

MULTIPLE SCLEROSIS AND EXERCISE

PROFESSIONAL

WHAT IS MULTIPLE SCLEROSIS?

Multiple Sclerosis (MS) is an autoimmune disease of unknown cause. MS is characterised by the formation of areas of demyelination (plaques) throughout the brain and spinal cord that comprise the central nervous system (CNS). The direct damage to the CNS results in slow or interrupted transmission of nerve impulses and causes a varied and wide range of symptoms. Symptoms include physical and cognitive disability, extreme fatigue, temperature sensitivity, and depression. Reports indicate that physical inactivity is a major concern for people with MS as they cannot participate as they would like to (1).



HOW DOES EXERCISE HELP WITH MS?

Many of the symptoms associated with MS are reduced through physical activity or exercise. Exercise is a great way for everyone to stay strong, control weight, improve fitness, and ward off chronic diseases such as heart disease. While managing the consequences of MS, exercise represents a crucial tool and is an important approach for improving health and wellness. Unfortunately, inactivity invites consequences such as fatigue, poor strength and poor fitness. If someone is feeling fatigued, they might be less likely to exercise, and as a result, they will have even more fatigue over time. Being inactive also raises the risk of developing other chronic health conditions. If you remain inactive, alongside MS, you might develop heart disease or diabetes too.

There is scientific evidence that exercise improves outcomes for persons with MS. These outcomes range from the cellular level to quality of life. Research has indicated that persons with MS who engage in exercise have better brain health, better cognition based on speed of information processing, and increased mobility and cardiovascular health. Plus, persons with MS who engage with exercise have less fatigue, depression, anxiety, and pain, and better sleep quality and quality of life (2).

IS EXERCISE SAFE FOR PEOPLE WITH MS?

Yes! Exercise can be just as safe for people with MS as it is for people without. Research that summarised the risk of relapse and other adverse events associated with exercise training for people with MS has shown that exercise is not associated with increased risk of relapse or risk of adverse events (3). Your physiotherapist or exercise physiologist can help design a program that is tailored to your abilities.

WHAT TYPE OF EXERCISE IS BEST / RECOMMENDED FOR MS?

To be effective, exercise should be performed regularly at a suitable intensity. Most importantly, choose exercise that you enjoy as you will be more likely to stick with it! The internationally recognised physical activity guidelines for adults with mild to moderate MS tell us how much physical activity people with MS are encouraged to participate in.

Physical activity guidelines for adults with mild to moderate MS are:

- » 30 minutes of moderate intensity aerobic activity, two days per week; and strength training for major muscle groups, including the calf muscles, leg muscles, abdominal, and arm muscles, on two days per week (4)(5).

If you are beginning again with exercise, slowly work up to this volume of exercise over 2 to 3 months and seek the help of your exercise physiologist or physiotherapist.

Break exercise into shorter bouts of 10 to 15 minutes at a time if necessary. For strength training exercise, slowly work up to doing two sets of 10-15 repetitions of each strength training exercise. Experiment with timing so that exercise does not tire you out for the rest of your day.

Aerobic Exercise

Can be performed in a variety of settings including individual and group training sessions on land or in water.

Walking is the number one choice of aerobic exercise by persons with MS (6), and walking intensity can be measured by counting your steps over a period of time (e.g. by using a pedometer or smart phone/watch).

- » Use of exercise bikes and elliptical trainers is preferable to the use of a treadmill when there is a risk of tripping and falls.

Our advice is:

Start small and see how you go. How fast can you already walk? How long can you walk for? Build this up to achieve your 30 minutes of aerobic exercise. Walking 100 steps in a minute is moderate intensity aerobic exercise for persons with MS (7). But remember, something is always better than nothing and don't be disheartened if you're not meeting the recommendations straight away. Rome wasn't built in a day!

Strengthening Exercises

- » Can be performed in a variety of settings including home, community centre or gym.
- » Can be performed with resistance or machine weights; body weight, resistance bands, or water.
- » Progressive resistance with heavier weights and low repetitions is beneficial.
- » Frequent rest breaks and alternating muscle groups during training helps minimise fatigue.
- » All exercises can be modified by a physiotherapist or exercise physiologist to suit your ability.



Stretching & Balance Exercises

- » Can be helpful to improve posture and flexibility.
- » Can be performed on most days of the week.
- » Stretching exercises can be performed using gravity or resistance bands.
- » Balance exercises can be performed by challenging one normal sitting and standing posture.
- » All exercises can be modified by an exercise physiologist or physiotherapist to suit your ability.

OVERCOMING BARRIERS

Fatigue

Fatigue is common in MS; exercise and fatigue management education strategies will actually help your fatigue level in the long term (8).

Heat Sensitivity and MS

Physical and sensory symptoms may temporarily increase with small increases in environmental or body temperature. People with MS should be encouraged to keep cool and well hydrated during exercise sessions, for example using cool clothing and try to exercise inside or in the shade.

