

Osteoporosis and exercise

Osteoporosis is characterised by the loss of calcium and other minerals from the bones, which makes them susceptible to fracturing (breaking). In Australia, around half of all women and one third of men over 60 years have osteoporosis. Women are more susceptible because the hormonal changes of menopause worsen bone loss.

A nutritional diet including calcium-rich foods and regular exercise throughout life (including during childhood and adolescence) are known to reduce the risk of osteoporosis in later years.

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

Most fractures occur due to a fall. Exercise can build muscle strength and improve balance, which reduces the likelihood of falling. It can also reduce the risk of fractures resulting from osteoporosis by slowing the rate of bone loss.

There are other benefits of exercise for people who have osteoporosis or want to prevent osteoporosis. These include reduced need for some medications that can contribute to falls risk, 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

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
- Current medications
- Your fitness and ability
- Other medical conditions such as cardiovascular or pulmonary disease, arthritis, or neurological problems
- Whether bone density or falls prevention are the main aims of your exercise program
- A combination of weight-bearing aerobic and muscle-building (resistance) exercises is best, together with specific balance exercises.

Recommended exercises

Exercises that are beneficial for people with osteoporosis include:

- Weight-bearing aerobics exercise including 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 including Tai Chi.

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

Swimming and water exercise

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 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 health care professional.

Walking

Even though walking is weight-bearing exercise, it does not have a major impact on 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 appropriate as a safe way to introduce some physical activity.

Exercises to avoid

A person with osteoporosis has weakened bones prone to fracturing. Activities to avoid include:

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

The amount of exercise

The exact amount of exercise required for people with osteoporosis is currently unknown. However, research indicates the following may be beneficial:

- 45 minutes to one hour of aerobic activity two to three times per week.
- Resistance training (such as weight training with dumbbells, barbells or rubber tubing) two to three times per week. Each session should include exercises to strengthen the lower limb, trunk and arm muscles. Each exercise should be performed eight to 10 times.
- Balance exercises need to be performed at a level that is challenging to your balance and should be performed for a few minutes at least twice a week. Note, for safety reasons, always make sure you can hold on to something if you overbalance.
- Include stretching exercises to promote flexibility.
- Exercise needs to be continued long term to achieve reductions in fracture rates.

Professional advice

Regular exercise should be considered 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 the risk of injury including fractures. Also, consult a doctor or dietician about ways to increase the amount of calcium, vitamin D and other important nutrients in your diet. You may be advised to use supplements. Avoid smoking and excessive alcohol, which is bad for bones.

Where to get help

- Your doctor
- Physiotherapist

Things to remember

- Osteoporosis is characterised by the loss of calcium in the bones, which makes them susceptible to fracturing.
- Exercising regularly reduces the rate of bone loss and conserves bone tissue, reducing 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 health care professional for expert advice.

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

University of Melbourne - Centre for Health, Exercise and Sports Medicine

Content on this website is provided for education and information purposes only. Information about a therapy, service, product or treatment does not imply endorsement and is not intended to replace advice from your doctor or other registered health professional. Content has been prepared for Victorian residents and wider Australian audiences, and was accurate at the time of publication. Readers should note that, over time, currency and completeness of the information may change. All users are urged to always seek advice from a registered health care professional for diagnosis and answers to their medical questions.

For the latest updates and more information, visit www.betterhealth.vic.gov.au

Copyright © 1999/2012 State of Victoria. Reproduced from the Better Health Channel (www.betterhealth.vic.gov.au) at no cost with permission of the Victorian Minister for Health. Unauthorised reproduction and other uses comprised in the copyright are prohibited without permission.