

Physical activity and healthy ageing

Older people benefit from an active lifestyle, yet more than half of Australian men and women aged 60–75 are not sufficiently active for health benefits.*¹

It is important for all older people to understand that the body retains its ability to adapt to exercise training throughout life, even in those with a previously inactive lifestyle.²

Regular moderate physical activity in older patients should be part of an overall approach to cardiovascular risk factor modification that incorporates smoking cessation, healthy eating, and management of depression, social isolation, dyslipidaemia, high blood pressure and diabetes.

** Sufficient physical activity for health benefits: at least 30 minutes of moderate-intensity physical activity (produces a noticeable increase in breathing depth and rate but still allows person to talk comfortably) on most, if not all, days of the week. The amount of activity can be accumulated in shorter bouts, such as three 10-minute walks.*



Heartsite www.heartfoundation.com.au
Heartline 1300 36 27 87

NSW HEALTH

- ♥ Unless contraindicated, all older people should try to be as physically active as possible, in as many ways as they can. Activities should include a combination of moderate-intensity aerobic activity, resistance training, stretching and balancing. Inactive older people may need to build up their activity level gradually. The aim is to achieve at least 30 minutes on most, if not all, days of the week.
- ♥ In older adults progressive resistance training is the optimal mode of physical activity training for improving and maintaining function.³ It improves strength, walking, and ability to perform everyday movements.⁴

An active lifestyle in later life helps prevent the typical age-related decline in functional capacity (Figure 1), which is partly due to inactivity rather than an intrinsic effect of ageing. **It is important for patients to be aware that the body retains its ability to adapt to exercise training throughout life, even in those with a previously inactive lifestyle.**²

Progressive resistance training (i.e. performing movements against a specific external force that is regularly increased during training) markedly increases muscle strength in people 60 years and over, and improves ability to complete everyday tasks such as walking, standing up from a chair or climbing stairs.^{4,5}

A daily walking program can improve walking endurance, even in nursing home residents.²

Physical activity in older people, particularly resistance training, may reduce the risk of disability and hospitalisation, improve quality of life, and allow individuals to retain their independence.^{2,5} Resistance training benefits not only the healthy elderly, but also those who are frail or have chronic diseases including diabetes, painful osteoarthritis (OA) or chronic heart failure.⁵

Older patients should be aware that an active lifestyle in younger adulthood is not sufficient for current health benefits. Health benefits are more strongly correlated with recent activity than past activity – **it is the physical activity they do now that counts most.**⁶

Cardiovascular benefits

There is evidence for cardiovascular benefits of physical activity in older men and women:²

- ♥ In men aged 71–93 years, increasing distance walked per day correlates with reduced risk for coronary heart disease, independently of other risk factors.⁷
- ♥ The well-documented blood pressure-reducing effect of physical activity applies also to elderly patients.²
- ♥ Inactive people who become active in old age can still achieve substantial health benefits. Previously inactive older women or men who become active show a marked reduction in overall (any cause) mortality compared with sedentary peers.⁸

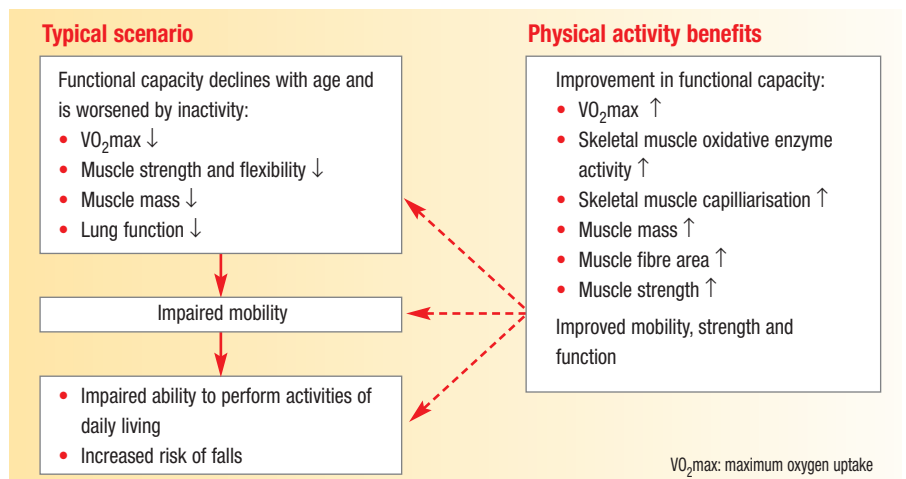


Figure 1. Functional capacity and ageing: physical activity counteracts the typical pattern of decline.^{2,4}

