Exercise for Individuals with Parkinson Disease

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HOW MANY OF YOU CURRENTLY EXERCISE?
Treating Individuals with PD

- Traditional Treatment Options
  - Pharmacology
  - Deep Brain Stimulation (DBS)

- Therapeutically based interventions
  - OT
  - PT
  - Speech
  - Exercise

EXERCISE BENEFITS INDIVIDUALS WITH PARKINSON DISEASE

FACT!!!

- Exercise is not a replacement for medication
- Properly managed medication may greatly effect your ability to exercise and to see benefits from exercise
Benefits of Exercise

• There is overwhelming evidence that exercise benefits individuals with PD
  – Extended duration of medication dosage
  – Decreased/maintained PD related symptoms
  – Improved balance/gait
  – Decreased falls
  – Improved fitness/strength
  – Improved cognition
  – Decreased depression

But . . .

• Effects are exercise specific

• Not sustained without exercise

Exercise Benefits are Specific

• Randomized controlled trial with 3 groups
  – High-intensity treadmill exercise
  – Low-intensity treadmill exercise
  – Stretching and resistance training

• All groups exercised 3 times per week for 3 month

(Shulman et al. 2012)
Exercise Benefits are Specific

- Results
  - All groups improved walking speed
  - Treadmill groups improved fitness
  - Stretching and resistance training improved strength
- Conclusion
  - Exercise is beneficial but specific
  - Treadmill and resistance exercise may lead to greater benefit
  - Effects not long lasting

WHAT MOTIVATES YOU TO EXERCISE?

Group and Community Exercise

- Improved balance, gait, and reduced number of falls after 24 weeks - Tai Chi (Li et al. 2012)
Group and Community Exercise

- Improved balance, gait speed, endurance, quality of life after at least 12 weeks of boxing - Boxing (Combs et al. 2010)


Group and Community Exercise

- Improved motor symptom severity, balance, freezing, gait speed, and bradykinesia - Dance (Duncan & Earhart, 2012)

Comparing Exercise Effects
Why Tango?

- Evidence (Earhart Lab)
- Set to music – cues
- Long steps
- Turns
- Leader/Follower – Forward/Backward walking
- Improvisational
- Partner (falls)

Occupational Therapy Program, University of Wisconsin - Madison


McNeely ME et al. (submitted)
Results – Spatiotemporal Gait

![Graphs showing spatiotemporal gait results](image)

Results – Functional Gait

![Graphs showing functional gait results](image)

Behavioral Results Summary

- Everybody got better at everything.
- FWD stride length, BKD velocity and stride length, Timed-Up-and-Go, Six Minute Walk Test, balance, and motor sign severity improved from baseline to post-test, regardless of exercise group.
- There were trends towards performance declines from post-test to follow-up.
Limitations

• Across groups, participants averaged 4 hours of exercise per week prior to enrolling in the study.
• Demographic considerations

Engagement Matters

• Previous work demonstrates the importance of 1) participation and 2) sustained practice
• Group based (partnered?) exercise programs may improve adherence

HOW DO WE ENGAGE THOSE WHO ARE NOT ALREADY ENGAGED?

What’s next?
Group 1 – ‘Not a fan of Exercise’

- Those with access and a desire to exercise are utilizing services
- How do we engage individuals not drawn to exercise?

Glassblowing

Phase 1

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Motor Learning

Group 2 – Those Without Access

- Low socioeconomic rural and urban individuals with PD are less likely to engage in research as well as have access to critical medical care.

We Come to You
Why Cycling?

• If you live near Madison
  – There is a list with all of the currently available programming for individuals with PD
  – My lab supports a tango dance class for individuals with PD and/or caregivers
    • http://www.wisconsin-tango.com/
  – Research options

Group 3 – Ready To Go!!!!!

Resources

• Local APDA website
• Movement disorders groups
• MDs
Now What

• Step 1 – Talk to you doctor
• Step 2 – Find something that looks meaningful/appealing to you
• Step 3 – GO!!!!!! And Don’t stop!!!!!

Are We Asking Relevant Questions?

Conclusions

• Exercise is beneficial to individuals with PD but not universally accessible or appealing
• Group exercise may increase adherence
• Alternative forms of exercise may engage those not interested in “exercise”
• Rural and urban low SES communities need to be better served
Thank you!

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The Madison Chapter of the APDA

QUESTIONS