



## Public Webinar Series

**Title: Turn up the Gain: Are you getting what you should be getting out of LSVT LOUD® and LSVT BIG®?**

**Presenters: Angela Halpern, MS, CCC-SLP  
Heather Cianci, PT, MS, GCS**

**Date Presented: May 11, 2016**

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## *Turn up the Gain:*

Are you getting what you should be getting out of LSVT LOUD® and LSVT BIG® ?



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## Learning Outcomes

After finishing this webinar, participants will be able to:

1. Identify issues that lead to people with PD having functional difficulties with movement and communication.
2. Describe the key ingredients that make exercise effective in treating the symptoms of PD.
3. List ways how you and your therapists can work harder to achieve the best results possible.

## Plan for Webinar

Logistics

Brief Introduction

Learn how to ensure that you are getting the best outcomes possible with LSVT BIG and LSVT LOUD by “Turning up the Gain.”

## Polling Question 1

Who are you?

- A person with PD
- A caregiver
- A therapist (PT, OT or ST)
- A health care professional
- Other

## Instructor Biographies

### **Heather Cianci, PT, MS, GCS**

Ms. Cianci is the founding therapist of the Dan Aaron Parkinson's Rehab Center (a Good Shepherd Penn Partners facility) at Pennsylvania Hospital in Philadelphia, PA. She received her bachelor's in PT from the University of Scranton in Scranton, PA and her master's in gerontology from Saint Joseph's University in Philadelphia. Heather received her GCS in 1999. She is certified in LSVT BIG and is a graduate of the NPF's Allied Team Training for PD. She has written and lectured for both the NPF and PDF. Heather is also a board member for CurePSP, and the coordinator of their Medical Professionals Advisory Committee.

### **Angela Halpern, MS, CCC-SLP**

Ms. Halpern is an ASHA-certified speech-language clinician and research associate at the National Center for Voice and Speech in Denver, CO. She received her master's degree in the Department of Communication Disorders and Sciences at the University of Pittsburgh. Ms. Halpern has worked extensively in the area of neurogenic disorders with a specialty in Parkinson disease. She is certified in LSVT LOUD™. In addition to providing speech therapy to individuals with Parkinson disease, she is a faculty member and workshop leader for LSVT Global, Inc. She is also a member of Dr. Lorraine Ramig's research team. As a part of this team she continues to study voice and speech in Parkinson disease.

## Polling Question 2

If you are a person with PD have you:

- Received LSVT LOUD
- Received LSVT BIG
- Received both
- Received neither

## How does PD affect movement and communication?

### Motor symptoms

- Bradykinesia
  - slowness of movement, speaking, thinking
- Hypokinesia
  - Stooped posture, short steps, reduced arm swing, tiny writing, reduce volume of speech
- Rigidity-
  - Stiffness or trunk and/or extremities
- Tremor
- Postural Instability
  - Balance impairments
  - Fear of Falling and Falls

## It is a “Stunning Time” to be in rehabilitation today

Basic science evidence for the value of exercise in PD (classically drugs, surgery)

Identified key principles of exercise that drive activity-dependent neuroplasticity (intensity, repetition, salience, complexity, timing matters)

Demonstrated that exercise can improve brain functioning (neuroplasticity) and may slow symptom progression

### Exercise is Medicine!

Kleim & Jones, 2008; Kleim et al, 2003; Zigmond et al, 2009

## How does PD affect movement and communication?

### Non-motor symptoms

- Apathy
- Anxiety
- Depression
- Difficulties with motor planning, processing, internal cueing, memory and other neuropsychological changes
- Reduced sensory awareness
- Orthostatic Hypotension
- And more....

## What we all KNOW...

“Exercise is Medicine”

AND...

You have to take your medicine as prescribed (dose, time, frequency) to achieve the expected results and benefits!

These challenges are real...  
but is there  
HOPE and POTENTIAL  
for positive changes in  
movement and communication?

