



Public Webinar Series

Title: Freezing in PD: “Tricky, Sticky Situations: I’m not cold, but my feet want to stick and my words won’t come out!”

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**Freezing in PD:
Tricky, Sticky Situations: I'm not cold, but my feet
want to stick and my words won't come out!**



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Disclosures

All of the LSVT Global faculty have both financial and non-financial relationships with LSVT Global. Non-financial relationships include a preference for the LSVT LOUD and LSVT BIG as treatment techniques.

Ms. Gusé and Ms. Peterson are employees of and receive lecture honorarium and travel reimbursement from LSVT Global, Inc. as faculty for LSVT BIG and LSVT LOUD Training and Certification Workshops.



Plan for Webinar

Logistics

Brief Introduction

Discuss freezing as it pertains to gait,
movement and speech

How can LSVT BIG and LSVT LOUD
help?

Question and Answer

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during this presentation have
given consent for their
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Instructor Biographies

Laura Gusé, MPT, MSCS

Ms. Gusé received her Master's Degree in Physical Therapy from the University of North Dakota. Ms. Gusé has worked extensively in the area of neurogenic disorders since then, both in outpatient and inpatient settings. She has specialized in treatment of 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 Expert Clinician, and has helped to develop many of the current LSVT BIG treatment tools, webinars and curriculum. She now serves as the Chief Clinical Officer of LSVT BIG for LSVT Global.

Elizabeth Peterson, M.A., CCC-SLP

Ms. Peterson received her master's degree in Speech, Language and Hearing Sciences from the University of Colorado-Boulder. She began working with Dr. Lorraine Ramig's research team at the National Center for Voice and Speech in Denver, studying voice and speech disorders in Parkinson disease, while completing her master's thesis. Ms. Peterson is LSVT LOUD® certified. In addition to providing LSVT LOUD to individuals with Parkinson disease and other neurological disorders she is the Chief Speech Technology Officer for LSVT Global Inc., working to enhance treatment accessibility through technology. Ms. Peterson is also an LSVT LOUD faculty member for LSVT Global, Inc., training and certifying speech-language clinicians in the delivery of LSVT LOUD.

Learning Objectives

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

- Identify common triggers of freezing of gait.
- Be aware of how LSVT BIG and LSVT LOUD treatment can be tailored to treat freezing issues.
- Understand the role of sensory calibration in treatment of freezing issues.

Freezing in PD

What is freezing?

- Sudden episodes of the inability to move or very short, quick movements that do not lead to the desired movement
 - Start hesitation (Weak “GO” signal)
 - Stop hesitation (Weak “NO GO” signal)
- Can occur with gait, ADLs and speech
- Often leads to falls and related injuries
- Most likely to occur in later stages of PD & during “off” times

What causes freezing in PD?

- Not completely understood!
- Grey matter frontal and parietal atrophy observed in PD patients with FOG
- Increased executive function and perceptual deficits associated with FOG and corresponding structural damage of frontal and parietal cortexes.

V.S. Kostić, MD, et al.
Neurology February 7, 2012 vol. 78 no. 6 409-416

What are the clinical implications?

GET READY signal too weak
Inadequate preparation (SET) or anticipation for movement
Clinical: Bradykinesia/hypokinesia

GO signal too weak
Inadequate selection/initiation of a movement
Clinical: Freezing/Start hesitation

NO GO signal too weak
Inadequate completion of a movement
Clinical: Festination/Sequential movements more difficult/run together

Nambu et al. Neurosci Res 43:111-117, 2002

Freezing in PD

Commonly occurs:

- in later disease stages
- during “off” times
- with turns
- direction changes
- while dual tasking
- in smaller spaces
- in crowds
- when feeling rushed or rushing
- with anxiety
- with fatigue



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Treatment of Freezing

Traditional Treatment Approaches

- Marked lines on the floor
- Laser pointer or walker with laser
- External verbal cueing
- Visualization
- Rocking
- Metronome or Music Therapy

