LSVT BIG® Webinar:
Treatment of Freezing
Using LSVT BIG®

This work was supported, in part, by the National Institutes of Health - R01 DC011050, R21 DC006674, R21 NS043711, Michael J. Fox Foundation, Parkinson Alliance and Davis Phinney Foundation

Plan for Webinar

Logistics

Brief Introduction

Review

Discuss ways to use LSVT BIG to treat freezing issues

Presenting LSVT BIG Faculty

Laura Guse', MPT, MSICS
Beth Marcoux, DPT, PhD

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Instructor Biographies

Laura Gusé, MPT, MSICS
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 core LSVT BIG treatment tools, webinars and curriculum. She now serves as the Chief Clinical Officer of LSVT BIG for LSVT Global.

Beth Marcoux, DPT, PhD
Dr. Marcoux holds a BS in Physical Therapy from Russell Sage College, an advanced Master’s degree in Physical Therapy Education from the University of Southern Mississippi, a Doctor of Physical Therapy degree (with an emphasis in Clinical Education) from the University of Michigan, and a Doctor of Physical Therapy from the Massachusetts General Hospital Institute for Health Professions. She has served on physical therapy faculties at the University of Vermont, the University of Michigan, and University of Michigan-Flint, Henry Ford Community College and University of Rhode Island where she was Professor and Chair of Physical Therapy for seven years. She is certified in LSVT BIG and for the past 5 years her clinical experience has focused on the treatment of patients with Parkinson’s disease.

Disclosures

- All of the LSVT BIG faculty have both financial and non-financial relationships with LSVT Global.
- Non-financial relationships include a preference for the LSVT BIG as a treatment technique.
- Financial Relationships include:
  - Dr. Cynthia Fox receives lecture honorarium and travel reimbursement and has ownership interest in LSVT Global, Inc.
  - Laura Gusé is an employee of LSVT Global, Inc. and receives consulting fees, lecture honorarium and travel reimbursement from LSVT Global, Inc.

STATEMENT ON DISCLOSURE AND CONFLICT:

The academic research and for-profit business has been handled according to all rules and regulations of the National Institutes of Health and the University of Colorado. The research team is in full compliance with federal statute (42 C.F.R. Part 5, Subpart F) and the University of Colorado-Boulder Policy on Conflicts of Interest and Commitment.

All clients shown in videos during this presentation have given consent for their videos to be used for educational purposes

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

• Identify common triggers of freezing of gait.
• Recognize other situations where freezing can occur besides gait.
• Be aware of how LSVT BIG treatment can be tailored to treat freezing issues.
• Understand the role of sensory calibration in treatment of freezing issues.

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

• Value of exercise in PD (classically drugs, surgery, today…)
• Identified key principles of exercise that drive activity-dependent neural plasticity
• Demonstrated that exercise can improve brain functioning (neural plasticity) and may slow disease progression
• Exercise is Medicine!

Klein & Jones, 2008; Ludlow et al, 2008

Legitimate Therapeutic Options
To provide symptomatic relief, improve function

Pharmacological (L-dopa)  Neurosurgical (DBS-STN)

Voice and Body Exercise

Zigmond et al, 2009
Patient case: Bernie

- 71 year-old, diagnosed with Parkinson’s disease in 1994
- Reason for referral: slowness and difficulty walking, history of falls, freezing
- Optimized on PD medications
- Hoehn & Yahr 3

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**Case Study Outcomes:**

<table>
<thead>
<tr>
<th></th>
<th>PRE</th>
<th>POST</th>
</tr>
</thead>
<tbody>
<tr>
<td>Falls</td>
<td>1-2/month</td>
<td>0/month</td>
</tr>
<tr>
<td>Assistive device</td>
<td>Cane</td>
<td>None</td>
</tr>
<tr>
<td>Gait Velocity</td>
<td>0.35 m/s</td>
<td>1.17 m/s</td>
</tr>
<tr>
<td>% of age matched norm</td>
<td>29.6 %</td>
<td>100%</td>
</tr>
<tr>
<td>Endurance</td>
<td>730 ft</td>
<td>1200 ft</td>
</tr>
</tbody>
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- To improve his walking
- To go to the movies
- To play with his grandchildren
- To go out to dinner with friends and family

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**LSVT BIG**

Intensive amplitude-based exercise program for the limb motor system!
Re-education of the sensorimotor system.

