

health
& hart 

Bones &

Joints

Diet & lifestyle secrets to keep you healthy



Bone health: The skeleton in the cupboard

Most people don't think about feeding their bones. There's a common belief that once bones are formed, they're set for life — until problems start to appear. Yet many people live with arthritis or osteoporosis, or know someone who does. Bones aren't static; they're living tissue that is constantly being broken down and rebuilt. The good news is that simple nutrition and lifestyle habits can support strong, healthy bones as we age.

About bones

Bone is a living tissue that is constantly changing and renewing itself. There are two different types of cells in your body that carry out this process: osteoclasts and osteoblasts. **Osteoclasts** break down old bone, creating cavities. **Osteoblasts** build new bone, filling the cavities.

During childhood and adolescence, there is an emphasis on building new bones, increasing their density and strength. By the time you get to your mid to late twenties, you will have reached your maximum bone strength, which is called peak bone mass.

Then, after the age of 40, the ageing process leads to an increase in the breaking down of bone. This means you start to lose bone density and strength, making bones more susceptible to fractures.

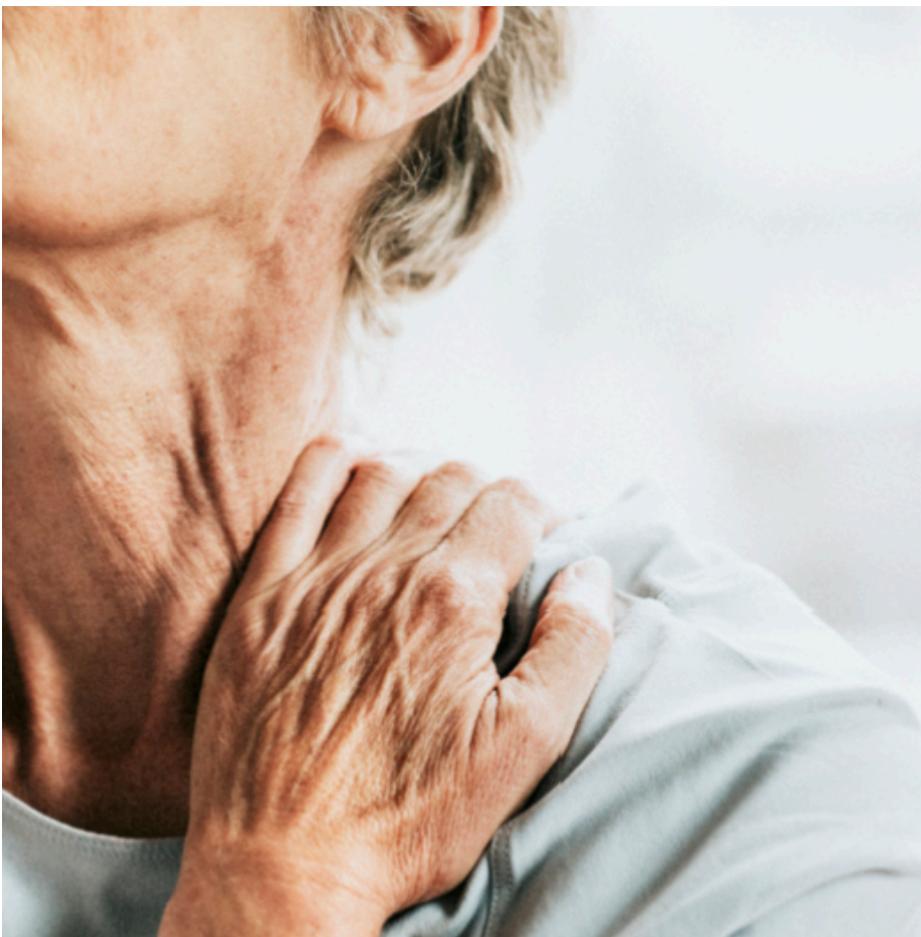


Osteoporosis

A fear– or worse still, a diagnosis – of osteoporosis makes many women (and men) think seriously about the health of their bones.

