



**DO YOU SUFFER FROM
OSTEOPOROSIS?**



UNIQUE SOLUTIONS
for Unique Women

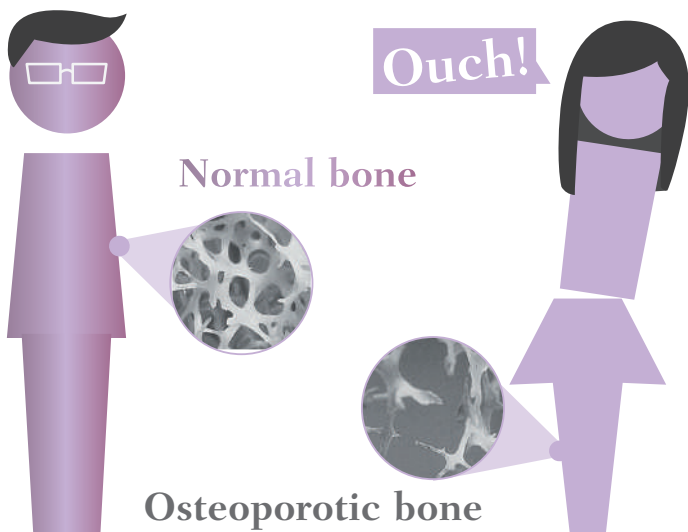
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prescription

Osteoporosis

Osteoporosis occurs when bones become thin and fragile, the skeleton weakens, and risk of fractures increase.

Worldwide, **one in three women and one in five men** over the age of 50 will suffer a fragility fracture (broken bone) due to osteoporosis.¹

Although fractures can occur in any part of the body, they most commonly affect the wrists, spine and hips.¹ Fractures due to osteoporosis are a major cause of pain, long-term disability and loss of independence among older adults, and can even result in premature death.¹



Setting the foundation for bone health throughout life

They say you are what you eat – and that's very true for your bones too. Bones, formed of living tissue,¹ need the right nutrients to stay strong and healthy.¹ A balanced diet of key bone nutrients such as calcium, vitamin D and protein, will help to optimise your bone health at all ages and reduce the risk of osteoporosis.²

The size and the amount of bone contained in your skeleton changes significantly throughout life. Likewise, as you age, the specific nutritional needs of your skeleton change too.¹

The goal of a bone-healthy diet is to help:¹



Children and Adolescents

BUILD maximum peak bone mass



Adults

MAINTAIN healthy bones & avoid premature bone loss



Seniors

SUSTAIN mobility and independence by preventing and treating osteoporosis

What are the key nutrients for bone health?

1. CALCIUM

Calcium is a major building block of our bone tissue, with 99 % of calcium found in the skeleton. Bone acts as a reservoir for maintaining calcium levels in the blood, which is essential for healthy nerve and muscle function.¹

Calcium is a key nutrient for all age groups, but the amount needed varies at different stages of life. Demands are particularly high during the rapid period of growth in teenagers.¹

Dairy foods (milk, yoghurt, cheeses) are the most readily available sources of calcium in the diet, they also contain other important nutrients for growth. Additional food sources include certain green vegetables, whole canned fish with soft, edible bones such as sardines or pilchards, nuts and tofu set with calcium.¹

Selection of calcium-rich foods³



Food	Serving size	Calcium content
1. Milk	225 ml	300 mg
2. Yoghurt	170 ml	310 mg
3. Cheese (Cheddar)	28 g	205 mg
4. Broccoli (fresh/cooked)	225 g	60 mg
5. Figs, dried	2 figs	65 mg
6. Tofu, calcium-set	115 g	205 mg



2. VITAMIN D

Vitamin D plays key roles in the development and maintenance of healthy bones. It **assists calcium absorption** from food in the intestine and **ensures correct renewal and mineralisation** of bone.¹

The primary source of Vitamin D is the sun's trigger to synthesise the vitamin in our skin, or from food as a secondary source.¹

How much sun exposure do you need?

Vitamin D is made in the skin when it is exposed to UV-B rays in sunlight. Due to our increasingly indoor lifestyles, low levels of vitamin D have become a worldwide problem as they can jeopardise bone and muscle health.¹

Generally, you should try to get **10–20 minutes of sun exposure to your bare skin** (face, hands and arms) outside peak sunlight hours (before 10 AM and after 2 PM) daily – without sunscreen – and taking care not to burn.¹

Selection of foods containing Vitamin D¹

Very few foods are naturally rich in vitamin D.

