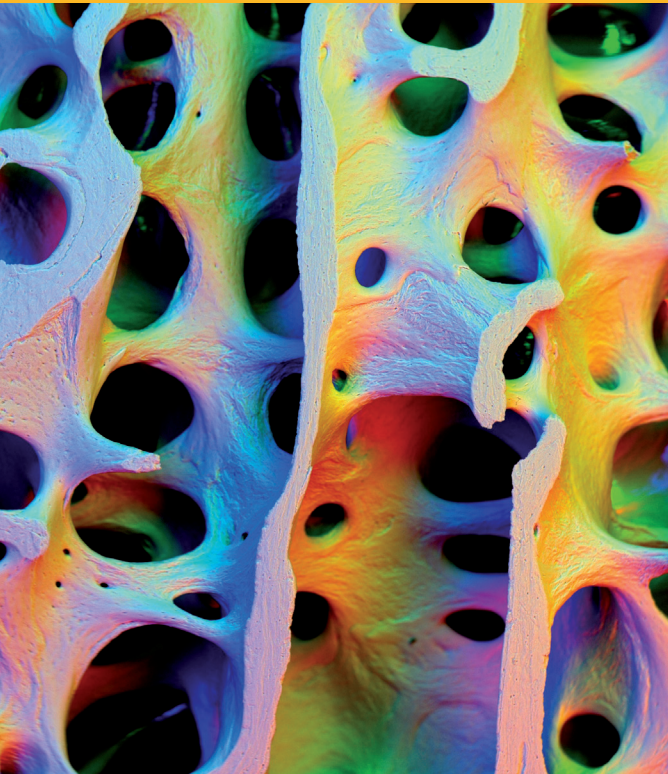


What is osteoporosis?

Osteoporosis occurs when the struts which make up the mesh-like structure within bones become thin, causing them to become fragile and break easily, often following a minor bump or fall. These broken bones are often referred to as ‘fragility fractures’. The terms ‘fracture’ and ‘broken bone’ mean the same thing. Although fractures can occur in different parts of the body, the wrists, hips and spine are most commonly affected. It is these broken bones or fractures which can lead to the pain associated with osteoporosis. Spinal fractures can also cause loss of height and curvature of the spine.



Healthy balanced eating

Whatever your age or gender, it is vital to make sure that what you eat today will help to keep your skeleton strong for the future. Although getting enough calcium is important, a healthy, balanced diet is essential to provide all the vitamins, minerals and other nutrients that your bones need. Aim to eat meals that incorporate a wide variety of foods from the four main groups, including fruit and vegetables; carbohydrates like bread, potatoes, pasta and cereals; dairy and alternatives; beans, pulses, fish, eggs, meat and other proteins. Aim for a healthy body weight to help protect your bones.



Calcium

Calcium is vital for strong teeth and bones because it gives them strength and rigidity. Our bodies contain about 1kg of this important mineral, 99 per cent of which is found in our bones. Most people should be able to get enough calcium through healthy eating, without the need for additional supplements.

How much calcium do I need?

Age	Daily RNI (Reference Nutrient Intake)
0-12 months (non breast fed only)	525mg
1-3 years	350mg
4-6 years	450mg
7-10 years	550mg
11-18 years boys/girls	1000/800mg
Adults (19+) years	700mg
Pregnant women	700mg
Breast feeding women	700mg + 550mg

Those people taking osteoporosis drug treatments might benefit from a daily calcium intake of around 1000mg a day.

Vitamin D

You need vitamin D to help your body absorb calcium. Adequate vitamin D will also keep muscles strong and help prevent falls in older people. You can get vitamin D by the action of sunlight on your skin, from food and drink containing vitamin D naturally or added-in (‘fortified’) or from dietary supplements. You should try to get short periods (about 10 minutes) of sun exposure to your bare skin, once or twice a day, without sunscreen and taking care not to burn. Get outside between late March and the end of September when the sun’s rays produce vitamin D.

To ensure you get enough, a UK government advisory committee have recommended that, in addition to sensible sunlight exposure, everyone over 1 year of age should get 10 micrograms (sometimes described as 10 µg) of vitamin D every day. (8.5 - 10 micrograms for all infants under 1 year). The government says most of us should get enough vitamin D from sunlight when we are outside in the summer, alongside foods that contain vitamin D but that in the winter months we rely on foods and supplements.

