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## Osteoporosis and exercise

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### Summary

- Osteoporosis is characterised by the loss of calcium in a person's bones, which makes them more likely to fracture (break).
  - Exercising regularly reduces the rate of bone loss and conserves bone tissue, lowering the risk of fractures.
  - Exercise also helps reduce the risk of falling.
  - Exercise that is too vigorous may increase the risk of fractures.
  - See your doctor, physiotherapist or other healthcare professional for expert advice.
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Osteoporosis is the loss of calcium and other minerals from a person's bones, which makes the bones susceptible to fracturing (breaking). In Australia, around half of all women and one third of men over 60 years of age have osteoporosis. Women are more likely to have osteoporosis because the hormonal changes of menopause make bone loss worse.

A nutritious diet including calcium-rich foods and regular exercise throughout a person's life (including during childhood and adolescence) will reduce the risk of osteoporosis in later years.

People with existing osteoporosis can also benefit from exercise. This is because a sedentary lifestyle (little exercise) encourages the loss of bone mass. Exercising regularly can reduce the rate of bone loss.

Most bone fractures occur because of a fall. You can reduce your chances of falling by exercising to build your muscle strength and improve your balance. Exercise can also slow the rate of bone loss, which reduces the risk of fractures from osteoporosis.

Exercise also brings other benefits to people who have osteoporosis or want to prevent osteoporosis. These include reduced need for some medications that can contribute to the risk of falls, and better management of other health problems.

### Benefits of exercise for people with osteoporosis

A sedentary lifestyle, poor posture, poor balance and weak muscles increase the risk of fractures. A person with osteoporosis can improve their health with exercise in valuable ways, including:

- reduction of bone loss
- conservation of remaining bone tissue
- improved physical fitness
- improved muscle strength
- improved reaction time
- increased mobility
- better sense of balance and coordination
- reduced risk of bone fractures caused by falls
- reduced pain
- better mood and vitality.

### Deciding on an exercise program for people with osteoporosis

Always consult with your doctor, physiotherapist or health care professional before you decide on an exercise program. Factors that need to be considered include:

- your age
- the severity of your osteoporosis
- your current medications
- your fitness and ability
- other medical conditions such as cardiovascular or pulmonary disease, arthritis, or neurological problems
- whether improving bone density or preventing falls is the main aim of your exercise program.

A combination of weight-bearing aerobic and muscle-building (resistance) exercise is best, together with specific balance exercises.

### **Recommended exercises for people with osteoporosis**

Exercises that are good for people with osteoporosis include:

- weight-bearing aerobics exercise such as dancing
- resistance training using free weights such as dumbbells and barbells, elastic band resistance, body-weight resistance or weight-training machines
- exercises to improve posture, balance and body strength, such as tai chi.

Ideally, weekly physical activity should include something from all three groups.

### **Swimming and water exercise for people with osteoporosis**

Swimming and water exercise (such as aqua aerobics or hydrotherapy) are not weight-bearing exercises, because the buoyancy of the water counteracts the effects of gravity. However, exercising in water can improve your cardiovascular fitness and muscle strength.

People with severe osteoporosis or kyphosis (hunching of the upper back) who are at high risk of bone fractures may find that swimming or water exercise is their preferred activity. Consult with your doctor or healthcare professional.

### **Walking for people with osteoporosis**

Even though walking is a weight-bearing exercise, it does not greatly improve bone health, muscle strength, fitness or balance, unless it is carried out at high intensity such as at a faster pace, for long durations (such as bushwalking) or incorporates challenging terrain such as hills. However, for people who are otherwise inactive, walking may be a safe way to introduce some physical activity.

### **Exercises that people with osteoporosis should avoid**

A person with osteoporosis has weakened bones that are prone to fracturing. They should avoid activities that:

- involve loaded forward flexion of the spine such as abdominal sit-ups
- increase the risk of falling
- require sudden, forceful movement, unless introduced gradually as part of a progressive program
- require a forceful twisting motion, such as a golf swing, unless the person is accustomed to such movements.

### **The best amount of exercise for people with osteoporosis**

The exact amount of exercise required for people with osteoporosis is currently unknown. However, guidelines suggest:

- 45 minutes to one hour of aerobic activity two to three times per week
- resistance training two or three times per week– each session should include exercises to strengthen the lower limb, trunk and arm muscles, and each exercise should be performed eight to 10 times
- balance exercises – these need to be at a level that is challenging to your balance and should be performed for a few minutes at least twice a week. For safety reasons, always make sure you can hold on to something if you overbalance
- stretching exercises to promote flexibility.

You need to continue your exercises over the long term to reduce your chances of a bone fracture.

## Professional advice for people with osteoporosis

Regular exercise is an essential part of any osteoporosis treatment program. See your doctor before starting a new exercise program. Physiotherapists and other exercise professionals can give you expert guidance.

Always start your exercise program at a low level and progress slowly. Exercise that is too vigorous too quickly may increase your risk of injury, including fractures. Also, consult your doctor or a dietitian about ways to increase the amount of calcium, vitamin D and other important nutrients in your diet. They may advise you to use supplements.

Avoid smoking and excessive alcohol, which are bad for your bones.

### Where to get help

- Your doctor
- Physiotherapist

### Things to remember

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**This page has been produced in consultation with and approved by:**

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