As a result, in some countries certain food and drinks such as margarine, breakfast cereals and orange juice are fortified with vitamin D.

Food	Serving size	Vit D content (IU)
Farmed salmon	100 g	100 - 250
Canned sardines	100 g	300 - 600
Canned tuna	100 g	236
Egg yolk	1 yolk	20
Fresh shitake mushrooms	100 g	100

IU: International Unit

3. PROTEIN^{1,2}

Protein provides the body with a source of essential amino acids necessary for health. Adequate protein intake is essential for the building of peak bone mass during childhood and adolescence (affecting skeletal growth) and for the preservation of bone mass with ageing.

Protein undernutrition also leads to reduced muscle mass and strength in seniors, which is a risk factor for falls.

Selection of foods containing protein^{1,2}

Dairy products provide both calcium and protein and have been associated with higher bone strength in both men and women.

Excellent sources of animal protein include lean red meat, poultry, fish as well as eggs.



Micronutrients that support bone health

Micronutrients are required in trace amounts for normal growth and development.¹ Ongoing research suggests that several, listed below, are important to bone health:

Vitamin K



Found in leafy green vegetables, such as spinach, cabbage, liver, some fermented cheeses and prunes¹

TIP Snack on prunes, a high source of vitamin K^{1,4}

Magnesium



Found in green vegetables, legumes, nuts, seeds, unrefined grains, fish¹

TIP 28 g of almonds = up to 19 % of your daily need⁵

Zinc



Found in lean red meat, poultry, whole grain cereals, pulses and legumes¹

TIP Beans and chickpeas are good plant sources¹

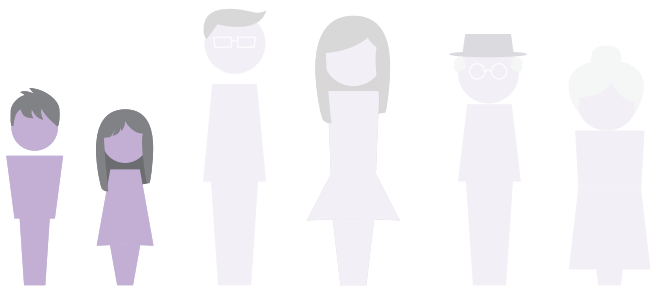
Carotenoids precursors to vitamin A



Found in many vegetables, including leafy green vegetables, carrots and red peppers¹

TIP 50 g of raw carrots meet your daily need¹





Building bones early in life

Bone health starts early in life – in fact it begins at the foetal stage, when good maternal nutrition helps optimise the development of the baby’s skeleton.

Childhood and adolescence are critical times for bone building. It is during this period that both the size and strength of our bones increases significantly.¹

Approximately half of our bone mass is accumulated during adolescence. The process continues until our mid 20s.¹

Although genetics will determine up to 80 % of the variability in individual peak bone mass, factors such as **nutritional intake** and **physical activity** will help a child achieve optimal bone strength. This is beneficial in late adulthood as there is more bone in reserve from which to draw; unlike in their younger years, adults cannot replace bone tissue as quickly as they lose it.¹

It is believed that a 10 % increase in peak bone mineral density (BMD) – one measure of bone strength – **could delay the development of osteoporosis by 13 years.**¹

Calcium and protein-rich nutrition boosts bone development

Young people aged between 9–18 years have higher calcium and protein requirements, with the peak age for bone building being 14 years in boys and 12.5 years in girls.¹

Milk and other dairy products provide up to 80 % of dietary calcium intake for children from the second year of life onwards. Although calcium is a vital nutrient for bone development during this stage of life, children are consuming less milk than they did 10 years ago and are instead turning to sweetened beverages. This trend needs to be reversed and children encouraged to drink more milk.¹

Young people also need enough protein to achieve their genetic potential for peak bone mass. Studies have shown a **positive link between children who were given extra servings of milk in their diets** – which is high in protein – and increases in a growth factor that enhances bone formation.¹

Getting enough of the sunshine vitamin

Young people often don't get enough vitamin D. This is partly due to their increasingly indoor lifestyles. By ensuring that children spend more time participating in sports and outdoor physical activity – and less time indoors in front of their computers or televisions – parents can help them maintain a healthy level of this key vitamin.¹

Recommended daily intake of key nutrients according to the Institute of Medicine (IOM) USA¹

