

# Strength training and multiple sclerosis

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## The benefits of strength training

Strength (or resistance) training is just one component of a balanced exercise routine, which also includes fitness (aerobic) activity, balance and flexibility exercises. Strength training exercise increases muscle mass by making the muscles work harder than they're used to. It usually involves weights or some other form of resistance designed to improve a person's strength.

In multiple sclerosis (MS), loss of myelin (which helps insulate the nerves) can cause messages from the brain, through the spinal cord and to the muscles to be slowed or blocked. This can result in muscle weakness. This weakness can be temporary, such as during an exacerbation, after prolonged walking or from an increase in body temperature. It can also be more permanent. A period of inactivity can also result in what is called secondary weakness, adding to the primary weakness caused by MS.

Studies have demonstrated that people with MS can prevent or reverse secondary weakness (due to disuse), improve their quality of life, and slow down progression of disability by engaging in strength training activities.

Strengthening weak muscle groups can improve balance and fitness, make everyday activities easier (e.g. showering, dressing, shopping and cooking), and improve general mobility (walking with or without an aid or wheelchair mobility). Strength training has also been shown to help in the management of back pain, arthritis, heart disease, osteoporosis, depression, balance disorders and sleep disturbances.

Specifically, research has shown that strength training can:

- improve muscle strength
- improve muscle coordination and efficiency
- improve functional ability
- improve energy levels
- enhance mood and feelings of wellbeing

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## Is strength training exercise safe for people with MS?

Exercise does not trigger an MS relapse (exacerbation) or adversely affect the disease process. A properly designed strength training program will not cause prolonged fatigue or worsen MS symptoms.

Some people with MS may experience muscle soreness initially, but this usually settles after a day or two. Other people may experience a temporary worsening of sensory symptoms if they have an increase in body temperature during exercise. This temporary worsening of symptoms generally subsides within an hour following the end of the exercise session.

People with unstable blood pressure or heart disease should obtain medical clearance from their doctor and have a strength training program designed by a suitably trained health professional.

If experiencing a relapse (exacerbation) of MS, or if you are feeling unwell, avoid strenuous physical activity until your health is more stable.

### Getting started with a strength training exercise program

- **Physical assessment.** It is preferable to have a physical assessment completed by a physiotherapist or trained fitness instructor prior to starting an exercise program. If you are experiencing difficulties with mobility, vision, tremor, balance and/or fatigue, it is more appropriate to consult with a physiotherapist.
- **Prescription.** For strength training to be most effective, you need a program that is tailored to your individual needs and addresses any functional limitations that you may have. Ideally, a program will consist of exercises involving a reasonable level of resistance and that are performed with enough repetitions to enable your muscles to adapt.
- **Review.** Have your program reviewed periodically by a qualified health professional if your level of ability changes so that the program can be adapted to suit your specific needs. For example, weights may need to be increased as you become stronger, or decreased after an exacerbation involving prolonged rest or following a significant change in MS symptoms. A trained fitness instructor can also review your program on a more regular basis and modify it accordingly.

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