# Exercise
## and multiple sclerosis (MS)

**After an MS diagnosis you're bound to wonder about the impact on your exercise routine, or whether it's safe to begin one. "Can I still exercise?" and "How does exercise impact MS?" are common questions. For most, the answer is "Yes – being active can help people with MS", but there are some things to be aware of.**

**Regular, moderate exercise can help you to live well with MS. As everyone's MS experience, symptoms and capacity for exercise differ, an individual approach is best.**

**Early planning and knowing your limits are key. With the right information and timely support, you can continue, start, or modify exercise – helpful for maintaining good health, wellbeing, and an independent lifestyle.**

Exercise is generally beneficial for people with MS and can be tailored to improve your health, strength, and flexibility. It can help with many MS symptoms including one of the most common – depression and general quality of life.

Before starting a new exercise program it's essential to check with your MS Nurse, GP, physiotherapist or another member of your MS healthcare team. A consultation and suitable preparation can stop things like overheating, fatigue, mobility, and recovery (commons in MS), from becoming potential barriers to exercise.

### Other things to consider before starting exercise

- Managing the physical symptoms of MS (such as muscle weakness, spasm, fatigue, pain, altered balance or tremor). A physiotherapist or trained fitness instructor can design an exercise program suited to your individual needs and preferences.
- Your healthcare team can help determine the best form of exercise, equipment, and adaptations for you. They can identify any health risks which may affect your ability to exercise safely or temporarily worsen symptoms.
- Avoid strenuous exercise during a relapse (exacerbation) of MS, an infection or fever (can raise core body temperature and cause symptoms to worsen), or if you feel generally unwell. Whilst you may need to reduce or stop exercise at these times, you can usually restart at a lower intensity and duration, gradually rebuilding your fitness, flexibility, and strength.

### The benefits of exercise

An essential part of managing MS, exercise can help with improved functional ability – things like balance and mobility, fatigue, mood, pain tolerance and prevention of other diseases.

In general, exercise doesn't trigger an MS relapse or adversely affect the disease process. Besides helping manage some MS symptoms, regular exercise can decrease the effects of physical inactivity and elevate your health and wellbeing.

Regular physical activity can benefit everyone in various ways including:

- Less fatigue (including MS fatigue), greater stamina and fitness.
- Improves joint flexibility.
- Better coordination and balance.
- Improves and maintains muscle strength and tone.
- Helps manage muscle stiffness (known in MS as mild spasticity).

- Improves posture and reduces back and neck pain.
- Stabilises blood pressure and decreases the risk of heart disease.
- Reduces the risk of obesity, diabetes and osteoporosis.
- Lifts mood, reduces stress and depression.
- Builds self-confidence and sense of wellbeing.
- Increases alertness and concentration.
- Provides opportunity for social interaction and support.

## How exercise can help with MS symptoms

Studies have shown exercise to be valuable for people with MS.

Moderate exercise has been shown to improve strength, mobility also bowel and bladder function, for people with mild to moderate MS. Exercise also helps people maintain a healthy weight. This reduces your chances of acquiring co-morbidities, and can lessen the impact of some MS symptoms, such as pain and MS fatigue.

Besides the physical body, exercise is also good for the mind and brain. Exercise has been found to be neuroprotective and improve symptoms of depression, cognitive processing speed, visuospatial memory, executive function and cognitive flexibility. These positive effects often last for several days after exercising.

Being active will likely help you feel sharper. If you play a team game, the associated strategy and communication may also help you feel alert.

Staying active is also recommended for children with MS, as it reduces symptom load. Exercise improves children's sleep pattern; reduces the amount of disability they experience and relapse rate.

## Special exercise considerations in MS

- **Exercise and pain management**

Exercise may provide pain relief to some and in some form, is an essential part of a pain management plan.

You could try an exercise class, exercise at home, walking, gym or aquatic exercises like swimming or hydrotherapy or gentle stretching exercises, t'ai chi or yoga. It's important to find a way to exercise that suits you, is enjoyable and helps rather than aggravates your pain.

- **Fatigue and exercise**

MS fatigue can make exercise difficult for some, in which case it's important to start slowly and build up gradually. In the beginning, you may feel some of the following effects (usually managed by taking it easy in the early days), but the benefits should appear quickly.

  - You may feel tired even with small bursts of exercise.
  - Your legs don't want to work anymore but you don't feel tired.
  - Exercise makes you more tired.
  - Heat and dehydration can decrease performance and trigger fatigue during exercise (but usually subsides soon after).
  - Some MS symptoms (such as muscle tremor, spasticity or weakness) require more effort during physical activity and result in MS fatigue. Conserving and replenishing energy can help.

### How to minimise fatigue during exercise

As with general considerations, start with low-intensity exercise, gradually building up the intensity, frequency and duration.