AGE
4-8 years
CALCIUM
1000 mg
PROTEIN
19 g

AGE
9-13 years
CALCIUM
1300 mg
PROTEIN
34 g

AGE
14-18 years
CALCIUM
1300 mg
PROTEIN FOR
GIRLS **46 g**
PROTEIN FOR
BOYS **52 g**

AGE
1-3 years
CALCIUM
700 mg
PROTEIN
13 g



Psst... And we all need 800–1 000 IU/day of Vitamin D per day!^{1,6}

Exercise and lifestyle matter

Nutrition and physical activity work hand in hand to enhance bone development in people of all ages, and at no stage in life is this more important than in youth. Young people who exercise regularly show a significant increase in bone mass.¹

A healthy body weight during childhood and adolescence – being neither too thin nor overweight – contributes to optimal bone health. Anorexia has a serious and negative impact on bone mineral density (BMD) and skeletal strength in adolescents, while obese children are more likely to sustain fractures at the wrist.¹

Bone-building tips for kids¹



SNACK

on cheese, yoghurt, nuts and dried fruit

DRINK

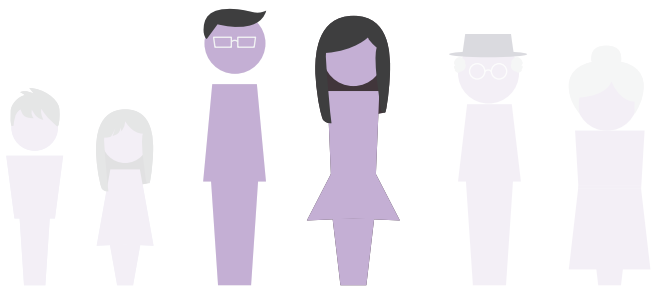
milk-based beverages, fruit smoothies and mineral waters

EAT

balanced meals that contain calcium and protein, as well as fruits and vegetables

MOVE

spend time outdoors on physical activities that involve running and jumping



Maintaining healthy bones as an adult

Bone tissue loss generally begins at around the age of 40 years when we can no longer replace bone tissue as quickly as we lose it. At this stage in life you should take action to stem the tide of bone loss.¹

- **Ensure bone-healthy nutrition, with sufficient calcium, protein, vitamin D and important micronutrients**
- **Engage in weight-bearing and muscle-strengthening exercise**
- **Avoid negative lifestyle factors such as smoking and excessive alcohol use**

Adopting a bone-healthy lifestyle is of critical importance and adults need to pay particular attention at key points in their lives. In women, this is around the age of menopause when they experience a period of rapid bone loss due to a reduction in protective oestrogen levels. In men, bone loss accelerates after the age of 70 years.¹

Keep up your intake of dietary calcium

Adults aged 19–50 years should have a dietary calcium intake of 1 000 mg/day. For people who cannot get enough calcium through their diet, supplements (preferably combined with vitamin D) may be beneficial. These should however not exceed 500–600 mg per day.¹

Easy ways to **boost your calcium intake:**¹

- **Consume dairy products as they are calcium rich; add low-fat cheeses to your meals**
- **Try calcium-set soy, which can be used as a substitute for meats**
- **Drink milk or calcium-enriched substitutes - and add to your coffees and tea**
- **Eat yoghurt regularly as a nutritious breakfast or snack**
- **Add wholegrains or seeds like quinoa and chia to your meals**
- **Snack on nuts or dried fruit**
- **Drink calcium-rich mineral water (check the labels)**
- **Choose vegetables that are especially calcium rich (such as cress, broccoli, okra)**
- **Add chickpeas, lentils and white beans to your meals**

Are you at risk of vitamin D deficiency?

The Institute of Medicine (IOM) recommended **vitamin D allowance for adults aged 19–50 is 600 IU per day**. To maintain your vitamin D levels you need regular safe exposure to sunlight.¹

Although sunlight is the primary source of vitamin D, eating fatty fish regularly (e.g., salmon, sardines and tuna) or consuming vitamin D enriched food and drink, can help boost your levels.¹



Adults at greater risk of deficiency include anyone who lives at latitudes with minimal exposure to sunlight and people who are obese, have a dark skin tone, cannot expose their skin to the sun for medical or cultural reasons, or have diseases that reduce uptake of vitamin D from the intestine (e.g., Crohn's disease). If you have any of these risk factors, measurement of vitamin D, based on 25-hydroxyvitamin D levels in the blood, may be advisable. Supplementation may then be prescribed if required.¹

