

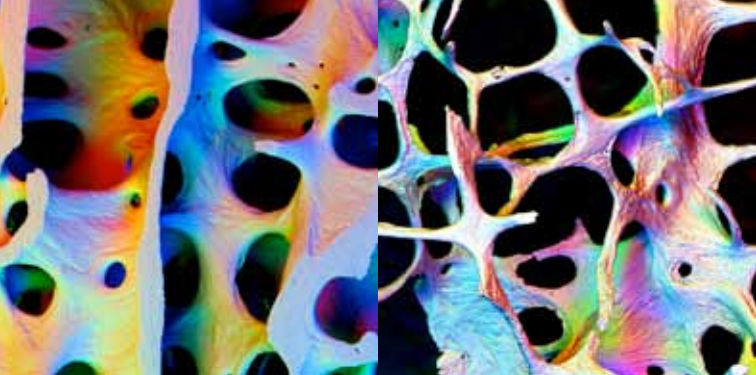


**Royal  
Osteoporosis  
Society**

Better bone health for everybody

# SCANS AND TESTS AND OSTEOPOROSIS





Strong dense bone

Fragile osteoporotic bone

## 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 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. Spinal fractures can cause loss of height and curvature of the spine.

# Finding out if your bones are strong

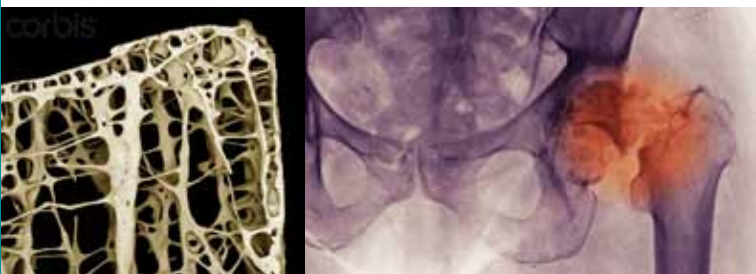
You are having a scan because your doctor thinks your bones may have lost strength and become more fragile.

A bone density scan measures how much 'bone mineral' is in an area of your skeleton – usually your lower spine and one of your hips. This helps to explain how strong your bones are.

The lower your bone density measurement, the greater your risk of having a fracture (broken bone) either in your spine, hip or elsewhere in your skeleton.

If your results fall well within the range found in a healthy young adult they will be described as "normal". If they are well below this range it is described as "osteoporosis" and an intermediate result is sometimes described as "osteopenia".

Bone density is not the only factor indicating bone strength. Many other factors such as taking glucocorticoids (steroids) or having previously broken bones after a simple fall provide additional information indicating that your bones are more fragile. Another important factor is the effect of age. As you move into old age the scaffolding inside your bones is more likely to have 'broken down' and this damage to the structure leads to reduced





bone strength - so a bone density result showing osteoporosis in your 50s for example, does not indicate as high a risk of fracture as it would if you were in your 70s or 80s.

Your results will be used as part of an overall assessment of your bone strength to decide how strong your bones are. The scan results and any recommendations for treatment will usually be sent to your GP – you should be told at your appointment how long this will take.

## Having a bone density scan

Your bone density will usually be measured using a DXA (dual energy xray absorptiometry) scanner. This uses a low dose of x rays - similar to the background radiation we all normally encounter over just a day - and less than one tenth of a chest x ray.

Having a scan takes up to 20 minutes and isn't unpleasant but you will need to lie on a couch on your back with your legs resting on a cushion for your spine scan. You won't be put in a 'tunnel' or need an injection. You can stay in your clothes unless your clothing has metal (zip) in the hip area or along the spine (including underwired bras).

You may be asked to change into a hospital gown for your scan.



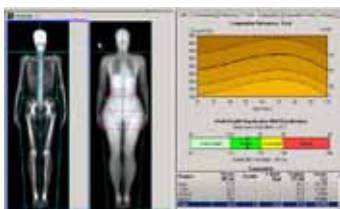
For more information see our fact sheet  
*Bone density scanning and osteoporosis.*

## Having a bone (or 'fracture risk') assessment

Your bone density result isn't a perfect measure of your bone strength as it won't show whether the structure, or scaffolding, inside your bones has broken down which has an important effect on bone strength. Other factors such as the size of your bones also need to be considered.

Your doctor or other health professionals advising you will consider your bone density, in combination with all the other risk factors that research has shown are linked to a 'high risk of fracture'. This is called a 'fracture risk assessment'.