## What does research on voice and body exercise in PD tell us?



**Key ingredients that make exercise effective in treatment of PD symptoms**

**Intensity:** Frequency, effort, repetitions, accuracy, force or resistance, aerobic challenge

**Specificity:** Train the deficits- bradykinesia, hypokinesia, impaired kinesthetic awareness, hypophonia, postural instability, axial rigidity, etc.

**Salience:** Meaningful, individualized, rewarding, purposeful, feedback

**Complexity:** Complex movement, environmental enrichment, dual tasking

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

**How do the LSVT Protocols fit in with this?**

**World Parkinson Congress 2016 Scientific Update**

- Optimize on medications 1<sup>st</sup> and then exercise
- Treatment should be 50/50 split of medications/exercise
- Exercise should be **AEROBIC** (getting your heart rate up):
  - ✓ 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 Smeyne, Giselle Petzinger, Gammon Earhart

**The LSVT Protocols are INTENSIVE!!!**

LSVT LOUD is a SPEECH Treatment Protocol  
LSVT BIG is a PT/OT Treatment Protocol

**Both are INTENSIVE across sessions:**

- 4 consecutive days a week for 4 weeks
- 60 minute sessions
- Daily homework practice - all 30 days of the month
- Daily carryover exercises - all 30 days of the month
- Life-long habit of practice

**Exercise-enhanced Neuroplasticity Targeting Motor and Cognitive Circuitry in PD**

- **Goal-based practice** to acquire a skill with *aerobic ex*
- A **supervised environment**
- Facilitate **learning through instruction and feedback** (reinforcement).
- “Feedback serves several purposes including (i) **challenging** patients beyond self-selected levels of perceived capability, (ii) maintaining **motivation**, and (iii) facilitating the **engagement** of individuals to become cognitively aware of movements that were previously automatic and unconscious.”

Petzinger, GM et al. Lancet Neurol. 2013 Jul; 12(7): 716–726.

**LSVT LOUD Treatment Session Snapshot**

**Daily tasks**

- First half of treatment session  
Rescale amplitude of motor output through CORE Loud
- **Sustained “ah” (minimum 15 reps)**
  - **High/Low “ah” (minimum 15 reps)**
  - **Functional phrases (minimum 50 reps)**

**Hierarchical speech tasks**

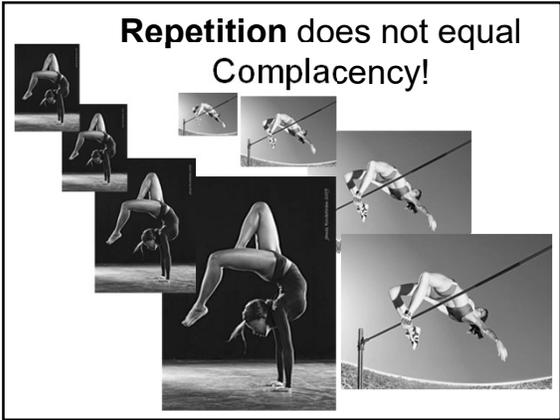
Second half of session  
Train amplitude from CORE exercises into in context specific and variable speaking activities

- **Week 1 – words, phrases**
  - **Week 2 – sentences**
  - **Week 3 – reading**
  - **Week 4 - conversation**
- ↑ Shorter, simple  
↓ Longer, more complex

**Intensity: Minimum Repetitions and Time Spent on Treatment Exercises in LSVT LOUD**

Task	Total Minimum Repetitions in one month
	Total Minimum Repetitions in one month
Long Ah	504 repetitions
High ah	504 repetitions
Low Ah	504 repetitions
Functional phrases	1680 repetitions
Structured reading	440 minutes
Conversational speech	440 minutes

All tasks increase in complexity and difficulty across the 4 weeks of treatment →



