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UNLOCKING THE SECRETS OF BRAIN DISEASE®

IMPROVING AND MAINTAINING STRENGTH: EXERCISE REVIEW

ROBERT HAND, PT, DPT, NCS, MSCS



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Parkinson's

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PARKINSONISM – MOVEMENT CONSIDERATIONS

- **MOVEMENT QUALITY?**
 - Slower or smaller movements (Bradykinesia)
 - Difficulty starting or stopping (Akinesia)
 - Stiffness or rigidity
 - Muscle cramping or spasm
 - Freezing of gait*



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IMPROVING YOUR MOBILITY

- **EXERCISE AND PHYSICAL ACTIVITY**

- Increase muscle endurance
- Increase muscle strength and power
- Improve cardiovascular endurance
- Loosen up muscles and tight joints



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EXERCISE AND ACTIVITY

- **EXERCISE**

- Specific regimens to improve specific underlying problems
 - Ex: balance, gait, flexibility, etc.
- Often is supervised by a healthcare professional, coach, trainer, etc.

- **PHYSICAL ACTIVITY**

- Any movement of the body that uses energy
 - Ex: walking the dog, hiking, gardening, etc.
- Necessary to maintain gains made through exercise



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EXERCISE AND YOUR BRAIN

- **NEUROPLASTICITY**

“The ability of the brain to form and reorganize synaptic connections, especially in response to learning or experience or following injury.”

- Exercising specific to your deficits improves mind-muscle connection
- Improve your ability to use available dopamine
- Through practice you can learn new skills or relearn lost skills
- Exercise for brain change!



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EXERCISE FOR PARKINSONISM

- **COMMON MISSTEPS**

Why do exercise programs for people with parkinsonism fail?

- Lack repetition or frequency → How often?
- Lack intensity → How challenging physically/mentally?
- Lack specificity → Is this what you need?
- Lack salience → Does this matter to you?
- Lack variability → Does it change regularly?



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EXERCISE FOR PARKINSONISM

• EXERCISE PROGRAMMING

- Flexibility
 - Daily stretching for 10-15 minutes to prevent posture changes
- Aerobic Exercise
 - Improve your endurance and heart health
- Progressive Resistance Exercise Training
 - Improve your movement quality and strength
- Amplitude and Brain Games!



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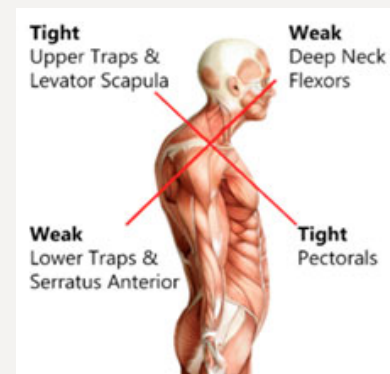
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EXERCISE FOR PARKINSONISM

• FLEXIBILITY

- Posture
 - Prevent rounded, stooped posture
 - Stretch: chest, neck, shoulders, hips
- Movement
 - Normal walking requires specific range of motion
 - Stretch: calves, hamstrings, hip flexors
- Hold for 20-30 seconds up to 3x, 1-2x per day



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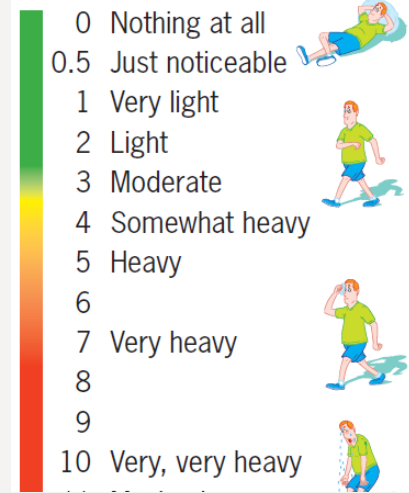
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EXERCISE FOR PARKINSONISM

• AEROBIC EXERCISE

- Monitoring through perceived exertion
 - Goal of 3-7, depending on exercise
- Steady state exercise
 - Ex: Walking on treadmill at 4/10 exertion
- High-intensity Interval Training (HIT)
 - Ex: Alternating fast (7/10) and slow (4/10) on bike
- At least 3-5x per week for up to 30min

HOW HARD IS THE ACTIVITY?



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EXERCISE FOR PARKINSONISM

• PROGRESSIVE RESISTANCE EXERCISE TRAINING

- Strength training also based on perceived exertion
- Attempting to work with varying set and repetition schemes
 - Ex:
 - 3 sets of 12-15 lighter rep's for endurance (general)
 - 5 sets of 5 heavier rep's for power (force production → bradykinesia)
- Compound, functional movements
 - Squat, lifting from floor, sit to stand, push overhead

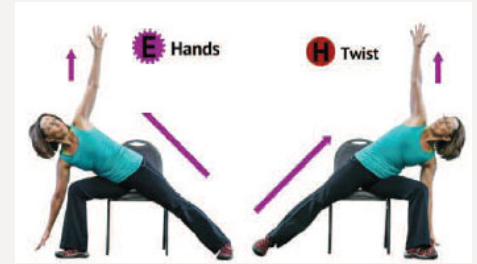


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EXERCISE FOR PARKINSONISM

- **AMPLITUDE AND BRAIN GAMES**

- Amplitude
 - Recalibrate your perception of “normal” movement
 - If it feels normal, it’s probably not big enough
- Brain Games
 - Utilize dual task training (DTT) and attention training
 - Exercise should incorporate a thinking component



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EXERCISE FOR PARKINSONISM

- **OVERVIEW**

- Daily exercise with various components – mix it up to/over an hour!
 - Flexibility (10-15min)
 - Aerobic Exercise (20-30min)
 - Progressive Resistance Exercise training (20-30min)
 - Amplitude and Brain Games (10-15min* -- incorporate with flexibility)
- Meet with health professionals for initial prescription
- Check in regularly
- EXERCISES ARE SPECIFIC TO YOUR NEEDS



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THANK YOU

(STAND UP OR STRETCH!)



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