

Self-care information on...

Osteoporosis



What is osteoporosis?

Osteoporosis is a condition that affects the bones, causing them to become weak and fragile and more likely to break (fracture).

These fractures most commonly occur in the spine, wrist and hips but can occur in other bones such as the arm or pelvis.

What causes osteoporosis?

Osteoporosis is caused by bones losing their density. Bones are at their thickest and strongest in early adult life and are constantly renewed and repaired through a process called bone turnover. However, as you age, this process is no longer balanced and bone loss increases. This means bone is very slowly broken down over time and your bones become less dense as you get older. This leads to the bone becoming weaker and more likely to fracture.

Women are at greater risk of developing osteoporosis than men. This is because changes in hormone levels can affect bone density. The female hormone oestrogen is essential for healthy bones. After the menopause, the level of oestrogen in the body falls, and this can lead to a rapid decrease in bone density.

Other things that increase the risk of developing osteoporosis include:

- Diseases of the hormone producing glands – such as an overactive thyroid gland (hyperthyroidism)
- Family history of osteoporosis
- Long-term use of certain medications that affect bone strength or hormone levels, for example, oral prednisolone
- Malabsorption problems
- Heavy drinking
- Smoking.

What are the symptoms of osteoporosis?

Osteoporosis usually develops slowly over several years, without any symptoms. However, after a certain amount of bone loss, the following may occur:

- A bone fracture after a minor injury such as a fall

This is often the first sign or indication that you have osteoporosis. If you have osteoporosis, the force of a simple fall to the ground (from the height of a standard chair or less) is often enough to fracture a bone. This kind of fall does not usually cause a fracture in someone without osteoporosis. A bone fracture after a minor injury like this is known as a fragility fracture.

Fragility fractures are most commonly of the hip, wrist, and vertebrae (the bones that make up the spine).

- Loss of height, persistent back pain and a stooping (bent forward) posture

These symptoms can occur if you develop one or more fractured vertebrae. A vertebra affected by osteoporosis may fracture even without a fall or significant force on it. The vertebrae can become squashed with the weight of your body.

Preventing osteoporosis

The following advice may help to prevent, or slow down bone loss. This information is particularly important if you are at increased risk of developing osteoporosis. If you already have osteoporosis, the following measures can also help to try to slow down any bone loss.

Regular exercise

The pulling and tugging on the bones by your muscles during exercise helps to stimulate bone-making cells and strengthens your bones. Weight-bearing exercise and resistance exercise are particularly important in improving bone density and helping prevent osteoporosis.

Weight-bearing exercises are exercises where your feet and legs support your weight. Examples include brisk walking, aerobics, dancing, running, skipping, and even jumping up and down on the spot.

Resistance exercise strengthens the supporting muscles around bones. This helps to increase tone and improve balance, which may help to prevent you from falling.

For most benefit you should exercise regularly - aiming for at least 30 minutes of moderate exercise or physical activity at least five times per week.

If you have been diagnosed with osteoporosis, it is a good idea to talk to your GP or health specialist before you take up any new exercise activity, to make sure it is right for you.

Healthy eating

Eating a healthy, balanced diet is recommended for everyone.

Calcium is important for maintaining strong bones. The recommended intake of calcium is at least 700mg a day. This is roughly equivalent to one pint of milk. If you have been diagnosed with osteoporosis and are taking a drug treatment, you may need to boost your calcium intake up to around 1000mg a day. Calcium can be found in a number of different foods, including green leafy vegetables, dried fruit, tofu and yoghurt.

Calcium content of some common foods:

Weight	Food	Calcium content (mg)
1/3 pint (190ml)	Whole milk	224
1/3 pint (190ml)	Semi-skimmed milk	231
1/3 pint (190ml)	Skimmed milk	235
150g (5oz)	Low-fat yoghurt	225
112g (4oz)	Ice cream	134
28g (1oz)	Cheddar cheese	202
112g (4oz)	Curly kale	168
112g (4oz)	Baked beans	59
100g (3 1/2oz)	Tofu	480
56g (2oz)	Whitebait (fried)	482

Generally people can get sufficient calcium by eating a healthy balanced diet. However, if you have a low calcium intake then supplementation may be necessary. Supplementation may also be necessary if you have been diagnosed with osteoporosis and are taking a drug treatment (see 'calcium and vitamin D tablets' later on in this leaflet).

Vitamin D is also important for bones and teeth as it helps your body to absorb calcium. The best source of vitamin D is sunlight, which your body uses during the summer months to manufacture the vital vitamin in your skin.

Vitamin D can be found in cod liver oil, sardines, tinned salmon, pilchards or tuna, cooked mackerel, herring and kipper, eggs, mushrooms, and fortified breakfast cereals.

The Department of Health recommends a daily vitamin D supplement containing 400IU (10mcg) of vitamin D for all people aged 65 years and over and anybody who is not exposed to much sunlight. For a list of suitable products that can be purchased from supermarkets and pharmacies, and for more information on vitamin D, see the self-care leaflet on vitamin D.

