Get Active with MS: The Benefits of Exercise

JACKIE HARRIS – NOVEMBER 2016
MS CONSULTANT PHYSIOTHERAPIST

Introduction

• In the “olden days” it was often suggested that people with MS should avoid exercise

• However, these days we know that exercise can be beneficial in managing symptoms and maintaining overall wellbeing in MS

• Despite this, approximately 78% of people with MS undertake no physical activity at all
You May Have Lots of Questions...

- I can’t do what I used to do
- What exercise?
- Is it safe?
- Should I exercise?
- I’m too tired
- How often?
- How much?
- Does exercise make MS worse?
- But my [symptoms] flare up?

Program Outline

- Benefits of exercise for people with MS
- Some recent research findings
- Guidelines for how much exercise
- Barriers to exercising and how to overcome them
- Types of exercise
- Motivation: How to get started and keep going
- Where to get help: Further information & Resources
Physical Benefits of Exercise

Same for PwMS as general population:

• reduce risk of heart disease, diabetes and obesity
• build strong bones and muscles
• manage blood pressure

Physical Benefits - MS

• Reduce secondary deconditioning due to inactivity
• Maximise mobility, posture & balance
• Improve ability to do everyday tasks
• Reduce risk of falls
• Optimise symptom recovery after a relapse
• Increased energy levels & reduce fatigue
• Improve muscle strength and potentially walking speed
• May help reduce spasticity
• May have a neuro-protective effect & anti-inflammatory (disease modifying)
Psychological Benefits

- Improved confidence & sense of well being
- Increased alertness, concentration and psychological stamina
- Optimises neuroplasticity (adaptation of the brain)
- Improves mood, reduced depression

Social benefits

- Create 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
Recent Studies

- A recent study looked at a 24 week program of progressive cardio and strength training (5 sessions per fortnight), and found that not only did strength and fitness improve, but also BDNF levels in the brain (brain derived neurotrophic factor) increased! (This is a protein that has an important role in the maintenance and repair of the nervous system – and PwMS have lower levels than healthy adults)

- 20 PwMS who did twice a week clinical Pilates for 8 weeks, in addition to physical benefits showed improved cognitive function too!

- 15 PwMS in wheelchairs took part in a 12 week Pilates program, and showed improvement in their ability to lean to side, sitting posture, and pain in the shoulders and back. They also reported various physical, functional, psychological and social benefits!

Recent Studies

- Preliminary results from an ongoing study show how an exercise training program using only elastic resistance bands can improve strength significantly in people with MS — Funded by National MS Society March 2016

- Another study investigated the effects of uphill and downhill walking exercise on mobility, functional activities, and muscle strength in MS, they found better improvements in the down hill walking group in terms of fatigue, mobility, functional activities, balance and leg strength
Exercise in MS is safe 😊

- 26 studies – 1296 PwMS
- No increases in relapse
- No adverse events

Pilatti et al Journal of Neurosciences 2014

Guidelines for appropriate levels of exercise
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.

But What About Guidelines for PwMS?

I asked one of our gym clients: “How much exercise do you think you should be doing?”

His answer:
• “Well it’s a trade off between how pooped you’re feeling and how much you think you should be doing”
Let's Look at CANADA…

Some Stats

- 24,000 people in Australia have MS (1 in 1000 people)
- 100,000 people in Canada have MS (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 MS. The results were 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 MS. 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 MS community stakeholders they then developed evidence-based exercise guidelines for people with MS.

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), RR & progressive MS.
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

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 MS should work towards meeting the guidelines in ways that they enjoy and that suit their levels of ability and lifestyles.
ACTIVITY EXAMPLES

Multiple Sclerosis Limited
17/11/2016
MS Presentation Title Here

BE ACTIVE ... YOUR WAY

Multiple Sclerosis Limited
17/11/2016
MS Presentation Title Here

Making an Action Plan

Multiple Sclerosis Limited
17/11/2016
MS Presentation Title Here

Why have goals?

