EXERCISE AND ACTIVITY ARE IMPORTANT FOR THOSE WHO LIVE WITH PARKINSON’S DISEASE

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‘Activity’ vs ‘Exercise’

- **Physical Activity** refers to any movement of the body that uses energy (e.g., walking, hiking, gardening).

- **Exercise** refers to specific regimens to improve specific underlying problems (e.g., balance, gait, flexibility etc); often is supervised.
Activity is Important!

• Low activity leads to
  • Poor cardiovascular health
  • Reduced physical function

• Recommended activity levels for all folks
  • 150 min/wk of moderate to vigorous activity (CDC)
  • 10,000 steps / day
Low Activity in Those with PD

Associated with:
- Motor symptom severity
- Fatigue
- Sleep problems
- Depression
- Poor cardiovascular health
- Low physical function

- What is the cause and what is the effect?
Which Is More Important?

- **Activity** keeps people going, and is critical after supervised exercise.
- Activity, and particularly vigorous activity, is just as important as structured ‘exercise regimens’.
- **Exercise** – helps correct specific underlying problems that interfere with daily function and lead to falls.
Activity Levels of People With PD

- Steps taken a day
  - Early to moderate PD: 4700 to 5400
  - Recent PD diagnosis, not yet on meds: ~5400
  - People without PD: 7800

- Even very early in PD, people tend to be sedentary or engage in light physical activity only (95% of the day in one study)
Intensity of Activity

- Sedentary
  - Sitting, Lying down, Sleeping!

- Low
  - Casual walking, bicycling <5 mph, stretching, light weight training, slow dancing

- Moderate
  - Brisk walking (3-4.5 mph), walking uphill, hiking, aqua aerobics, weight training, boxing, most aerobic machines

- High
  - Race walking, jogging/running, back packing, vigorous calisthenics, karate, vigorous dancing, boxing/sparring
Activity in PD

- People with PD (n=699) are 1/3 less active than older adults generally (n=1,959)
- Activity levels decline with increasing disease severity
- In a longitudinal study: daily steps declined 12% and moderate intensity walking declined 40% in a year

van Nimwegen et al, J Neurol. 2011;258:2214-21.
Options to Increase Activity - Examples

• Daily vigorous walking or biking
• Vigorous dancing
• Boxing
• Group exercise programs that increase heart rate
Is Vigorous Activity Important?

- Midlife, regular exercise reduces risk of subsequent PD
- Exercise reduces cognitive impairment in older people with / without dementia
- Animal models – physical exercise enhances brain plasticity

J Eric Ahlskog. *Neurology* 2011;77;288
Is Activity Neuroprotective for PD?

- Studies are needed in humans but are expensive
- Before asking this question, first need to determine:
  - What is the best dose of aerobic exercise?
  - Does exercise provide benefits for people prior to initiation of dopaminergic or other dopamine related therapies?
Current Study - Multicenter Trial
Does exercise slow PD symptoms?

[Logos of Denver Broncos, Pittsburgh Steelers, and Chicago Bears]
Purpose: Define the right intensity of exercise in preparation for a clinical trial of neuroprotection

- Compare aerobic exercise at 2 intensities & no exercise
- People recently diagnosed with PD; not on medications for PD
- Three sites: Denver, Chicago, Pittsburgh
- 129 participants randomized
- Results: November, 2016!!!
- Funded by the National Institutes of Health (NIH)
Clinical Bottom Line

• Activity is important for health in general
• Low activity is associated with a number of health related and PD specific problems for people with PD
• Possible strategies to increase activity
  • Start slowly, build gradually but consistently
  • Consider some form of step counter
  • Join activities that encourage activity!
Specific Exercise Also Is Important

- Studies that inform exercise choices
  - Cardiovascular
  - Flexibility
  - Strength
  - Balance
  - Combinations
How Much Do People with PD Exercise?
Findings from a survey in collaboration with Davis Phinney Foundation

- Large percentage of those who responded indicated that they exercise
- Only about half exercise moderately or vigorously
- Only a small percentage meet the CDC guidelines of 150 of vigorous exercise weekly
- Only about 1/3 of respondents received specific exercise recommendations from their health care providers
Exercise Types In Which People with PD Engage

Majority of participants reported some form of aerobic, strengthening, flexibility, and balance

- **Flexibility**: e.g., stretching, Yoga
- **Strengthening**: e.g., free weights, weight machines, resistance bands, body weight resistance)
- **Aerobic**: e.g., walking and biking, elliptical, circuit training, aerobic classes, and running
- **Balance**: e.g., individual balance activities, Yoga, Tai Chi, boxing, dance
Clinical Bottom Line

Exercise is important

• Long-term exercise habits are necessary because PD is chronic and progressive

• Most appropriate exercise prescription is not yet known

• Many approaches to exercise provide benefits
  • Balance training improves balance; strength training improves strength; aerobic conditioning improves aerobic condition!
Clinical Bottom Line

- Choose a mode of exercise that is enjoyable
- Exercise with a partner if that is helpful
- Focus on areas that need improvement (e.g., might be strength, flexibility, balance, some combination)
- Incorporate vigorous activity if feasible
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