Emerging Treatment Frameworks

- Support addressing both motor and cognitive deficits

Using LSVT BIG to Treat Freezing Issues

- Unveil Freezing Triggers with **ADLs**:
 - Eating: fork to mouth
 - Toileting: pulling pants up/down, hygiene, transfers on/off the toilet
 - Transfers: sit to stand and stand to sit; approaches to chair
 - Bed Mobility: in/out of bed, rolling and repositioning

Treat Hypokinesia/Bradykinesia via LSVT BIG Paradigm Shifts

(Covey)

□ **TARGET:** Amplitude

(Ramig et al., 1995; Fox et al., 2006; Farley et al., 2008)

□ **MODE:** Intensive and High Effort

□ **CALIBRATION:** Generalization

“An ounce of prevention is worth a pound of cure.”

-Benjamin Franklin

Using LSVT BIG to Treat Freezing Issues

- Unveil Freezing Triggers During **Gait**
 - Start hesitation
 - Turns: turns in place, and/or turns when walking
 - Backing up
 - Approaching chairs or obstacles
 - Narrow passages: doorways, elevators, narrow corridors
 - Changes in terrain
 - Distractions
 - Crowded environments/people approaching

THINK BIG!!!

LSVT BIG Treatment Session

Maximal Daily Exercises

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

Functional Component Tasks

5 EVERYDAY TASKS– 5 reps each

For example:

- Sit-to-Stand
- Pulling keys out of pocket
- Opening cell phone (flip phone)

Walking BIG

Distance/time may vary

Hierarchy Tasks

Patient identified tasks:

- Getting out of bed
- Playing golf
- In and out of a car

Build complexity across 4 weeks of treatment towards long-term goal

Video-reason for quarter turns

Functional Component Tasks

Goal is to “hook” or “cue” patients into thinking about their BIG movements and BIG effort in daily living

OVERLEARN – simple components to assist with carryover of BIG movements and BIG effort into daily living

Quarter turn – poor technique leading to loss of balance

Freezing with Gait

- Functional Component Tasks
 - Make specific to individual freezing issues
 - Examples: 90 degree turns, sit to stand, stand and take a step, step through doorway, turn in front of chair, reach and step back, etc.

Video-quarter turn practice

Freezing of ADLs

- **Functional Component Task Training**
 - Make specific to individual freezing issues
 - ADL Examples: Fork to Mouth, pulling pants up, buttoning, putting shoes on
 - Bed Mobility Examples: rolling, scooting, supine to sit
 - Transfer Examples: stand to sit, sit to stand, turn to sit

Freezing with ADLs

- **Hierarchy Task Training**
 - Include freezing triggers
 - Toilet self (freezes when turning to approach toilet and when taking first step after getting up from the toilet)
 - Dress Self (freezes when trying to get clothes out of closet, when backing up from closet, and when standing up to pull pants up,

Hierarchy Task Examples

“Real-World” BIG Tasks – Patient DRIVEN!

In/Out of Car	Getting in/out of bed
Walk and Talk	Laundry
ADL's	Going out to church/restaurant
Writing	Playing with children/grandchildren
Tennis	Shopping
Chores	Transportation: train/bus/car
Golf	Getting the mail
Hiking	Cleaning the house
Gardening	

Gait Training

- Progress from closed to open environment
- Include identified freezing triggers
- Extinguish your verbal and non-verbal cues over time
- Gradually add in distractors, real environment and dual task challenges
- In more severe cases, may need additional support of U-step walker or caregiver cueing
- Work on sustained endurance of BIG walking

Freezing with Gait

- **Hierarchy Task Training**
 - Include freezing triggers
 - Walk into bathroom to use the toilet (freezes in doorways and when approaching toilet)
 - Walk into restaurant (freezes when opening doors, in crowds, and maneuvering around tables)
 - Walk down to get the mail (freezes when entering and exiting the elevator and when carrying the mail)

Gait Training with U-step

PROGRESSION of treatment for freezing using LSVT BIG over 4 weeks

TIPS FROM THE EXPERTS!