Before starting new (or modifying existing) exercise, identify and address any secondary factors contributing to your fatigue. Apply cooling strategies to minimise any temperature increase. Choose exercises suitable to your fitness level (and needs) such as:

- **Stretching** - least tiring and very helpful if you experience more fatigue due to spasticity (muscle stiffness). Helps loosen muscles, reducing the amount of energy required to move.
- **Strengthening** - can help where muscle weakness causes fatigue, making everyday tasks tiring. These exercises may need more mental effort due to the postural control and skill required and can be more tiring.
- **Muscle endurance training** - repetitive low-resistance exercises performed to the point of muscle fatigue. Signs of fatigue include performance decline, decreased range of movement, and uncomfortable muscle sensation or pain. Don't push beyond these signs of fatigue, as this can result in a 'conduction block' (a temporary but reversible paralysis from overheated muscles) and can strain the supporting tissue. Recovery is longer if you push past this point.
- **Fitness (aerobic)** - most tiring (requires large amounts of oxygen for a sustained period) but the most beneficial form of exercise for your heart, lungs and brain function. While the frequency, intensity and duration of physical activity will vary according to your needs, just a small amount of aerobic exercise can increase your fitness.

Stay hydrated during exercise and remember for some people, heat from the warmed muscles can trigger MS fatigue. Try to keep cool by wearing loose clothing, a wet cloth or cool band around your neck; by drinking water before and during, and by exercising in an air-conditioned or well-ventilated area.

- **Sensory symptoms**

The intensity of or number of sensory symptoms (such as numbness, tingling, pins and needles or blurred vision) can sometimes increase during exercise. These changes can be unavoidable but if tolerable, you can continue exercising. An increase in symptoms usually resolves within a short time after an exercise session. For safety reasons, you may need to decrease the level of exercise intensity if temporary worsening of symptoms does not resolve within 30 minutes after exercising (for example, numbness in your feet whilst cycling or on a treadmill).

## Types of exercise

- **Strength training and MS**

Also known as progressive resistance training, strength training might involve exercises (often repetitions) where you lift weights, use your body weight to work against (such as sit-ups or push-ups), or pull against an elastic band. The aim is to build and strengthen your muscles.

Moderate strength training exercise helps with balance and posture and helps combat fatigue. Irregularly used muscles weaken and require more energy to carry out tasks. This can lead to a cycle of decline, as an already weak muscle will weaken further, a process known as atrophy.

Strength training improves general and cognitive fatigue and increases the connectivity between brain regions in people with MS. It is thought that increased brain connectivity may protect against fatigue and future cognitive decline.

  

Besides better muscle strength, coordination and efficiency, strength/resistance training can also enhance mood and overall wellbeing. The positive effects lasting for several weeks after stopping.

- **Endurance training**

Endurance training trains the aerobic system, improves your cardiovascular resilience, and makes muscles more efficient. It involves regular, steady aerobic exercise, such as cycling, swimming or jogging. You would typically start with shorter distances and some exercise, building up to longer periods of exercise.

Over time, endurance training improves your ability to recover from exertion, although it's important not to over-exert yourself too quickly.

Significantly, endurance training has been shown to benefit or aid walking ability in people with MS. Studies have shown a combination of endurance and leg resistance training can improve mobility, balance and co-ordination.

As with other forms of exercise, stopping endurance training generally results in the benefit being lost over time. For this reason, consistency is recommended, to help you retain the maximum benefit.

- **Aquatic exercise and MS**

A popular activity for people living with MS, aquatic (water) exercise has various health and other benefits including:

- Adaptability – can be tailored to your abilities (whilst strong swimming skills are not required, familiarity in and around water is a must).
- Warm water can ease muscle tightness or weakness.
- Improves strength, flexibility, fitness and energy levels.
- Reduces pain plus swelling in arms and legs.
- Relaxing, social and fun.
- Water aids balance.

Water's special properties can make exercising in water easier than on land:

- **Buoyancy** – water helps push the body up; you feel lighter and it's easier to move your arms, legs and stay balanced. Reduces force and impact on joints and can relieve aches and pains.
- **Hydrostatic pressure** – the deeper you are in water, the more pressure the surrounding water exerts on your body. This can help reduce swelling in the arms and legs.
- **Turbulence** – irregular motion or swirling movement of water. Varied turbulence increases or decreases challenge level, for example faster or larger movements in water increases intensity, whereas flotation aids help decrease it. Turbulence can help with exercises designed to improve balance, as it's easier to 'catch yourself' from falling in water, than it is on land.
- **Resistance** – denser than air, water provides greater resistance to movement. Moving your arms and legs against resistance is like lifting weights. For example, exercises can be intensified by holding paddles or other water devices to increase the resistance level.

**Aquatic exercise guidelines**

Things to consider before starting and during aquatic exercise include:

- Whether an individually tailored program or class environment suits you best.
- Cooler pools tend to aid those with heat sensitivity or who seek intense exercise such as swimming laps or running. Warm pools are good for low-intensity or passive exercise (e.g., walking and assisted movements) and spasticity (muscle stiffness), which worsens in cooler water. (Pools heated between 25 and 35 degrees are a good general guide).

