



Exercise Physiology • Hydrotherapy • Injury Rehabilitation

What is Multiple Sclerosis (MS)?

Multiple Sclerosis (MS) is a chronic neurological disease. Most patients are commonly diagnosed between the ages of 20 and 40. MS affects 2-3 times as many women as men and is characterised by random autoimmune attacks of and damage to the insulating myelin sheath (demyelination) of the central nervous system and to motor axons (nerve fibres). Lesions in myelin can be present in the cerebral hemispheres, brainstem, and spinal cord. This demyelination negatively affects rapid smooth coordinated movement. MS is diagnosed by patient history of attacks, MRI of the brain and spinal cord and analysis of spinal fluid during disease flare-ups for specific antibodies.

Common signs and symptoms include:

- Fatigue
- Spasticity
- Poor coordination
- Impaired balance
- Weakness and paresis
- Sensory loss and numbness
- Cardiovascular dysautonomia
- Tremor
- Impaired sudomotor function (reduced sweating response)
- Heat sensitivity
- Blurry vision
- Bladder dysfunction
- Cognitive and memory defects

BENEFITS OF EXERCISE

Persons with MS have been observed to be more sedentary than apparently healthy age-matched individuals. Nonspecific physical deconditioning is known to contribute to fatigue and general poor health in persons with MS. In addition, maximal muscle force measured during isokinetic testing has been shown to be consistently lower in MS patients likely due to spasticity and/or co-contraction of opposing muscles, conduction block of demyelinated fibres, reduced muscle metabolic responses during voluntary exercise, muscle weakness because of fibre atrophy and/or sensory deficits.

Because some individuals with MS are at an increased falls risk and their symptoms and energy levels can vary daily, aerobic and resistance sessions should be supervised, individualised, and frequently modified. In addition, heat sensitivity, spasticity, sensory deficits, muscle weakness, and fatigue can preclude upright activities like walking and running and reduce tolerated exercise intensity and duration.

Benefits from engaging in regular bouts of physical activity include:

- Improved lower limb strength and power for improved functional ability
- Improved walking speed and gait efficiency
- Increased independence
- Improved individual impairments
- Improved balance / reduce falls risk
- Improved cardiorespiratory fitness for co-morbidity reduction
- Improved quality of life
- Reduced fatigue
- Reduced depressive / anxiety symptoms

References

DeBolt LS, McCubbin JA. The effects of home-based resistance exercise on balance, power, and mobility in adults with multiple sclerosis. Archives of Physical and Medical Rehabilitation 2004;85(2):290-7.

Mostert S, Kesselring J. Effects of a short-term exercise training program on aerobic fitness, fatigue, health perception and activity level of subjects with multiple sclerosis. Multiple sclerosis 2002;8(2):161-8.

Patti F, Ciancio MR, Cacopardo M, Reggio E, Fiorilla T, Palermo F, et al. Effects of a short outpatient rehabilitation treatment on disability of multiple sclerosis patients: a randomised controlled trial. Journal of Neurology 2003;250(7):861-6.

Halabchi, F. Alizadeh, Z. Sahraian, M. & Abolhasani, M. (2017). Exercise prescription for patients with multiple sclerosis; potential benefits and practical recommendations. BMC Neurology. 1471-2377. 17: 1-11

Pilutti, LA; Edwards, TA. (2017). Is Exercise Training Beneficial in Progressive Multiple Sclerosis?. International Journal of MS Care. Hackensack, New Jersey, 19, 2, 105-112.



GOT A QUESTION?
admin@mkmovement.com.au

60 Central Park Ave, **Craigieburn** VIC 3064 - Splash Leisure Centre 0413 159 727
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