10 micrograms (µg) is equal to 400 International Units (IU).



A vitamin D supplement is recommended all year round:

- From birth to one year unless you are receiving 500 ml or more of formula milk which is fortified with vitamin D
- From aged 1 to 4 years
- If you aren’t exposed to much sunlight – for example, if you cover up your skin for cultural reasons; you are frail, housebound or confined indoors for long periods or who use sunblock for medical reasons.

For everyone else, consider whether you need a 10 microgram (400IU) supplement to ensure you get the vitamin D you need especially during the winter months. This includes pregnant and breastfeeding women as well as people with darker skin because of their ethnic origin.

For more information see our booklet All about osteoporosis; our Vitamin D supplements and tests fact sheet or on our website.

Other lifestyle factors

Stop smoking - it has a harmful effect on bone. It’s another good reason to try to give up. Reduce an excessive alcohol intake as it increases the risk of osteoporosis and fractures. The current UK daily ‘low risk’ upper limit is 14 units a week for men and women (spread over at least 3 days). A unit equals one small glass (125ml) of wine or half a pint (300ml) of beer or cider.



Exercise

Exercise and strong bones

Another way your skeleton can grow stronger is if you do regular weight-bearing exercise. This is any kind of physical activity where you are supporting the weight of your own body, for example jogging, aerobics, tennis, dancing and brisk walking. If you have osteoporosis and are at high risk of breaking bones, you may need to be careful of vigorous, high impact exercise and forward bending (touching your toes).

Remember, it’s important to stay active and find exercise you enjoy. Broken hips occur in older people when they are frail and more likely to fall. Exercises like swimming, gardening, golf and Tai Chi may help to maintain muscle strength, balance and co-ordination and reduce your risk of falling. See our booklet *Exercise and osteoporosis* for specific exercises.

Exercise recommendations

Children - 60 minutes of moderate-intensity physical activity daily.

Adults - 30 minutes of moderate-intensity physical activity at least five days a week. Also physical activity to improve muscle strength on at least two days a week.

Older Adults (over the age of 65) - incorporate physical activity to improve balance and co-ordination on at least two days a week. Avoid sitting for extended periods.

(Dept of Health (2009) & Chief Medical Officer (2011) recommendations).



CALCIUM RICH FOOD CHOOSER			
– choose calcium rich foods as part of well balanced healthy eating			
Foods providing around 300 micrograms of calcium per average portion		Foods providing around 50 micrograms of calcium per average portion	
Edam / Gouda	1 portion (40g)	Plain yoghurt	1 tablespoon (40g)
Paneer cheese	1 portion (60g)	Fortified fromage frais	1 ‘mini’ pot (47g)
Parmesan cheese	1 portion (30g)	Muesli Swiss style	1 portion (50g)
Cheese omelette	1 portion (120g)	Bread (white)	1 medium slice (36g)
Quiche (cheese and egg)	1 portion (140g)	Bread (wholemeal)	1 thick slice (44g)
Macaroni cheese	1 portion (220g)	Green or French beans	1 portion (90g)
Foods providing around 200 micrograms of calcium per average portion		Green cabbage	1 portion (95g)
Milk or milk drink e.g. hot chocolate (skimmed/ semi-skimmed/whole)	1 tumbler or mug (200ml)	White cabbage (raw)	1 portion (90g)
Soya milk (calcium boosted)	1 tumbler or mug (200ml)	Broccoli (steamed)	1 large portions (110g)
Cheddar cheese & low-fat hard cheese	Small matchbox size (30g)	Watercress	1 small bag (40g)
Yoghurt (low-fat fruit, plain & calcium boosted soya)	1 pot (125g)	Fried onion	1 medium sized (150g)
Porridge (made with semi-skimmed milk)	1 bowl (160g – weight with milk)	Tinned tomatoes	1 tin (400g)
Halloumi	2 thin slices (35g)	Red kidney beans	2 tablespoons (70g)
Cauliflower cheese	1 portion (200g)	Vegetable casserole	1 portion (260g)
Lasagne (meal for one, vegetable or meat)	1 portion (290g)	Veggie burger	1 (56g)
Pizza 12”(cheese & tomato, vegetarian or meat topping)	¼ of the whole	Vegetable samosa	1 (75g)
Tofu (steamed or fried)	1 portion (120g)	Pasta (dried, boiled)	1 portion (230g cooked weight)
Sardines (canned)	1 portion (50g)	Rice (basmati, boiled)	10 heaped tablespoons
Rice pudding	1 portion (200g)	Dairy or non-dairy ice cream	1 scoop (60g)
Foods providing around 100 micrograms of calcium per average portion		Dried apricots	8 (64g)
Cottage cheese	2 tablespoons (80g)	Orange / easy-peel citrus (e.g. tangerines, satsumas)	1 large orange (50g) / 3 medium easy-peelers (210g)
Camembert	1 portion (40g = 1/6th of whole)	Almonds	10 whole nuts (22g)
White pitta bread	1 small (75g)	Brazil nuts	9 whole nuts (30g)
Plain naan bread	1/3 (43g)		
Baked beans	1 small tin (200g)		
Cornish pasty	1 medium size (155g)		
Sausages (pork or vegetarian)	2 (80g)		
Tahini (sesame paste)	1 heaped teaspoon (19g)		
Sesame seeds	1 tablespoons (12g)		
Tinned pink salmon	1 small tin (105g)		
Grilled herring	1 (119g)		
Custard (ready made)	1 portion (120g)		
Dried figs	2 (40g)		