- ♥ Even in those with existing cardiovascular disease (CVD), physical activity has been shown to improve functional capacity and mental well-being,⁹ and even reduce mortality rates in some groups.^{8,9} Unless contraindicated, physical activity should be encouraged in older people with well compensated, clinically stable CVD.⁹

Other benefits in older people

Patients with chronic disease

Diabetes: progressive resistance training has been demonstrated to improve glycaemic control and significantly increase strength in older patients with type 2 diabetes.⁵ Aerobic exercise has been shown to increase glucose uptake during glucose tolerance testing and improve exercise tolerance in elderly patients.¹⁰

Chronic obstructive pulmonary disease (COPD): exercise programs achieve clear improvements in symptoms, cardiovascular fitness, exercise endurance, health-related quality of life and mood in patients with COPD,¹¹ including those over 60 years old.¹²

Falls and fracture prevention

Falls are responsible for 90% of hip fractures and 50% of vertebral fractures. Osteoporosis Australia recommends that exercise programs in all older adults should aim to prevent falls by improving muscle strength and co-ordination.¹³

Patients with a known history of falls can be targeted for tailored programs of progressive muscle strengthening, balance retraining exercises and walking. These programs reduce fall rates in elderly people, and can lower the risk of moderate-to-severe injury by more than one third. Group tai chi may also be effective in preventing falls.¹⁴

Bone mass: progressive resistance training can contribute to maintenance of bone mass in older people. Progressive resistance training is particularly appropriate for patients at risk for fracture, because it can also improve muscle mass, strength, balance, and reduce risk for falls.³

All patients who take long-term corticosteroids should be advised to undertake regular, weight-bearing exercise (e.g. light resistance training) to help reduce osteoporosis risk.^{11,15}

Other conditions

Osteoarthritis: aerobic exercise, even when low-intensity, is effective in improving functional status, gait, pain and aerobic capacity in people with knee OA.^{16,17} Both supervised exercise classes and one-to-one instruction are effective.¹⁸ Progressive resistance training may also reduce pain in older people with OA.⁴ **Physical activity does not cause disease progression in OA.**³

Sleep quality: exercise may improve sleep and quality of life in the over-60 age group.¹⁹

Surgical recovery: a 3-month exercise 'prehabilitation' program before abdominal or cardiac surgery may improve functional capacity and may reduce postoperative complications, shorten hospital stays, improve quality of life and maximise function (compared with preoperative physical inactivity).²⁰

Mental health: emerging evidence suggests that physical activity (e.g. supervised exercise groups, light resistance training) is effective in alleviating symptoms of depression in older adults, compared with no intervention²¹ or education only,²² and may be as effective as antidepressant medication in this age group.²³ Conversely, physical inactivity is a risk factor for depression in the elderly.^{24,25}

Safety

In older patients, the very small risk of cardiovascular events is outweighed by the benefits of physical activity and the well-documented risks of inactivity for age-related functional decline and chronic disease.³ Progressive resistance training in people 60 years and over does not appear to increase risk of hospitalisation or serious adverse events such as myocardial infarction or death, and may reduce use of health care services.⁴

- ♥ Before commencing a physical activity program, older patients should be assessed to ensure the activity is appropriate, and to identify limitations to activity. History should aim to identify cognitive impairment, depression, CVD, hydration status, diabetes mellitus, hypothyroidism, retinal disease, haemorrhoids, stress incontinence, neurological impairment and musculoskeletal symptoms. Physical examination should include cardiovascular examination,

inspection for hernias, neurological and musculoskeletal examination, and assessment of balance and mobility.³