Studies show that people who set challenging but achievable goals are more likely to be active.

How to set exercise goals

1) Establish what you can do now. Example: Ride a stationary bike for 10 minutes, once a week.
2) Set a goal for this week. Example: Ride a stationary bike for 10 minutes, with a little resistance, twice a week.
3) Set a goal for the month. Example: Add 5 minutes to my stationary bike ride each week.
4) Check in at the end of each week to see how you are doing. Adjust your goal as it is challenging but doable.

Create a goal setting sheet. Write down:

1) What goal can you do right now?
2) What goal is for this week?
3) What goal is for this month?

Be flexible

Life is unpredictable. You may need to modify your goals to accommodate symptoms or unexpected events.

Keepin’ it real

Tips to achieve optimistic, realistic goals:

Be realistic. You don’t always have to improve; maintaining your level of normal fitness can be a goal.

Share your goals: Tell someone what you are aiming for, and find a buddy to exercise with.

Be aware of your body. Note how you’re feeling and do a little if you can’t do a lot.

Take note of your successes: Track your progress on your calendar or using an app on your smartphone.

“Why. There is so much remorse when a person cannot do; focus on what you can do. Keeping a journal or log of how much activity you are getting in can help you track your progress and help commit to any goals you may have set.”

— Ravi Paranjpe, Kinesiologist and MSFSP Coordinator Crimson Physiotherapy

How to make your plan “sticky”

Need help actually sticking to your action plan? Here are some tips to make sure you keep going:

1) Use action cues. Cues are triggers for planned actions. For example: if you are planning a walk, place your walking shoes next to your TV to jog your memory.

2) Focus on the first step of getting ready. If you are planning a walk, make sure you have your walking shoes ready and on the door so when the TV is on, you can just put them on and get out the door.

3) Make physical activity plans with others. They will help keep you on track.

Making an Action Plan

Include in your plan what activity you are going to do.

Where you do physical activity, when you’ll do it, for how long, and the intensity Level you are aiming for. The Canadian Physical Activity Guidelines recommend activities performed at a moderate intensity.

Sample Action Plan

This is an action plan that meets the guidelines.

Back-up Plan

Things may not go as well as your physical activity plan. Be flexible and adjust the plan. There’s always a way. Think about the unexpected events that might pop up in your life. Have a back up plan now for the days life throws you a curve.
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>30 mins aerobic + strength training</td>
<td></td>
<td></td>
<td>30 mins aerobic</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Symptoms & Challenges Effecting Ability to Exercise

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

Exercise and heat sensitivity

A small temperature rise in the environment or the body can cause a temporary increase in sensory symptoms, weakness or fatigue.

Sensory symptoms that flare up during exercise do not make your MS worse or cause an exacerbation.

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

- Exercise in a cool environment
- Drink lots of cool water
- Wear loose, cool clothing
- Consider doing pool-based activities
- Keep a spray bottle of water nearby, to cool yourself down regularly
- Monitor how you are feeling - find a spot to cool off if you are getting too warm
- Consider investing in cooling equipment such as a vest, collar or cuffs
- Strengthening exercise may be better tolerated than cardio in terms or rise in body temp
- Pre-cooling the body prior to exercise reduced the effects of heat sensitivity

What is fatigue?

Fatigue is the most commonly reported symptom in MS: 75 - 95% of PwMS experience fatigue

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

- Significant impact on daily life
Managing Fatigue

- Think about the time of day you exercise
- Plan around other life activities & events
- Monitor post exercise fatigue levels
- Start slow, build up gradually
- Take breaks and recover well
- Choose suitable exercise
- Do shorter more frequent sessions (at least 10 minutes) – or 30 secs on, 30 secs off
- Alternating & vary exercises (upper/lower body)

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
I have chronic 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

I have little access to a fitness centre

- 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

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>House work</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>
</tr>
<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>

- House work
- Gardening
- Mowing the lawn
- Walking to shops
- Taking the stairs
- Playing with kids
- Shopping

- Body weight exercises
- Climbing
- Weights machines and free weights
- Pump class
- Theraband

- Walking, running or hiking
- Cycling
- Swimming / water aerobics
- Sports and athletics
- Dancing
- Cardio Gym equipment
- Group classes
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.

