



# LSVT Global Public Webinar Series

Title: **Early Parkinson Disease:  
A Discussion on the Benefits of Exercise and LSVT BIG®**

Presenters: Laura Guse, MPT, MSCS  
Tami Hefferon, DPT, DPT, CSCS, OCS

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**Early Parkinson Disease:  
A Discussion on the Benefits of Exercise and LSVT BIG®**

**Presented by:**

**Laura Guse, MPT, MSCS**  
LSVT BIG Training and Certification Faculty  
Chief Clinical Officer of LSVT BIG

**Tami Hefferon, DPT, DPT, CSCS, OCS**  
LSVT BIG Training and Certification Faculty



## Instructor Biographies

**Tamara Hefferon PT, DPT, CSCS, OCS**  
Dr. Hefferon received her Bachelor of Science in Physical Therapy from the University of Arizona and her Doctorate in Physical Therapy from A.T. Still University. She has been certified in LSVT BIG® since 2009, and received her Orthopedic Clinical Specialist Certification in 2017. Dr. Hefferon is an Assistant Professor and Orthopedic Specialist at Franklin Pierce University. She also owns her own cash based practice with her husband called Impact Physical Therapy. She has a passion for treating persons with Parkinson disease with emphasis on early onset and young onset patients.

**Laura Gusé, MPT, MSCS**  
Ms. Gusé received her Master's Degree in Physical Therapy from the University of North Dakota. She has over 15 years of experience working with adults with neurological disorders with a special focus on Parkinson disease and Multiple Sclerosis. She has been certified in LSVT BIG® since 2009, and is a Multiple Sclerosis Certified Specialist. She is an LSVT BIG faculty member and Clinical Expert, and has helped to develop many of the current LSVT BIG treatment tools and videos, webinars and curriculum. She now serves as the Chief Clinical Officer of LSVT BIG.

- Logistics and Intro
- Review and discuss the use of LSVT BIG with people who are newly diagnosed with Parkinson's disease
- Answer your questions live!

## Plan for Webinar

### Information to Self-Report CE Activity

- This LSVT Global webinar is NOT ASHA or state registered for CEUs, but it may be used for self-reported CEU credit as a non-registered CEU activity.
- If you are a speech, physical or occupational therapy professional and would like to self-report your activity, e-mail [webinars@lsvtglobal.com](mailto:webinars@lsvtglobal.com) to request a certificate after completion of the webinar which will include your name, date and duration of the webinar.
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- Attendance for the full hour is required to earn a certificate.

### Disclosures

- All of the LSVT faculty have both financial and non-financial relationships with LSVT Global.
- Non-financial relationships include a preference for the LSVT BIG and LSVT LOUD as a treatment technique.
- Financial Relationships include:  
All of the LSVT Faculty receive consulting fees, lecture honorarium and travel reimbursement from LSVT Global, Inc. Ms. Guse is an employee of LSVT Global, Inc.

### Learning Outcomes

After finishing this webinar, participants will be able to:

1. List how early exercise and therapy intervention helps with brain change in positive ways.
2. List how early therapy leads to better mobility, and quality of life.
3. Describe how LSVT BIG can help individuals with early PD.

## Polling Question 1

Are you:

- A person with PD
- A caregiver or family member of someone with PD
- A physical, occupational or speech therapist
- A medical professional (non-therapy)
- Other

### How much exercise do we need?

American College of Sport Medicine Recommendations

150 minutes of moderate aerobic physical activity per week, (30 minutes, 5x/ week)

**OR**

75 minutes of vigorous aerobic physical activity per week (20 minutes, 3x/week)

### Which Kinds of Exercise are Moderate in Intensity?

### Which Kinds of Exercise are Vigorous in Intensity?

## Is Exercise Safe for People with PD?

**Effect of High-Intensity Treadmill Exercise on Motor Symptoms in Patients With De Novo Parkinson Disease: A Phase 2 Randomized Clinical Trial.**

- Phase 2 randomized trial of 128 de novo participants with PD
- Hoehn and Yahr Stages 1-2
- 60- 65% and 80 – 85% HR safe and feasible
- High intensity treadmill 3-4 x/week
- Mean change in UPDRS motor score significantly lower in high intensity group compared to control group

Shenkman et al., 2018 Jama Neurology 75(2):219-226. doi:10.1001/jamaneurol.2017.3517

## What Types of Exercise do People with PD Need?

### Why is Exercise SO Vital in PD?

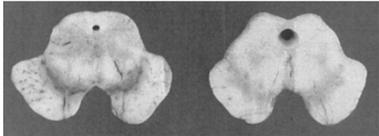
- General health and wellness benefits for the cardiovascular and musculoskeletal system
- Prevents secondary impairments related to decreased level of mobility and activity
- Improves brain function and potentially slows symptom progression!



