

World Physical Therapy Day, clinical area sheet 4

Active aging

Physical therapists are exercise experts, providing services for a wide range of people to optimise their physical ability. They prescribe exercise as part of a structured, safe, and effective programme.

An important part of their role is to help people remain active as they age. More than any other profession, physical therapists (known in many countries as physiotherapists) prevent and treat chronic disease and disability in aging adults through specifically prescribed activity and movement.

The World Health Organization encourages regular physical activity for older adults, because it has been shown to improve the functional status and quality of life in this group of individuals. (www.who.int/dietphysicalactivity/factsheet_olderadults/en/)

It says that older adults should engage in at least 30 minutes of moderate-intensity physical activity five days a week, if appropriate.

Source: World Health Organisation, "What is active aging?"
www.who.int/ageing/active_ageing/en/index.html

This document provides information and resources demonstrating the contribution of physical therapists in keeping people active as they age, particularly their role in maintaining general health, preventing and treating cardiovascular disease, and countering joint problems. A separate clinical area sheet is available dealing specifically with cardiovascular disease.

Improving functional ability

Older adults engaged in regular physical activity demonstrate improved:

- balance
- strength
- coordination and motor control
- flexibility
- endurance.

As a result, physical activity can reduce the risk of falls – a major cause of disability among older people.

Source: World Health Organization, “Physical activity and older adults”
www.who.int/dietphysicalactivity/factsheet_olderadults/en/

Participation in regular exercise programmes leads to older adults having higher levels of functional capabilities, greater independence, and improved quality of life.

Source: Ellingson T, Conn VS. *Exercise and quality of life in elderly individuals. J Gerontol Nurs.* 2000 Mar;26(3):17-25

Exercise programmes can slow down functional decline. Elderly adults can, with an appropriate exercise programme, be helped to achieve levels of activity that will bring health benefits, and the decline in overall function that might normally be expected with age can be substantially retarded.

Source: Landin RJ, Linnemeier TJ, et al. *Exercise testing and training of the elderly patient. Cardiovasc Clin.* 1985; 15(2): 201-18

Physical activity and exercise are inversely associated with mortality and age-related morbidity.

Sources: Kushi LH, Fee RM, et al. *Physical activity and mortality in postmenopausal women. JAMA.* 1997 Apr 23-30; 277(16): 1287-92

Nied RJ, Franklin B. *Promoting and prescribing exercise for the elderly. Am Fam Physician.* 2002 Feb 1;65(3):419-26.

Gregg EW, Cauley JA, et al. *Relationship of changes in physical activity and mortality among older women. JAMA.* 2003 May 14; 289(18):2379-86.

Preventing and treating non-communicable disease

Participation in regular physical activity can prevent or improve many non-communicable diseases prevalent in older adults:

- cardiovascular disease (coronary heart disease, stroke)
- hypertension (elevated blood pressure, which can contribute to cardiovascular disease)
- osteoarthritis (a disease that causes joint swelling, pain and limits movement)
- osteoporosis (a disease in which bones become fragile)

Source: World Health Organisation, “Physical activity and older adults”
www.who.int/dietphysicalactivity/factsheet_olderadults/en/

Being active from an early age can help prevent these non-communicable diseases, and regular movement and activity can also help relieve the disability and pain associated with them.

Source: World Health Organisation, “Physical activity and older adults”
www.who.int/dietphysicalactivity/factsheet_olderadults/en/

Promoting cardiovascular health

Regular exercise in older adults has many positive effects on cardiovascular health, including increasing cardiac output, maximum heart rate, endurance, and arterial blood flow, and decreasing heart rate, blood pressure, and risk of heart disease.

Source: Vincent KR, Braith RW et al. Resistance exercise and physical performance in adults aged 60 to 83. J Am Geriatr Soc. 2002 Jun; 50(6):1100-7.

One study found that after eight months of regular training, a group of 85-year-olds had increased walking speed and increased maximal oxygen uptake and decreased blood pressure. This resulted in reduced health risk and improved independence.

Source: Puggaard L, Larsen JB, et al. Maximal oxygen uptake, muscle strength and walking speed in 85-year-old women: effects of increased physical activity. Aging (Milano). 2000 Jun; 12(3):180-9.

