

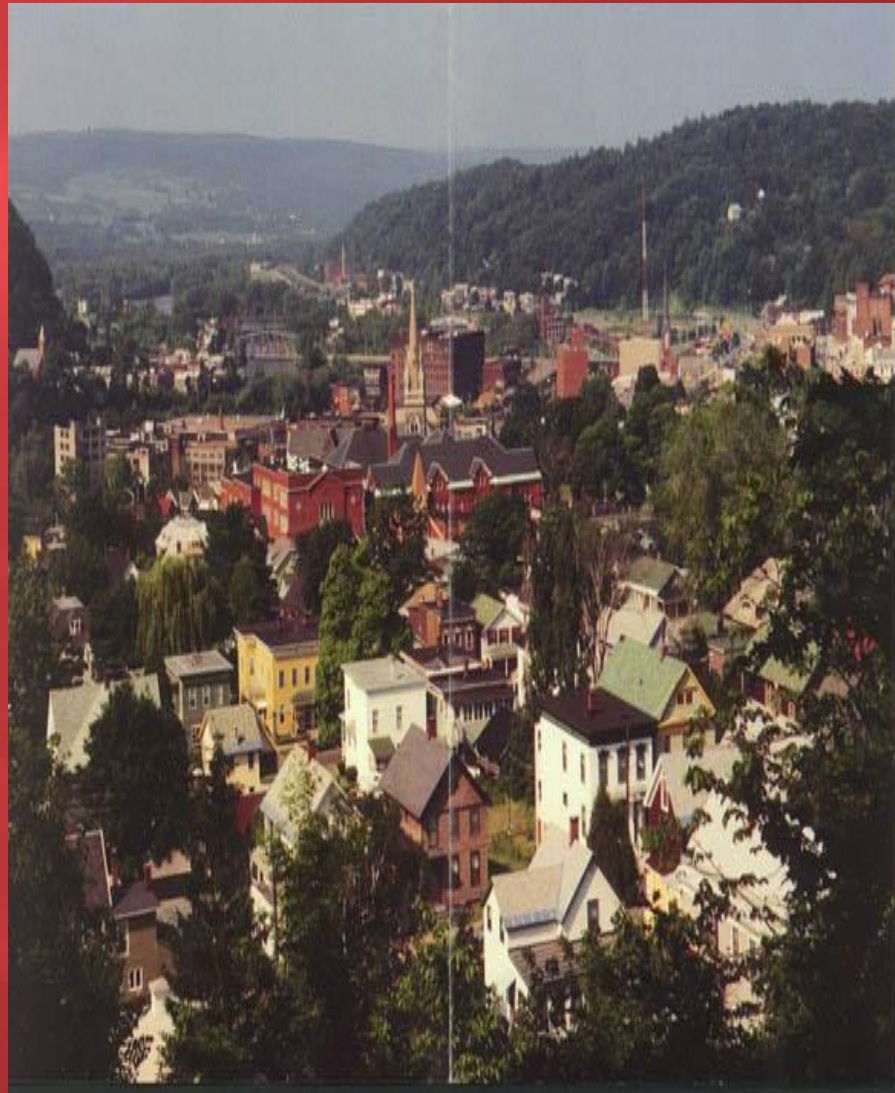
BENEFITS OF EXERCISE FOR PEOPLE WITH PARKINSON'S DISEASE

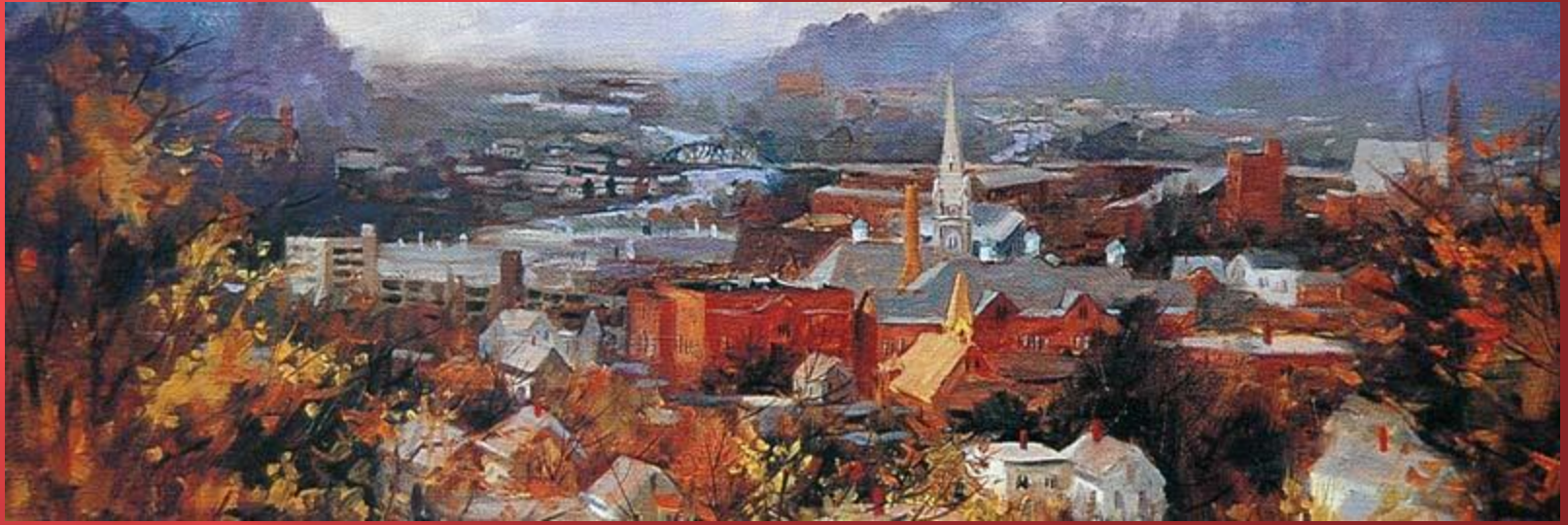
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Disclosure

- ▣ I have no financial interest or affiliation with anything presented here today.





