

42. THE BENEFITS OF STRENGTH TRAINING FOR OSTEOPOROSIS

What is strength training?

Strength training (or resistance training) can be defined as exercise in which resistance is applied to a muscle to develop and maintain muscular strength, muscular endurance and muscle mass.

The resistance applied can take the form of free weights (dumbbells or leg cuffs), machine weights, resistance bands or even body weight.

What are the benefits of strength training for osteoporosis?

Improvements in muscle strength, function, pain and quality of life can be achieved through strength training. Importantly for osteoporosis prevention and management, strength training can maintain or even improve bone mineral density.

Reducing the risk of a fracture is an important factor in osteoporosis management. Strength training can reduce the risk of fracture by:

- a) improving bone mineral density
- b) Improving muscle strength which can reduce the risk of falls and thus the risk of fracture.

Strength training is also beneficial for the prevention and management of other chronic illnesses such as diabetes and heart disease and is useful in the management of arthritis.

How to begin

The principles of strength training that apply to the healthy population also apply to people with osteoporosis, however more consideration needs to be given to safety aspects surrounding changes in bone strength and previous fractures associated with osteoporosis.

Therefore, before commencing a strength training program it is strongly recommended that people with osteoporosis see the appropriate health professional (eg. Physiotherapist or exercise physiologist). A health professional will complete a thorough assessment and design the most appropriate program for the individual.

People with osteoporosis or any chronic condition, or those who have not participated in strength training previously, should also be “cleared” by their doctor before participating in a strength training program.

This will ensure any complications, medication side effects and other medical conditions which could be exacerbated by strengthening exercises, are ruled out.

What to expect

Strength training programs do not have to be elaborate to be effective. A simple program using free weights (eg. dumbbells and ankle cuff weights) with one or two exercises

addressing each major muscle group is sufficient to provide an overall improvement in strength and function.

Importantly, for osteoporosis prevention, the stress applied to the bone through strength training must reach a threshold level for an increase in bone mineral density to occur. Thus, moderate to high intensity strength training is recommended for the prevention of osteoporosis (be guided by your health professional).

If you have osteoporosis you may need to work at a lower intensity of exercise. Once again, be guided by your health professional.

Strength training exercises should not cause pain, and any that do should be stopped and reviewed by the health professional who prescribed the program.

To obtain the most benefit from strength training, participants should complete their program two to three times per week and progress the intensity of the exercise under the guidance of their health professional.

Useful resources

Arthritis/Osteoporosis Victoria has a register of metropolitan and rural strength training programs conducted by health and fitness professionals who have completed professional development courses run by Arthritis/Osteoporosis Victoria. To locate your nearest class contact Arthritis/Osteoporosis Victoria on (03) 8531 8033 or 1800 011 041 (country callers). Alternatively, contact your local community health centre or

physiotherapist to enquire if they run a suitable strength training program.

Resources available for borrowing by members from the Arthritis Victoria Resource Centre

- Exercise for strong bones : Your easy to follow stand up guide to reducing your risk of osteoporosis / Bassey, Joan; Dinan, Susie. -- London: Carroll & Brown Publishers, 2001.
- Exercises for osteoporosis : A safe and effective way to build bone density and muscle strength / Daniels, Dianne. -- New York NY: Hatherleigh Press, 2000.
- Falls and fractures: Beating the odds: Your falls prevention exercise routine / Osteoporosis Australia. Osteoporosis Australia, 1991. [Video Recording]
- On the move with osteoporosis : Education and exercise manual / Lurie, Shamara; Baskin, Michelle. / Osteoporosis Sydney Support Group. -- Kogarah, NSW: Osteoporosis Sydney Support Group, 1999.
- Strength training for beginners / Bassey, Joan; Dinan, Susie. -- London: HarperCollins Publishers, Inc. 2001.
- Strong women, strong bones : Everything you need to know to prevent, treat and beat osteoporosis / Nelson, Miriam E; Wernick, Sarah. -- Port Melbourne: Lothian, 2000.

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If you would like further information please contact our telephone information service on

(03) 8531 8000 or 1800 011 041 (country callers)

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Prepared by Education & Services staff, Arthritis Victoria, March 2004. This material is for your information and is not intended to be medical advice. You are encouraged to review the information provided with your doctor or relevant health professional.