

# 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 diagnosed by checking your bone mineral density on a DEXA scan.

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 very 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 to strengthen bone, or minimise age-related bone loss.

## How can I safeguard my bones?

- Daily weight-bearing exercise can strengthen lower bones. Walking and running, or just shifting weight from one foot to another while standing for a bus are examples of weight-bearing exercise.
- Inactive or bedbound people struggle to weight bear and will find it difficult to strengthen bones, even if their diet is calcium rich.
- Consume enough calcium and vitamin D.
- Eat a healthy balanced diet including at least 5-a-day fruit and vegetables 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.

## How much calcium do I need?

An ideal [calcium](#) intake for adults is 700-1000mg per day. You can see if your diet is giving you enough by checking the table below.

| Calcium in dairy products          | Quantity              | Calcium (mg)                 |
|------------------------------------|-----------------------|------------------------------|
| Cow's milk, including Lactose free | 100ml                 | 120                          |
| Sheep's milk                       | 100ml                 | 170                          |
| Goat's milk                        | 100ml                 | 100-120                      |
| Cheese:                            | matchbox-size:        |                              |
| Cheddar                            | 30g                   | 222                          |
| Edam/Halloumi                      | 30g                   | 238                          |
| Cottage                            | 30g                   | 38                           |
| Cheese triangle                    | 1 triangle (15-17.5g) | 84-138                       |
| Yoghurt (plain)                    | 120g                  | 181 (low fat)<br>193 (whole) |
| Fromage frais                      | 1 pot (47-85g)        | 80-128                       |
| Rice pudding or custard pots       | 1 pot (55g)           | 60g                          |

|                                                                                                       |                                        |                         |
|-------------------------------------------------------------------------------------------------------|----------------------------------------|-------------------------|
| Malted milk drink                                                                                     | 25g serving in 200ml semi-skimmed milk | 444-800                 |
| Rice pudding                                                                                          | ½ large tin (200g)                     | 198                     |
| Custard - tinned                                                                                      | 1 serving (120ml)                      | 110-127                 |
| Milk chocolate                                                                                        | 30g                                    | 68                      |
| <b>Non dairy sources of calcium</b>                                                                   |                                        |                         |
| <i>Calcium-fortified products</i>                                                                     |                                        |                         |
| Calcium-fortified plant-based alternatives to milk e.g. soya, oat, nut, coconut, pea, rice* drinks    | 100 ml                                 | 120 - 189               |
| Soya bean curd/tofu (only if set with calcium chloride (E509) or calcium sulphate (E516), not nigari) | 100g (uncooked weight)                 | 350-400                 |
| Calcium-fortified soya, coconut or oat yoghurt and soya dessert or custard                            | 100g                                   | 120-211                 |
| Calcium-fortified coconut cheese                                                                      | 100                                    | 200-736                 |
| Calcium-fortified infant cereals                                                                      | 1 serving (20g)                        | 120                     |
| Calcium-fortified cereals                                                                             | 30g serving                            | 136-174                 |
| Calcium-fortified instant hot oat cereal                                                              | 1 tbsp dry cereal (15g)                | 200                     |
| Calcium-fortified bread                                                                               | 1 slice (37-50g)                       | 84-179                  |
| Sardines (with bones) (in tomato sauce, olive oil, brine)                                             | ½ tin (60g)                            | 273-407                 |
| Pilchards (with bones)                                                                                | 1 serving (60g)                        | 150                     |
| Tinned salmon (with bones)                                                                            | ½ tin (106g)                           | 115 (pink)<br>174 (red) |
| Whitebait                                                                                             | 1 small portion (50g)                  | 430                     |
| Scampi in breadcrumbs                                                                                 | 6 pieces (90g)                         | 90                      |
| White bread                                                                                           | 2 large slices (100g)                  | 155                     |
| Wholemeal bread                                                                                       | 2 large slices (100g)                  | 106                     |
| Pitta bread/chapatti                                                                                  | 1 portion (65g)                        | 90                      |
| Orange                                                                                                | 1 medium (120g)                        | 29                      |
| Broccoli, boiled                                                                                      | 2 spears (85g)                         | 36                      |
| Kale                                                                                                  | 100g boiled                            | 150                     |
| Spring greens                                                                                         | 1 serving (75g)                        | 56                      |

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 101<sup>1</sup>/<sub>2</sub>g 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.

N.B. Spinach, dried fruits, beans, seeds and nuts contain calcium but they also contain oxalates and/or phytates which reduce how much calcium your body can absorb from them. You should not rely on them as your main sources of calcium.

## How much vitamin D do I need?

[Vitamin D](#) helps calcium get from our food and into our body where it helps strengthen bones. Most of our vitamin D should be made in our bodies from exposure to sunlight. You are at risk of vitamin D deficiency if you always cover up outside, avoid the sun, or have darker coloured skin, or if you are housebound as vitamin D cannot be absorbed through glass. Wearing sunscreen also reduces vitamin D production in the skin. Vitamin D from sunlight can be stored in the body for use throughout the year. If you are living with obesity you are also more likely to have low levels of vitamin D.

We should all try to expose our bare arms and face to the sun for 15 minutes two to three times a week, between the hours of 10am and 3pm, during summer months (April to September) to make enough vitamin D for the year. However 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 Choices website.

## Vitamin D rich foods

Oily fish, egg yolk, meat 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.

## Other important lifestyle factors

**Smoking:** Smoking leads to an increase in bone loss, and increased risk of osteoporosis.

**Low oestrogen levels:** Oestrogen helps your body take up or 'absorb' calcium. This is why you are more at risk of osteoporosis if you have gone through the menopause. 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, learn more about weight gain in our [malnutrition food fact sheet](#). If you are concerned, 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: Crohn's/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.

**Alcohol:** Research shows that drinking a lot of alcohol increases the risk of osteoporosis. However, there is some evidence to show that having a moderate amount of alcohol may be protective. You are advised to stay within the government guidelines.

## Summary

Osteoporosis is a condition where the bones become thinner due to calcium loss. It can affect both men and women. It is most common in older people, particularly after the menopause. There are steps that you can take to reduce your risk of getting osteoporosis like having a healthy balanced diet with plenty of calcium, vitamin D and other vitamins and minerals. It is important to get some weight-bearing exercise every day, not to smoke and to keep your alcohol intake within guidelines.