

Stroke and exercise

What is stroke?

A stroke happens when the blood supply to the brain is suddenly interrupted. There are two main causes of stroke. Most commonly, an artery in the brain is blocked by a clot, stopping normal blood flow and the delivery of oxygen and nutrients to the brain area beyond (ischemic stroke). This occurs in around 85% of cases of stroke. The second cause is through a break in the wall of a blood vessel, leading to a bleed in the brain (haemorrhagic stroke). This disruption in blood flow may lead to temporary or permanent damage to the brain. The range of symptoms from stroke may include: weakness, numbness or paralysis of the face, arm or leg on either side of the body, sometimes both; difficulty speaking or understanding others; loss of vision, blurring or reduced vision in one or both eyes; difficulty swallowing or eating; loss of balance; fatigue; reduced cardiovascular fitness; and difficulty thinking and remembering.

Symptoms can appear alone or in combination and last for hours, days, months or even years. If symptoms resolve within 24 hours, this is usually called a transient ischemic attack (TIA). A TIA should not be ignored. Prompt investigation of the cause of a TIA may prevent a stroke. The degree of recovery and the speed of recovery from stroke varies between individuals and recovery may take many years.

How does exercise help?

Exercise helps prevent stroke. Once a person is affected by stroke, regular exercise and physical activity can also help reduce the risk of further stroke and improve post-stroke recovery, as well as help manage symptoms of stroke. Reported benefits include:

- Improved strength and endurance
- Improved walking ability and ability to complete day to day activities of daily living
- Improved balance and coordination
- Improved flexibility
- Improved mood
- Improved alertness and thinking ability

What exercise is best for people with stroke?

The type of exercise or physical activity that works best for an individual with stroke will depend on the extent of their disabling symptoms, the medical conditions that may have been present pre-stroke or be new since the stroke, such as heart problems and diabetes, their exercise preferences and their ability to get out and about. Avoiding prolonged sedentary (sitting/lying) behaviour is likely to be important in this population. Fatigue is often reported as a barrier to exercise, but there is some evidence that exercise can help when performed regularly.

Type of exercise	Recommendations
Aerobic exercise (for heart and lung fitness)	Start at low intensity & duration, increasing the program gradually Small bursts of regular activity Exercise bikes & elliptical trainers preferable to treadmills due to falls risk
Resistance training (muscle and bone strength)	Progressive resistance with high weights and low repetitions Alternate muscle groups 2-3 days a week
Stretching and balance	Functional training and Tai Chi can improve balance & coordination

*Before commencing a program, a medical review with your doctor is recommended to discuss clearance and referrals to appropriate allied health practitioners including accredited exercise physiologists or physiotherapists.

References and further information

Exercise is Medicine Australia www.exerciseismedicine.org.au
National Stroke Foundation <http://strokefoundation.com.au>
Find an Accredited Exercise Physiologist www.essa.org.au
Exercise Right www.exerciseright.com.au

1. Billinger, S.A., Arena, R., Bernhardt, J., et al., Physical activity and exercise recommendations for stroke survivors: A statement for healthcare professionals from the American Heart Association/American Stroke Association. *Stroke* 2014; p. 1-22.
2. Stephanie S. Y. Au-Yeung, Christina W. Y. Hui-Chan, and Jervis C. S. Tang Short-form Tai Chi Improves Standing Balance of People With Chronic Stroke *Neurorehabil Neural Repair* first published on January 7, 2009 doi:10.1177/1545968308326425