**LSVT BIG Treatment Session Snapshot**

<b>Maximal Daily Exercises</b>	<b>Functional Component Tasks</b>
<ol style="list-style-type: none"> <li>1. Floor to Ceiling – 8 reps</li> <li>2. Side to Side – 8 reps</li> <li>3. Forward step – 8 reps</li> <li>4. Sideways step – 8 reps</li> <li>5. Backward step – 8 reps</li> <li>6. Forward Rock and Reach – 10 each side (work up to 20)</li> <li>7. Sideways Rock and Reach – 10 each side (work up to 20)</li> </ol>	5 EVERYDAY TASKS– 5 reps each <b>For example:</b> <ul style="list-style-type: none"> <li>• Sit-to-Stand</li> <li>• Pulling keys out of pocket</li> <li>• Typing</li> </ul>
	<b>Walking BIG</b>
	Distance/time may vary
	<b>Hierarchy Tasks</b>
	Patient identified tasks:
	<ul style="list-style-type: none"> <li>• Getting on/off bus</li> <li>• Hiking</li> <li>• Getting OOB to bathroom</li> </ul>
	<b>Carryover Task Assigned</b>

*It isn't just about the amount of treatment...*

**Intensity: Minimum Repetitions and Time Spent on Treatment Exercises in LSVT BIG**

Task	Total Minimum Repetitions in one month
	Total Minimum Repetitions in one month
Sustained Exercises	384 repetitions
Repetitive Exercises	1280 repetitions
Functional Component Tasks	400 repetitions
Hierarchy and BIG walking	340 minutes minimum

All tasks increase in complexity and difficulty across the 4 weeks of treatment →

**It is also about HOW you hard you work during the treatment and after!**

**You must keep up the intensity within sessions.**

HOW??? → WITH HIGH EFFORT

- Amplitude – keep it BIG/keep it LOUD
- Repetitions – increase the reps
- Force/resistance –
- Accuracy – push to get it correct
- Fatigue – drive to healthy levels: ↑HR, sweating, breathing hard

## Train via Principles of Neuroplasticity Intensity

- Fatigue
  - Good “workout” fatigue
  - Does your patient say “This is hard work!”, “What a workout!”, “You’re relentless.”
  - FEELING A WORKOUT VERSUS STRAIN/PAIN
  - Encourage them to perform to levels beyond SELF-PERCEIVED CAPACITY

Petzinger, Fisher, McEwn, Beeler, Walksh & Jakowec 2013

## Improve a variety of skills needed for function:

### LSVT BIG Exercises:

- Being able to completely start and stop – this helps with preventing festination, retropulsion, and freezing of gait
- Direction changes - making turns
- Endurance - Aerobic
- Balance
- Strengthening
- Functional ability

### LSVT LOUD Exercises:

The LSVT Protocols  
SPECIFICALLY  
target the deficits (motor and non-motor) unique to PD

Specifically train you how to  
**OVERCOME**  
Impaired kinesthetic awareness

*“My voice is not too soft.”*

*“I had no idea my arm does not swing!”*

Specifically train you how to  
**OVERRIDE**  
bradykinesia and hypokinesia!



## Self-awareness of Symptoms

2012 Study

Findings

- Out of 10 motor symptoms, most people with PD had **Reduced Speed and Reduced Amplitude** of their movements, but did not recognize *them* or the severity of how they were impacting their quality of movement

2016 Study

Findings:

- People with PD seem to have better awareness of “externally observable symptoms like gait and rest tremors”

**Intensive Calibration Training  
is needed to GENERALIZE  
rescaled amplitude!**

1. Increase Awareness
2. Increase Acceptance
3. Increase Comfort
4. Generalize and Carryover to Untrained Tasks

Train Specifically: Impaired kinesthetic awareness and other non-motor PD symptoms

**What brings you JOY?**

**What do you want to  
KEEP enjoying even with PD?**

**Feedback that helps you learn the RIGHT  
amount of effort needed for a more  
normal speech and movement!**

That voice is not too loud! That movement was not too big!

Let's playback your voice or movement and see what it sounds like/looks like.

How much effort was that?

Was that your "AH" voice?

Feel the effort, that is the effort you need to use all the time when you talk/walk!