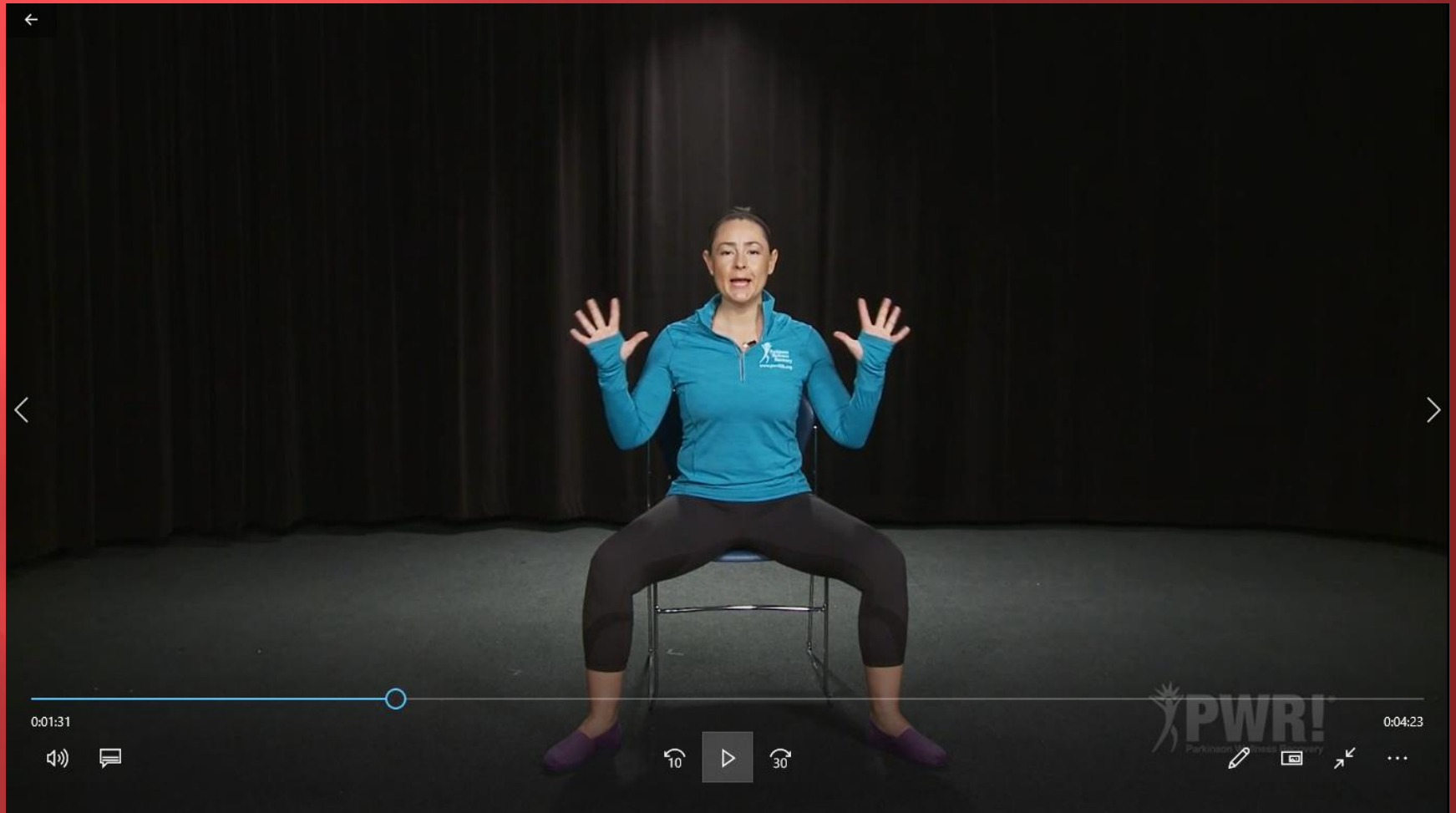
What do I mean by “Exercise”

- ▣ Physical activity is defined as any bodily movement produced by skeletal muscles that results in energy expenditure. ...
- ▣ *Exercise* is a subset/type of physical activity that is:
 - ▣ 1. planned,
 - ▣ 2. structured
 - ▣ 3. repetitive and
 - ▣ 4. has as an objective/goal: the improvement or maintenance of physical fitness.

My definition of Exercise

- ▣ “FunWork”

“PWR” positions



3 points to remember from this talk

- ▣ 1. Exercise is medicine
- ▣ 2. Exercise is for both the mind & the body
- ▣ 3. Be proactive in managing this chronic condition

“Exercise is medicine”

- Why is exercise now regarded as “medicine”?

“Neuroplasticity” -

Our brain’s ability to reorganize itself by forming new neural connections THRU-OUT LIFE!

Neurons/Nerve cells in the brain can compensate for injury or disease by adjusting their activity in response to new situations or changes in their environment
Growing evidence that exercise can change your brain’s environment!! (already been proven in animal models)

“Exercise-induced” Neuroplasticity

- ▣ 8 Human PD studies between 2008 & 2015:
 1. corticomotor excitation
(brain-muscle connection)
 2. increased gray matter volume
(Why is this important?)
 3. changes in “Brain-derived neurotrophic factor (BDNF): What is this? a protein in the *brain* & spinal cord: promotes survival of nerve cells/neurons (including growth, maturation & differentiation, & maintenance)





Recent Studies on Exercise & PD

- ▣ These studies all published within the past 2 years
- ▣ 1st study: “Effects of Exercise on Falls, Balance, & Gait Ability in Parkinson’s Disease”

Meta-analysis of 25 studies:

24 of 25 studies showed better balance & improved walking over the short term;

12 of 25 studies over the long term (1 year)

4 of 25 showed reduced fall rate over short term & 5 of 25 studies over long term.

