



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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**LSVT BIG® Webinar for
Professionals:
Treatment of Freezing
Using LSVT BIG®**



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Greetings from....

Beth Marcoux, DPT, PhD
LSVT BIG Expert Clinician
LSVT BIG Training and Certification Faculty,
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Plan for Webinar

Logistics

Brief Introduction

Review

Discuss ways to use LSVT BIG to treat
freezing issues

Instructor Biographies

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 Alabama, Birmingham, a Ph.D. in Public Health (Health Behavior and Health 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, Oakland University and the 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.

Information on CEUs

- This webinar is offered for 0.1 CEUs.
- Attendance for the full hour is required to earn CEUs.
- The LSVT Global webinars for 2014 are not registered for state-approved CEUs.
- You will receive a handout of these slides and a certificate of completion after the webinar. The certificate will include your name, date of the webinar and the number of hours earned.
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- 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 Guse' is an employee of LSVT Global, Inc. and receives consulting fees, lecture honorarium and travel reimbursement from LSVT Global, Inc.

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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

Learning Objectives

Upon conclusion of this webinar, physical therapist and occupational therapist participants will be able to:

- Be able to identify common triggers of freezing of gait.
- Recognize other situations where freezing can occur besides gait.
- Be able to select Functional Component Tasks and Hierarchies that address freezing issues.
- Understand the role of sensory calibration in treatment of freezing issues.



Hypokinesia/Bradykinesia

- Present at Diagnosis
- Correlates with DA Loss
- Correlates with disease progression
- Generalized across motor systems

LSVT BIG

Standardized, research-based, specific protocol
Delivered by LSVT Certified Clinician
Adheres to principles of neuroplasticity (Kleim & Jones, 2008)

SPECIFICITY - SINGLE FOCUS

Amplitude - Think BIG! – Retrain NORMAL USE
Challenges the impaired system – PD-specific approach

INTENSITY

16 1-hour individual sessions; 4 consecutive days per week for four weeks; Daily homework and carryover

REPETITION

Daily Tasks – Over learned

COMPLEXITY/CHALLENGING

Progressive Hierarchies
Promote continuous use in everyday activities

SALIENCE

Feedback and Motivation; Empower/Reinforce/Instruct

What are the pathophysiological deficits that interfere with movement?

SENSORY MOTOR DEFICITS

Reduced activation for internally generated movements
Sensory proprioceptive processing problems
Perceptual sensory-motor mismatch

COGNITIVE – EXECUTIVE FUNCTION AND ATTENTIONAL DEFICITS

Inadequate preparation for movement
Difficulty changing strategies quickly/divided attention; adapting to environmental conditions

EMOTIONAL – MOTIVATIONAL DEFICITS

Reduced "vigor", implicitly choose small/slow movements, loss of self-efficacy; default to low energy despite greater capacity,
Perceptual cost/reward mismatch

What causes freezing in PD?

- Not completely understood!
- Grey matter frontal and parietal atrophy observed in PD patients with FOG
- Increase 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

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Cognitive
Attention, executive functions

MOTOR DISORDER
Inappropriate scaling of muscle force

SENSORY DISORDER
Sensory proprioceptive processing problem

Emotional
Apathy, depression, motivation

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

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

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

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

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

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

-Benjamin Franklin

Functional Component Tasks

5 EVERYDAY TASKS– 5 reps each

- Patient-driven
- Personalized to each patient
- Never change
- SIMPLE movement
- Practice repetitively

These tasks can be a COMPONENT of a larger task. They are simple, and will be practiced repetitively.

THINK BIG!!!

Functional Component Tasks

Goal is to “hook” or “cue” patient’s 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 ADL's

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

Video-reason for quarter turns

Hierarchy Tasks

Designed to:

- Bring amplitude rescaling into everyday living!
- Context-specific and complex activities that are emotionally salient/patient-driven.

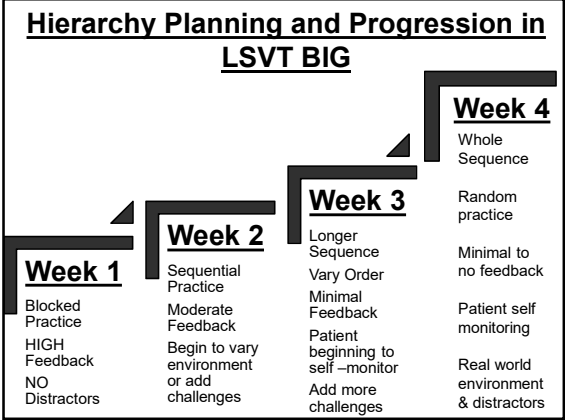
Video-quarter turn practice

HIERARCHY Task Analysis

Break it down into manageable units or sub-tasks

Remove complexity & environmental/cognitive distractors

Identify the "problem" – where the behavior breaks down and why?



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 (client freezes in doorways and when approaching toilet)
 - Walk into restaurant (client freezes when opening doors, in crowds, and maneuvering around tables)
 - Walk down to get the mail (client freezes when entering and exiting the elevator and when carrying the mail)

Video FOG Akinetic Patient

Insert: FOG Akinetic Patient

Freezing with ADL's

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

**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 they encounter the trigger situation
- May use THINK BIG signs in key areas
- Repetition is key
- Keep it SIMPLE!
- Tailor Carryover Assignments to instill confidence that power over freezing is possible!

CALIBRATION

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



Weeks 3 and 4

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

Barriers to Calibration

- Sensory: They don't perceive that their movement is too small. Movements that are WNL's feel TOO BIG.
- Internal Cueing: They don't self cue to use their bigger movements. Requires a LOT of repetition before patients self cue!
- Neuropsych Deficits: Have difficulty sustaining attention on using BIG movements, dual tasking, shifting set, etc.

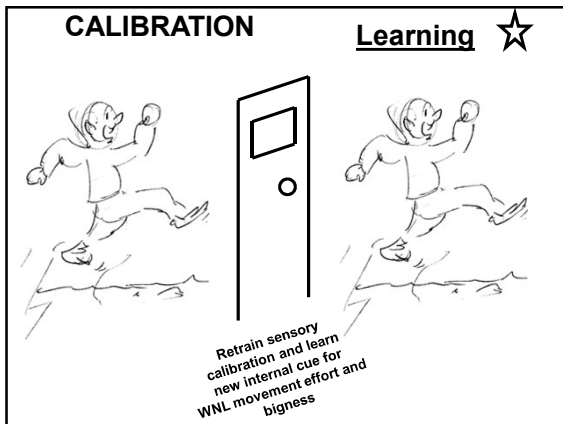
REMEMBER....



Key Steps to Calibration

1. Help the patient recognize the NEED to use larger amplitude movements
2. Convince the patient that bigger movements are WNL's and have a positive impact on function
3. Assure the patient is comfortable using bigger movements in the real world

REPEAT!!!



Summary Slide

- In order to successfully treat freezing issues in PD you 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

Further Information and Resources

- Online LSVT BIG Certification Renewal
- Launch of Online LSVT BIG Training and Certification Workshop!
- Update information on the LSVT BIG Clinician Directory!
- Live Renewal Option
- Webinars-Clinician and PD Community
- FAQ's
- "Ask the Expert"-info@lsvtglobal.com
- LSVT BIG online Clinician's Forum
- LSVT BIG Homework Helper DVD
 - Coming soon: Translation into German!