**LSVT Daily Exercises**



**Function**

**The LSVT Protocols  
produce changes that are  
meaningful to YOU**

**Your therapist will help you create a link  
between your**

- Maximal Daily Exercises
- Functional Component Tasks/Phrases
  - Hierarchy Tasks



**AND functional tasks that you are having  
difficulty with OR just don't want to have  
difficulty with...**

***If you understand the links  
– you will TURN UP THE  
GAIN!***

### **Turning up the Gain with Mr. P**

- Tapped in to his knowledge as a track coach
- Used his strong faith as a motivator – saying “Amen!” when he did well; referring to big posture when receiving communion at church
- Chose FC tasks, Hierarchy, and Gait situation that helped him stay active with his volunteerism and kept up his motivation
- Steadily helped him use his past skills as a teacher to “command the room” with his BIG presence and voice
- Encouraged regular phone calls with his daughter (SLP)
- *The better he performed his exercises and functional tasks...the harder we made them!*

### **Case Presentation**

*Mr. P*

- 72 y/o male with 2 year h/o PD
- Retired religion teacher and track coach
- Supportive spouse and daughter who was a speech therapist
- Self-described “quiet, reserved man”
- Concerned that his lack of affect was scary to the children he volunteered with

**The LSVT Protocols  
progress in COMPLEXITY to  
train real world application of  
voice and movement**

### **Mobility and Speech Issues**

- Slowed gait velocity with reduced L HS
- No L arm swing
- Beginning to favor R arm/hand
- Decreased trunk rotation
- Easily fatigued
- Low voice volume
- Running out of breath
- Feeling unsteady when walking outdoors with grandchildren
- Always looking at the ground and having difficulty lifting neck and keeping at midline
- Worried the students he volunteered with thought he wasn't friendly or approachable

### **Tips to increase complexity after BIG and LOUD Good Quality is established**

<b>Fine Motor</b>	<ul style="list-style-type: none"> <li>• Sorting/handling pills; in and out of pill box.</li> <li>• Drawing/writing</li> <li>• Locate objects in a bag/purse</li> <li>• Shuffle and deal cards</li> <li>• Navigate the phone</li> <li>• Buttoning while walking and talking</li> </ul>
<b>Large Motor</b>	<ul style="list-style-type: none"> <li>• Walking and talking</li> <li>• Seated exercises while talking/ or doing other things</li> <li>• Standing exercises while talking/doing other things</li> <li>• Sit to stand while talking or with balance challenges</li> <li>• Carrying things</li> </ul>
<b>Cognitive</b>	<ul style="list-style-type: none"> <li>• Serial Subtraction</li> <li>• Word/Letter/Categorical Association Tasks</li> <li>• Memory tasks</li> <li>• Play a card game (solitaire, black jack, poker with clinician); is also motor task</li> </ul>

## Turning up the Gain with Mr. P

### Progressing FCM:

1. Sit to Stand - lower seat ht., unsteady surfaces, dual cognitive task, flicks, time-trials
2. Smiling while keeping neck in midline – unsteady surfaces, with dual motor task, getting people to smile back or say hello to him
3. Passenger seat belt with L hand – on low unsteady surface, loud music he did not enjoy, limiting use of RUE
4. Getting BUE in to a long-sleeved shirt - unsteady surfaces, dual cognitive task, while walking
5. Picking up book and holding it open in L hand - unsteady surfaces, dual cognitive task, while turning, with head turns

## Patient Resources

- [www.lsvtglobal.com](http://www.lsvtglobal.com) → Patient Resources
  - Public Webinars
  - Patient Symposiums
- LSVT BIG Homework Helper Videos-
  - DVD on Amazon or [www.lsvtglobal.com](http://www.lsvtglobal.com)
  - Videos (stream or download) [www.vimeo.com](http://www.vimeo.com)

## Maximal Daily Exercises

1. Floor to Ceiling
  - Uneven surfaces under seat and feet
  - Instead of counting – name items in a category
  - Add flicks
  - “Do it 2 more times just like that!”