Recent Studies - 2

- ▣ 2nd study: “Comparative Effect of Power Training & High-Speed Yoga on Motor Function in Older Patients with Parkinson Disease”

Done over 12 weeks at 2x per week

Both groups improved physical performance as compared to the nonexercise group

(Physical performance: UPDRS – Motor score, Balance test scores, including single-leg balance, walking speed, 1 repetition max., & peak power for leg press)

No difference in improvement with either yoga or power training

Recent Studies - 3

- ▣ 3rd study: “Cortical & motor responses to acute forced exercise in Parkinson’s disease”

Forced exercise, while off medication, resulted in brain activation similar to when on PD medication in 9 subjects with PD.

(shown by fMRI brain scans)

This has already been shown in animals.

This suggests that medication & Forced exercise may use the same brain pathways to produce relief of PD symptoms.

Recent Studies - 4

- ▣ 4th study: “Power training induced change in bradykinesia & muscle power in Parkinson’s disease” (Power vs.Strength)
26 patients with mild to moderate PD (age 65 years or older) either did 12 wks (2x/wk.) of PWT (low-load/high speed) or were in the control group. PWT/exercise group improved both physical function & quality of life.

Recent Studies - 5

- ▣ 5th study: “Effectiveness of resistance training on muscle strength & physical function in people with Parkinson’s disease”

Meta-analysis: 7 studies of 401 persons with mild to moderate PD

Showed moderate intensity progressive strength training 2-3x/wk. over 8-10 wks increased strength, balance, & less symptoms

Recent Studies - 6

- ▣ 6th study: “Multiple factors, including non-motor impairments, influence decision making with regard to exercise participation in Parkinson’s disease: a qualitative enquiry”
 - a 6-month minimally supervised group exercise program
 - provided an opportunity to “reframe” an identity of an “Active self”

What does a Physical Therapist do?

We are experts in movement & function.

We assist you in:

1. Wellness/General health & conditioning
2. Care & prevention of injuries, post-surgeries, & chronic conditions: such as diabetes, cardiac, orthopedic, & neurological conditions
3. We have specialites (can have more than 1)
4. We communicate & sometimes co-treat with other health professionals, such as OT & Speech.

Physical Therapy Treatment

How do we help you & your family manage this chronic condition?

Combination of:

1. Physician: medicine/surgery/guidance
2. PT/OT/Speech: instruction in exercise, self care/family care, fall prevention, home modification/guidance

“LSVT-Big” vs. “PWR”

“LSVT-BIG”: (part of “LSVT-Global”)

- ▣ 1. Therapists are certified every 2 yrs.
- ▣ 2. Based on research from “LSVT-LOUD”
- ▣ 3. PT research done by Dr. Becky Farley, PT, PhD.
- ▣ 4. Specific set of exercises done 4x/wk for 4 wks.

“PWR” / Parkinson Wellness Recovery

1. Therapists certified once
2. Based on the same research by the same researcher ; however, Dr. Farley expanded the research to include studies showing the same results can be obtained with 2-3x/wk.
3. She also added cognitive components & taught exercise principles instead of 1 specific set of exercises

What advantage is it for a PT to be part of your health care team?

- ▣ 1. We probably see you more often than you see your physicians (For example: we may see medication side effects sooner & report them to your physician)
- ▣ 2. We may address additional, specific issues that are affecting your daily life (such as why am I having such a hard time getting in & out of the car?)
- ▣

Summary

- ▣ Exercise is medicine
- ▣ What is the optimal exercise routine? Intensity? Repetitions?
- ▣ Benefits shown with frequency of 2-3x/week