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

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.
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
• How much time are you likely to be able to exercise in an average week?
Getting and Staying Motivated

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

What do People with MS have to say?

• “I have now joined beginners slow form Thai Chi. Also I have bought a Fitbit wrist band. And am aiming for 8000 steps a day which is about 5.4kms of walking. You and one of my Drs urged me to walk more. I am trying to get a routine going for back exercises you gave me”

• “I come to the Lidcombe gym twice a week – Tuesdays and Thursdays. At home I do some sit to stands, some arm work, a little bit of walking, but not as much exercise as I do here at the gym”
What do People with MS have to say?

• “I just want to let you know that all is going well with my physio program and particularly my exercise assistant. He’s very good at overcoming my natural reluctance to exercise regularly”

• “I have now reached a stage where I can almost lean forward in the wheelchair, put my head on my knees and then sit myself up again without assistance. That was unimaginable for me even when I last saw you. I can now train on the Moto med arm crank for 34 minutes without stopping and then follow that up with the motor assisted leg exerciser for a further 30 minutes. I do that 3 to 4 times a week”

Case Study

• 36 y.o. female with RRMS, uses a stick

• Fatigue, heat sensitivity, weakness right leg, altered balance and sensation

• I gave client some exercises for home, plus she attended BRB for 3 days per week for 8 weeks

• Showed improvements walking speed, distance and endurance, balance and strength in legs