***“My symptoms are well controlled on my medications. Why now?”***

“Early PD” is **NOT** Early in PD

### Pathological Findings



**50-60% cell death at diagnosis;  
70-80 % loss of dopamine terminals  
Precedes diagnosis ~5-6 years**

### Early PD – Brain and Body Changes

Decreased cognition	Decreased motor loop efficiency	Increased social anxiousness
Alterations in activities of daily living	Cessation of “normal” exercise routine and reduced activity level	Reduced unilateral arm swing, step length or arm swing observable upon exam

### World Parkinson Congress Scientific Update

**Exercise: What do we know about how it impacts Parkinson’s?**

- Optimize on medications 1<sup>st</sup> and then exercise: treatment should be 50/50 split of medications/exercise
- Exercise should be aerobic:
  - ✓ This increases blood flow – this changes the environment of the brain and allows for change to occur
- Exercise should be **skill-based**
- Variety** of exercise is important

Originally presented on October 7, 2015, Session IV, Richard Smeysne, Giselle Petzinger, Gammon Earhart

### What is the Evidence Supporting Exercise in PD?

- Helps the brain to use the remaining dopamine more efficiently
- Number of dopamine receptors increases and signaling improves
- Increases release of neurotrophic factor which are beneficial
- Protects remaining dopamine neurons from damage



Hirsch MA, et al. 2015; Fischer et al, 2013; Tillerson et al 2001

### What is Neuroplasticity?

- Neuroplasticity = Brain Change
- In the initial phase of neurodegeneration the most neurons are rapidly lost.
- This is the time where treatment can have the most impact on preventing further degeneration and symptoms.
- If "exercise plays a powerful enough mitigating/palliative role, it should be performed very early and aggressively, and ideally prophylactic years before the onset of this process."

Foster PP, et al. *Front Neurol.* 2011; 2: 28.

**“Does any kind of exercise drive neuroplasticity?”**

### Key Ingredients!

- Specific
- Intensive
- Meaning
- Repetition
- Complex
- Timing

(Alexander et al., 1990; Fox et al., 2002; Graybiel 1998; Kleim et al., 2003; Kleim and Jones, 2008; Jones et al. 1999; Saint-Cyr JA, 2003; Tillerson et al., 2002; Vergara-Aragon et al., 2003; Black et al. 1990; Comery 1995; Fisher et al. 2004; Kleim et al., 2001; 1996; Perez et al. 2004; Pisani et al., 2005 Plautz et al., 2000 )

### Keep Your Movement Alive!

**Use it or lose it:**  
Failure to drive specific brain functions can lead to functional degradation

➔

**Use it and improve it!**  
Training that drives a specific brain function can lead to an enhancement of that function

### Complex Needs Can be Daunting!

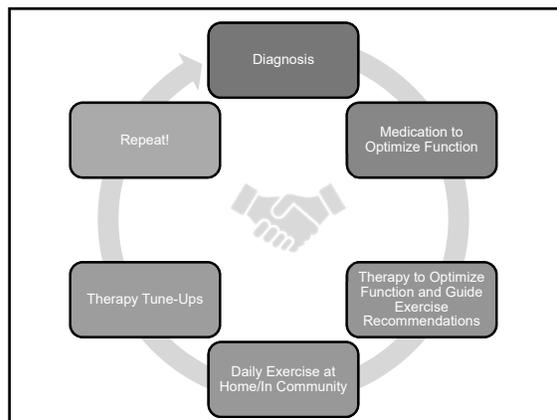
**You will need:**

- \_\_\_\_ Moderate to vigorous aerobic exercise at least 30 minutes, 5x/ week
- \_\_\_\_ Balance Training
- \_\_\_\_ Flexibility Exercises
- \_\_\_\_ Strengthening Exercise
- \_\_\_\_ Training that specifically addresses my PD symptoms
- \_\_\_\_ Complex and challenging exercise
- \_\_\_\_ Repetitive practice
- \_\_\_\_ Exercise which is intensive in nature
- \_\_\_\_ Meaningful and enjoyable exercise and movement
- \_\_\_\_ Task specific training