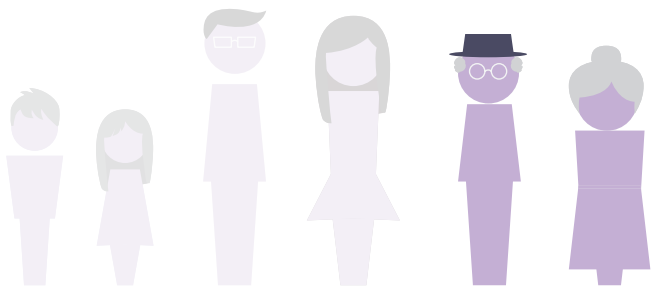
Proteins and healthy body weight

The current recommended daily allowance for healthy adults is 0.8 g of protein per kilogram (kg) of body weight, per day.¹

Adults should eat sufficient protein-rich foods such as dairy products, meats and fish, lentils, beans and nuts. Poor protein intake is often related to undernutrition.¹

A person's body mass index (BMI) should ideally be between 20–25 kg/m². A BMI below 19 kg/m² is a risk factor for osteoporosis.¹





Nutrition in seniors: stay strong and mobile*

In seniors, a bone-healthy diet is an essential ingredient in helping to slow the rate of bone thinning and preserve muscle function. **This in turns helps reduce the risk of falls and fractures.**¹

Malnutrition is common among the elderly for a number of reasons. Seniors may have reduced appetite or be less inclined to cook balanced meals. Vitamin D levels may be lower because of less frequent exposure to sunlight, especially in seniors who are housebound.¹

The skin's capacity to synthesise vitamin D also decreases, as does the kidney's capacity to convert vitamin D to its active form. In addition, with age, the body is less able to absorb and retain calcium.¹

More calcium, protein and vitamin D needed

In addition to higher calcium intake, **seniors need more dietary protein and vitamin D than the young.** Both these nutrients help prevent muscle wasting (known as sarcopenia) and thereby help lower the risk of falls and fractures. Higher dietary intake of protein in older people who have been hospitalised with hip fracture has been shown to improve bone density, reduce the risk of complications and reduce rehabilitation time.¹

Daily dietary recommendations for seniors¹

Age	Gender	Calcium RDA	Vitamin D RDA	Protein RDA [#]
51-70 years	female	1200 mg	600 IU	46 g
	male	1000 mg	600 IU	56 g
>70 years	female	1200 mg	800 IU	46 g
	male	1200 mg	800 IU	56 g

Based on Institute of Medicine (IOM) recommendations
RDA: Recommended Dietary Allowances

[#]According to International Osteoporosis Foundation (IOF), a moderate increase in protein intake from 0.8 to 1.0–1.2 g/kg per day is considered optimal for skeletal muscle health in older adults

The International Osteoporosis Foundation recommends that seniors aged 60 years and over take a Vitamin D supplement at a dose of 800–1 000 IU/day. Vitamin D supplementation at these levels has been shown to reduce the risk of falls and fractures by about 20 %.¹

Exercise enhances the benefits of bone-healthy nutrition

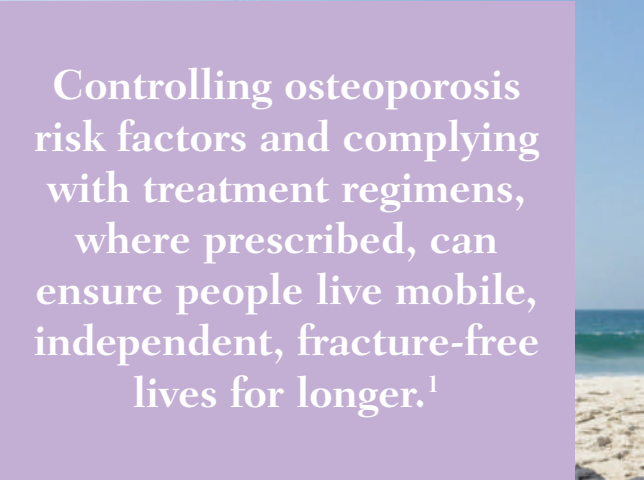
As at all stages of life, exercise is essential for bone health in seniors too. At this age, muscle strengthening exercises, suitable to individual needs and abilities, will help improve coordination and balance. This in turn helps to maintain mobility and reduce the risk of falls and fractures.¹



