

## Food Fact Sheet: Osteoporosis and diet

Osteoporosis is a condition where bones become thin and their strength is reduced. This makes them more likely to break. It affects both men and women but is most common after [the menopause](#).



Osteoporosis is often only diagnosed when a fall or sudden impact causes a bone to break (fracture). Diagnosis comes from checking your bone mineral density on a DEXA scan.

### **Diet and bone health**

Bones are made of protein fibres filled in with calcium and other minerals to create a hard structure. Bones are always changing in response to our lifestyle. During childhood and early adulthood they develop their strength but from our mid-30s onwards our bones start to lose calcium slowly, causing bone thinning. It is important to strengthen bones in our first 30 years to make sure we have enough calcium and other minerals for the rest of our life. This will help reduce the risk of osteoporosis. A bone-friendly diet and lifestyle is useful at any age though, to strengthen bone, or minimise age-related bone loss. Try to:

- Consume enough calcium and vitamin D
- Eat a healthy balanced diet including at least 5 [fruit and vegetables](#) a day to make sure you get all of the vitamins and minerals that are needed for bone health
- Eat enough protein - aim for meat, fish, dairy or plant-based alternatives (like tofu or pulses) twice a day
- Take a combination of regular weight bearing and muscle strengthening exercises. Inactive or bed bound people struggle with this, so they find it difficult to strengthen bones, even if their diet is rich in calcium

#### How much calcium do I need?

An ideal daily [calcium](#) intake for adults is 700mg (up to 1000mg for those undergoing osteoporosis drug treatment). You can see if your diet is giving you enough by checking the table below.

If you find it hard to make up this amount from diet alone, you should take a daily calcium supplement providing 400-600mg of calcium, preferably one that also contains 10µg of vitamin D. Take supplements with food to help aid calcium uptake into your body. If you have been diagnosed with osteoporosis your doctor will advise you on which supplement you should take.

Calcium Sources	Calcium (mg)
Milk, 1/3 pint (200ml)	240
Calcium-enriched soya/oat milk alternative 240 (200ml)	240
Hard cheese, matchbox-size (30g)	240
Yoghurt, plain/fruit 1 pot (150g)	240
Sardines with bones, ½ tin (60g)	240
Rice pudding, ½ large tin (200g)	180

Tofu / soya bean curd, (60g)	180
Calcium fortified bread, (180mg)180	180
Spinach, boiled, 1 serving (120g)	180
Figs, dried, 4	180
Cheese triangle (15g)	120
Cottage Cheese, 1 pot (100g)	120
Custard, 1 serving (120ml)	120
White bread, 2 large slices	120
Soya yogurt/dessert/custard (125g)	120
Baked beans, small tin (220g)	120
Fromage frais, 1 portion (50g)	60
Tinned salmon, ½ tin	60
Wholemeal bread, 2 large slices	60
Hummus, 1 serving (150g)	60
Brazil nuts or almonds (30g)	60
Orange 1	60
Broccoli, boiled, 2 florets (85g)	40

**How much vitamin D do I need?**

[Vitamin D](#) helps our bodies absorb calcium from our food and into our body where it helps strengthen bones. You are at risk of vitamin D deficiency if you have darker coloured skin, you always cover up outside, avoid the sun, work long hours (e.g. work a night shift) or if you are house-bound, pregnant or breast-feeding, or are aged 65+. Babies, young children, and children and adolescents who don't spend much time outside are also at risk. Wearing sunscreen also reduces vitamin D production in the skin and if you live in an area where the air quality is polluted. People living with obesity are also more likely to have low levels of vitamin D.

It is the sun's ultraviolet rays that allow vitamin D to be made in the body. In the UK, ultraviolet light is only strong enough to make vitamin D on exposed skin (on the hands, face and arms or legs) during April to September. But it's important to know that you don't have to sunbathe in order to get enough.

Vitamin D from sunlight can be stored in the body for use throughout the year. During the autumn and winter, we get vitamin D from our body's stores and from food sources, but these are insufficient to keep up vitamin D levels. All adults should consider taking a daily 10µg (400IU) vitamin D supplement, especially during autumn and winter.

Be aware that strong sun also burns skin so we need to balance making vitamin D with being safe in the sun. Take care to cover up or protect your skin with sunscreen before you turn red or get burnt. Find out more about [sun safety on the NHS website](#).

#### **Dietary sources of vitamin D rich foods**

- Oily fish, egg yolk, meal offal and milk (this varies during the seasons) are all good sources of vitamin D

- Cod liver oil also contains a lot of vitamin D, but you shouldn't take this if you are pregnant
- Fortified margarines, fruit juices and breakfast cereals all have vitamin D added

For more information on vitamin D see our [Vitamin D](#) Food Fact Sheet

### **Other important lifestyle factors**

#### Alcohol

A high alcohol intake is associated with an increased risk of osteoporosis, fracture risk and falls. You are advised to stay within the [government guidelines](#).

#### Smoking

Smoking leads to an increase in bone loss, risk of osteoporosis and hip fracture.

#### Low oestrogen levels

Oestrogen helps your body take up or 'absorb' calcium. If you have relative energy deficiency in sport (**RED-S**) as the result of insufficient energy intake or excessive energy expenditure or gone through the menopause, the low oestrogen levels puts you at more risk of osteoporosis. Following a diet rich in natural oestrogens (like soya) could help prevent osteoporosis after the menopause.

#### Weight

Being underweight (with a BMI under 19) increases your risk of osteoporosis. This may be because body fat stores help to keep oestrogen levels. You are advised to maintain a healthy body weight. You can learn more about weight gain in our Malnutrition Food Fact Sheet. (link) If you have any concerns talk to your doctor, dietitian or other healthcare provider.

#### Other health conditions

If your diet has been restricted in any way by long-term poor health, or if you have certain health conditions/take certain medications you may be at risk of osteoporosis. Conditions commonly associated with osteoporosis include: Crohns/ulcerative colitis, [coeliac disease](#), eating disorders and conditions that are treated with corticosteroids such as [rheumatoid arthritis](#). Talk to your doctor if you are concerned.

### Top tips

- Osteoporosis is a condition where the bones become thinner due to calcium loss, so a bone-friendly diet and lifestyle is useful at any age to strengthen bone or minimise age-related bone loss
  - Consume enough calcium and vitamin D
  - Eat a healthy balanced diet including at least 5 fruit and vegetables a day to make sure you get all of the vitamins and minerals that are needed for bone health
  - Eat enough protein - aim for meat, fish, dairy or vegetarian alternatives (like tofu or pulses) twice a day
  - Take a combination of regular weight-bearing and muscle strengthening exercise.
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