



healthy bones and joints



CLINICAL INFORMATION FOR PRACTITIONERS AND PATIENTS

Bones

Building strong bones takes a lifetime. You may not think much about your bones, but you can't make a move without them. Strong bones help you look good, stay active and feel your best. Taking good care of your bones also can help prevent osteoporosis, a disease that makes bones weak, brittle and easy to break.

Every Age Counts

It's never too early or too late to take care of your bones. Bone is a living tissue, the body builds new bone and loses old bone throughout your life span. Since your bones are always changing, you can't take them for granted. At each stage of your life you need to take steps to make them strong and keep them strong. Getting enough calcium, vitamin D and exercise is critical to help build and maintain bone health.

Bone building is a major focus for children and teens, because this is the time when new bone growth occurs faster than bone loss. You achieve your 'peak' bone strength and mass during these early years. If you build as much bone as you can when you are young, you will have more in reserve as you get older, when bone loss starts to occur. Some children and teenagers do not achieve as much bone growth as they could, mostly because of inadequate calcium, vitamin D and exercise.

Some bone loss is a normal part of ageing for both men and women from about age 35. For young and middle-aged adults, the goal is to maintain bone mass and strength by building as much new bone as you lose through the ageing process. As we grow older, bone loss occurs faster than bone growth. To keep bones healthy, people aged 51 and older need to take action to limit bone loss. Getting enough calcium, vitamin D and exercise is vital in all stages.

What is Osteoporosis?

As we age, the bone withdrawals can exceed deposits leading to lower bone mineral density and bone fragility also known as osteoporosis. There are 2.2 million Australians affected by osteoporosis. About 11 per cent of men and 27 per cent of women aged 60 years or more have osteoporosis.

Higher Risk for Women

Oestrogen plays a fundamental role in maintaining bone health in both men and women. Oestrogen enhances formation and reduces bone breakdown. All women should follow an osteoporosis prevention plan throughout life, especially after the age of 45.

Silent Disease

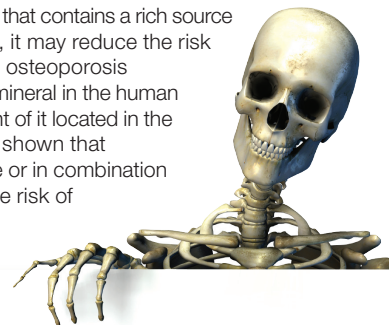
Osteoporosis is a silent disease, as people cannot feel their bones getting weaker. Most don't know they have osteoporosis until a fracture occurs, from a major fall or from a simple action such as sneezing. Early symptoms include muscle and joint ache, chronic backache, loss of height and spine deformation.

Dietary & Lifestyle Tips

- **Exposure to sunlight** is important for the production of vitamin D. Aim to get outdoors for 20-30 minutes each day
- **Avoid smoking** - Smokers have lower levels of oestrogen, lower body weight and bone mineral density, and as a result, smokers suffer more fractures than non-smokers
- **Exercise** - Weight bearing and resistance exercise are essential for maintaining good bone density. Beneficial exercises include weight bearing aerobic exercise, resistance training, and high impact loading such as jumping. Exercise daily or every second day for 60 minutes for maximum benefit
- **Reduce salt and soft drinks** - Avoid adding salt to your food. Calcium is excreted into the urine when salt is consumed. Soft drinks contain high levels of phosphorus which binds with calcium making less calcium available for building healthy bones
- **Reduce animal protein** - Excessive protein intake also increases calcium loss, while an inadequate protein intake is associated with poor recovery from fractures
- **Acid-alkaline balance and the Mediterranean diet** - A recent study from Greece found that a modified version of the Mediterranean diet rich in alkaline fruits, vegetables, fish and olive oil was associated with good bone health

Bone Building Herbs and Nutrients

- **Kudzu** (*Pueraria lobata*) is a herb that contains a rich source of phytoestrogens and like soy, it may reduce the risk of menopausal complaints and osteoporosis
- **Calcium** is the most abundant mineral in the human body, with more than 90 per cent of it located in the bones and teeth. Studies have shown that calcium supplementation, alone or in combination with vitamin D, helps reduce the risk of osteoporosis



Bone Facts:

- A person has more than 300 bones at birth and only 206 bones as an adult. Over time, small bones fuse together.
- Over a period of about seven years, each bone in our body is slowly replaced until it is a new bone.
- Every second, our bone marrow produces two million red blood cells.



