



LSVT Global® Public Webinar Series

**Title: Simple Strategies to Help you Transfer LSVT
Improvements to your Daily Life**

**Presenters: Laura Gusè, BSPT, MPT
Elizabeth Peterson, MA, CCC-SLP**

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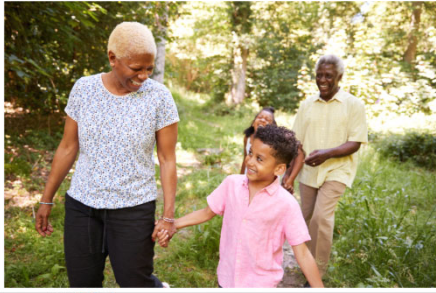
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Simple Strategies to Help you Transfer LSVT Improvements to your Daily Life



LSVT GLOBAL Innovation in Science. Integrity in Practice.®

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Presenters



Laura Gusé, BSPT, MPT
LSVT BIG® Faculty &
Chief Clinical Officer



Elizabeth Peterson
MA, CCC-SLP
LSVT LOUD® Faculty

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Presenter Biographies

Laura Gusé, MPT

Ms. Gusé has extensive experience treating people with neurodegenerative disorders in various practice settings. She was LSVT BIG certified in 2009 and now serves as Chief Clinical Officer of LSVT BIG. Ms. Guse® oversees the training, curriculum and product development related to LSVT BIG, and has helped to create many of the current LSVT BIG treatment tools, webinars, and courses. She has spoken at many national and international conferences on topics related to LSVT BIG.

Elizabeth Peterson, MA, CCC-SLP

Ms. Peterson received her master's degree in Speech, Language and Hearing Sciences from the University of Colorado-Boulder. She has worked as a research associate at the National Center for Voice and Speech-Denver and the University of Texas Health Science Center, San Antonio and primarily delivers LSVT LOUD in a research setting. Ms. Peterson currently manages LSVT Global's ongoing webinar program to help educate clinicians, individuals with PD or other neurological conditions, and all others involved in their care, on topics related to LSVT programs.

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Disclosures

- All LSVT faculty have both financial and non-financial relationships with LSVT Global.
- Non-financial relationships include a preference for LSVT LOUD and LSVT BIG as treatment techniques.
- Financial Relationships include:
Ms. Gusé and Ms. Peterson are employees of LSVT Global and receive lecture honorarium.

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Webinar Logistics

- Microphones are muted
- How to ask questions
- Handouts
- Survey
- Continuing Education Units (CEUs)

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Information to Self-Report CE Activity



- This LSVT Global webinar is NOT ASHA or state registered for CEUs for speech, physical and occupational therapy professionals, but it may be used for self-reported CEU credit as a non-registered/non-preapproved 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 to request a certificate after completion of the webinar which will include your name, date and duration of the webinar.
- Licensing requirements for CEUs differ by state. Check with your state PT, OT or Speech licensing board to determine if your state accepts non-ASHA registered or non pre-approved CEU activities.
- Attendance for the full hour is required to earn a certificate.

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Learning Objectives



Upon conclusion of this webinar, participants will be able to:

1. Define what calibration is as it relates to movement and voice changes secondary to Parkinson's disease (PD).
2. List the three key deficits in PD that make calibration challenging.
3. Describe the four areas of calibration that are integrated into LSVT BIG and LSVT LOUD to facilitate ongoing improvement in movement and loudness in everyday life.

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Polling Question 1



Who are you?

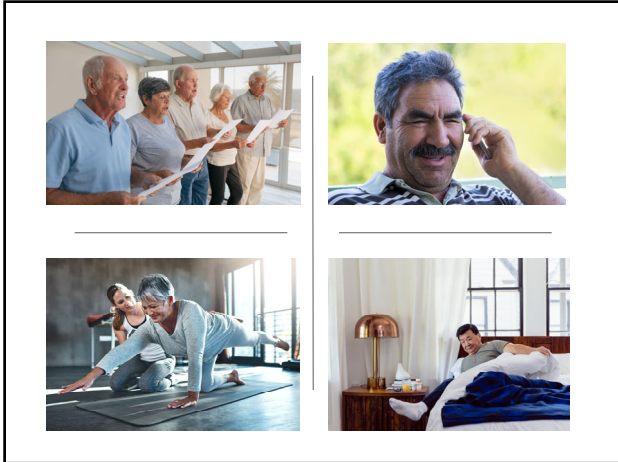
- Person with PD or another condition
- Family member or caregiver
- PT, OT or SLP
- Other health care professional
- Other

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"What did you say?"



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Barriers to Generalization

- Sensory disorder
- Internal cueing
- Neuropsychological changes

Fox et al, 2002; Sapir et al, 2011

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1 | **Sensory disorder**

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Why?

PD is more than a movement disorder.

