



What is osteoporosis?

Osteoporosis occurs when the struts which make up the mesh-like structure within bones become thin causing them to become fragile and break easily, often following a minor bump or fall. These broken bones are often referred to as 'fragility fractures'. The terms 'fracture' and 'broken bone' mean the same thing. Although fractures can occur in different parts of the body, the wrists, hips and spine are most commonly affected. It is these broken bones or fractures which can lead to the pain associated with osteoporosis. Spinal fractures can also cause loss of height and curvature of the spine.

There is information suggesting a link between some drugs used to treat osteoporosis and a very rare occurrence in which the thigh bone (femur) breaks as a result of little or no force. These are called unusual (or 'atypical') thigh bone (femoral) fractures. This factsheet has been produced in response to the many questions the charity's Helpline receives on this subject prompted by media stories and the, often confusing, information that is available online. It is important to remember that these fractures are extremely rare in people taking drug treatments for osteoporosis and in the majority of people the benefits of taking the treatment will far outweigh this very rare risk.

Why do I need drug treatment for osteoporosis?

Drug treatments are prescribed if you have osteoporosis and are at a high risk of broken bones. These treatments help strengthen your bones and reduce your risk of having fractures.

What is an 'atypical' thigh bone fracture?

'Atypical' thigh bone fractures are fractures which occur along the long shaft of the thigh bone in people who are taking certain osteoporosis treatments. Thigh bone fractures can occasionally occur as a result of osteoporosis but these are of a different nature. These "atypical" fractures occur after little or no force and in many cases there is a history of pain at the site of fracture, in the thigh or groin, for a few weeks or months prior to the break. In some cases the fractures can occur in both thighs and may be slow to heal.

How common are atypical fractures in people taking drug treatments for osteoporosis?

They are very uncommon, occurring in up to 5 in 10,000 people taking these drug treatments.

Which drug treatments for osteoporosis have been linked with this problem?

So far, atypical fractures have been reported mainly in people taking alendronate (alendronic acid) for osteoporosis but this may just reflect the fact that this is by far the most commonly used treatment. There have also been reports of atypical thigh fractures occurring in people taking other osteoporosis treatments including risedronate, ibandronate, zoledronic acid and also denosumab (Prolia).

Do osteoporosis drugs increase the risk of atypical fractures and how do they do this?

Although rare, atypical fractures appear to be more common in people taking some osteoporosis treatments (see above). Why these treatments may predispose to such rare fractures is unknown and is an important area for research.

Bone is constantly being worn away and rebuilt by specialist bone cells, this is called bone remodelling. When the amount of bone is worn away more quickly than it is rebuilt osteoporosis occurs. The bisphosphonates and denosumab slow down the rate at which bone is broken down and replaced with new bone. Although this is a very useful process to prevent bone loss and common fractures, one theory is that prolonged treatment may result in thigh bones becoming more susceptible to rare atypical fractures.

How can my doctor minimise my risk of an atypical fracture?

Two approaches may help (although no research has been carried out to prove that this is useful):

- Firstly doctors will only prescribe a drug treatment if you are at high risk of breaking a bone and really need bone protection.
- Secondly if you have been taking a treatment successfully for 5 years or more without breaking bones easily, it may be possible to consider a 'pause' in treatment. Usually your doctor would reassess your need

for further treatment after 1-3 years.

If you are at very high risk of fracture your doctor may decide that it is better to continue your drug treatment without a "pause". Ultimately, you and your doctor or specialist will need to agree about how long to take a treatment depending on your own specific situation. However, it should be remembered that atypical thigh bone fractures are very rare and that in the vast majority of people, the benefits of the drug, in terms of preventing fractures greatly outweigh this risk.

What can I do to reduce my risk of this rare adverse effect if I am taking an osteoporosis drug?

1. It is important to remember that if you are at high risk of osteoporotic fractures, the benefits of taking these drugs will far outweigh the risks and there is no reason to stop taking your drug treatment.

2. If you have been on one of these treatments for osteoporosis for 5 years or more, have a discussion with your doctor to make sure you need to stay on the treatment.

3. If you have unexplained new pain in the thigh or in your groin whilst taking osteoporosis drug treatments, particularly any of the bisphosphonates or denosumab, for more than a year it would be sensible to discuss this with your doctor or other health professional as soon as practical. If they think your pain could be caused by your treatment they may recommend an x-ray or a scan.

If investigations confirm that I have had an atypical fracture, what is likely to be recommended?

The MHRA (see Box 1), has stated that if you are unfortunate enough to have one of these rare fractures whilst taking a bisphosphonate or denosumab you should stop taking the treatment unless a specialist advises otherwise. Further management may include:

- Avoidance of weight-bearing exercise
- An operation to stabilise the bone with a pin and plate
- Another osteoporosis drug treatment may be recommended instead of a bisphosphonate or denosumab

The **National Osteoporosis Society** is the only UK-wide charity dedicated to improving the prevention, diagnosis and treatment of osteoporosis and fragility fractures. The Charity receives no Government funding and relies on the generosity of individuals to carry out its vital work.

For osteoporosis information and support contact our Helpline:

 **Freephone 0808 800 0035**

 **nurses@nos.org.uk**

To become a member or make a donation:

 **01761 473 287**

 **join online at www.nos.org.uk**

I understand that the risk of atypical fracture is very low but it still really worries me. What can I do?

Talk to your doctor and explain your concerns. Ask about the likely potential benefits of treatment for you and also the risk of adverse effects including atypical fracture. Unfortunately no drug treatments is free from side effects but you are still worried explain this to your doctor, as there may be other drug treatments which you can take.

The Medicines and Healthcare products Regulatory Agency (MHRA) is the organisation in the UK that makes sure drugs and medical devices work and are acceptably safe.

For more information about specific drug treatments for osteoporosis you can download our factsheets from our website or obtain a hard copy by phoning the charity. If you would like more general information on drug treatments for osteoporosis, such as how to decide which drugs to take, please ask us for a copy of our publication *All About Osteoporosis*.

This factsheet is one of a range of leaflets and publications produced by the National Osteoporosis Society. If you would like more information on osteoporosis please ask us for a copy of our booklet *All About Osteoporosis* by getting in touch with us using the contact details above.

Any medical information in this factsheet is not intended to replace the advice given by your doctor.