 **Smart Solutions!**

**Start with Therapy (PT/OT) First**

- PD is complex!
- You will need experts to first help you *restore* and *optimize* your physical function and then teach you what to do after treatment
- Therapists informally partner with local fitness professionals to help you



 **Top 4 Considerations**

1. Therapist are the movement experts in PD and will be the best ones to educate you, establish a baseline, and help you design a customized exercise plan for you.
2. General fitness does not include functional task specific training important for your life now and later.  
*Eg. Dancing will not teach you how to better button your shirt faster or write your name more legibly.*
3. Therapists understand the underlying pathology to assure that exercise is safe and comprehensively addresses your PD.
4. General fitness does not address the sensory deficits in PD.

**The Importance of Evidence Based Practice**

If you are investing time and effort into exercise and therapy, know the evidence and expected results.

- Has there been research?
- Are the results lasting?

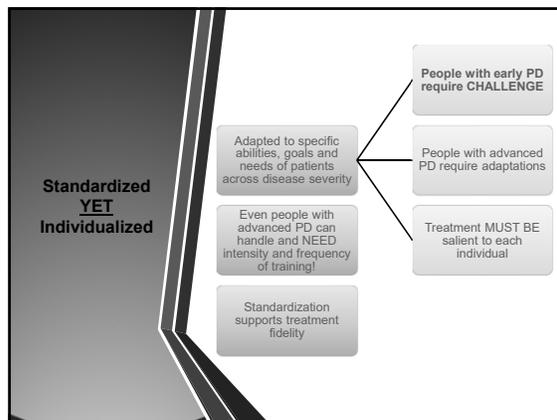
LSVT LOUD and LSVT BIG adhere to those principles of neuroplasticity and are supported by over 20 years of NIH funded research! LSVT BIG and LSVT LOUD work!

**LSVT BIG is an Exercise-Based Physical & Occupational Therapy**

- Standardized exercise protocol
- Prescribed dosage & method of delivery
  - (frequency/duration/strength)
  - 16 1-hour individual sessions
- 4 consecutive days a week for 4 weeks
  - High effort

(Ramig et al, 1995; 2001a; 2001b)

Delivered by LSVT BIG certified OTs and/or PTs in collaboration with LSVT BIG Certified OTAs and/or PTAs.



### LSVT BIG Treatment Session

**Maximal Daily Exercises**

1. Floor to Ceiling – 8 reps
2. Side to Side – 8 reps
3. Forward step – 8 reps
4. Sideways step – 8 reps
5. Backward step – 8 reps
6. Forward Rock and Reach – 10 each side (work up to 20)
7. Sideways Rock and Reach – 10 each side (work up to 20)

**Functional Component Tasks**  
5 EVERYDAY TASKS– 5 reps each

**For example:**

- Sit-to-Stand
- Pulling keys out of pocket
- Typing

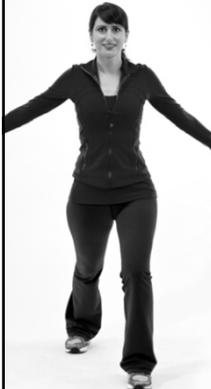
**Walking BIG**  
Distance/time may vary

**Hierarchy Tasks**  
Patient identified tasks:

- Getting on/off bus
- Hiking
- Setting up work station

**Carryover Task Assigned**

### LSVT BIG Treatment Session



**Maximal Daily Exercises**

- Floor to Ceiling – 8 reps
- Side to Side – 8 each side
- Forward step – 8 each side
- Sideways step – 8 each side
- Backward step – 8 each side
- Forward Rock and Reach – 10 each side (working up to 20)
- Sideways Rock and Reach – 10 each side (working up to 20)

### Link to Function and Task Specific Practice Customized for YOU is VITAL

- Task specific exercise
- Getting in and out of the car
- Buttoning
- Cooking, and eating
- Restaurant management
- Workplace changes
- Recreation




### Mode- Intensive and High Effort

- Intensive dosage
- Intensive exercise
  - Repetitions pushed
  - Resistance pushed
  - Accuracy pushed
  - Fatigue (healthy)
- What does the research say?
- Intensive practice is important for maximal plasticity



(Kleim & Jones, 2008)

### Calibration

MISMATCH between on-line perception of output and how others perceive it.