Movement Hallmarks of Parkinson's Disease

- Bradykinesia (slow movement)
- Hypokinesia (small movement) make it more effortful to move and speak.

Sensory Hallmarks of Parkinson's Disease

- Your movement feels normal to you, even though it is smaller than normal.
- When you talk, your voice sounds normal to your ear, but it is too quiet.

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What does this mean?

A mismatch between what you perceive and what actually "comes out".....

- When you move bigger and others tell you it looks normal, it feels too big to you.
- When you talk with what is actually normal volume, to you it feels like you are shouting.

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Video- Calibration with Gait

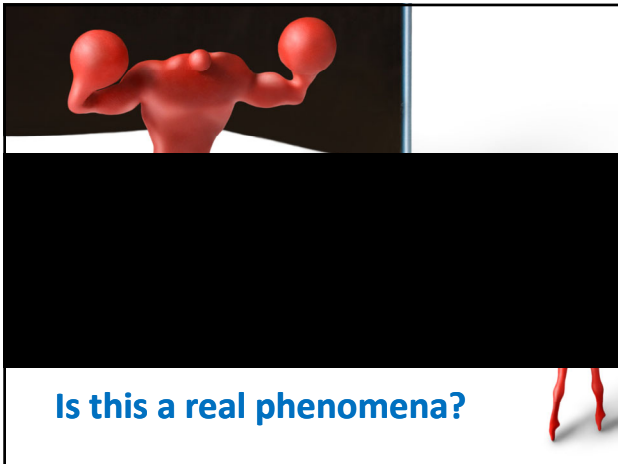


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Video- Calibration and Voice



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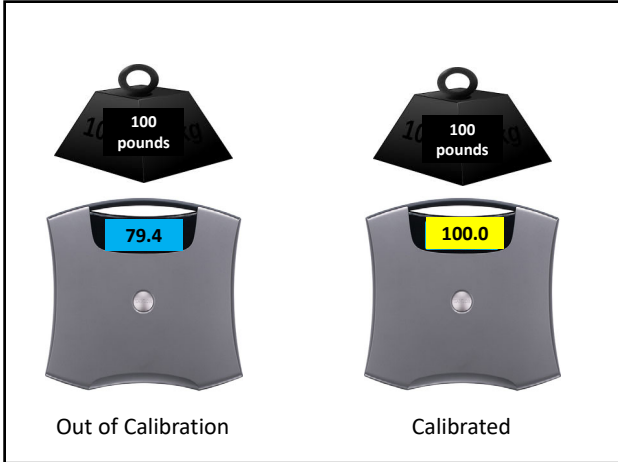
Evidence for Sensory Processing Deficits

Reduced amplitude of movement in individuals with PD may be **perpetuated** by abnormally processed sensory feedback. (Klockgether et al., 1995; Rickards & Cody, 1997; Abbruzze et al., 2003; Kaji et al., 2005)

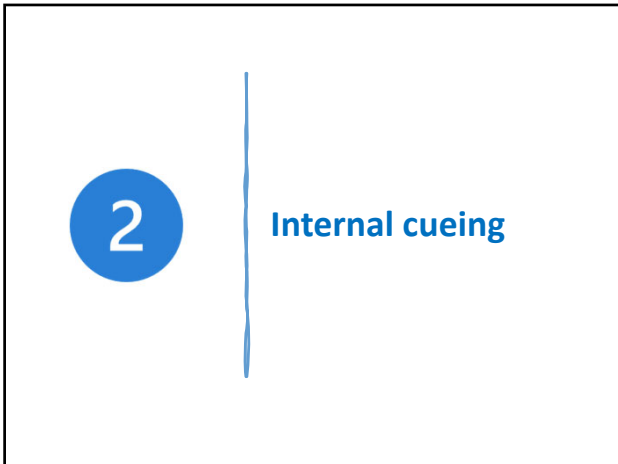
Evidence for central sensory processing disorder in speech of those with PD (Sapir, 2014)

- Reduced awareness of movement and vocal loudness deficits
- Lack of self-correction
- Feelings of being loud enough when too soft; feelings of being too loud when they are normal

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Even with education on the sensory disorder due to PD, patients do not simply start moving bigger and talking louder to achieve normal function.

The internal cue to spontaneously and independently move bigger and talk louder is diminished.

(Fox et al., 2002), (p. 92 Arnold et al., 2013), (Mollaei et al., 2013).

Internal Cueing

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3 Neuropsychological changes

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Neuropsychological Barriers to Generalization

Emotional - Depression or Anxiety	Motivational Apathy
Memory & Thinking	Default to Lower Effort

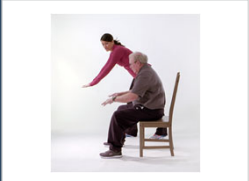
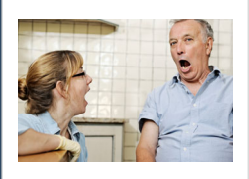
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Good news!