## QUESTIONS??

**LSVT**  
GLOBAL

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[www.lsvtglobal.com](http://www.lsvtglobal.com)

## Summary

- Exercise for PD must be intensive, specific, complex, meaningful to be EFFECTIVE!
- Remember that you may not realize how small or slow your movements really are or how soft your voice is
- Do not let small movements or a soft voice slip by
- Remember why you are practicing LSVT LOUD and LSVT BIG...it is about FUNCTION!
- Do not be afraid to WORK HARD!
- HAVE FUN!!!

## Additional Resources and Information

**For People with Parkinson's:  
How to get started with  
LSVT BIG and LSVT LOUD**

- Ask your doctor for a referral and a prescription for a speech or physical/occupational therapy **evaluation** and **treatment**
- Visit [www.lsvtglobal.com](http://www.lsvtglobal.com) and click on "find a clinician" to find an LSVT LOUD or LSVT BIG Certified Clinician in your area
- If you need assistance finding a clinician, call our office and we will help. 1-888-438-5788

**LSVT LOUD Live Trainings 2016**

Full schedule at [www.lsvtglobal.com](http://www.lsvtglobal.com)  
Updates as year progresses

May 13 - 14, 2016	Cherry Hill, NJ
June 17-18, 2016	Berlin, Germany
June 24 - 25, 2016	London, UK
July 16-17, 2016	Tokyo, Japan
August 4-5, 2016	New York, NY
August 26-27, 2016	Mainz, Germany
December 1 - 2, 2016	New York, NY

Every live workshop (LSVT BIG and LSVT LOUD) offers free patient symposiums on day 2! To register please go to [www.lsvtglobal.com](http://www.lsvtglobal.com) → Patient Resources → Patient Symposium

**5 Key Questions to Ask**

- How many LSVT LOUD/LSVT BIG clients have you treated?
- What are your typical outcomes?
- Do you have a follow-up/maintenance plan for your clients?
- Is your LSVT LOUD/LSVT BIG Certification current?
- Do you deliver the gold standard dosage of LSVT LOUD/LSVT BIG? (4 days a week for 4 weeks, individual 60 minute sessions, with daily homework and carryover assignments)

**LSVT BIG Live Trainings 2016**

Full schedule at [www.lsvtglobal.com](http://www.lsvtglobal.com)  
Updates as year progresses

May 14- 15, 2016	Orlando, FL
May 21-22, 2016	Crown Point, IN
June 10 - 11, 2016	Cherry Hill, NJ
June 17-18, 2016	Berlin, Germany
July 9-10, 2016	Tokyo, Japan
July 15-16, 2016	Denver, CO
July 16-17, 2016	Atlanta, GA
August 6-7, 2016	New York City, NY
August 20 - 21, 2016	Traverse City, MI
August 27- 28, 2016	Austin, TX
September 16-17, 2016	Portland, OR
October 1 - 2, 2016	Cherry Hill, NJ
October 15-16, 2016	Kansas City, KS
October 29-30, 2016	Beelitz, Germany
November 5-6, 2016	Nashville, TN
November 19-20, 2016	Nuremberg, Germany
December 2-3, 2016	New York City, NY

**For Therapy Professionals:  
How to get started with  
LSVT BIG and LSVT LOUD Training**

- For **ONLINE LSVT BIG** or **ONLINE LSVT LOUD**, go to [www.lsvtglobal.com](http://www.lsvtglobal.com) and click on LSVT BIG or LSVT LOUD and then "Online Courses". Same content, certification, and CEUs as live course!
- For **IN-PERSON LSVT BIG** or **IN-PERSON LSVT LOUD** go to [www.lsvtglobal.com](http://www.lsvtglobal.com) and click on LSVT BIG or LSVT LOUD to find course locations.

**Parkinson Events 2016**

**Partners in Parkinson's**  
[www.partnersinparkinsons.org](http://www.partnersinparkinsons.org)

May 14: Oakland, California  
June 4: Cincinnati, Ohio  
October 1: New York, New York

**Victory Summits**  
[www.davisphinneyfoundation.org/victory-summit/](http://www.davisphinneyfoundation.org/victory-summit/)

October 8: Sacramento, CA

**World Parkinson Congress**  
<http://www.wpc2016.org/>  
Portland, OR from September 20 – 23, 2016