- ♥ Patients should be advised to always start with a warm-up and finish with a cool-down and some gentle stretches, to drink sufficient fluids before, during and after physical activity, to wear appropriate clothing, and to try to be active in a cool place or during cooler times of the day.
- ♥ Brisk walking should not be recommended as a fall prevention intervention in women with a history of falling.¹⁴
- ♥ Those at higher risk for fatigue or injury (e.g. the frail or recently ill) should be monitored during resistance training programs.^{4,14}

Promoting physical activity

Several general practice-based studies have reported success in increasing physical activity levels among older people, including those aged over 75 and the overweight. Physical activity interventions in the elderly may be most effective where contact is maintained long-term (12 months or more) and where programs are tailored to individual needs and circumstances. Even sedentary, frail women in their eighties have achieved increased activity and confidence in their ability to exercise.³

Heart Foundation programs and services

- ♥ **Just Walk It** program – refer your patient to a community walking group (NSW): call **1300 36 27 87** (local call cost)
- ♥ **Heartline** – information for you and your patients on healthy eating, physical activity, blood pressure, blood cholesterol, smoking cessation, location of local **Heartmoves** programs and contact numbers: call **1300 36 27 87** (local call cost)
- ♥ **Heartmoves** – refer your patient to a safe, low- to moderate-intensity exercise class suitable for every fitness level, delivered by accredited exercise professionals trained in risk management: call **(02) 4952 4699**
- ♥ **Heartsite** – www.heartfoundation.com.au
- ♥ **General Practice Lifestyle Risk Factor Management Project** – contact your Division of general practice

References: 1. Australian Institute of Health and Welfare (AIHW). *Heart, stroke and vascular diseases – Australian facts 2004*. Canberra; AIHW and National Heart Foundation of Australia, 2004; 2. Hardman AE, Stensel DJ. *Physical activity and health. The evidence explained*. New York; Routledge, 2003; 3. Bean JF et al. *Arch Phys Med Rehabil* 2004; 85(7 Suppl 3): S31–42; 4. Latham N et al. *The Cochrane Database of Systematic Reviews* 2003, Issue 1; 5. Cyarto EV et al. *J Sci Med Sport* 2004; 7(Suppl): 30–38; 6. Sherman SE et al. *Am Heart J* 1999; 138 (5 Pt 1): 900; 7. Hakim AA et al. *Circulation* 1999; 100: 9–13; 8. Bauman AE. *J Sci Med Sport* 2004; 7(Suppl): 6–19; 9. Briffa T et al. *Physical activity recommendations for people with cardiovascular disease*. National Heart Foundation of Australia, *In press* 2006; 10. Tessier D et al. *Arch Gerontol Geriatr* 2000; 31:121–132; 11. McKenzie DA et al. *Med J Aust* 2003; 178(Suppl): S1–S39; 12. Lacasse Y et al. *The Cochrane Database of Systematic Reviews* 2001, Issue 4; 13. Osteoporosis Australia. *Preventing the fracture cascade. For the General Practitioner*. Sydney; Osteoporosis Australia, 2004; 14. Gillespie LD et al. *The Cochrane Database of Systematic Reviews* 2003, Issue 4; 15. American College Of Rheumatology. *Arthritis Rheum* 2001; 44: 1496–1503; 16. American Geriatrics Society. *J Am Geriatr Soc* 2001; 49: 808–23; 17. Brosseau L et al. *The Cochrane Database of Systematic Reviews* 2003, Issue 2; 18. Franssen M et al. *The Cochrane Database of Systematic Reviews* 2001, Issue 2; 19. Montgomery P, Dennis J. *The Cochrane Database of Systematic Reviews* 2002, Issue 4; 20. Carli F, Zavorsky GS. *Curr Opin Clin Nutr Metab Care* 2005; 8: 23–32; 21. McNeil JK et al. *Psychol Aging* 1991; 6: 487–8; 22. Singh NA et al. *J Gerontol A Biol Sci Med Sci* 2001; 56: M497–504; 23. Barbour KA, Blumenthal JA. *Neurobiol Aging* 2005 Oct 10 [Epub ahead of print]; 24. Lampinen P et al. *Prev Med* 2000; 30: 371–80; 25. Farmer ME et al. *Am J Epidemiol* 1988; 128: 1340–51.