- **BIG POSTURE:** Look straight ahead when walking, turning, backing up, stepping through doorways, entering elevators, changing terrain, etc.
- **BIG STEPS:** If it does not feel TOO BIG, it's NOT BIG ENOUGH! Use EXTRA BIG steps turning, backing up, going through doors, etc.
- **FOCUS! THINK BIG...THINK BIG...THINK BIG.....**
- **PLAN AHEAD!** Extra Time, Medications, Rest

See "Tips and Tricks for Freezing"

Weeks 1 and 2

- May need caregiver reminders, cueing and "pre-cueing" to THINK BIG before you encounter the trigger situation
- May use THINK BIG signs in key areas
- Repetition is key
- Keep it SIMPLE!
- Your therapist will tailor Carryover Assignments to instill confidence that power over freezing is possible!

REMEMBER....



Weeks 3 and 4

- Your therapist will add dual task challenges, distractions and real world situations when training Functional Component Movements, Hierarchies and Gait
- By end of week 4, you should be able to do complete the whole "triggering" task without freezing in real life consistently
- Train during "wearing off" times

CALIBRATION

**....is at the
heart of the matter**



Barriers to Calibration

- Sensory: People with PD don't perceive that their movement is too small. Movements that are normal feel TOO BIG.
- Internal Cueing: People with PD have difficulty remembering to use their bigger movements. Requires a LOT of repetition before patients self cue!
- Neuropsych Deficits: Have difficulty staying focused on using BIG movements and dual tasking.

LSVT BIG TREATMENT GOAL

People with Parkinson disease will use their bigger movements "automatically" in everyday living – and there will be long-term carryover of increased amplitude use!

Key Steps to Calibration

1. We help patients recognize the NEED to use larger amplitude movements
2. We show patients that bigger movements are really normal and have a positive impact on function
3. We assure patients are comfortable using bigger movements in the real world

REPEAT!!!

Speech Characteristics in PD

Reduced loudness

Hoarse voice quality

Monotone

Imprecise articulation

Vocal tremor

Hesitations

Short rushes of speech

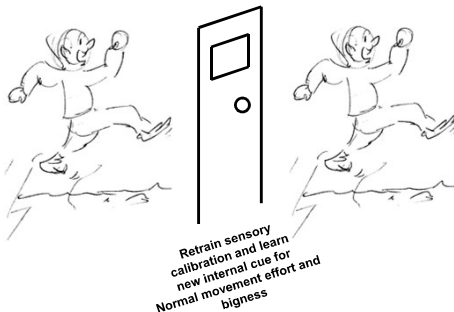
(Darley et al, 1969a; 1969b; 1975; Logemann et al, 1978)

Some patients report volume, hoarse voice or monotone as the first PD symptom

(Aronson, 1990)

CALIBRATION

Learning ☆



Video – pauses in speech

Video – festinating speech

LSVT LOUD Treatment Session

Daily Exercises

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 Exercises

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

Homework and Carryover Exercises – Assigned daily to practice LOUD voice outside of treatment

Using LSVT LOUD to Treat Freezing Issues

- Unveil Freezing Triggers During **Communication**
 - Start hesitation
 - Talking in front of a group
 - Distractions
 - Dual tasking
 - Speaking for long durations or with more complex sentences
 - Crowded environments/loud environments
 - Speaking on the phone

Functional Phrases

Goal is to “hook” or “cue” patients into thinking about their LOUD voice and effort in daily living

OVERLEARN – simple components to assist with carryover of LOUD voice and effort into daily living

**THINK
LOUD!!!**

Freezing with Communication

Functional Phrases

- Patient driven, make specific to freezing situations
 - Examples: Phrase used when answer phone or when greet people
 - “Hello, this is Jim.”
 - “How are you today?”
- Gradually add in distractors, real environment and dual task challenges
 - Sort cards while saying phrases
 - Pick up dog bowl and pour in food while saying phrases
 - Solve math problem while saying phrases

Freezing with Communication

Hierarchy Exercises

- Identified through discussions on patient interests, hobbies and typical communication situations (When is patient having difficulty communicating? When is patient freezing?)
- Salient to each individual's long-term communication goals
- Extinguish verbal and non-verbal cues over time
 - Alphabet board
 - Pacing cues
- Gradually add in distractors, real environment and dual task challenges
 - Finding change in purse while reading/speaking
 - Taking a walk while carrying on conversation
 - Ordering coffee at a cafe
- In more severe cases, may need additional support of family members for cueing