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Food	Serving	Calcium
Cheese	100 g	830 mg
Sardines (with bones)	100 g	354 mg
Soybeans, dry	100 g	260 mg
Cabbage	100 g	212 mg
Yoghurt	100 g	205 mg
Whole milk	100 dl	120 mg
Fennel	100 g	109 mg
Broccoli	100 g	105 mg
Salmon	100 g	87 mg
Orange	1 medium	87 mg
Whole-wheat bread	100 g	63 mg

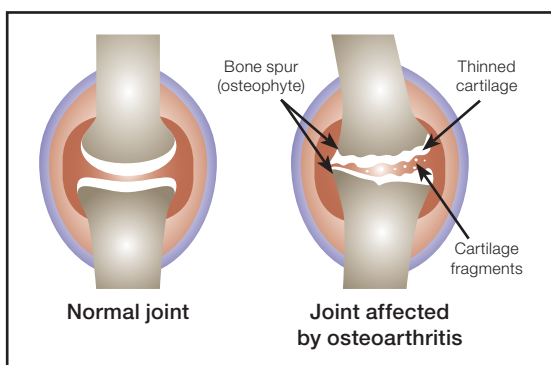
- **Vitamin D** - If sun exposure is not possible, then a vitamin D supplement is recommended. Vitamin D increases bone mineral density and in conjunction with calcium has been shown to reduce bone fractures in elderly people
- **Vitamin K** deficiency is associated with low bone mineral density and increased fracture risk. The combination of vitamins K and D may be particularly effective in stimulating bone healing following fractures
- **Boron** reduces the urinary excretion of calcium and magnesium, especially when dietary magnesium is low. Low boron intake is associated with impaired bone health, brain function and immune response

Joints

The cartilage between joints acts as a natural shock absorber and maintains lubrication of the joint surfaces, protecting bones and tissues from impact associated with movement.

What is Osteoarthritis?

Osteoarthritis is the deterioration of the joints. The deterioration of the cartilage and bone surface can result in crippling pain, inflammation, damaged joint tissue and reduced movement. The knees and hands are most often affected with pain and stiffness ranging from mild to severe. Approximately 8-10 per cent of all men and women have osteoarthritis in one or more of their joints.



How do I know if I have Osteoarthritis?

The main symptom is pain, usually made worse by the use of the joint and relieved by rest, as well as stiffness following any period of inactivity. Other symptoms include swelling and redness of the joint, weakness of the muscles surrounding the joint and reduced movement. Osteoarthritis can be effectively managed with herbs and nutrients. Ask your practitioner for advice on what is most suitable for you.

Dietary & Lifestyle Tips

- **Exercise** reduces pain and improves function in people with arthritis. Swimming, yoga, and pilates may be beneficial
- **Minimise stress on joints** - Overweight people have four to five times greater risk of developing osteoarthritis of the knee. Being only 5 kg overweight increases the force on the knee by 15-30 kg with each step. Losing weight may help
- **The Mediterranean diet** consists of a high intake of fresh fruit and vegetables, legumes, olive oil, fish and poultry. It is also high in culinary herbs, garlic and onions but low in meat and dairy products. Following the Mediterranean diet reduces the risk of osteoporosis and arthritis

Joint Facts: Babies are born without conventional kneecaps instead they have a formation of cartilage. In girls this usually turns into a normal bone kneecap by the age of three, in boys the age of five.

Anti-inflammatory Herbs and Nutrients

- **Antioxidant minerals** include zinc, manganese, copper and selenium. They can promote healthy joint function
- **Bromelain and Rutin** - Bromelain may help relieve the pain of osteoarthritis. Studies suggest it can reduce inflammation or pain caused by inflammation. Rutin is a flavonoid with antioxidant and anti-inflammatory action
- **Calcium Fluoride** is a mineral cell salt in a homeopathic form for improving muscle tone, tendon and bone strength
- **Devil's Claw** is a herb with anti-inflammatory and pain relieving properties used in the treatment of painful joints. Scientific evidence supports the use of Devil's Claw for the pain related to degenerative joint disease or osteoarthritis
- **Fish Oils** assist in reducing inflammation and pain associated with arthritis. Several studies have shown that regular consumption of fish oil decreases joint tenderness and swelling in those with rheumatoid arthritis. Fish oil supplementation reduces tender joints and morning stiffness of osteoarthritis
- **Glucosamine and Chondroitin** - Glucosamine plays a role in cartilage formation and repair. It may help maintain the joint and rebuild damaged cartilage. Glucosamine may also have anti-inflammatory activity. Chondroitin sulfate is a major component of cartilage and supplementation has been shown to reduce osteoarthritic pain of the knees
- **Magnesium** deficiency causes the bone crystals to become larger and more brittle. Chronic magnesium deficiency has also been shown to be associated with arthritis. Magnesium is found in nuts, legumes, whole grains, green vegetables, bananas, potatoes and dairy foods
- **Manganese** is needed for the formation of healthy cartilage and bone. Deficiency results in abnormal skeletal development

Your healthcare practitioner will be able to prescribe high quality 'practitioner only' medicines that are best suited to your individual needs.