It will help build up a more complete picture of your bone strength and likelihood of breaking bones in the future. These risk factors include: having broken a bone easily; taking glucocorticoids (steroids); having rheumatoid arthritis; smoking; drinking more than 3 units of alcohol a day; a tendency to fall over. If you have a high risk of fracture, then your doctor may recommend that you take an osteoporosis drug treatment to strengthen your bones. You may also be given advice about things you can do yourself to improve your bone strength.



# Finding out if you've had a spine (vertebral) fracture

## Ordinary x rays

Osteoporosis only causes back pain or spinal curvature if a spine fracture, or multiple fractures, have occurred. A spine fracture is a change in shape ("compression") of the spinal bones resulting from low bone strength. These fractures can result from a fall but, in someone with osteoporosis, often occur as a result of a minor injury to your back. You will usually be referred for an ordinary x ray to check for spinal fractures. Sometimes a bone density scan might identify a fracture if it happens to be in the area being scanned. If you have pain and problems that you think could be caused by osteoporosis, ask the health professionals advising you whether you have had spine fractures that could explain your symptoms.

## Vertebral fracture assessment (VFA) scans

This type of scanning may be carried out at the same time as a bone density scan using a DXA machine. VFA scans also use low dose x rays, to look at the shape of the bones in your spine and see if there are any fractures. Although not available in all hospitals, they can be a useful way of identifying fractures without having to refer you for an additional x ray. Your experience of VFA would be much the same as for a standard DXA bone density scan although you may need to lie on your side for part of the procedure. If you find it difficult to lie on your side, discuss your concerns with the staff so that they can make you comfortable.

# Finding out if your osteoporosis drugs are working

## Repeat bone density scanning

Don't be disappointed if you aren't having very regular scans. Having repeat bone density scans provides some useful information but won't always tell you whether a drug is working or not.

If you do have a follow up DXA scan this will usually be performed two or more years after your first scan. This is because it is difficult to measure significant changes in bone density in less time than this. You might also have a follow up scan after 5 years of treatment as part of a treatment review and fracture risk assessment. Whenever possible, your scan should be repeated using the same scanner.

You can be confident that all the licensed drug treatments for osteoporosis have been clinically tested and research has proved that they reduce the risk of broken bones. Having a fracture while on treatment doesn't necessarily mean the drug isn't working – drugs reduce but do not eliminate the risk of fractures – but if you continue to break bones your doctor may prescribe a different drug.

## Blood or urine tests – ‘bone markers’

Bone marker tests are only carried out in some specialist centres.

When the cells that break down and build up bone are at work, they leave behind chemical changes. These are called ‘bone markers’ and can be measured in urine or blood. Bone marker tests can be used to monitor responses to drug treatments.

Most GPs can’t usually offer you this type of test because they won’t have the experience or the equipment to use bone markers effectively.

It is not advisable to buy a self-testing kit over the counter or on the internet because the accuracy and usefulness of these kits is unproven.

These tests cannot be used instead of bone density scans to assess your risk of breaking bones.



**For more information see our fact sheet**  
***Blood and urine tests - bone markers -  
and osteoporosis.***

## Other blood and urine tests

You may have other blood or urine tests at the time of, or following, your scan. These are carried out to see if you have medical conditions which may be causing your low bone density or fractures. You may also have a blood test to check your calcium or vitamin D levels and to check your kidney function, especially if you are going to be prescribed the osteoporosis drugs given as an injection or via a drip.

Your doctor may decide that you are not getting enough calcium and vitamin D and prescribe supplements without needing a test.



## Ultrasound scanning

This type of scanning uses high frequency sound waves to test the strength of bones by measuring how quickly the ultrasound waves travel through the bone. Ultrasound scanning can certainly tell you something about your bone strength and risk of fracture, especially your risk of hip fracture if you are older (75 years or over), but it is not as reliable as other methods such as DXA. If you have a low ultrasound result, you may need to be referred for a DXA scan, especially if you have other risk factors. Ultrasound scanning is rarely useful if you are a younger person except in the research field. The general recommendation, if you have significant risk factors for osteoporosis and fractures, would be to discuss these with your doctor. If you have no risk factors then making healthy lifestyle changes is usually the best approach.



For a list of all our publications see our leaflet *Our information resources* or visit our website [theros.org.uk](https://theros.org.uk).

## For osteoporosis information and support contact our Helpline:



Freephone 0808 800 0035



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## To order an information pack or other publications:



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