

Patient information from BMJ

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Osteoporosis: what treatments work?

The aim of osteoporosis treatment is to prevent broken bones (fractures).

There are several medicines you can take to help your bones stay stronger for longer, which makes them less likely to break. There are also things you can do yourself to protect your bones, including eating well and exercising regularly.

To find out more about osteoporosis, including what causes it, see our patient information: *Osteoporosis: what is it?*

Lifestyle measures

Get enough calcium and vitamin D

One of the main ways to prevent fractures is to keep your bones as strong and healthy as you can.

Healthy bones rely on you getting enough calcium and vitamin D. Bones are made mostly of calcium, and your body needs vitamin D to absorb calcium from food.

You can get calcium from your diet, mainly through dairy products like milk and yoghurt, or dark green vegetables like spinach. Vitamin D comes mainly from sunlight, but there's also small amounts in oily fish, red meat, and egg yolks.

If you have osteoporosis, your doctor will talk with you about your diet and lifestyle. They might suggest taking **supplements** so you can get enough calcium and vitamin D.

You should always check with your doctor before starting or changing supplements. They can recommend the best ones for you based on your age, diet, and whether you have any other specific medical conditions. There can also be side effects if you take too many supplements, or if you take the wrong ones.

Exercise

If you can, you should exercise at least two days a week to help prevent falls and fractures.

Weight-bearing exercise can help keep your bones strong. This means any type of exercise where you are putting weight on your bones, like walking and jogging.

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Strengthening exercises like weight training can also help, especially if started when you're younger

Improving balance can also help you to avoid falls. Activities such as tai chi can help improve your balance.

You can ask your doctor about which exercises are safe for you.

Avoid falls

If you have osteoporosis it's really important to do whatever you can to avoid falls. Even a fall from standing height can cause a fracture. Here are some small changes you can make to stay safe:

- Keep your floors free of clutter and secure any loose rugs
- Wear well-fitting shoes with good grip and support
- Don't walk around in socks or stockings
- Install handrails on both sides of your stairs and in bathrooms
- Use a non-slip rubber mat in your bath or shower
- Keep a torch by your bed for when you need to get up at night
- Keep your phone in your pocket in case you need to call for help.

Medicines

There are different medicines to help treat or prevent osteoporosis. The best one for you will depend on what's causing your osteoporosis, your risk of breaking a bone, your age, whether you're male or female, and what you prefer. Your doctor will talk with you about the options and help you choose.

Bisphosphonates

Bisphosphonates are one of the most common medicines for treating or preventing osteoporosis in both women and men. They work by slowing down the rate at which old bone is broken down. This makes your bones stronger and helps prevent fractures.

You usually take bisphosphates as tablets, but some come as an injection. The injection is given every 3 months or once a year, depending on the type

Bisphosphonates can cause side effects in some people. For example, when taken as tablets they can irritate the tube that runs from your throat to your stomach (your oesophagus). This can cause discomfort and problems like ulcers in your oesophagus.

To make this less likely you should swallow the tablets whole, with a big glass of plain water, and stay upright for at least half an hour after taking them.

Bisphosphonates have also been linked to some more serious side effects, although these are rare. These include a bone disease in the jaw, irregular heart beat, stress fractures (caused by wear and tear on weak bones), and bone pain.

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Anabolic agents

Anabolic agents are also commonly used to treat osteoporosis in both women and men. They work by speeding up the rate at which new bone is built. Your doctor might recommend these medicines first if you have severe osteoporosis.

Anabolic agents come as injections. You take these once a day or once a month, depending on the type. Some people might get side effects like nausea, dizziness, headaches, leg cramps, low blood pressure and heart palpitations.

If you stop taking anabolic agents suddenly, your bones can become weak again very quickly. To prevent this, your doctor will usually give you another medicine afterwards to keep your bones healthy.

Other medicines

Post-menopausal women

A medicine called **denosumab** is another treatment option for osteoporosis in post-menopausal women. You take it as an injection every 6 months. This makes it a good option for women who prefer fewer injections. But it can cause side effects, including an increased chance of serious infection and damage to the bones in the jaw. Bisphosphonates, anabolic agents, and denosumab are the main treatments for post-menopausal osteoporosis. Your doctor will probably try these first, but there are other options if you can't take them or they don't work:

- **Selective estrogen receptor modulators (SERMs)**
- **Hormone replacement therapy (HRT)**
- **Conjugated estrogens/bazedoxifene.**

If your doctor thinks you should take one of these medicines, they will talk to you about the benefits and risks.

Men

In men, osteoporosis is mainly treated with bisphosphonates and anabolic agents. If you can't take these or they don't work, you may be given denosumab.

As with women, some men have weaker bones for hormonal reasons. In particular, low levels of the hormone **testosterone** can cause bone weakness in some men.

If your doctor thinks your osteoporosis is caused by low testosterone levels, you might be given **testosterone replacement therapy**. Researchers aren't sure whether testosterone therapy can help strengthen bones and reduce fractures. But some doctors might suggest this as a treatment alongside bisphosphonates if your testosterone level is low.

People with osteoporosis caused by corticosteroids

Corticosteroids, also called steroids, are anti-inflammatory medications used to treat various conditions, including severe asthma and some types of arthritis. When people take them for a long time they can cause weaker bones.

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If you need to take corticosteroids for more than a few months, your doctor should talk with you about medicines for osteoporosis. They might recommend bisphosphonates, anabolic agents, denosumab, or SERMs depending on your age, sex, and risk of fracture. They might also recommend calcium and vitamin D supplements.

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