Practical Exercise Strategies for Movement Disorders

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Learning Objectives

- The following will focus on Parkinson Disease (PD)
  - The same principles can be applied to Mild Cognitive Impairment, Lewy-Body Dementia, and Alzheimer’s Disease
- Participants will:
  - Learn about the evidence to support different forms of exercise for people with PD
  - Learn how to implement aerobic, strength, balance, and flexibility exercise
  - Learn about additional resources available to help you exercise at home

Aerobic exercise

- “Regular aerobic-type exercise is the single strategy with compelling evidence for slowing Parkinson disease progression. All patients with Parkinson disease should be encouraged to engage in regular such exercise”
  (Ahlskog, 2018)
- People with PD spend 75% of all awake time in sedentary behaviors
- Compared to healthy controls matched for age, PD patients were ~30% less physically active
  (Bouca-Machado, 2020)

Exercise for ALL OF US!

- Exercise recommendations for adults from the American College of Sports Medicine and the US Department of Health and Human services
  - For older adults: add flexibility and balance training
  - It’s THE SAME for Parkinson’s!

How much activity do I need?

Moderate-intensity aerobic activity
Anything that gets your heart beating faster counts.

Muscle-strengthening activity
Activities that make your muscles work harder than usual.

Lighten up this week! Start with just 5 minutes. It all adds up!
How do I know how hard to go?

- For moderate intensity:
  - 13-15
  - "somewhat hard" to "hard"

**Rate of Perceived Exertion Scale**

<table>
<thead>
<tr>
<th>Perceived Exertion Rating</th>
<th>Description of Exertion</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>No exertion, sitting &amp; resting</td>
</tr>
<tr>
<td>7</td>
<td>Extremely light</td>
</tr>
<tr>
<td>8</td>
<td>Very light</td>
</tr>
<tr>
<td>9</td>
<td>Light</td>
</tr>
<tr>
<td>10</td>
<td>Hard</td>
</tr>
<tr>
<td>11</td>
<td>Somewhat hard</td>
</tr>
<tr>
<td>12</td>
<td>Very hard</td>
</tr>
<tr>
<td>13</td>
<td>Extremely hard</td>
</tr>
<tr>
<td>14</td>
<td>Maximal exertion</td>
</tr>
</tbody>
</table>

App in Apple Store: “HR Zones”

- Toggle these to green if you know your resting heart rate

Heart Rate Zones

- If you want to get better at walking... you must walk!
  - Consult with a physical therapist if you think you need an assistive device
  - Treadmill is a good option for mild symptoms
  - Listening to a beat can improve walking – typical walking beat is 100-115 steps per minute
    - Metronome app – can "tap" to find your rhythm
    - Find songs at your rhythm
      - Example YouTube search: "songs 110 bpm" "110 bpm playlist"
      - Example Spotify search: "110 bpm"
    - Example metronome app: "Metro Timer"

Walking for aerobic exercise

- If you want to get better at walking... you must walk!
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Limitations to walking?

You've got options!

What's the Evidence: Strength

- There are PD related reductions in muscle strength
  - More difficult physical function, less confidence in balance, increased fall risk
- Strength training significantly improves muscle strength and performance of mobility (Cruickshank, 2014)
  - Early to moderate stage disease
- Important principles
  - Keep progressing!

Strength train at home!

Strength train at home!

Easier Harder

Easier

Sit to stand

Harder

Hip bridge

Easier Harder

Easier

Row

Harder

Hip abduction (muscle on side of hip/buttock)
Strength train at home!

Easier
Heel Raise
Harder

Easier
Push-up
Harder

What's the evidence? (Mindfulness/ Yoga)

Additional benefits over conventional stretching and strengthening on psychological distress, spiritual well-being, and health-related quality of life

Comparable benefits related to motor symptoms and mobility

90 minute session 1x/wk, 20 min session 2x/wk

What's the evidence? (Balance)

Multi-dimensional balance training programme improves balance and gait performance in people with Parkinson's disease: A pragmatic randomised controlled trial with 12-month follow-up

Improves balance, walking speed, and ability to walk and dual-task (think about something else)

Improvements lasted 1 year after intensive period of training

Highly Challenging Balance Program Reduces Fall Rate in Parkinson Disease

Reduced falls per month by 37%

Resources for Mindfulness

- Classes that combine balance, strength, and mindfulness
  - Yoga, Tai Chi, and Qi Gong classes through the Stanford Neurosciences Supportive Care Program
  - Tai Chi for Rehabilitation from Stanford Pain Medicine

- Apps

- Online guided meditations from Carolyn McManus, PT

Confidential – For Discussion Purposes Only
Balance training

- Stanford Neuroscience Supportive Care Program
- Other online resources for virtual exercises live and pre-recorded
  - https://www.apdaparkinson.org/free-online-exercise-and-therapy/
- Physical Therapists can design an individualized balance training program for you

Balance training - how to set up at home

- Wall behind you, counter or chair next to you
- No hard/ sharp surfaces nearby

Clock Taps
Single leg balance
Walk looking side to side
Eyes closed in corner

Flexibility

Trunk twist
Calf stretch (heel down)
Hamstring stretch
Hip flexor stretch
Chest stretch

What could a typical week look like?

<table>
<thead>
<tr>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
<th>Friday</th>
<th>Saturday</th>
<th>Sunday</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dance or group class incorporating balance</td>
<td>Aerobic (walk, bike, etc) 30-45 minutes</td>
<td>Aerobic (walk, bike, etc) 30-45 minutes</td>
<td>Aerobic (walk, bike, etc) 30-45 minutes</td>
<td>Aerobic (walk, bike, etc) 20 minutes</td>
<td>Resistance training</td>
<td>Resistance training</td>
</tr>
<tr>
<td>Resistance training</td>
<td>Flexibility</td>
<td>Flexibility</td>
<td>Flexibility</td>
<td>Flexibility</td>
<td>Yoga + Mindfulness</td>
<td>Flexibility</td>
</tr>
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</table>
Physical Therapy

- A physical therapist can help you design a long-term home-based exercise program

- Home-based programs were found to be as effective as center-based program (Flynn, 2019)
  - Significantly improved balance and gait speed
  - Trends towards improving quality of life

How to find a PT:
- Type in “find a PT” to google browser - first link is to the American Physical Therapy Association page to search for a PT
- Select specialist: neurology

References


Questions?