Improving joint health

Tai Chi exercise brings improved balanced and physical functioning to people with osteoarthritis.

Source: Song R, Lee EO et al. Effects of tai chi exercise on pain, balance, muscle strength, and perceived difficulties in physical functioning in older women with osteoarthritis: a randomized clinical trial. J Rheumatol. 2003 Sep; 30 (9): 2039-44.

Research indicates that exercise decreases pain and increases ability to exercise in people with osteoarthritis and rheumatoid arthritis.

Sources: Minor MA, Hewett JE et al. Efficacy of physical conditioning exercise in patients with rheumatoid arthritis and osteoarthritis. Arthritis Rheum. 1989 Nov; 32(11): 1396-405.

O'Reilly SC, Muir KR et al. Effectiveness of home exercise on pain and disability from osteoarthritis of the knee: a randomised controlled trial. Ann Rheum Dis. 1999 Jan; 58(1): 15-9.

Exercise decreases depression and anxiety in people with osteoarthritis. *Source: Minor MA, Hewett JE et al. Efficacy of physical conditioning exercise in patients with rheumatoid arthritis and osteoarthritis. Arthritis Rheum. 1989 Nov; 32(11):1396-405.*

Land-based therapeutic exercise programmes have been shown to reduce pain and improve physical function in people with osteoarthritis of the knee.

Source: Fransen M, McConnell S. Therapeutic exercise for people with osteoarthritis of the hip or knee. A systematic review. J Rheumatol. 2002 Aug; 29(8):1737-45.

For people with osteoarthritis of the knee, both high intensity and low intensity aerobic exercise (stationary cycling) are equally effective at improving functional status, gait, pain, and aerobic capacity.

Source: Brosseau L, MacLeay L, et al. Intensity of exercise for the treatment of osteoarthritis. Cochrane Database Syst Rev. 2003;(2): CD004259.

Research also indicates that regular exercise by people with arthritis decreases the likelihood of developing disability by 10% and protects against functional decline.

Source: Feinglass J, Thompson JA et al. Effect of physical activity on functional status among older middle-age adults with arthritis. Arthritis Rheum. 2005 Dec 15; 53(6): 879-85.

Improving mental health

Physical activity has been shown to improve mental health and cognitive function in older adults and contributes to the management of disorders, such as depression and anxiety. Active lifestyles often provide older persons with regular occasions to make new friendships, maintain social networks, and interact with other people of all ages.

Source: World Health Organisation, "Physical activity and older adults"
www.who.int/dietphysicalactivity/factsheet_olderadults/en/

Research has indicated that increased levels of physical activity reduces the risk of Alzheimer's disease. Exercise, along with cognitively stimulating activities, can reduce some of the symptoms of the disease.

Sources: Penrose FK. Can exercise affect cognitive functioning in Alzheimer's disease? A review of the literature. Activities, Adaptation & Aging 2005;29(4): 15-40

Christofoletti G, Oliani MM et al. A controlled clinical trial on the effects of motor intervention on balance and cognition in institutionalized elderly patients with dementia. Clin Rehabil. 2008 Jul; 22(7):618-26.

Aerobic exercises significantly reduced depressive symptoms in people over 60.

Source: Penninx BW, Rejeski WJ et al. Exercise and depressive symptoms: a comparison of aerobic and resistance exercise effects on emotional and physical function in older persons with high and low depressive symptomatology. J Gerontol B Psychol Sci Soc Sci. 2002 Mar; 57(2):P124-32.

A regular programme of aerobic exercise can slow or reverse functional deterioration, reducing the individual's biological age by 10 or more years, and potentially prolonging independence.

Source: Shephard RJ. Maximal oxygen intake and independence in old age. Br J Sports Med. 2009 May;43(5):342-6. Epub 2008 Apr 10.

This information may be freely reproduced with acknowledgement to WCPT. It is designed as a resource, and does not necessarily represent an official WCPT view or policy. It was produced with the kind assistance of Marilyn Moffat, Professor of Physical Therapy at New York University and President of WCPT.