

## Healthy bones and osteoporosis

Osteoporosis – often called ‘thinning of the bones’ – is very common. You might think only very elderly women get it. But, for example, one in three women and one in 12 men aged over 50 are affected. And younger people can get it too. Osteoporosis makes bones fragile and more likely to break. And most people don't find out they have it until after they break a bone.

This issue of *Treatment Notes* is for anyone worried about osteoporosis. It explains who's at greatest risk, and how you can lower your chances of getting osteoporosis or breaking a bone because of it.

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### Healthy bones

Your body constantly recycles the material your bones are made of – new bone is made as older bone is broken down. When you're young, more bone is made than is broken down. So your bones grow heavier and stronger. But as you age, bone-forming slows down. And by the time you're about 30, it matches the rate at which older bone is broken down. This means your bones stop getting heavier. Then, as you get older still, bone is broken down more quickly than new bone is made, so your bones get steadily thinner.

Even when you're elderly, healthy bones should be strong enough to take minor falls or knocks. Developing strong healthy bones when you're young helps protect against bones becoming too thin later in life. A healthy diet and exercise are crucial for this. The sex hormone, oestrogen, is also important in protecting women's bones from thinning.

### The bare bones of osteoporosis

Osteoporosis is like the bone-thinning as people get older, but much worse. The bones become full of tiny holes, and can eventually become fragile and likely to break. These pictures show healthy bone and bone with osteoporosis.

All bones are affected, but it's those in the hip, wrist and spine that are particularly likely to break. That's why so many older people break their hip or wrist when they fall. In the spine, osteoporosis can cause cracks and make the bones collapse. This can cause severe back pain, make people shorter by several inches, and give them a rounded back, making daily life difficult.

When older people break a bone it can take a long time to heal and take away their independence. Breaking a hip can even cause problems that lead to them dying early.



Microscope pictures of healthy bone (above) and bone with osteoporosis (below)



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## Are you at high risk?

Anyone can get osteoporosis, but you're particularly at risk if you're in one or more of these groups:

- you've already **broken a bone** through a minor injury – this could suggest you already have osteoporosis.
- you're a woman who had an **early menopause**, (before you were 45) or you've ever gone more than 6 months with **no periods** (except during pregnancy). This could mean you have had low levels of oestrogen. Since oestrogen protects your bones from thinning, the longer your level is low, the more at risk you are.
- you're a man with a low level of **testosterone** hormone.
- you don't lead an **active enough life** – your bones may have become thinner and weaker, especially if you've never been very active or you have mobility problems.
- you have certain **liver, kidney or thyroid** problems that can affect the health of your bones.
- you have a problem that affects how you absorb food (such as Crohn's disease), you're on a very strict diet (such as a vegan diet) or you've ever had anorexia or bulimia. Over time, you may not have got all the **nutrients** you need to grow strong bones or to keep them healthy.
- you've ever taken **steroid tablets** for a long time (such as 5mg prednisolone for 3 months or more) – steroids can cause bone-thinning.
- your mother ever broke her hip, or you know that you have a **family history of osteoporosis**.
- you're **very thin** (or were when you were young). If you're very underweight, your bones may never grow very strong. This is especially true for women because they tend to have lighter bones than men.
- You're a **smoker** or a **heavy drinker**.

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## Do you need to worry?

People often don't find out they have osteoporosis until they're tested for it after breaking a bone. But finding out earlier if you're at risk means you can take steps to help keep your bones healthy and reduce your chance of breaking a bone.

It's a good idea to talk to your GP if you're in one or more of the 'at risk' groups listed on page 3, or if you're worried about osteoporosis. They'll look at your medical history and may organise a bone scan for you. This can help show whether you already have, or are at risk of, osteoporosis and whether you need to do anything to make your bones healthier.

## What can help?

It's never too late to try to make your bones stronger. The steps below are recommended for anyone with osteoporosis or who's at risk of it. In fact, they're good tips for everyone to keep their bones healthy.

## Food for your bones

A healthy balanced diet, rich in calcium, is crucial for strong and healthy bones. The box, right, has more on this. Vitamin D is also important to help you absorb calcium from food. Your skin can usually make enough vitamin D when exposed to daylight. Most people get enough from exposing their hands, arms and face for a few minutes a day, and they get that from normal daily activities – sunbathing isn't recommended.