  

- To avoid fatigue, overheating or exertion, limit time in the water to for example, 20 to 30 minutes and/or start with an easier program and gradually build up the time and effort over a few weeks.
- Monitor your body temperature – a rise can trigger new or flare up existing symptoms. Temporary changes usually resolve in 24 hours so tell your instructor and/or health professional if changes persist.
- Stay hydrated before, during and after pool exercise. Avoid long pool sessions as you can become dehydrated.
- Avoid any strenuous exercise during a relapse or if ill. Consider taking a break from or modifying your aquatic exercise program until you recover. You may need to adapt your program after a relapse or illness.
- It's important to have some level of water confidence. Wear floatation aids or be assisted or supervised by someone who is a good swimmer - until you're confident in the water or always, if needed/preferred.
- If you have continence issues, discuss a management plan with your MS healthcare team before you start aquatic exercise, so that you can concentrate and enjoy it, instead of worrying about accidents.

## Tips for staying motivated

- Choose an activity you enjoy.
- Schedule time for exercise in your week.
- Don't overdo it. When you feel fatigued, stop, rest or change exercises.
- The first 6 to 12 weeks of a new exercise program can be the most difficult, so record your progress and achievements, and reward your efforts!

## Information and assistance:

## General

There is support available to help you manage your MS:

- **Your MS Nurse or GP** should be the first contact for any new and/or persistent concerns or questions related to exercise and MS.
- **Your neurologist, MS Nurse** or **other healthcare provider** can help you to manage the impact of exercise on symptoms (and vice versa), on an ongoing basis and discuss the best approach for your individual circumstances.
- **Contact your state MS organisations** (details below) to access services including peer and/or online support and other resources.
- For information about MS and MS treatments visit **www.msaustralia.org.au**

- **Contact details for your state/territory MS organisations:**

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| MS Limited (Victoria \| NSW \| ACT \| Tasmania) | 1800 042 138 | msconnect@ms.org.au | www.ms.org.au |
| MSWA (Western Australia) | 1300 097 989 | communications@mswa.org.au | www.mswa.org.au |
| MS Society SA & NT (South Australia \| NT) | 1800 812 311 | msassist@ms.asn.au | www.ms.asn.au |
| MS Queensland | 1800 177 591 | info@msqld.org.au | www.msqld.org.au |

  

## Other

- **Carers Australia 1800 422 737** www.carersaustralia.com.au provides information and advice to carers, their friends and families about carer support and services.
- **Independent Living Centres Australia 1300 885 886** www.ilcaustralia.org.au has a range of products to assist with day-to-day living including for exercise.
- **The National Public Toilet map** www.toiletmap.gov.au details over 16,000 toilet facility locations and has a trip planner with the facility to plan toilet breaks whilst exercising outdoors. You can access the map via compatible mobile phones and the National Public Toilet Map IPhone App.

## Other resources

- The articles and posts on the MS Australia Wellbeing Wednesday platform, Facebook page and MS Uninterrupted blog, often include health and wellbeing topics, some related to exercise:
  www.msaustralia.org.au/living-ms
  www.msaustralia.org.au/wellbeing-ms/exercise-activity
  www.Facebook.com/MSAustralia
  www.uninterrupted.org.au
- The MS Australia Heat Sensitivity, Fatigue, Pain and/or Sensory Symptom Sheets may be useful:
  www.msaustralia.org.au/about-ms/symptoms
- You may wish to explore this illustrated exercise list (with animated/moving examples), videos and/or tips for staying active on the Multiple Sclerosis (MS) UK Trust website (there are also dedicated fitness websites for people with MS, but again we encourage you to get professional advice):
  www.mstrust.org.uk/understanding-ms/lifestyle/exercises-people-ms
  www.mstrust.org.uk/exercise-videos
  www.mstrust.org.uk/news/views-and-comments/top-tips-staying-active-when-you-have-ms
- Guest article about exercise on the MS Australia website by Dr Yvonne Learmonth, an Accredited Physiotherapist who specialised in Physical Activity research in multiple sclerosis:
  www.msaustralia.org.au/living-with-ms/expert-blog/exercise-and-ms

## Mental health support and resources

- Your **local state/territory MS organisation** (contact details above) may be able to assist you with specific mental health queries and concerns.

- **The Australian Government Department of Health's** Head to Health portal www.headtohealth.gov.au provides broad online and digital information and links (including apps and programs, forums, phone/chat/email services, websites/pages), to help people find mental health resources and services including related to **Living with a chronic physical health issue** (search via keyword or chatbot Sam).

**Sources:** This fact sheet comprises material from previously published Australian state/territory MS organisation leaflets, plus Multiple Sclerosis (MS) UK Trust online resources (and associated references), and has been endorsed by a medical expert, an MS Nurse and a person living with MS.

**Disclaimer:** This information was prepared by MS Australia. It is intended to provide useful and accurate information of a general nature and is not a substitute for medical advice.

  