Fundamental Treatment Principles
- Hypothesis-based/PD-specific
- Neuroplasticity-based
- Research-based
Founded upon the fundamental principles of

**LSVT LOUD®**

Intensive amplitude-based exercise program for the speech motor system!

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What are the fundamentals of LSVT BIG?

Standardized, research-based, specific protocol

**TARGET:**

**MODE:** Intensive and High Effort

**CALIBRATION:** Generalization

- Sensory
- Internal cueing
- Neuropsychological changes

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**TARGET**

BIG (Large amplitude whole body movement)

Single Target - Triggers Activation across motor systems

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**LSVT BIG TARGET:**

**Hypokinesia/Bradykinesia**
- Present at Diagnosis
- Correlates with DA Loss
- Correlates with disease progression
- Generalized across motor systems

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**MODE**

**Delivery**
- Certified LSVT BIG Physical/Occupational Therapist
  - 1:1 intervention

**Time of Practice**
- 4 consecutive days per week for 4 weeks
- 16 sessions in one month
- 60 minute sessions
- Daily carryover assignments (30 days/entire month)
- Daily homework (30 days/entire month)

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**People with PD CAN get BETTER!!!!!!**

**REQUIREMENTS:**
- PUSH yourself— High Effort!
- Reinforce! Motivate!
- Empower with potential!
“Don't practice until you get it right. Practice until you can't get it wrong.”
- unknown

CALIBRATION
MISMATCH between on-line perception of output and how others perceive it
“I had no idea how small my world had become”
“I can't move like this, people will think I am crazy!!”
**TREATMENT FOCUS**

- Improve self-perception/awareness of amplitude required to produce normal movement amplitude
- Improve self-cuing/attention to action - habitually scale increased amplitude of movement patterns
- Produce larger movements

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**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)

**Hierarchy Tasks**
- Patient identified tasks:
  - Getting out of bed
  - Playing golf
  - In and out of a car

**Walking BIG**
- Distance/time may vary

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**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 cortices.

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


Festination and Freezing in PD

- What is freezing?
  - Start hesitation (Weak "GO" signal)
  - Stop hesitation (Weak "NO GO" signal)

- Can occur with gait, ADL’s and speech

- Often leads to falls and related injuries

- 38% to 70% of PWP fall each year

- More likely to occur in later stages of PD, during "off" times, when fatigued or anxious

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
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

Using LSVT BIG to Treat Freezing Issues

• Unveil Freezing Triggers with ADL’s:
  – 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

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

-Benjamin Franklin
THINK BIG!!!

LSVT BIG Treatment Session

Maximal Daily Exercises
1. Floor to Ceiling – 8 reps
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Functional Component Tasks
5 EVERYDAY TASKS – 5 reps each
For example:
- Do 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

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
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.

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

Hierarchy Task Examples

“Real-World” BIG Tasks – Patient DRIVEN!

- In/Out of Car
- Walk and Talk
- ADL’s
- Writing
- Tennis
- Chores
- Golf
- Hiking
- Gardening

- Getting in/out of bed
- Laundry
- Going out to church/restaurant
- Playing with children/grandchildren
- Shopping
- Transportation: train/bus/car
- Getting the mail
- Cleaning the house
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)

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)

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
PROGRESSION of treatment for freezing using LSVT BIG over 4 weeks

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!

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
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”*

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**REMEMBER....**

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**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.

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!!!
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!

Summary Slide

• In order to successfully reduce freezing issues in PD we must:
  – Understand the specific triggers
  – Tailor LSVT BIG 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 can improve mobility, quality of life, independence with ADLs, and can reduce falls

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
"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

QUESTIONS?

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