Particularly prevalent in women after menopause due to falling levels of both oestrogen and progesterone, getting older increases the risk of bone fractures. Osteoporosis is also more common in women because they tend to have smaller, less dense bones than men.

However, it's not just a female phenomenon. Osteoporosis is still common in men, affecting one in five, often secondary to another health problem, thanks to decreased testosterone. Cyclists for example could be prone to weaker bones if they aren't doing any weight bearing exercise and are low in vitamin D.



Are you at risk?

There is a genetic component to osteoporosis, so a family history may increase your risk. However, there are a number of other lifestyle factors that *may* also have an impact. Do these apply to you?

- Previous fragility fracture (breaking a bone following a minor incident)
- History of maternal hip fracture
- Thin or small bone frame
- Low levels of sex hormones – lack of oestrogen/progesterone in women, and testosterone in men
- Low Body Mass Index (BMI)
- Conditions that affect the absorption of food like Crohn's or coeliac disease
- Conditions like rheumatoid arthritis, hyperthyroidism and parathyroid disease
- Use of some pharmaceutical drugs like long-term or high-dose use of steroids, anti-epileptic drugs or antacids
- Excessive alcohol consumption
- Low stomach acid or frequent indigestion
- Smoking
- A diet low in calcium
- Low levels of vitamin D
- Lack of weight-bearing exercise (bodyweight exercise/ weights)

More than just calcium

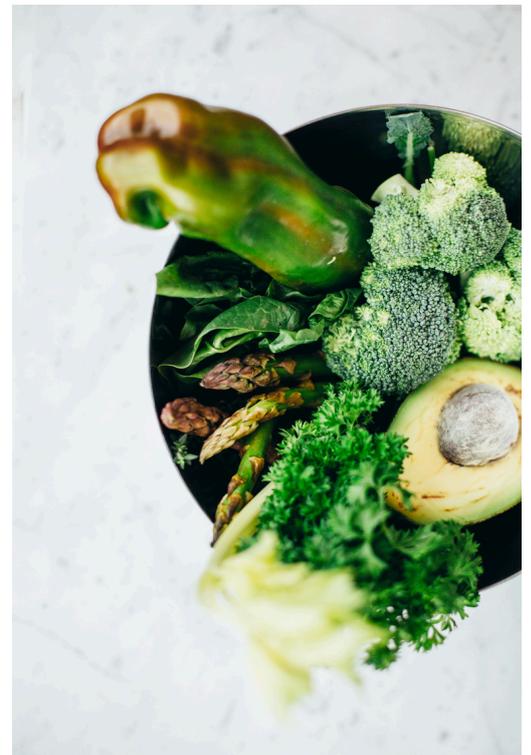
People often think protecting their bones means reaching for calcium supplements, but bone health is far more complex than that. While calcium is the most abundant mineral in bone, osteoporosis is not simply caused by a lack of dietary calcium.

Magnesium, which is involved in hundreds of processes in the body, is now considered important in the prevention and reversal of osteoporosis. Even mild magnesium deficiency is thought to increase the risk of developing the condition.

While bones use phosphorus as building materials, the ability to absorb calcium into bones depends on vitamin D and is assisted by the trace mineral boron. Vitamin C makes collagen, and zinc helps make new bone cells. Vitamin K2 helps prevent the loss of calcium from bones.

Bone health relies on an orchestra of nutrients working together. While many bone-friendly supplements contain this mix, it's not always best to simply pick something off the shelf. If you have concerns about your bone health, it's worth consulting a nutrition professional.

A qualified nutritionist can help you create a personalised plan covering diet, lifestyle and supplements, based on your individual needs.



Are you making one of these diet mistakes?



Eating too much refined sugar and/or carbohydrates. Diets high in ultra-processed foods tend to be low in bone-supporting nutrients. High sugar intake may indirectly affect bone via insulin resistance and inflammation.