*“I can’t walk like this. People will think I’m crazy!”*



Fox et al, 2002; Sapir et al, 2011

### Post Treatment Exercise Considerations

-  Respect your unique personality
-  What is available locally?
-  What is fun and motivating?
-  What are your goals?

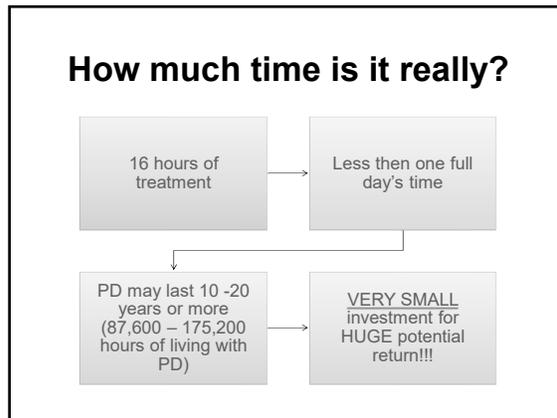
### Therapy and Exercise are Investments



LSVT BIG is delivered 4x/week for 4 weeks and will help get you into the habit of daily exercise.



These treatments are an investment in you. They will keep you at your peak function longer so you can do the things you need or want to do! It may even help you to continue your job longer, so 16 hours of your life is worth it!



### How to get started with LSVT LOUD and LSVT BIG



- Ask your doctor for a referral and a prescription for a physical and/or occupational therapy **evaluation and treatment**
- Visit [www.lsvtglobal.com](http://www.lsvtglobal.com) to find an LSVT BIG Certified Clinician in your area and send the referral to your chosen therapist
- DVDs and videos available to practice movement exercises used in LSVT BIG. Search our store, [amazon.com](http://amazon.com) or [vimeo.com](http://vimeo.com)

### Summary

- In early PD, pathology is not “early”.
- Community based fitness, while important, does not replace skilled therapy by PD experts. Seek out a therapist early! Don't wait until symptoms are more noticeable or problematic.
- Begin PT and OT such as LSVT BIG as soon as possible after diagnosis...prevent decline
- Your LSVT sessions should be functional, challenging, meaningful and fun!
- Keep practicing every day!
- See your therapists lifelong just like you see the dentist. They are your partners in PD!

### How to ask questions LIVE:

1. Type in the QUESTION BOX on your control panel
2. Raise your hand! (Click on the hand icon.)
  - Your name will be called out
  - Your mic will be unmuted (make sure your mic is unmuted as well)
  - Then ask your question out loud
3. Email [info@lsvtglobal.com](mailto:info@lsvtglobal.com) if you think of questions later



## QUESTIONS???

[info@lsvtglobal.com](mailto:info@lsvtglobal.com)  
[www.lsvtglobal.com](http://www.lsvtglobal.com)



**LSVT LOUD Seminars**

- Portland, OR /Sept. 22, 2018
- Dallas, TX/Oct. 27, 2018
- Boynton Beach, FL/Nov. 2, 2018
- New York, NY/Nov. 30, 2018

**LSVT BIG Seminars**

- Cherry Hill, NJ/ Sept. 29, 2018
- Atlanta, GA/Oct. 7, 2018
- Livonia, MI/Oct. 14, 2018
- Milwaukee, WI/Oct. 20, 2018
- Dallas, TX/Oct. 20, 2018
- Sarasota, FL/Nov. 10, 2018

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**Early Parkinson Disease: A discussion on the benefits of LSVT LOUD®**

Date: Wednesday, October 17, 2018  
Time: 2:00 PM - 3:00 PM EDT  
Cost: Free

Register at:  
[www.lsvtglobal.com](http://www.lsvtglobal.com) and select the "Public Webinars" quick link at the bottom of the page.