Research is continuing to address what exercise and strategies are best for fatigue and heat sensitivity; for now, it is recommended to follow the physical activity guidelines, remembering to build up to these guidelines slowly. Stretching and balance exercises are important too. They can be useful to relieve muscle spasms and cramps and may help with relaxation and sleep patterns.

Stretching and balance exercises should be continued when fatigue levels, or temperatures, are high.

Finding support

It is important to have the right support if you feel like participating in exercise is too difficult for you. Support to help you exercise is not to be underestimated. Research indicates that learning about exercise, working with others to overcome your barriers, and identifying facilitators to exercise will make you more successful in increasing your activity levels (9). Tell your friends, family, work colleagues, and neighbours about the benefits of exercise for you and tell them that you want to be more physically active and they might join you too. Exercise is beneficial for everyone and the more people that are involved, the more fun you might have!

You can seek out help from an accredited exercise physiologist or physiotherapist to give you specific instructions. Ask them to help you overcome any exercise barriers you might have and ask them to work with you to develop an exercise program that not only suits your needs but is also enjoyable.

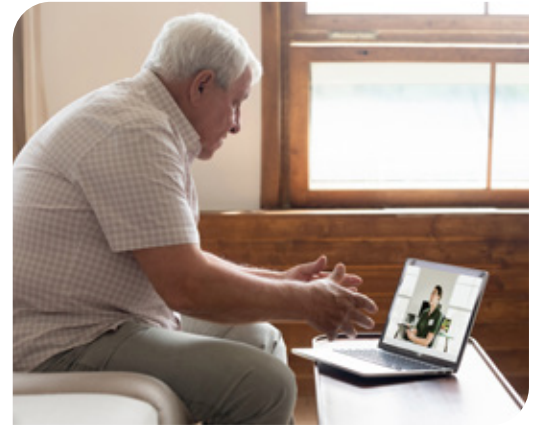
USING TECHNOLOGY TO YOUR ADVANTAGE

Your accredited exercise physiologist or physiotherapist may live far from you, but you can still access them using the telephone or email.

Online videos and resources are engaging and will offer education on exercises for persons with MS. Suggested websites are listed below.

Mobile apps for your smartphone are useful for monitoring physical activity, connecting with professionals over video-chat and tracking your progress. Downloading these apps to your smartphone is very easy and many are free. Suggested mobile apps available at the time of publication are listed below. Be sure to ask your physiotherapist or exercise physiologist which apps they are using so you can connect with them right away!

Connect to wearable technology such as digital devices worn as a wristwatch or band as these can track your step count, heart rate and sleep. Wearables allow you to monitor your activity without thinking about it, so you'll soon see how much you are improving week by week.



FURTHER INFORMATION

Exercise is Medicine Australia www.exerciseismedicine.org.au

Multiple Sclerosis Australia www.msaustralia.org.au - the national website of MS Australia

Find an Accredited Exercise Physiologist www.essa.org.au

Find an Accredited Physiotherapist www.physiotherapy.asn.au

Exercise Right www.exerciseright.com.au

[Yoga and Non-Cardio Exercises: Your Allies in Managing MS Symptoms and Improving Overall Health](#) - telelearning brought to you by the National MS Society and Can Do MS.

[Workout Your Worries: Anxiety and Exercise in MS](#) - telelearning brought to you by the National MS Society and Can Do MS.

[Your Mind is a Muscle, Too: The Relationship Between Exercise and Cognition](#) - telelearning brought to you by the National MS Society and Can Do MS.

[ChairFit with Nancy](#) - series of free exercise videos developed by a physical therapist with years of experience working with people with MS.

Health Focused Mobile App Examples (available in 2020)

MySidekick for MS | My MS Manager | Charity Miles

The MS Trust's (United Kingdom) [series of exercise videos](#) for people with MS can be done in a seated or standing position to address balance, endurance, strength and flexibility.

[14 Weeks to a Healthier You](#) - free, personalised, web-based physical activity and nutrition program targeted to people with mobility limitations, chronic health conditions and physical disabilities. Created by National Center for Health, Physical Activity and Disability (NCHPAD), the program can help you get moving and make healthy nutrition choices.

[The Canadian Physical Activity Guidelines for Adults with Multiple Sclerosis](#) can help adults with mild to moderate disability, resulting from relapsing or progressive forms of MS, to improve their fitness.

[The Aquatic Physical Therapy and MS](#) video produced by Laura Diamond, MS, PT, Diamond Physical Therapy Associates, PC, and Jill McElligott, PT, DPT, offers an introduction to the potential benefits of aquatic physical therapy for managing MS symptoms and enhancing fitness. It also provides interviews with a neurologist, a physiotherapist, all of whom specialise in working with people with MS, as well as with people with MS about their perspectives on aquatics exercise.

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