EXERCISE IS MEDICINE AUSTRALIA FACTSHEET
Brief version Published: May 2014

Multiple sclerosis and exercise

What is multiple sclerosis?

Multiple Sclerosis (MS) is a chronic disease of the central nervous system (CNS: brain, spinal cord and optic nerves). In MS, the immune system mistakenly starts to attack myelin, the protective coating around the nerve cells in the CNS that assists nerve conduction. The nerve cells themselves can also be damaged. These attacks on myelin produce 'scarring' or 'plaques' in the CNS. These scars slow or interrupt the transmission of nerve impulses, resulting in the varied symptoms of MS. The progress, severity, and specific symptoms of MS are unpredictable and vary from one individual to another.

Symptoms may include:

Sensory changes such as pins and needles or numbness – muscle weakness – extreme tiredness (fatigue) – sensitivity to heat – reduced balance and coordination – bladder and bowel disturbance – cognitive changes – visual problems.

How does exercise help?

Regular exercise is useful for maintaining general fitness and may also help reduce the impact of specific symptoms of MS and help maintain optimum physical function.

Reported benefits include:

- Reduced fatigue levels, improved endurance
- Improved balance and coordination
- Improved muscle strength
- Improved posture and flexibility
- Improved mood and sense of wellbeing
- Improved alertness and concentration

What exercise is best for people with MS?

To be effective exercise needs to be performed regularly at a suitable intensity. Despite a growth in the literature about MS and exercise there is no specific training regime that has been recommended above all others. It is important for people with MS to choose activities that are enjoyable, match their physical needs, and can be scheduled into a weekly routine.

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 Frequent rest breaks Alternate muscle groups
Stretching and balance	Improves posture, flexibility and relieves muscle cramps/spasms

People with MS usually experience fatigue sooner and take longer to recover. If physical problems occur, ceasing the activity and reducing the duration and intensity of the next session should be considered.

People with MS can also experience an increase in physical and sensory symptoms with slight increases in temperature. It is important to keep cool, stay hydrated and cease the activity if necessary. If symptoms persist for longer than 30-60 minutes after exercise consider reducing the intensity and duration of the next session.

References and further information

Exercise is Medicine Australia www.exerciseismedicine.org.au
Multiple Sclerosis Australia www.msaustralia.org.au
Find an Accredited Exercise Physiologist www.essa.org.au
Exercise Right www.exerciseright.com.au

1. 1.Dalgas, U, Stenager, E. (2012). Exercise and disease progression in multiple sclerosis; can exercise slow down the progression of multiple sclerosis? *Therapeutic Advances in Neurological Disorders, 5 (2) 81-95*
2.Dalgas, U., E. Stenager, et al. (2008). "Multiple sclerosis and physical exercise: recommendations for the application of resistance-, endurance- and combined training." Multiple Sclerosis **14**(1): 35-53
2. 3.Dodd KJ, Taylor NF, Shields N, et al. Progressive resistance training did not improve walking but can improve muscle performance, quality of life and fatigue in adults with multiple sclerosis: a randomized controlled trial. Mult Scler. 2011; 17(11):1362-74.
3. 4.Morrison, E. H., D. M. Cooper, et al. (2008). "Ratings of perceived exertion during aerobic exercise in multiple sclerosis." Archives of Physical Medicine & Rehabilitation **89**(8): 1570-4
4. 5.Smith R, Adeney- Steel, Fulcher G, Longley W. Symptom Change with exercise is a Temporary Phenomenon for people with Multiple Sclerosis. *Arch Phys Med Rehabil.* Vol 87, May 2006
5. 6. Skjerbæk, A et al. (2013) Heat sensitive persons with multiple sclerosis are more tolerant to resistance exercise than to endurance exercise. Multiple Sclerosis 9(7) 932-940
6. White AT, Wilson TE, Davis SL, Petajan JH. Effect of precooling on physical performance in multiple sclerosis. Mult Scler 2000; 6; 17

For more detailed information, please read the full version of this factsheet at www.exerciseismedicine.org.au