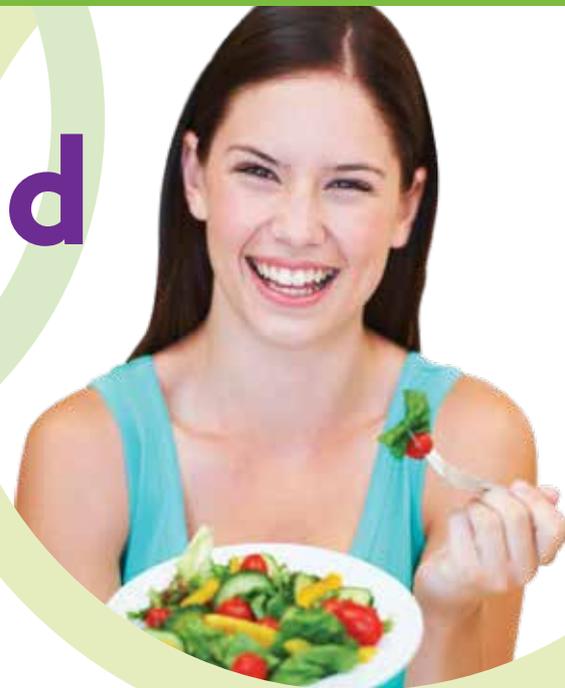


Vegan diets and bone health

A vegan lifestyle is associated with many health benefits, including a lower risk of heart disease, diabetes and obesity, but is it also healthy for bones? Helpline Nurse Janet Bowman investigates.



Vegetarianism has been around for a long time; in fact some of the world's oldest cultures follow a vegetarian diet because of their religious and cultural beliefs. In the Western world this style of eating, and the stricter form of vegetarianism known as veganism, is growing in popularity as more and more people choose to follow a plant-based diet for health, moral, religious or environmental reasons.

A healthy, balanced diet is the mainstay of good bone health as it ensures that we obtain the range of nutrients necessary for our bones. There has been a concern that individuals choosing to follow a more restrictive vegan diet may be at risk of certain nutritional deficiencies and, as a consequence, at greater risk of developing osteoporosis.

Vegetarian diets can vary widely, but what does it actually mean to be a vegan?

Whereas a typical vegetarian will not include any meat, fish or poultry in their diet, a vegan will only eat plant-based foods and will additionally exclude any foods that have been derived from animals, such as eggs, dairy products and honey. A vegan diet is essentially composed of all kinds of fruits, vegetables, beans, pulses, grains, nuts and seeds.

Increased risk of osteoporosis

So, does a vegan diet increase the risk of osteoporosis and fragility fractures?

A well-planned vegan diet will include a wide variety of foods eaten over the course of a day. Dairy is not the only good source of calcium or the other range of nutrients that are needed for bone health.

Non-dairy calcium-rich foods include fortified soya products, pulses, nuts, seeds and white bread. Additionally, fresh fruit and vegetables contain a number of key vitamins, minerals and trace elements. Vegan diets do very well in providing rich sources of these nutrients, many of which are required to maintain healthy bones (such as magnesium, potassium and vitamin K).

Vegans also tend to eat a higher proportion of soya products such as tofu, as these foods are rich in protein (which non-vegans get from dairy and other animal-derived foods). Soya beans and soya products contain isoflavones, a type of natural phytoestrogen, which may be beneficial for bone health, especially in post-menopausal women, although research has so far failed to prove this conclusively.

Drawbacks

So what are the potential downsides of a vegan diet?

There has been little research looking at the long-term effects of a vegan diet on bone health, but some small studies have shown that vegans have a slightly lower bone mineral density (BMD) compared to non-vegans. However, more recent research, using the combined results of several studies, found no significant difference in the BMD of vegetarians or vegans when compared to people who ate meat. Even so, there is evidence that vegans often fall short when it comes to the recommended intake of calcium and this in itself could lead to poor bone health and an increased risk of fracture.

Vegan diets may also be low in other nutrients that are important for our bones, such as protein, vitamin D and vitamin B12.

