioactive

iodine treatment which helps to reduce thyroid activity, and finally surgery to remove part or all of the thyroid.

What is hypothyroidism ('underactive thyroid')?

Hypothyroidism is frequently referred to as an 'underactive thyroid' and means that the thyroid gland is not producing enough of the hormone thyroxine. Children born with this problem and adults who develop it will need lifelong treatment. It may also occur as a long term consequence of previous thyroid surgery. This condition can cause symptoms such as tiredness, lethargy, weight gain and feeling the cold as well as depression and muscle aches.

How is hypothyroidism diagnosed and treated?

Again a diagnosis is made following a clinical assessment by the doctor and then the thyroid function blood tests would once again confirm the diagnosis. This condition is treated by taking daily thyroid hormone replacement tablets, with levothyroxine being the most widely used preparation. It can take a little while to get established on the right dose of levothyroxine so regular blood tests are necessary at the start of treatment. On-going monitoring is also needed to make sure that the hormone levels stay within the recommended range.

Thyroid Disease and Osteoporosis

Does hyperthyroidism cause osteoporosis and fractures?

Bone is continuously being broken down and replaced by cells known as osteoclasts and osteoblasts. Each cycle of bone 'turnover' takes about 200 days and excess thyroid hormone will hasten this rate of bone turnover. If this process is happening too rapidly the bone building cells (osteoblasts) are not able to replace your bone fast enough, thus the overall rate of bone loss is increased.

If your thyroid hormone levels stay too high for too long, there is an increased risk of developing low bone density and osteoporosis, particularly if you are a post-menopausal woman and research has shown a potential increased risk of breaking your hip.

Hyperthyroidism can also be associated with muscle weakness and loss of lean body mass, which can be quite severe in some cases. This can then lead to an increased risk of falling and subsequent broken bones.

If I have hyperthyroidism, should I have a bone density scan?

A bone density scan provides information about the strength of your bones and helps your doctor determine whether or not you have a high risk of breaking bones. It is important to discuss your individual risks for osteoporosis with your doctor. Hyperthyroidism is one of a number of conditions that can cause a reduction in bone density. Once your thyroid problem is controlled, bone density usually recovers. Your doctor will assess your need for a bone density scan based on your risk factors and refer you for a scan if necessary.

Does hypothyroidism cause osteoporosis and fractures?

Hypothyroidism itself is not a risk factor for osteoporosis as it does not lead to bone loss. However, if you have hypothyroidism and are on too much replacement therapy, this could result in bone loss. To prevent this, your thyroxine replacement (levothyroxine) must be carefully monitored to ensure levels do not become too high. This seems to be particularly important if you are elderly, as research suggests an increased risk of hip fracture in those over 70 who take high doses of levothyroxine.

I have had thyroid problems. What else can I do to prevent osteoporosis and fractures?

Factors which can help to maintain healthy bones include a well-balanced diet with adequate calcium rich foods; safe sunlight exposure to get adequate vitamin D; regular weight bearing exercise; avoiding smoking and keeping alcohol consumption within the recommended limits.

Getting more information and support

We hope this fact sheet will help you feel more informed and more confident when discussing your bone health with your medical team.

For more information about osteoporosis and bone health, including fact sheets on all available drug treatments, visit our website at theros.org.uk/info or order more of our printed publications.

If you need more information or support, talk to your healthcare professional.

You can also call our specialist Helpline nurses with any questions or concerns about bone health or living with osteoporosis, for free, on **0808 800 035**, or email them at nurses@theros.org.uk

You may also find the following organisations helpful:

British Thyroid Foundation

btf-thyroid.org
01423 810 093

NHS website
nhs.uk

Patient UK
patient.co.uk

Society for Endocrinology
'You and your hormones'
yourhormones.info

Thyroid UK
thyroiduk.org
01255 820 407



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This information is based on the latest evidence and clinical practice. It should not replace advice from your own healthcare professionals.

To give us feedback on this fact sheet, email us at health.info@theros.org.uk

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To view or order more information about osteoporosis and bone health:



theros.org.uk/info



01761 471 771



info@theros.org.uk

To contact our specialist nurses:



0808 800 0035



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President: HRH The Duchess of Cornwall. Formerly known as the National Osteoporosis Society.

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