Get Active with MS: The Benefits of Exercise

JADY LAM – AUGUST 2019
MS EXERCISE PHYSIOLOGIST

Acknowledgement

We acknowledge and pay respect to the traditional custodians past and present on whose lands we meet today.

We acknowledge the deep feelings of attachment and the relationship of Aboriginal people to country and respect the cultural authority of the elders in each community.
Program Outline

- Benefits of exercise for people with MS
- Exercise guidelines
- Types of exercise
- Barriers to exercising and how to overcome them
- Motivation: How to get started and keep going
- Where to get help: Further information & Resources

Introduction

Physical Activity is defined as “bodily movement produced by skeletal muscles that requires energy expenditure.”

- Exercise: “planned, structured, and repetitive physical activity for the purpose of developing physical fitness.”

- Incidental Activity: unstructured activity taken during the day, such as walking for transport, housework and the performance of activities of daily living.
Benefits of exercise for people with MS

Exercise in MS is safe 😊

Historically, suggestion that people with MS should avoid exercise

Exercise is safe and beneficial in managing symptoms and maintaining overall wellbeing in MS

- 26 studies – 1296 people with multiple sclerosis
- No increases in relapse
- No adverse events

Pilatti et al Journal of Neurosciences 2014

~ 78% of people with MS undertake no physical activity at all
Poll One

Which of these MS symptoms do I have?

a) Fatigue
b) Muscle weakness and spasticity
c) Loss of mobility, balance and falls
d) Pain and/or changes in sensation
e) Cognition and mood changes

Physical Benefits - MS

• Maintain and increase strength in weakened muscles
• Improve cardiovascular fitness, reducing levels of fatigue and increasing endurance
• Improve and maintain both upper and lower limb range of motion
• Improve flexibility, relieving muscle spasms and cramps
• Correct posture, gait abnormalities and improve balance and coordination, reducing risk of falls and improving walking
• Improved sexual functioning
• Main bone density and bladder/bowel function
• Optimise symptom recovery after a relapse
Other Physical Benefits of Exercise

Reduce secondary deconditioning due to inactivity.

Same for PwMS as general population:

- Reduce risk of cardiovascular disease e.g. heart disease, stroke, blood pressure
- Reduced risk of Type 2 diabetes
- Reduced risk of Metabolic syndrome
- Reduced risk of some Cancers e.g. colon, breast, endometrial, lung
- Weight management
- Build strong bones and muscles

Psychological Benefits

- Improve mental health and sense of wellbeing, reducing depression and anxiety
- Improve sleep, alertness, concentration and psychological stamina
- May encourage neuroplasticity (adaptation of the brain) and slower disease progression as a result of anti-inflammatory properties
Social benefits

- Opportunities for socialising and meeting new people
- Regular support from others when participating in a group
- Benefits of joining a club or team
- MS specific groups
  - Shared experiences

Quality of Life!

Exercise means I can:

- Live independently at home or with family
- Enjoy being in the community with family and friends
- Work
- Complete tasks with less assistance
- Complete more tasks before feeling fatigue
Exercise Guidelines

Poll Two

How much exercise am I currently doing each week?

a) None
b) Less than 1 hour
c) 1-2 hours
d) 3-4 hours
e) More than 5 hours
Poll Three

How much exercise should I be doing each week?

a) None
b) Less than 1 hour
c) 1-2 hours
d) 3-4 hours
e) More than 5 hours

Australia’s Physical Activity & Sedentary Behaviour Guidelines for Adults

Physical Activity Guidelines
- Doing any physical activity is better than doing none
- Be active on most, preferably all, days every week
- Accumulate 150 to 300 minutes (2 ½ to 5 hours) of moderate intensity physical activity or 75 to 150 minutes (1 ¼ to 2 ½ hours) of vigorous intensity physical activity, or an equivalent combination of both, each week
- Do muscle strengthening activities on at least 2 days each week

Sedentary Behaviour Guidelines
- Minimise the amount of time spent in prolonged sitting.
- Break up long periods of sitting as often as possible.
Let's Look at CANADA…

Some Stats

- 25,600 people in Australia have multiple sclerosis (1 in 1000 people)
- 100,000 people in Canada have multiple sclerosis (1 in 350 people)
- That's a rate 28% higher than the country with the second-highest mark, Denmark, and nine times higher than the global average.
A team of Canadian researchers recently undertook a thorough review of the research literature on exercise in multiple sclerosis. Results published in May 2013.