Vegans are generally thinner and eat fewer calories and less fat than meat-eaters. This aspect of a vegan diet is linked to many health benefits such as lower blood pressure and less heart disease compared to non-vegetarians. Being on the thin side doesn't necessarily equate with poor bone health, but a low body weight and in particular a BMI (body mass index) below 19kg/m² is associated with a greater risk of developing osteoporosis and fractures.

Although veganism encompasses much more than just diet, it is possible to maintain healthy bones whilst following a vegan diet – as long as it is balanced, well planned and includes a good intake of calcium-rich foods.



Ten vegan foods filled with calcium

	Portion size	Mg of calcium per portion
Tofu steamed	100g	510
Soya yoghurt & custard (fortified)	150g	180
Soya milk (calcium fortified)	200ml	178
Curly kale, boiled	95g	143
Tahini (sesame paste)	1 heaped tsp	129
Figs, dried	2 (40g)	100
Okra, stir-fried	8 medium size (40g)	88
Sesame seeds	1 tbsp (12g)	80
Oranges	1 medium peeled (160g)	75
Red kidney beans	3 tbsps (105g)	75

Getting the nutrients you need for your bones without meat

Calcium

Adults need about 700mg of calcium a day. If an individual's calcium intake is on the low side, a calcium supplement may be necessary.

Although calcium is important, so are other minerals and vitamins and well-balanced healthy eating is the key to making sure you get enough of the other vital nutrients that are essential for bone health.

Some plant-based foods eaten as part of a healthy diet naturally contain phytates and oxalates, which bind to calcium and decrease its absorption. Phytates, or phytic acid, are found in whole grains and bran, while foods such as spinach and rhubarb contain high quantities of oxalic acid (oxalate). For most vegans, as long the diet is balanced with plenty of other calcium-rich foods, overall calcium intake is unlikely to be adversely affected.

Vitamin D

Vitamin D helps your body absorb and use calcium.

There are very few foods that are naturally high in vitamin D and sunlight is the best source, providing 80–90 per cent of our vitamin D. Vegans who have limited sunlight exposure will get little vitamin D in their diet other than from fortified food or a supplement. The supplement vitamin D2 (ergocalciferol) is formed from irradiated fungi and is the only type of vitamin D that is suitable for vegans (there is one new vegan vitamin D product on the market which is still in the process of being evaluated.) Although studies have shown that vitamin D2 has a shorter duration of action than vitamin D3 (cholecalciferol, which is formed from the natural oil found on sheep's wool), it is still effective when taken on a daily basis.

Vitamin B complex

It is known that vitamins from the "B complex" play a role in bone health and some recent research has linked low B12 levels with an increased risk of fracture. This vitamin is only available in food from animals (and bacteria) so vegans need to make sure that they get enough by eating fortified foods or by taking a supplement.

Protein

Too little or too much protein may reduce the strength of bones and increase the risk of fracture. Protein is made up of a variety of amino acids, some of which are classed as "essential" as the body can't make them itself. While animal-sourced protein will contain the complete mix of amino acids, the exclusion of meat and dairy products in a vegan diet can potentially compromise essential amino acid intake. Vegans therefore need to eat a wide range of vegetable proteins in order to get all the amino acids the body needs. Good sources can be obtained from soya products, nuts, grains and dried beans.

For further information contact the Vegan Society: www.vegansociety.com



Tofu and chickpea curry

This delicious curry packs a real high-calcium punch and is brought to you by Canadian blogger and cook Celyna Hoffman, who runs the fantastic Love Peace Happiness Cooking website at <http://lovepeacehappiness.wordpress.com>.

Serves 4

Ingredients

250g basmati rice
3–4 tablespoons olive oil
4 cloves of garlic, minced
1 large onion, sliced
2 large red or yellow peppers, diced
500g tofu, pressed and diced
350g cooked chickpeas
2½ teaspoons chili powder
3 teaspoons curry powder
1 teaspoon cumin powder
1 teaspoon turmeric powder
400ml coconut milk

Directions

First cook the rice.

In a pot over medium-high heat, heat the oil, then cook the garlic, onion and peppers until everything is tender (3–4 minutes). Add the diced tofu, cooked chickpeas and all the spices. Combine well. Continue to cook for 2–3 minutes, stirring well.

Add the coconut milk, cook for another 1–2 minutes, then reduce heat to medium. Simmer for at least 10 minutes.

Remove from heat and serve over rice.

