Rehab and Exercise for the Person with MS

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April 8, 2021
Exercise and MS

Why is physical activity important?

DECREASED physical activity:
• higher disability score on EDSS
• progression of deficits (fatigue, depression, spasticity, cognition)
• deconditioning

Research: 25% of patients had prematurely retired from work due to MS.
• Greatest effects on employment status: impaired mobility, pain, gait disturbances, and cognitive impairments

INCREASED physical activity:
• Improved
  ○ Flexibility
  ○ Muscle endurance
  ○ Bone density
  ○ Muscle strength
  ○ Quality of life
  ○ Balance
  ○ Aerobic Capacity
  ○ Mood
  ○ Mobility/functional abilities
• Reduced
  ○ Fatigue
  ○ Pain
Exercise and MS

Research

Research supports exercise benefits for individuals with mild to severe mobility deficits related to MS.

No increased risk of exacerbation or relapse.

Physical and occupational therapy have had positive impacts on physical function, cognition and other neuropsychological symptoms in MS patients.
Rehabilitation

How do I know if physical rehabilitation is appropriate for me?

- Difficulty tolerating exercise
- Loss of balance or falls
- Difficulty completing daily tasks (ADLs, walking, using stairs)
- Symptom management
- Unable to perform activities in the same way or in the same amount of time
Rehabilitation

The rehab team

• Physical Therapy
• Occupational Therapy
• Speech-language Pathology (Speech Therapy)
• Neuropsychology
• Rehab Psychology
• Vocational Rehab
Rehabilitation

Adapting exercises

- Body weight supported training with a harness
  - Over-ground or treadmill

- Aquatic therapy
  - Provides body weight support
  - Decreased risk of falling
  - Improved tolerance to exercise (cold pool)

- Electrical stimulation
  - Assisted muscle contraction
  - Combined with traditional exercise (cycling, walking, resistance training)
## Getting Started
### Exercise Guidelines

<table>
<thead>
<tr>
<th>Exercise Type</th>
<th>Potential Benefits</th>
<th>Modes</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flexibility Training</td>
<td>Decrease spasticity, Prevent contractures</td>
<td>Traditional stretching, yoga, Pilates, pool</td>
<td>Daily to prn, Before/after exercise</td>
</tr>
<tr>
<td>Resistance Training</td>
<td>Reduced fatigue, Improved walking, Improved task performance</td>
<td>Body weight resistance, free weights, machines, resistance bands</td>
<td>2-3x/week</td>
</tr>
<tr>
<td>Endurance Training</td>
<td>Reduced fatigue, Improved recovery from exertion, Improved walking abilities</td>
<td>Swimming, stationary bike, walking, NuStep, arm bike</td>
<td>3-4x/week, 20-30 minutes</td>
</tr>
<tr>
<td>Balance Training</td>
<td>Decrease falls</td>
<td>Sitting balance, standing balance, pool, yoga</td>
<td>“it depends”</td>
</tr>
</tbody>
</table>
Getting Started

Examples of general exercise

Aquatics
- Pool temperature should not exceed 84°C for people with MS
- Studies show improvements in walking speed and dynamic balance

Pilates
- Exercises based on whole-body movement
- Emphasizes body alignment and stabilizing core muscles during movement
- RCT: improvement in walking distance and speed after two 50-min sessions/week for 12 weeks
Getting Started

Examples of general exercise

Seated Exercise
• ChairFit with Nancy
• https://www.youtube.com/channel/UCCAFFFLNiOjqR5FXtuH8ySxA

Yoga
• Traditional vs adapted
• Focus: Balance, flexibility, core strength
• Virtual vs in-person
# Getting Started