They found that exercise training is effective for improving both aerobic capacity and muscular strength in people with mild to moderate disability from multiple sclerosis. Exercise may also improve mobility, fatigue, and quality of life.

The researchers used the review to determine what the minimal ‘dose’ of exercise was, i.e. the frequency, intensity, type, and duration of exercise required to achieve desired benefits.

Together with health experts and the multiple sclerosis community stakeholders they then developed evidence-based exercise guidelines for people with multiple sclerosis.

**Target population:**

- Adults (aged 18-64), with mild to moderate disability (EDSS 0-7: unable to walk more than 5m even with aid – mostly wheelchair user), relapsing remitting and progressive multiple sclerosis.
Canadian Physical Activity Guidelines for adults with MS

At Least:

• 30 minutes of moderate intensity aerobic activity 2 times per week

AND

• Strength training exercises for major muscle groups 2 times per week

  • Aerobic & strength training activities can be done on the same day
  • Rest your muscles for at least one day between strength training sessions
  • Gradually increase your activity so that you are doing at least 30 mins of aerobic activity each session
  • Try to do 10-15 reps each exercise
  • Gradually work up to doing 2 sets of 10-15 reps
  • Activities should be performed at moderate intensity (you can talk but not sing)
  • Pick a resistance so that you can barely do the last set
  • Rest for 1-2 minutes between each set of exercise
How do we measure intensity?

Target Heart Rate:
- Take your pulse before the warm up. Take your pulse again when you’ve been exercising for about 5-10 minutes. Continue taking your pulse at regular intervals. Aim for 50-70% HRM
- HRM = 220-Age
- Not always most effective way of measuring intensity for MS population

Talk Test:
- If you can talk and sing without puffing at all, you’re exercising at a low level.
- If you can comfortably talk, but not sing, you’re doing moderate-intensity activity.
- If you can’t say more than a few words without gasping for breath, this is vigorous-intensity.

Exertion Scale:
AIM FOR LEVEL 3-8
Example Exercise Plan

- It could look something like this:

<table>
<thead>
<tr>
<th>Mon</th>
<th>Tues</th>
<th>Wed</th>
<th>Thurs</th>
<th>Fri</th>
<th>Sat</th>
<th>Sun</th>
</tr>
</thead>
<tbody>
<tr>
<td>30 mins aerobic</td>
<td></td>
<td></td>
<td>30 mins aerobic</td>
<td>strength training</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>30 mins aerobic + strength training</td>
<td></td>
<td>30 mins aerobic</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Development of Evidence-Informed Physical Activity Guidelines for Adults with MS

They undertook a systematic process:

- The researchers also developed a new MS Get Fit Toolkit, in conjunction with the Canadian MS Society.
- The authors emphasize that people with multiple sclerosis should work towards meeting the guidelines in ways that they enjoy and that suit their levels of ability and lifestyles.
**Your Way**

For moderate intensity activities that feel good and that you enjoy.

**Your Ability**

To what extent can you work towards meeting these guidelines.

**Guidelines at a Glance**

For important fitness benefits, adults with MS who have mild or moderate disability need:

- 30 minutes of aerobic activity, 5 times per week, and
- Strength training exercises for major muscle groups, 2 times per week.

Here’s what to aim for:

**How hard?**

- Aerobic activities should be moderate in intensity; you should be able to talk — but not sing!
- Aim for 2-3 sets of strength exercises for each major muscle group, with 10-15 repetitions per set.

**How much rest?**

- If you’re doing the aerobic and strength training exercises on the same day, avoid strengthening the same muscle group (such as legs or abdomen) two days in a row — your body needs a break in between sessions.

**Activity Examples**

MS affects everyone differently. Try to find a mix of moderate-intensity activities that suit your abilities and lifestyle. Some examples are provided below.