When a person with PD is cued, you generally can move bigger and talk louder.

The brain and body are capable of generating a louder voice and bigger movements!


And, with training, one can learn how to "recalibrate" their brain.

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CALIBRATION

is at the heart of the matter in LSVT LOUD and LSVT BIG.



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Definition of Calibration

The person with PD *knows* and *accepts* the amount of effort needed to consistently produce a louder voice, and bigger, more normal amplitude movements.

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Goal of Calibration

- The person with PD uses bigger movements “habitually” in her/her daily tasks and can maintain these bigger movements over time.
- The person with PD uses a louder voice “habitually” in his/her daily communication and can maintain this louder voice over time.

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LSVT BIG® & LSVT LOUD®

Standardized treatment protocols based on many years of scientific research

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LSVT BIG and LSVT LOUD treatment *each* consist of:

16 sessions: 4 consecutive days a week for 4 weeks	Individual 1-hour sessions	Daily homework practice	Daily carryover exercises
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Four Areas of Calibration!

- Education
- Treatment
- Carryover
- Homework



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1 Calibration through education

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Education on Motor Symptoms

Bradykinesia (slow movement)
Hypokinesia (small movement)

Make it more effortful to move and speak




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Education on the Sensory-Motor Mismatch in Voice and Speech

- There is a sensory mismatch because of PD. To talk with voice that's easy to hear and sounds like someone without PD, it will take you **more effort**.
- You may feel "Too LOUD" or like you're shouting when your voice is actually a **normal** volume.

Through LSVT LOUD, we will work on "recalibrating" your system so you can always use the right amount of effort to talk with normal loudness.




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Education on the Sensory-Motor Mismatch in Movement

- There is a sensory mismatch because of PD. To move more like someone without PD, it will take you **more effort**.
- You may feel "Too BIG" or like you're exaggerating your movements when you achieve movement that is actually **normal in size**.

Through LSVT BIG, we will work on "recalibrating" your system so you can always use the right amount of effort to move more normally.



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Education through Voice Playback

"Let's listen to your voice. Tell me what you notice."


Playback both "soft" voice and "LOUD" voice

Comment on quality, loudness, pitch:

"LOUD WILL FIX THAT"

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Education through Video Analysis of Movement



"Let's watch this and talk about what you notice."

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Education on Other Non-Motor Symptoms

Questions to consider:

- How is your energy level?
- Describe to me what you do throughout the day? What is a typical day like?
- Is there anything which you have lost confidence in being able to do well on your own? Is there anything you have given up because of PD?
- Have you noticed any changes in your thinking? What are those changes? Do you need more time to think through things than you used to? How do you do with multi-tasking or doing two things at once?
- Do you ever have feelings of anxiety, worry, sadness or depression?

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Education is ongoing. **What about treatment?**

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2 **Calibration training during treatment**

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Treatment: Why it Matters

*Your therapist must include opportunities throughout every session to make you comfortable with the **LOUDER** voice and **BIGGER** movement so you feel confident using it outside treatment, in your everyday life*

Your therapists will make sure that:

- You are not actually shouting, sounding angry, or moving in a crazy big way, even if you feel like you are.
- You are working hard enough to achieve great results.
- You sound and look natural as you speak and move.
- You remember to use a louder voice and bigger movement in everything you say and do.

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Calibration training during LSVT LOUD exercises and communication activities

How will your therapist help you?

1. **Drive** you to use a louder, more normal voice during voice exercises, reading, and communication practice.
2. **Reinforce** when you nail the target loudness
3. **Retrain your sensory perception and internal cuing.**
4. **Help to become more comfortable** with a LOUDER voice so you will use it outside the treatment room!

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Calibration training during LSVT BIG exercises and functional practice

- **Drive** to rescale amplitude with functional skills
- **Reinforce** when you move big enough.
- **Retrain sensory perception and internal cuing.**
- Help to **become more comfortable** with BIGGER movements and posture you will use it outside the treatment room!

WELL DONE!

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LSVT BIG Video- "Jacket"

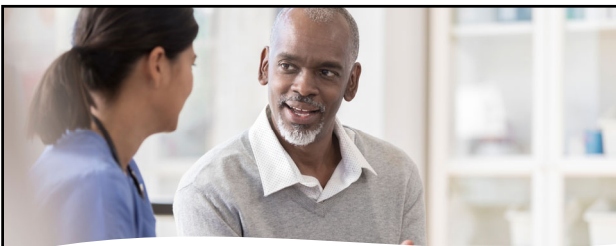


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Calibration through carryover assignments

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Carryover Assignments in LSVT LOUD & LSVT BIG

- Your therapist will assign you a new way for you to practice using your louder voice or bigger movement in daily life, all 30 days of treatment. Take them seriously!
- WHERE THE RUBBER HITS THE ROAD
- Tasks should be important to you and specific to you
- Systematically increases and builds comfort using a LOUDER voice and BIGGER movements

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Following up on Carryover Assignments



"Tell me how things went when you phoned your son. How did it feel? What did your son say? Show me."

