

## Exercise for Osteoporosis and Falls Prevention

### What is osteoporosis?

Osteoporosis is a disease in which the bones become fragile and brittle. They fracture more easily than normal bone. Even a minor bump or fall can cause a serious fracture. Half of all women and one-third of men over 60 in Australia will have a fracture due to osteoporosis.

Exercise helps to keep bones strong, prevent falls and fractures and helps you recover faster after a fracture. Some types of exercise help more than others.

### Exercise builds strong bones in children

Strong bones depend on how well they were made in the first place. Most people's bones are at their strongest in their 20s. After this, bone density begins to decline. For strong bones, children need enough daily calcium in the diet. Their bodies also need to make enough vitamin D to help them absorb calcium. Being in sunlight for short periods helps our bodies make vitamin D.

Even before puberty, exercise is very important for building strong bones. It is never too early (or too late) to begin making bones as strong as possible. Girls who are the most physically active have bones that are about 40% stronger than girls of the same age who are the least active.

### Exercise keeps bones strong in adults

Exercise in adults can help keep bones strong. Bone loss begins gradually in the late thirties. During the middle adult years, exercise is important to keep bones strong, as well as improving muscle strength and heart and lung fitness.

### Exercise keeps bones strong in elderly people and helps prevent falls

The main aim of exercise for older people depends on how healthy their bones are. If you haven't been diagnosed with osteoporosis it's important to exercise to keep bones and muscles strong. Exercise will also help improve your balance, posture and co-ordination.

### Exercise helps posture and balance

People with osteoporosis are more likely to have a bone fracture than people with normal bone strength. It's often a fall that causes the fracture. Elderly people have a higher risk of a fracture because they tend to fall more often. Every year, about

40% of people over 65 fall at least once. Avoiding falls means fewer fractures, especially hip fractures. Most hip fractures are caused by falls.

Falls can sometimes be prevented. People with better posture, better balance and stronger muscles are less likely to fall and are therefore less likely to be injured. On the other hand, people who are not very active are more likely to have a hip fracture than those who are more active. There are many causes of a fall, but some major factors, which could put you at higher risk include:

- having had a fall already
- taking many different medications
- having chronic diseases
- having arthritis, especially in the legs
- problems with vision
- having poor balance and poor muscle strength

### **What are the best exercises for strong bones?**

Exercises which mean your body has to carry its own weight (e.g. walking, but not swimming), and which involve running, jumping or skipping, help new bone to grow and prevent bone loss. Walking, jogging, dancing, tennis, volleyball, lifting weights, and netball, are all good.

### **Tips for a good bone-health exercise program**

- to have an effect on bone, exercise needs to be **REGULAR** and **FAIRLY VIGOROUS**. Doing a **VARIETY** of different exercises is best because it exercises bone in different ways. **SHORT, INTENSE BURSTS** of exercise (e.g. 15 minutes lifting weights or very brisk walking) is probably better for bones than a leisurely one hour walk.
- 2 short exercise sessions (20 minutes) separated by 8 hours is better for bone, than one long session
- Start slowly and progress gradually
- Activities that promote muscle strength, balance and co-ordination, help to prevent falls. Pilates, gentle yoga and Tai Chi are all good activities to help prevent falls.

### **Exercise for managing osteoporosis**

If you already have osteoporosis and have had fractures, it's good to ask a doctor or physiotherapist before starting an exercise program.

- start with a basic strengthening program
- join a falls prevention class
- if you have had a fracture
  - avoid jarring, twisting or jumping movements
  - avoid abrupt or sudden high impact movements
  - avoid abdominal (stomach) curl ups
  - avoid forward bending from the waist
  - avoid heavy lifting

## Preventing falls

### Exercise helps posture and balance

People with better posture, better balance and stronger muscles are much less likely to fall and therefore less likely to be injured. For example, women who sit for more than nine hours a day are more likely to have a hip fracture than those who sit for less than six hours a day. Some special exercise programs can reduce the risk of falling by about 20% and can also decrease serious injury from falls. These are programs for elderly people that are tailored to each older person's needs, and include progressive muscle strengthening, improving balance and walking.

### Balance

Weak muscles, changes in blood pressure or heart rate, medications, ear problems and even a poor diet can all affect balance.

As well as regular exercise, you can improve balance if you:

- Ask your doctor or physiotherapist about exercises to improve balance
- Maintain a healthy diet that includes fresh fruit and vegetables and calcium-rich foods
- Make sure you drink plenty of water each day
- Consider a special 'falls and balance' program or class (check out your local community health centre, health promotion unit or call Osteoporosis Australia on 1800 242 141).

## Other tips to prevent falls

### Around the home

- Make sure mats, rugs and carpet edges are lying flat on the ground
- Remove electrical cords from walking areas
- Avoid walking on slippery or wet surfaces
- Make sure rooms are well lit and free of clutter
- Consider installing a hand rail on at least one side of any stairs, and next to baths, showers and toilets
- Consider putting safety strips on edges of outdoor stairs

### Eyesight

- Make sure your home is well lit so you can see where you are going at all times
- Have your eyes tested every year by an optometrist
- If you wear glasses, use them as directed. Be careful when going up and down stairs if you wear bifocals or trifocals
- Wear sunglasses outside to minimize glare and squinting and to protect your eyes from UV damage.

### Footwear

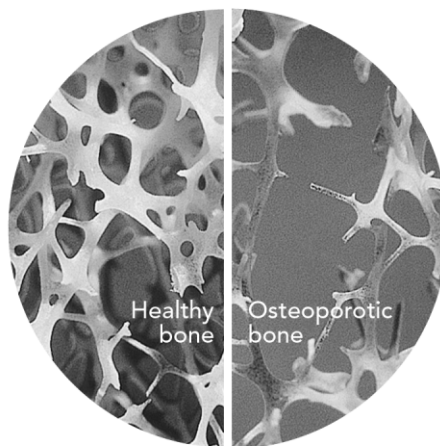
- Wear shoes with a broad heel, non-slip soles and good foot support

- Wear the correct size socks, pantyhose and shoes
- Choose shoes that offer good foot support
- Avoid high-heeled shoes

### In general

- Do regular physical activity, including exercises for balance, strength and posture
- Have your eyes checked regularly
- Have your hearing tested regularly
- Take time to regain your balance after lying down or standing up after sitting
- Avoid wet or icy pavements
- Avoid rushing to answer the phone, cross streets, catch elevators or other activities
- Use a walking aid if needed for balance
- Avoid walking on uneven surfaces
- Limit alcohol intake
- Talk to your doctor if you suffer from dizziness or feel unsteady at times
- Make time to talk to your doctor regularly about any medication you take and find out if you still need to take it. Some medications may affect your balance.
- Keep a light or flashlight within easy reach of your bed

For information about programs to improve muscle strength and balance and prevent falls, call Osteoporosis Australia on **1800 242 141**.



Healthy bone

Osteoporotic bone