If you walk independently or with a mod-ing aid, give these activities a try:

- **Aerobic**
  - Walk or bike
  - Dance
  - Swim or join an aqua fitness class
  - Play a sports game or an active game with your family or friends

- **Strength training**
  - Lift weights (free weights or machines)
  - Use resistance bands
  - Use your body weight. Do adapted push-ups, squats

If you use a manual or power wheelchair, given these activities a try:

- **Aerobic**
  - Cycle on a hand cycle or on a stationary bike
  - Swim or join an aqua fitness class
  - Play a sports game or an active video game

- **Strength training**
  - Lift weights (free weights or machines)
  - Use resistance bands

**Tips to avoid overheating**

- Be active in or around cooler spaces (not heated areas)
- Drink cool water
- Keep a spare supply of water nearMode
- Extend sitting postures (slightly)
- Manage your body temperature and any pain if you are getting too hot
- Use non-metal or metal-free equipment such as a wet, touch, or cloth.

**Benefits of Physical Activity**

In the past, people with MS were told they shouldn’t be physically active.

**The Facts Are**

- Exercise shows that following the guidelines should improve aerobic fitness and strength.
- Meeting the guidelines may reduce fatigue, improve mobility and enhance your overall well-being.
- There is no scientific evidence that following the guidelines will worsen MS symptoms.

**Important tips to avoid injury**

- Progress at your own pace. You are aiming for a little more symmetry and fatigue, not internal pain or exhaustion.
- Ask a health professional such as a doctor, physiotherapist, or qualified exercise professional for activity suggestions.
Types of Exercise
# Types of Exercise

## EXERCISE VS. “BEING ACTIVE”

<table>
<thead>
<tr>
<th>Being Active</th>
<th>Strength Training</th>
<th>Cardio / Aerobic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Housework</td>
<td>Body weight exercises</td>
<td>Walking, running or hiking</td>
</tr>
<tr>
<td>Gardening</td>
<td>Climbing</td>
<td>Cycling</td>
</tr>
<tr>
<td>Mowing the lawn</td>
<td>Weights machines and free weights</td>
<td>Swimming / water aerobics</td>
</tr>
<tr>
<td>Walking to shops</td>
<td>Pump class</td>
<td>Sports and athletics</td>
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<tr>
<td>Taking the stairs</td>
<td>Theraband</td>
<td>Dancing</td>
</tr>
<tr>
<td>Playing with kids</td>
<td></td>
<td>Cardio Gym equipment</td>
</tr>
<tr>
<td>Shopping</td>
<td></td>
<td>Group classes</td>
</tr>
</tbody>
</table>

Tai Chi, Yoga, Pilates and stretching are great activities to do **in addition** to the physical activities you do to meet the guidelines. They can build flexibility, balance, and body awareness.
Practical Applications of Exercise

• Symptoms vary from person to person, over time and therefore requires an individual plan

• Safe environment

• To be effective exercise needs to be performed regularly at a suitable intensity

• Not specific exercise

• Choose activities that are enjoyable, match your physical needs, and can be scheduled into a weekly routine

• Quality not quantity

• Little and often

• As tolerated and gradual progression, start low and monitor after/few days after exercising

Barriers for people with MS and how to overcome them
Symptoms & Challenges Effecting Ability to Exercise

- Temperature Sensitivity
- Fatigue
- Weakness / reduced mobility
- Pain
- Access to gym
- Exacerbations – what to do

Heat Sensitivity

Autonomic dysfunction

A small temperature rise (0.5 degree) in the environment or the body may cause a temporary increase in symptoms.

Exercise **does not** make your multiple sclerosis worse or cause an exacerbation.

You should recover in approximately 30 minutes.
Tips to avoid overheating

• Exercise in a cool environment e.g. earlier in the day during Summer, not exercising under direct sunlight, fans, A/C, pool
• Pre- and post-exercise cooling e.g. cool showers
• Cooling during exercise e.g. icy water, loose light clothing, wet towel, cooling scarf, spray bottle of water
• Take breaks, short periods vs. long periods
• Strengthening programs may be tolerated better than cardiovascular (fitness) training due to a lesser heating effect on core body temperature
• If symptoms persist for more than 60 minutes after exercise, consider reducing the intensity and duration of the next session.