"Tell me how it went when you used your bigger steps and bigger golf swing when you went golfing yesterday. Were you able to keep up with your friends? Did you hit the ball further? Did anyone notice?"

Assigned at end of session and reviewed first thing the following session.

Your therapist will keep you accountable!

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Calibration through homework

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Homework: Why it Matters



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How your Therapist will Incorporate Calibration

- Review homework log
- Ask how you are feeling
- Ask if you are using handouts, LSVT Homework Helper videos, LSVT Companion/Coach, or someone at home to help
- Make sure your effort at home matches your effort in treatment

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Research supports the changes we see clinically

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Neural evidence for LSVT LOUD

- Three published PET imaging studies pre/post LSVT LOUD
- One fMRI imaging study pre/post LSVT LOUD
- These studies involve 4 different cohorts of subjects and 2 independent imaging laboratories.
- Across results, a common finding of **right-sided shift of activation to areas involved in prosodic (pitch/loudness) monitoring of speech** have emerged.
- This has been hypothesized to be a neural correlate of sensory recalibration.

	Baseline	Posttreatment Voice Treatment	7-m follow up Voice Treatment
Z=34			
Z=20			
Z=4			

Lotti et al, 2003; Narayana et al., 2010; Baumann et al., 2018; Narayana et al., 2022

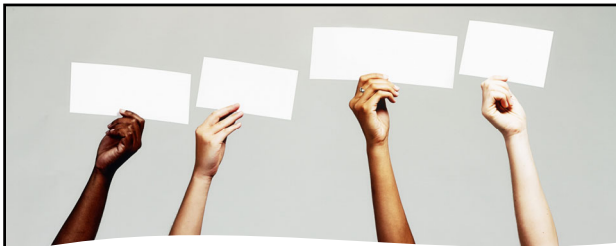
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"LSVT-BIG therapy in Parkinson's disease: physiological evidence for proprioceptive recalibration"

- Proprioception and fine motor skills assessed in 30 people with PD and 15 matched controls
- 11 people with PD received LSVT BIG
- People with PD had bigger pointing errors
- Proprioceptive performance was improved after 4 weeks of LSVT BIG and even more, 4 weeks later.
- "LSVT BIG training may achieve a recalibration of proprioceptive processing in people with PD."

Peterka et al. BMC Neurology (2020) 20:276

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Calibration: What's your sign?

Therapists listen for:

- Your "Ah-Ha" moments?
- What you able to do better at home
- If anyone has commented on if you are moving or sounding better

What do others say?


Therapists watch for:

- Your spontaneous movements and voice in therapy
- Your ability to self-correct before they have a chance to correct you

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Other Signs of Successful Calibration

- You notice functional impact/use outside treatment
- You give more details/carryover assignment
- You are internally cuing yourself
- Your speech and movement take less effort or you accept the effort needed to talk louder or move bigger



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Successful Calibration: Post Treatment



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Summary

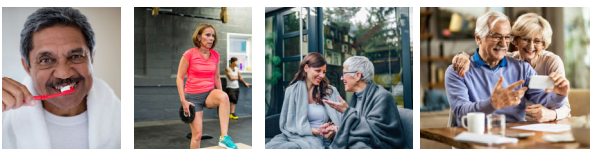
- LSVT LOUD and LSVT BIG are more than just exercises
- Translating improved voice and movement into daily function is the goal of therapy



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Summary

- We use calibration training to overcome sensory, internal cueing and neuropsychological changes that make translation of the louder voice and bigger movements into daily function a challenge.
- Within treatment we use Education, Treatment Exercises and Hierarchies, Carry-over Assignments and Homework Exercises to achieve calibration.
- The skill and knowledge of LSVT LOUD or LSVT BIG Certified Clinicians is essential in successful treatment outcomes.



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Join us for another webinar in May!

Life after LSVT LOUD® and LSVT BIG®: A step-by-step guide to help you maintain your treatment gains

Date: Wednesday, May 18, 2022
Time: 2:00 PM - 3:00 PM Eastern Daylight Time (EDT)

Learn how to optimize your success during LSVT treatment and maintain your gains for years to come!

Intended Audience: Individuals with Parkinson's disease or another neurological condition



Register at <https://blog.lsvtglobal.com/events/>
Scroll down to May events

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Thank you!



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Please complete the survey that will display on your screen after you exit the webinar.
It will take five minutes or less to complete!

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