Treatment for those at high risk

Although bone-healthy nutrition is important, medicine therapies are critical for fracture prevention in people at high risk, including those who have already experienced a first fracture. Today, there are many **proven and effective treatments** which have been **shown to reduce the risk of osteoporotic fracture by between 30-50 %**.¹

If you're over aged 50 years and have broken a bone, or have other risk factors for osteoporosis ask your doctor for a clinical assessment.¹



Controlling osteoporosis risk factors and complying with treatment regimens, where prescribed, can ensure people live mobile, independent, fracture-free lives for longer.¹

Non-age related nutritional factors

Celiac disease and other disorders can affect nutritional status

Diseases of the gastrointestinal system that affect nutrient absorption in people of all ages include inflammatory bowel disease (e.g., Crohn's disease and colitis) as well as coeliac disease. People with these diseases may be at increased risk of osteoporosis and fractures and need to ensure an adequate intake of calcium and Vitamin D. In such cases it is recommended that individuals have their nutrient status checked as they may need supplements.¹

Alcohol and caffeine: moderation is key

Excessive alcohol intake – more than two units per day – can increase the risk of suffering a fragility fracture. A unit is equal to 25 ml of spirits or 250 ml of beer.⁷

If you enjoy drinking coffee or other caffeine-containing drinks you need to ensure that you are getting sufficient calcium.¹

Getting enough calcium despite lactose intolerance

People with some degree of lactose maldigestion may avoid dairy products. As a result, they may not be consuming enough calcium daily.¹

If you are sensitive to lactose you may not need to eliminate dairy consumption completely: yoghurts with live cultures, and some hard cheeses are normally tolerated.¹

Some calcium-fortified cereals, fruit juices, and soy products also contain significant amounts of calcium. These foods provide a suitable alternative for people who are lactose-intolerant.⁸



For further information about osteoporosis, visit the National Osteoporosis Foundation South Africa website at www.osteoporosis.org.za

Information is also available on the World Osteoporosis Day website: www.worldosteoporosisday.org

For patient education & HCP information visit



www.adcockingramrx.co.za

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Easy to set up



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- 2. Enter the code below to begin: ZA1234**



- 3. Enter your details... now you're all set up**

* Information extracted verbatim from IOF World Osteoporosis Day 2015 October 20 Patient Brochures.

References: 1. International Osteoporosis Foundation. Serve up bone strength throughout life. [Brochure]. [Online] 2015. Accessed 2023/01/13. Available from https://www.osteoporosis.foundation/sites/IOFbonehealth/files/2022-03/2015_ServeUpBoneStrengthThroughoutLife_Brochure_English.pdf. 2. Kanis, JA, Cooper, C, Reginster J-Y. European guidance for the diagnosis and management of osteoporosis in postmenopausal women. Osteoporos Int 2019;30:3–44. 3. A Guide to Calcium-Rich food. International Osteoporosis Federation. [Online]. Accessed 2023/01/13. Available from <https://www.nof.org/patients/treatment/calciumvitamin-d/a-guide-to-calcium-rich-foods/>. 4. Higgs, J, Derbyshire, E, Styles, K. Nutrition and osteoporosis prevention for the orthopaedic surgeon. Efort Open Rev. 2017 Jun;2(6):300–308. 5. Link R. 12 Evidence-Based Health Benefits of Magnesium. Healthline. [Online] 2022 Feb 7. [Accessed 2023/01/13] Available from <https://www.healthline.com/nutrition/magnesium-benefits>. 6. Institute of Medicine 2006. Dietary Reference Intakes: The Essential Guide to Nutrient Requirements. 2006. The National Academies Press. [Online] Accessed 2023/01/13. Available from <http://nap.edu/11537>. 7. International Osteoporosis Foundation. 3 Steps to unbreakable bones. Vitamin D, calcium and exercise. [Brochure] [Online] 2011. Accessed 2023/01/13. Available from: https://www.osteoporosis.foundation/sites/IOFbonehealth/files/2019-06/2011_3StepsUnbreakableBones_TR_English.pdf. 8. National Institute of Diabetes and Digestive and Kidney Diseases. Eating, Diet, & Nutrition for Lactose Intolerance [Online] 2018. Accessed 2023/01/13. Available from <https://www.niddk.nih.gov/health-information/digestive-diseases/lactose-intolerance/eating-diet-nutrition>.

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