People with osteoporosis, and frail elderly people living in nursing homes, may need calcium and vitamin D supplements. Extra vitamin D is also recommended for: pregnant or breast-feeding

## Good food for bones

It's sensible to try to eat 3–4 portions of calcium a day.

Examples of a portion are:

- a glass of milk (about 200ml) – as a drink on its own, on cereal, or in hot or cold drinks
- a small pot of yoghurt
- a portion (50g) of cheese or cheese spread
- a handful of nuts or seeds
- two slices of bread or four crackers or crispbreads
- a serving of green vegetables (such as spinach, broccoli or cabbage)
- a portion (100g) of fish with edible bones (such as tinned salmon or pilchards).

Eating a balanced diet with at least 5 portions of fruit and vegetables a day should ensure you get enough of other important nutrients too.

Examples of a portion are:

- one large fruit (such as an apple, banana or pear)
- two medium fruits (such as a satsuma, kiwi fruit or plum)
- a handful of small fruit (such as grapes or strawberries)
- one tablespoon of dried fruits
- one small glass of fruit juice
- two tablespoons of vegetables
- a small bowl of salad.

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women; people aged 65 or over; vegans and people on special diets because of certain medical problems; and people who never, or rarely, go outside or who wear clothes that cover their whole body. Breast-feeding women may also need extra calcium.

## Don't be bone idle

Activities such as climbing stairs, brisk walking or dancing – known as 'weight-bearing' exercise – help make bones stronger. Doing 30 minutes five days a week is ideal, but every little bit helps. Certain exercises also help your balance, making you less likely to fall. And keeping active is also good for the rest of your body, such as your heart and circulation.

Different activities seem to strengthen bones in different parts of your body. That's why it's a good idea to do a variety of exercises. Choosing activities you enjoy will help you stick to them. If you're not used to keeping active, talk to your doctor before doing any new exercise. They'll also be able to give you advice if you have aches and pains, or mobility problems, that might make keeping active difficult.

## What about smoking and drinking?

Smoking might increase your risk of osteoporosis – yet another reason to quit. But, of course, everyone knows how hard giving up is. There are medicines that can help, such as nicotine replacement or bupropion. However, even with these medicines, it's still crucial to get advice and support from someone such as your doctor, pharmacist or nurse while trying to quit.

Sensible drinking doesn't seem to increase the chance of developing thin bones, but long-term heavy drinking might. For this and other reasons, it's not wise for women

## Falls

Elderly, frail people may be at risk of a fall. Things that can help prevent falls and injuries include:

- certain exercises to improve balance and muscle strength
- making the home safer. Possible ways include improving lighting, removing rugs and other hazards on the floor, and fitting handles in bathrooms and on the stairs
- checking with your doctor or pharmacist in case your medicines are making falls more likely
- regular eye tests
- wearing hip protectors. Older people at risk of a broken hip can reduce their risk of this injury if they wear these special plastic or foam shields around their hips. These are available on the NHS.

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to drink more than 14 units of alcohol per week (no more than 2–3 units per day), or for men to drink more than 21 units per week (no more than 3–4 per day). Typically, a 175ml glass of wine or a pint of ordinary strength beer is about 2 units, and a measure of spirits is 1 unit.

## What about medicines?

If you've had a broken bone due to osteoporosis, or you're at high risk of one, your doctor may suggest you take one of the following medicines to help prevent bone-thinning:

- bisphosphonates (such as alendronate, etidronate, risedronate), calcitonin, calcitriol or raloxifene.
- hormone replacement therapy (HRT) – taken by some women after the menopause to replace oestrogen and therefore help protect bones.

## Preventing falls

People with osteoporosis are at high risk of breaking a bone if they fall over. The box, left, gives tips about how such people can try to prevent falls.

## Want to know more?

Professionals such as your doctor, pharmacist or nurse can give you advice on things covered in this leaflet. There are also two other leaflets in this series of *Treatment Notes* which they may be able to give you: *Medicines to help you stop smoking* and *Worried about falls?*

You can also contact the **National Osteoporosis Society** ([www.nos.org.uk](http://www.nos.org.uk) or ☎ 0845 4500230) or **NHS Direct** ([www.nhsdirect.nhs.uk](http://www.nhsdirect.nhs.uk) or ☎ 0845 46 47).



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*Treatment Notes* contains general medical information that will not always apply to your child. Don't start, or stop, prescribed medicines without speaking to your doctor or pharmacist first.

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