Lifestyle changes

- Quit smoking – cigarette smoking is associated with an increased risk of osteoporosis.
- Limit your alcohol intake – the recommended daily limit is three to four units of alcohol for men and two to three units for women, it is important to also avoid binge drinking.

Living with osteoporosis

Having osteoporosis does not automatically mean that your bones will break, it just means it is more likely and that you have a 'greater risk of fracture'. You should therefore try to reduce your risk of a fall:

- Take your time using stairs and hold on to the rail.
- Check your home for hazards you may trip over, such as trailing wires.
- Make sure rugs and carpets are secure.
- Keep rubber mats by the sink and in the bath to prevent slipping.
- Have regular sight and hearing tests because poor eyesight can increase your risk of falling and some forms of deafness can affect your balance.

How do you treat osteoporosis?

Treatment for osteoporosis is aimed at trying to strengthen the bones and prevent fractures. You may be given treatment if you have been diagnosed with osteoporosis or you are thought to be at high risk of osteoporosis. If you have already had a fragility fracture, treatment is usually recommended to help prevent a further fracture.

There are a variety of drugs that can be used to treat osteoporosis. A group of medicines called bisphosphonates are the most commonly used.

Bisphosphonates

These are a group of drugs that include alendronate and risedronate.

How do bisphosphonates work?

Bisphosphonates work on the bone-making cells. They can help to restore some lost bone, and help to prevent further bone loss. Research studies have shown that the risk of bone fracture may be reduced by taking one of these drugs if you have osteoporosis. They may also help to reduce the chance of a second fracture if you have already had a fragility fracture.

How should bisphosphonates be taken?

Oral bisphosphonates should be taken in the morning at least 30 minutes before the first food, drink, or oral medicine of the day. They should be taken with plain tap water only. Other drinks, such as mineral water, tea and coffee are likely to reduce the absorption of the drug and stop it work properly.

It is important that oral bisphosphonates are taken whilst you are sitting or standing up. This is because they can cause irritation of your oesophagus (gullet). You should remain sat up for at least 30minutes after taking the medicine.

What are the side effects of bisphosphonates?

Not all patients will experience side effects from taking a bisphosphonate. However, some people may feel sick or get an upset stomach and others may experience constipation or abdominal pain. Patients may also experience indigestion-type symptoms such as heartburn or difficulty swallowing. A full list of the side effects is included in the patient information leaflet that comes with the medicine.

If you are taking a bisphosphonate and experience any thigh, hip or groin pain, you should contact your GP practice. They will be able to examine you and ensure the medicine is still appropriate.

A rare side-effect from bisphosphonates is a condition called osteonecrosis of the jaw. This is where the bone tissue in the jaw dies. It can result in severe damage to the jaw bone.

If you take a bisphosphonate and you experience pain, swelling or numbness of the jaw, a 'heavy jaw feeling' or loosening of a tooth, you should tell your doctor. You should also brush and floss your teeth regularly, tell your dentist that you are taking a bisphosphonate and go for regular dental check-ups whilst taking a bisphosphonate.

Calcium and vitamin D tablets

Your body needs plenty of calcium and vitamin D to make bone. If you are taking medicine to treat or prevent osteoporosis, your doctor will assess your diet and lifestyle to see if you are getting enough calcium and vitamin D. Unless your doctor is sure that you have an adequate intake, they will often advise you to take a calcium and vitamin D supplement in addition to a bisphosphonate (or other similar drug).

Calcium and vitamin D supplements can be purchased from your local pharmacy (see below for examples of available products). Your GP will advise you on the dose you should take.

It is important that calcium and vitamin D supplements are taken at a different time of day to bisphosphonates or the bisphosphonate treatment will not work (e.g. take the bisphosphonate in the morning and calcium / vitamin D with your evening meal).

Brand name	Calcium content per tablet	Vitamin D content per tablet	Approximate cost
Calceos [®] chewable tablets*	Calcium carbonate 1.25g (500 mg calcium)	10 micrograms (400 units)	£4.99
Adcal-D3 [®] chewable tablets*	Calcium carbonate 1.5g (calcium 600mg)	10 micrograms (400 units)	£5.99
Natecal D ₃ [®] chewable tablets*	Calcium carbonate 1.5 g (calcium 600 mg)	10 micrograms (400 units)	£5.75
Calfovit D ₃ [®] powder (Lemon flavour)	Calcium phosphate 3.1 g (1200 mg calcium)	20 micrograms (800 units)	£5.70

*Contains a small quantity of soya (or soya bean) oil. These products should not be taken by people who are allergic to peanuts or soya.

If you need any further information:

- Ask your pharmacist
- NHS choices: <http://www.nhs.uk>
- Patient UK: <http://www.patient.co.uk>
- National Osteoporosis Society: <http://www.nos.org.uk/>