Drinking too much alcohol. Excess alcohol is linked to poorer bone health and higher fracture risk.

Not eating enough protein and worrying about 'high protein diets'. Protein supports bone health, eating a portion of protein with each meal is not a high protein diet and for most of us it should be normal.

Not eating enough fruit and veg. A diet higher in fruit and vegetables has been found to support bone health.

<https://pubmed.ncbi.nlm.nih.gov/16789345/> 'For the purposes of this investigation, total vegetable intake included green vegetables, root vegetables, pulses, salad vegetables including tomatoes, other vegetables, and mixed-vegetable dishes such as curries and stir-fry dishes, but it did not include potatoes. Total fruit intake included fresh fruit, cooked or canned fruit, dried fruit, nuts, and fruit juices'

Food for strong bones

Calcium



Calcium-rich foods include dark leafy greens such as kale, rocket and watercress, broccoli, almonds, chia seeds, sesame seeds and tahini, cheese and yoghurt, sardines and canned salmon (with edible bones), whey protein, and edamame beans and tofu when calcium-set.

Calcium from plant foods is often less easily absorbed because of compounds such as oxalates and phytates, although some vegetables like kale and broccoli are better sources than others.

Calcium from animal sources such as dairy is generally well absorbed. For best absorption, calcium intake should be spread across the day. While it is possible to meet calcium needs using plant foods alone, including an animal-derived source makes this easier for many people.

Did you know - whitebait (with the bones) is a great source of calcium!

Food for strong bones

Vitamin D



You'll find vitamin D in oily fish like salmon, trout, mackerel, sardines and fresh tuna, egg yolks, liver and cheese and every year there's a newspaper article reporting this. However, it can be hard to get enough from food, and it's worth getting your vitamin D tested so you can supplement adequately. We all need different amounts.

Vitamin K2



The two most common forms of vitamin K2 are MK-4 and MK-7. MK-4 exists in small amounts in liver, eggs and meat. Fermented foods like cheese, sauerkraut and a soybean product called natto contain MK-7.

Food for strong bones

Vitamin C & Collagen

The best food source of collagen is bone broth. Vitamin C also helps to support the production of collagen, and you'll find vitamin C in all kinds of fruit and vegetables, including broccoli, cauliflower, kale, red pepper, kiwi, strawberries and citrus fruit like oranges.

Magnesium, Zinc & Phosphorus



Foods rich in magnesium are dark chocolate, avocados, almonds, legumes, tofu, seeds, wholegrains and leafy greens. Good sources of zinc include beef, prawns, spinach, flaxseeds, oysters and pumpkin seeds. Foods rich in phosphorus include pork, cod, salmon and tuna.

Healthy Weight Happy Bones

Low calorie diets are bad news for your bones, this could be through too much exercise and lack of fuel, or undereating.

Being overweight isn't protective either, people are commonly told to loose weight to reduce the load on joints and we can still be overweight and malnourished - not getting the right nutrients.

Being underweight, particularly during perimenopause and beyond, is associated with reduced bone density and increased bone loss. Low body mass index is a recognised risk factor for low bone mass in early postmenopausal women, likely due to reduced mechanical loading, lower oestrogen levels and compromised nutrient intake (Rav et al., 1999).

Early Postmenopausal Intervention Cohort (EPIC) study group, *Journal of Bone and Mineral Research*. DOI: 10.1359/jbmr.1999.14.9.1622.

While low body weight increases fracture risk, high body fat can also affect bone health. Research shows that in older women, higher amounts of local adipose tissue are associated with weaker bone material and greater cortical porosity, which may increase fracture risk. Maintaining a healthy weight helps support both bone density and bone quality (Sundh et al., 2015)

Sundh et al., (2015) A High Amount of Local Adipose Tissue Is Associated With High Cortical Porosity and Low Bone Material Strength in Older Women. *Journal of Bone Mineral Research*, 31 (4).