PROGRESSION of treatment for freezing using LSVT LOUD over 4 weeks

Video - Alphabet Board

Weeks 1 and 2

- May need caregiver reminders, cueing and “pre-cueing” to THINK LOUD before you encounter the trigger situation
- May use THINK LOUD signs in key areas
- Clinician may consider an alphabet board or metronome (drop when no longer needed)
- Repetition is key
- Keep it SIMPLE!
- Your clinician will tailor Carryover Assignments to instill confidence that power over freezing is possible!

Freezing with Communication

• Carryover Exercises

- Patient driven, make specific to freezing situations
- Complexity of carryover exercise matches level of hierarchy
- Examples:
 - Ordering a meal at a loud/crowded restaurant
 - Calling customer service to discuss a recent purchase
 - Giving presentation at work or to support group

Weeks 3 and 4

- Your clinician will add dual task challenges, distractions and real world situations when training Functional Phrases, Hierarchies and Carryover Assignments
- By end of week 4, you should be able to do complete the whole “triggering” task without freezing in real life consistently
- Train during “wearing off” times

TIPS FROM THE EXPERTS!

- **LOUD VOICE:** If it does not feel TOO LOUD, it's NOT LOUD ENOUGH! Use EXTRA LOUD voice when encountering trigger situation
- **FOCUS! THINK LOUD...THINK LOUD...THINK LOUD.....**
- **PLAN AHEAD!** Extra Time, Medications, Rest

Barriers to Calibration

- **Sensory:** People with PD don't perceive that their voice is too soft. Speech that is at a normal loudness levels feels TOO LOUD.
- **Internal Cueing:** People with PD have difficulty remembering to use their louder voice. Requires a LOT of repetition before patients self cue!
- **Neuropsych Deficits:** Have difficulty staying focused on using LOUD voice and dual tasking.

REMEMBER....



Key Steps to Calibration

1. We help patients recognize the NEED to use louder voice
2. We show patients that the louder voice is really normal and has a positive impact on communication
3. We assure patients are comfortable using louder voice in the real world

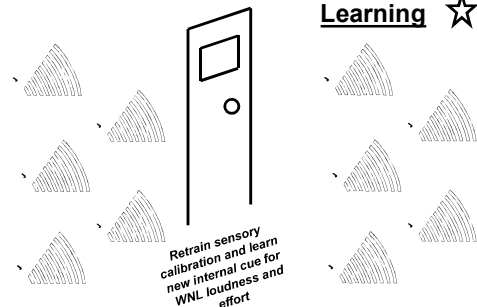
REPEAT!!!

CALIBRATION

*....is at the
heart of the matter*



CALIBRATION



LSVT LOUD TREATMENT GOAL

People with Parkinson disease will use their louder voice “automatically” in everyday living – and there will be long-term carryover of increased amplitude use!

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 to find an LSVT LOUD or LSVT BIG Certified Clinician in your area (as per video demonstration)
- DVDs available to introduce you to movement exercises used in LSVT BIG and voice exercises used in LSVT LOUD: www.lsvtglobal.com/products or www.amazon.com/shops/LSVTGlobal

Summary Slide

- In order to successfully reduce freezing issues in PD we must:
 - Understand the specific triggers
 - Tailor LSVT BIG and LSVT LOUD treatment to address the specific freezing
- Achieving calibration will require more time, effort and possible caregiver involvement in those with severe freezing issues
- Treating freezing issues with LSVT BIG and LSVT LOUD can improve quality of life, independence with ADLs, mobility and can reduce falls

“It is possible to take charge of your life, even with Parkinson’s.

It is possible for your will to override your brain.

It is possible to have Power Over Parkinson’s”

*~Sharon Kha
LSVT BIG and LSVT LOUD Graduate*

How to locate LSVT BIG and LSVT LOUD Certified Clinicians?

QUESTIONS?

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www.lsvtglobal.com