VITAMIN D RICH FOOD CHOOSER – choose vitamin D rich foods to add to vitamin D from sensible sunlight exposure		
Foods providing around 20 micrograms of vitamin D per average portion		• Limit processed meat. Limit oily fish to 4 portions a week (2 if you are pregnant or trying to conceive)
Grilled herring *	1 portion (119g)	• Limit liver products to 1 portion a week if you are over 50 and avoid if you pregnant
Foods providing around 12-13 micrograms of vitamin D per average portion		• Check the food labels or packaging for more information – the range fortified with vitamin D is increasing. Some yoghurt and bread products are enriched although there is no consistent evidence that specially enriched yeast is absorbed by the body.
Pink salmon, canned in brine & drained *	1 small can (100g)	• Some foods such as wild mushrooms can be high in vitamin D but this will vary
Grilled salmon *	1 portion (170g)	
Grilled kipper fillet *	1 portion (130g)	
Grilled rainbow trout fillet *	1 portion (155g)	
Smoked mackerel *	1 portion (150g)	
Foods providing around 3-4 micrograms of vitamin D per average portion		
Some malted hot drinks (check labelling)	1 mug (25g)	
Crab, cooked *	1 small can (75g)	
Tinned sardines in tomato sauce *	1 small can (100g)	
Scrambled eggs / plain omelette	2 eggs (120g)	
Foods providing around 1-2 micrograms of vitamin D per average portion		
Build-up powdered sachet (shake)	1 sachet (38g)	
Soya milk (fortified)	1 glass (200ml)	
Boiled chicken’s egg	1 egg without shell (50g)	
Cornflakes (fortified)/bran flakes (fortified)	1 portion (30g)	
Foods providing around 0.5 micrograms vitamin D per average portion		
Pork chop, grilled	1 chop excluding bone (75g)	
Corned beef	1 thick slice (50g)	
Grilled bacon rashers	2 middle rashers (80g)	
Low-fat spread, polyunsaturated (fortified)	1 teaspoon (5g)	
Baking fat/margarine	1 teaspoon (5g)	
Pork sausages, grilled or fried *	1 sausage (40g)	
Lamb’s liver, fried *	1 portion (40g)	



Our handy food choosers (see over) provide an easy way to help you to get the amount of calcium and vitamin D you need to keep your bones strong. Choose from the tables to help you get the UK recommended amounts.

For example, if you need 700 micrograms of calcium a day you might choose 2 options from the 300mg section and one from the 100mg section. Try and choose a wide variety of foods from the different sections rather than restricting yourself to two or three foods. In this way your bones will get all the nutrients you need.

For osteoporosis information and support contact our Helpline:

 **FREEPHONE 0808 800 0035**

 **nurses@nos.org.uk**

To order an information pack or other publications:

 **01761 471771**

 **info@nos.org.uk**

Our publications are available free of charge, but as a charity, we would appreciate any donation you are able to give to support our work. Or why not join us as a member to receive our quarterly magazine, packed with useful information, tips and the latest medical news?

 **01761 473287**

 **www.nos.org.uk**



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Healthy Living for Strong Bones

Including calcium and vitamin D