Stress and your bones



Stress itself can affect bone health. When we're under chronic stress, cortisol levels remain high and the body prioritises short-term survival over long-term nourishment and repair. Bone is a living tissue that relies on ongoing rebuilding, but elevated cortisol suppresses bone-building cells and favours bone breakdown instead. Over time, this imbalance could contribute to reduced bone density.

Relaxation techniques such as those used in yoga could be helpful. If you're into technology then monitoring heart rate variability (HRV) and sleep can all give insights to your stress and your health, so that you can make changes.

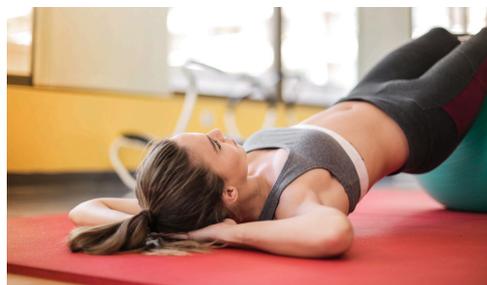
Exercise to strengthen your bones

We know that people who lead a more physically active life tend to have a higher bone mineral density – and, consequently, stronger bones – than those who are more sedentary. If you know you don't move enough, now is a great time to start. The best exercise for building stronger bones is weight-bearing exercise. That means the kind of exercise where you are supporting the weight of your body, like dancing, walking, lifting weights or using resistance bands, rope skipping, climbing stairs, playing tennis, kettlebells, hiking and even gardening.

Exercise also strengthens muscles, improving balance and thereby reducing the risk of falls.

According to the Royal Osteoporosis Society, you should be doing 50 minutes of moderate weight-bearing exercise on most days.

To ensure you feel motivated to exercise regularly, choose an activity you actually enjoy. Start slowly and build up gradually, and if you have any concerns about starting to exercise, please speak to your GP. Remember, exercise is not just good for bones and muscles, it benefits your general health, too.



Arthritis

Arthritis is primarily about the joints and not the bones themselves.

Osteoarthritis is about wear and tear of cartilage, and inflammation.

Rheumatoid arthritis is the autoimmune inflammation of joints, where the immune system mistakenly targets the joints.

- In yoga you might find it better to keep moving rather than hold a position (we call this 'dynamic' rather than 'static').
- Blankets, cushions and blocks can help with wrists, knees and hips.
- Strength based poses can help to support muscles around the joints.
- Maintaining a healthy weight, body fat and muscle amount can help by relieving the load but also maintaining strength.
- Sleep is important, poor sleep leads to inflammation.
- Stress management is key too. This can include foods, lifestyle, tests and supplements.
- Anti inflammatory foods including a plant based diet (that doesn't mean vegan), it means including vegetables, fruits, pulses, nuts and seeds.
- Ginger, turmeric and oily fish (omega 3) all have anti inflammatory properties. These might be suitable in supplement form.
- Minimising/removing alcohol, sugars, refined carbs and other foods that aggravate you could be helpful too.



Menopause / midlife bone & joint health

- Bone density naturally declines in perimenopause and after menopause due to lower oestrogen
- Joint stiffness and mild inflammation are also more common
- Weight-bearing exercise, resistance training, and yoga help maintain strength, balance, and flexibility
- Nutrition matters: calcium, vitamin D, magnesium, protein, and anti-inflammatory foods



Men's bone & joint health

- Men lose bone more slowly than women, but low testosterone, low activity, and poor nutrition may increase fracture risk
- Chronic stress raises cortisol, which shifts the body from an anabolic state (building muscle and bone) to a catabolic state (breaking down tissue)
- Men with a low BMI or underfueling in exercise may be at risk
- Strength training, impact activity (like skipping or hopping), and flexibility work (yoga, mobility) are helpful
- Adequate protein, vitamin D, calcium, and omega-3 fats support bones and joints
- There are nutritional tests that can focus on health and guide lifestyle, food and supplement strategies.

<https://pubmed.ncbi.nlm.nih.gov/10995046/>





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