## Cardio: OSU’s 8 Week Walking Program

<table>
<thead>
<tr>
<th>Week #</th>
<th>Walking interval</th>
<th>Rest interval</th>
<th>Repeat the intervals</th>
<th>Total activity time (minutes)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2 minutes</td>
<td>1 minute</td>
<td>5 times</td>
<td>10</td>
</tr>
<tr>
<td>2</td>
<td>4 minutes</td>
<td>2 minutes</td>
<td>4 times</td>
<td>16</td>
</tr>
<tr>
<td>3</td>
<td>5 minutes</td>
<td>2 minutes</td>
<td>4 times</td>
<td>20</td>
</tr>
<tr>
<td>4</td>
<td>7 minutes</td>
<td>2 minutes</td>
<td>3 times</td>
<td>21</td>
</tr>
<tr>
<td>5</td>
<td>5 minutes</td>
<td>2 minutes</td>
<td>5 times</td>
<td>25</td>
</tr>
<tr>
<td>6</td>
<td>10 minutes</td>
<td>2 minutes</td>
<td>3 times</td>
<td>30</td>
</tr>
<tr>
<td>7</td>
<td>15 minutes</td>
<td>2 minutes</td>
<td>2 times</td>
<td>30</td>
</tr>
<tr>
<td>8</td>
<td>20 minutes</td>
<td>2 minutes</td>
<td>2 times</td>
<td>40</td>
</tr>
</tbody>
</table>
Getting Started

How else can I increase physical activity?

• Gardening
• Chores
• Walking the dog
• Cooking
• Taking the stairs
• Dancing
Community Resources

OSU Adapted Sports program
For more information on OSU Adapted Sports, visit the community calendar: https://teamup.com/ksd5ut3ac3immngxdg

Franklin Park
*Medical provider must complete a referral/registration form
For more information about Franklin Park, visit: http://columbus.gov/recreationandparks/programs/Therapeutic-Recreation/
Community Resources
National MS Society

National MS Society Resources
- Ask an Expert
- Educational Videos
- Free from Falls program
- Relationship Matters program
- Webinar Series to learn strategies to live your best life with MS

To access the National MS Society calendar of virtual events, click here or visit https://www.nationalmssociety.org/ and go to the Resources & Support tab to find the Calendar of Programs and Events.
National MS Society
Exercise Tips

- Stay hydrated—cold water will help keep your body temperature low
- Exercise in a cool room and if outside, exercise at cooler times during the day
- Remember to stretch afterward
- No pain no gain should not be your mantra
- Start low and go slow
- Prioritize safety to reduce risk of injury
- Consult a medical professional before starting a new exercise routine
<table>
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<tr>
<th>Special considerations</th>
<th>Precautions to Take</th>
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<tbody>
<tr>
<td>Fatigue</td>
<td>Schedule resistance training on non-endurance training days.</td>
</tr>
<tr>
<td>Spasticity</td>
<td>Consider foot and/or hand straps with cycling. Use machines instead of free weights.</td>
</tr>
<tr>
<td>Heat intolerance and reduced sweating response</td>
<td>Adequate hydration, keep room temperature between 20 and 22 °C. Using of cooling fans and precooling. Plan exercise in the morning when body temperature is at the lowest.</td>
</tr>
<tr>
<td>Cognitive deficits</td>
<td>Follow written instructions/diagrams. Exercise tasks should be initially performed with minimal resistance. May require additional supervision during exercise to ensure safety.</td>
</tr>
<tr>
<td>Lack of coordination</td>
<td>Consider upright or recumbent arm/leg cycling to ensure balance and safety.</td>
</tr>
<tr>
<td>Sensory loss and balance problems</td>
<td>Perform exercises in a seated position; use machines or elastic bands instead of free weights.</td>
</tr>
<tr>
<td>Higher energy cost of walking</td>
<td>Adjust workloads to maintain target heart rate and check heart rate regularly.</td>
</tr>
<tr>
<td>Daily variations in symptoms</td>
<td>May need exercise supervision, make daily modifications to exercise.</td>
</tr>
<tr>
<td>Urinary incontinence /urgency</td>
<td>Adequate hydration, and schedule exercise in close proximity to restrooms.</td>
</tr>
<tr>
<td>Symptom exacerbation</td>
<td>Discontinue exercises and speak to a provider (PT, physician) Resume exercise program once symptoms are stable and medically ready.</td>
</tr>
</tbody>
</table>