Fatigue

Fatigue is the most commonly reported symptom in multiple sclerosis: 75 - 95% of people with multiple sclerosis experience fatigue

50 - 60% report fatigue as one of their worst symptoms

• Central fatigue
  • Primary
  • Secondary

• Neuromuscular fatigue

• Exercise CAN significantly reduce fatigue
Tips to manage fatigue

• Scheduling less fatigued times e.g. earlier in the day, plan around other life activities & events

• Beginning with exercise sessions of short duration (<20 mins), low intensity, low repetitions, low weights and gradually increasing as tolerated, shorter and more frequent sessions

• Work at own pace and have regular rests

• Mixing vigorous exercises with lighter exercises to avoid long periods of exercise at high heart rates

• Alternating muscle groups to rest one muscle group while exercising another

• Rest after exercise and if fatigue persists for more than 1 hour or if fatigue starts to cause physical problems, consider reducing the duration, intensity, repetitions or weights

• People with MS usually experience fatigue sooner and take longer to recover

• Not exercising if unwell

Weakness in Legs and Reduced Mobility

• Upper Body exercises – strength and cardio

• Wheelchair based exercises, machines or sports

• Water-based exercise & swimming

• Personal trainer / assistance / MS group
Pain

- Ask a health professional if it is safe to start or to continue exercising
- Try different activities and types of equipment; find what works for you based on where you are feeling pain

Limited access to exercise facility

- Make physical activity part of your daily life
- Use physical activity to get from place to place
- Try an exercise video at home
- Walk or wheel around your neighbourhood
- Local park / equipment
What to do during an exacerbation?

- Take a **break from exercising**
- Reduce intensity and or duration
- Try gentler form of exercise
- Restart at a **reduced intensity and gradually build up**
- Review appropriateness of current program

Motivation:
How to get started and keep going
Getting and Staying Motivated:

Starting Out:

• Doing something is better than doing nothing
• Do something that is realistic & that fits well into your life
• Join an adapted sports team or club in your community
• Find a local walking group
• Exercise with someone else
• Do something you enjoy
• Schedule it into your week in advance

Keep on Going:

• Set specific goals and reward yourself: ie – I am going to do the Sydney to Gong ride, or I am going to walk 3km without stopping
• Keep a record of what you have done and your improvements
• Follow a structured program, or a supervised group, use pictures/diagrams etc
• Combine exercise with sunshine, fresh air, meeting people. Variety is good.
• Use exercise as a form of transport
• Connect with others on social media to discuss being physically active
Where to get help: Further information & Resources

Getting Help & Advice with Getting Active

MS Connect
1800 042 138
msconnect@ms.org.au
MS Exercise Services

<table>
<thead>
<tr>
<th>Exercise Session</th>
<th>Description</th>
<th>Instructor</th>
<th>Cost</th>
<th>Location</th>
<th>Day/Time</th>
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<td>Chatwood Exercise Group</td>
<td>Independent</td>
<td>External</td>
<td>$13 per session</td>
<td>West Chatwood Community Learning Facility</td>
<td>Every Wednesday 10:00am</td>
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<tr>
<td></td>
<td>1 hour per session</td>
<td>Kerrie Silver</td>
<td>Per term: $130</td>
<td>565 Mowbray Road Chatwood</td>
<td>School Term Only</td>
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<tr>
<td>Chatwood Exercise Group –</td>
<td>Upper Limb –</td>
<td>External</td>
<td>$14 per session</td>
<td>West Chatwood Community Learning Facility</td>
<td>Every Wednesday 11.00am</td>
</tr>
<tr>
<td>Upper Limb – Upper Limb</td>
<td>Wheelchair</td>
<td>Kerrie Silver</td>
<td>Per term: $130</td>
<td>565 Mowbray Road Chatwood</td>
<td>School Term Only</td>
</tr>
<tr>
<td></td>
<td>1 hour per session</td>
<td></td>
<td>Paid upfront per term</td>
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<tr>
<td>East Gosford Exercise Group</td>
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<td></td>
<td>1 hour per session</td>
<td>Physiotherapist</td>
<td>Per term: $130</td>
<td>3/8 Russell Drysdale Street, East Gosford</td>
<td>School Term Only</td>
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<tr>
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<td></td>
<td></td>
<td>Paid upfront per term</td>
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<td>Lidcombe Yoga</td>
<td>Independent</td>
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<td>$15 per single session</td>
<td>Studio MS Lidcombe</td>
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<td></td>
<td>1 hour per session</td>
<td>Robyn Adler</td>
<td>$155 (5 sessions)</td>
<td>80 Betty Cuthbert Dr Lidcombe</td>
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<td>$130 (5 sessions)</td>
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<td>$105 (5 sessions)</td>
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<tr>
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<td>Upper Limb –</td>
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<td>Studio MS Lidcombe</td>
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<td>Wheelchair</td>
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<td>$165 (5 sessions)</td>
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<td>Marbleville Yoga</td>
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<td>942 Addison Road</td>
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<td>$180 (5 sessions)</td>
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<td>$165 (5 sessions)</td>
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Lidcombe Gym:

- MS Physiotherapist: assessments and individualised exercise plans
- MS Exercise Physiologists: assist with implementing your exercise program and adapting your exercises to ensure that you are progressing with your program
Getting Help & Advice with Getting Active

- Private physiotherapist with neurological or rehabilitation experience [https://australian.physio/](https://australian.physio/) or in hospital outpatient settings
- Exercise physiologist [https://www.essa.org.au/](https://www.essa.org.au/)
- Fitness instructor
- GP for referral
- NDIS, My Aged Care, Medicare


[https://www.dancehealthalliance.org.au/](https://www.dancehealthalliance.org.au/) NSW & QLD
Take Home Messages

• Physical activity is beneficial for people with multiple sclerosis
• Doing something is better than doing nothing
• Exercise will not make your multiple sclerosis worse or bring on an exacerbation
• Start slowly and gradually increase activity
• Choose enjoyable/motivating activities
• Exercise with others or in a group
• Choose activities that fit conveniently into your weekly routine
• Be sensible about resting and recovering
• Monitor your progress and reward your self
References


- U Dalgas, E Stenager, Thorsten Ingemann-Hansen *Multiple sclerosis and physical exercise: recommendations for the application of resistance, endurance and combined training* Multiple Sclerosis 2008; 14:35-53


- Cruickshank TM, Reyes AR, Ziman MR. *A systematic Review and Meta-Analysis of Strength Training in Individuals with Multiple Sclerosis or Parkinsons Disease* Medicine Volume 94, number 4, Jan 2015
Get Your Act Together

- Online Tool – designed to help you better manage your multiple sclerosis symptoms

- Focuses on some of the common symptoms of MS – emotions, fatigue, continence, cognition, pain and heat sensitivity

- Designed for people living in the ACT but includes useful information for all people living with MS

- Complete the tool to receive a personalized report (listing services, resources, tips etc)

Visit [www.ms.org.au](http://www.ms.org.au) and search Get Your Act Together
The National Disability Insurance Scheme

A major change to the way disability supports and services are funded and delivered

• Available to people who are: under 65, satisfy residency requirements and are able to demonstrate that their disability substantially affects daily living
• Promoting choice, control and social and economic participation
• Providing a whole-of-life approach
• It is not means tested
• Providing reasonable and necessary supports and services
• Ensuring equity of access

We can help you to

• understand the eligibility requirements
• understand the pathways to access the NDIS
• prepare for a planning conversation
• understand your current supports and any unmet need
• develop your goals
We are an NDIS ‘Registered Provider’

MS is a registered NDIS provider in NSW, ACT, Vic and Tas. MS is approved to provide:

- Preplanning prior to your conversations (All areas)
- Support Coordination/Connection – assistance to help make your plan active (All areas)
- Short term accommodation (Vic)
- Community Participation (NSW)
- Exercise physiology and personal training (NSW)
- Specialist Continence Assessment (NSW and Vic)
- Physiotherapy and Occupational Therapy (NSW and Vic)
- Plan Management

Want to learn more? Please call MS Connect 1800 042 138

My Aged Care

My Aged Care is an Australian Government initiative, website and phone line to help you find about aged care services.

Available to people who are 65 years of age and over.

Why Contact My Aged Care?

- Information
- Assistance in mapping out your needs
- An assessment for further supports

Phone: 1800 200 422 Free call Australia wide
Website: https://www.myagedcare.gov.au
MS Financial Assistance program
MS Financial Assistance program provides one-off funds for those facing financial hardship. The funds can be used to purchase equipment or air conditioners to promote quality of life and help with health related matters.

Thank you
MS Connect
1800 042 138
msconnect@ms.org.au