“It makes me feel less like a “slug” and more energised, empowered and confident”
<table>
<thead>
<tr>
<th>Exercise Session</th>
<th>Description</th>
<th>Instructor</th>
<th>Cost</th>
<th>Location</th>
<th>Day/Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chatwood Exercise Group</td>
<td>In-house</td>
<td>Vinca</td>
<td>$30 per session</td>
<td>Early Learning Centre</td>
<td>Every Wednesday 10:00am</td>
</tr>
<tr>
<td></td>
<td>1 hour per</td>
<td></td>
<td>Per term: $100</td>
<td>565 Manly Road Chatwood</td>
<td>School Term Only</td>
</tr>
<tr>
<td></td>
<td>session</td>
<td></td>
<td>Paid upfront per term</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chatwood Exercise Group</td>
<td>In-house</td>
<td>Vinca</td>
<td>$30 per session</td>
<td>Early Learning Centre</td>
<td>Every Wednesday 11:00am</td>
</tr>
<tr>
<td>Upper Limb – Wheelchair</td>
<td>1 hour per</td>
<td></td>
<td>Per term: $100</td>
<td>565 Manly Road Chatwood</td>
<td>School Term Only</td>
</tr>
<tr>
<td></td>
<td>session</td>
<td></td>
<td>Paid upfront per term</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gosford Exercise Group</td>
<td>External</td>
<td>Loriisa</td>
<td>$30 per session</td>
<td>Lions Community Hall</td>
<td>Every Wednesday 10:30am</td>
</tr>
<tr>
<td></td>
<td>1 hour per</td>
<td>Fuller</td>
<td>Per term: $100</td>
<td>Russell Drysdale Drive</td>
<td>School Term Only</td>
</tr>
<tr>
<td></td>
<td>session</td>
<td></td>
<td>Paid upfront per term</td>
<td>East Gosford</td>
<td></td>
</tr>
<tr>
<td>Lidcombe Yoga</td>
<td>External</td>
<td>Rohni</td>
<td>$15 per single session</td>
<td>St John’s Individual</td>
<td>Every Wednesday 11:00am</td>
</tr>
<tr>
<td></td>
<td>1 hour per</td>
<td>Adler</td>
<td>$10 pass = $100 ($5.25 each week)</td>
<td>Lidcombe</td>
<td>School Term Only</td>
</tr>
<tr>
<td></td>
<td>session</td>
<td></td>
<td>$15 pass = $150 ($5.00 each week)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lidcombe Yoga – Upper</td>
<td>External</td>
<td>Rohni</td>
<td>$15 per single session</td>
<td>St John’s Individual</td>
<td>Every Wednesday 10:00am</td>
</tr>
<tr>
<td></td>
<td>1 hour per</td>
<td>Adler</td>
<td>$10 pass = $100 ($5.25 each week)</td>
<td>Lidcombe</td>
<td>School Term Only</td>
</tr>
<tr>
<td></td>
<td>session</td>
<td></td>
<td>$15 pass = $150 ($5.00 each week)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Marrickville Yoga</td>
<td>External</td>
<td>Rohni</td>
<td>$15 per single session</td>
<td>Addington Road Community</td>
<td>Every Tuesday</td>
</tr>
<tr>
<td></td>
<td>1 hour per</td>
<td>Adler</td>
<td>$10 pass = $100 ($5.25 each week)</td>
<td>Centre</td>
<td>9:00am</td>
</tr>
<tr>
<td></td>
<td>session</td>
<td></td>
<td>$15 pass = $150 ($5.00 each week)</td>
<td>162 Addington Road</td>
<td></td>
</tr>
<tr>
<td>Lane Cove Yoga</td>
<td>External</td>
<td>Penny</td>
<td>$15 per single session</td>
<td>Lane Cove Bowling Club</td>
<td>Every Monday</td>
</tr>
<tr>
<td></td>
<td>1 hour per</td>
<td>Cook</td>
<td>$10 pass = $100 ($5.25 each week)</td>
<td>Lane Cove Bowling Club</td>
<td>10:30am</td>
</tr>
<tr>
<td></td>
<td>session</td>
<td></td>
<td>$15 pass = $150 ($5.00 each week)</td>
<td>lane Cove</td>
<td>School Term Only</td>
</tr>
<tr>
<td>Dance for Health</td>
<td>External</td>
<td>Rosebri</td>
<td>$30 per session</td>
<td>St John’s Individual</td>
<td>Every Monday</td>
</tr>
<tr>
<td></td>
<td>1 hour per</td>
<td></td>
<td>Per term: $100</td>
<td>Lidcombe</td>
<td>10:30am</td>
</tr>
<tr>
<td></td>
<td>session</td>
<td>1 hour per</td>
<td>Paid upfront per term</td>
<td></td>
<td>School Term Only</td>
</tr>
</tbody>
</table>

Dance for Health
Multiple Sclerosis Limited

Getting Help & Advice with Getting Active

MS Connect
MS A ACT/NSW/VIC Physiotherapist
Private physio with neurological or rehabilitation experience
Hospital outpatient or neurological physio
Fitness instructor or exercise physiologist

You may need to see your GP for medical clearance prior to starting an exercise program

Get Healthy Service – Information and Coaching Service:
www.gethealthynsw.com.au
Heartmoves: www.heartmoves.org.au
NSW Health Healthy Lifestyle:

MS Get Fit Tool Kit:
www.csep.ca/cmfiles/Guidelines/MSToolkitEnglish.pdf

Sport Rec Access Line: 1800 BE IN IT (1800 234 648)
Getting Help & Advice with Getting Active

Chronic Disease Management Plan:  

NSW Health SHARE: [www.share.org.au](http://www.share.org.au)

Access for all Abilities Officers: (03) 9935 8031  

NeuroMoves (previously Burn Rubber Burn):  

Take Home Messages

- Physical activity is beneficial for PwMS
- Doing something is better than doing nothing
- Exercise will not make your MS 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
Multiple sclerosis and physical exercise: recommendations for the application of resistance, endurance and combined training

U Dalø, E Stenager, Thorsten Ingemann-Hansen
Multiple Sclerosis 2008; 14:35-53


References


