



LSVT Global[®] Public Webinar Series

Title: **Small movements and LSVT BIG[®]
Can “BIG” help my “small”?**

Presenters: Bernadette Kosir, OTR/L, CAPS
Laura Gusé, MPT, MSCS

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Small movements and LSVT BIG®

Can **“BIG”** help my **“small”**?



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Plan for Webinar

Logistics

Brief Introduction

Review and discuss

Instructor Biographies

Bernadette Kosir, OTR/L, CAPS

Ms. Kosir is a graduate of University of Michigan in Ann Arbor and Wayne State University in Detroit, and has been a practicing Occupational Therapist for 30 years. She joined Residential Home Health in 2001, and is currently Director of Therapy Services for the Michigan and Illinois multidisciplinary team, directing over 250 field clinicians, providing clinical program development and management, and participating as a corporate leader in marketing and community outreach efforts. She is a certified trainer in Integrated Care Management for coordinated care of patients with chronic diseases including Parkinson disease, and is an NAHB Certified Aging in Place Specialist. She remains active in corporate and community grass roots efforts for addressing continuum of care needs for persons with Parkinson disease, and is an Ad Hoc member of the Professional Advisory Board for the Michigan Parkinson's Foundation.

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.

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- This LSVT Global webinar is **NOT** state registered for CEUs, but it **may be used for self-reported CEU credit** as non-registered CEUs.
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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:
 - Bernadette Kosir receives consulting fees, lecture honorarium and travel reimbursement from 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.

STATEMENT ON DISCLOSURE AND CONFLICT: The co-existence of both 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 50, Subpart E) and the University of Colorado-Boulder Policy on Conflict of Interest and Commitment.

Learning Objectives

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

- Give examples of fine motor tasks and how they are impacted in Parkinson disease (PD)
- Describe how LSVT BIG is used to address difficulties with fine motor control in PD
- Identify specific fine motor tasks that you or someone you know would like to improve
- List at least three ways that you can learn more about LSVT BIG or find a clinician

Fine Motor Tasks: What are they?

- Tasks which require precise manipulations of the hand and fingers. Steadiness, coordination, muscle control, proprioception, sensation are necessary to make accurate and discrete finger movements.
- Examples: Buttoning, writing, typing, tying shoes, putting in earrings, fastening a necklace or clasp, picking up small objects and grasping.
- 75% of people with PD have micrographia

Jarzebska, 2006

Even small movements
are TOO SMALL
in people with PD!

Polling Question 1:

If you have Parkinson's have you experienced any difficulties or changes in your fine motor function?

1. YES
2. NO

What is the cause of fine motor control issues in PD?

- Limb-kinetic apraxia
 - "loss of deftness with a decrease in the ability to correctly perform independent but coordinated finger movements"
 - Somatosensory processing deficit possibly due to a change in the "interplay" between the basal ganglia and the supplementary motor area
 - Underlying basis poorly understood
 - Insensitive to dopaminergic therapy
- Bradykinesia
 - Slow movements
 - Responsive to dopaminergic therapy
- Tremor
- Reduced hand strength Foki et al, 2015, Snider et al, 2014

3 Studies on Fine Motor Training

1. Vanbelligen T., et al. (2017) Home based training for dexterity in Parkinson's disease: A randomized controlled trial. *Parkinsonism and Related Disorders* 41: 92-98.
 - Home based dexterity group vs. Theraband program
 - 5x/week for 4 weeks, 30 minute sessions- intensive
 - HOMEDEXT improved in dexterity related activities of daily living (ADLs) and 9-Hole Peg Test
 - Effects did not sustain
2. Bryant, et al. (2018) Feasibility study: Effect of hand resistance exercise on handwriting in Parkinson's disease and essential tremor. *Journal of Hand Therapy* 31: 29-34
 - 9 people with PD and 9 people with Essential Tremor
 - Home based hand and arm resistance exercises
 - 3x/week for 6 weeks
 - Grip strength increased in PD, but not ET
 - Handwriting did not improve

3. Oliveira, et al. Micrographia in Parkinson's disease: the effect of providing external cues. *Journal of Neurology, Neurosurgery, and Psychiatry* 1997;63:429-433.
 - 11 with PD and 14 HC
 - Both visual (lines or dots) and auditory cues (BIG) improved size of handwriting in people with PD

Polling Question 2:

If you are a person with Parkinson's or other condition, have you received LSVT BIG Treatment?

- 1. YES
- 2. NO

How is LSVT BIG used to improve function with fine motor tasks?

- 1. Intensive Exercise-
 - a. Increase amplitude of hand and finger movements
 - b. Increase "kinesthetic awareness" of hand posture and function
- 2. Functional Task Specific Practice
- 3. Home Exercise Practice
- 4. Carryover assignments

MODE: Intensive and High Effort

LSVT BIG is delivered 4 consecutive days a week for 4 weeks

Individual 1 hour sessions by LSVT Certified Therapists found in all practice settings

Daily homework practice
(all 30 days of the month)

Daily carryover exercises
(all 30 days of the month)

LIFE LONG HABIT OF PRACTICE IS ESTABLISHED!

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 pants up
- Stepping into shower

Hierarchy Tasks

Patient identified complex tasks:

- Dressing
- Meal Preparation
- Toileting

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

Walking BIG

Distance/time may vary

LSVT BIG

Goals for Patients

Patients use their bigger, more normal movements “automatically” in everyday living – and there is long-term carryover of increased amplitude use!

Large Amplitude Exercises



PURPOSES OF MAXIMAL DAILY EXERCISES

- Learn the RIGHT amount of effort to produce normal movement and to override bradykinesia and hypokinesia.
- Forced Use: Improve or restore function!
- Drive activity dependent neuroplasticity
- Improve coordination, balance, strength, flexibility, functional endurance

“BIG Hands” in LSVT BIG!

- Focus on sustained “BIG hands” throughout treatment vs. a closed/ “small” hand posture

- Hand Flicks

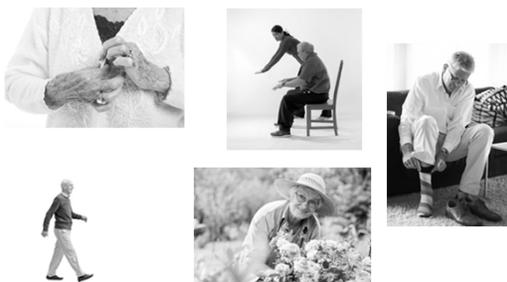


Video- Flicks

BUT THEN:

- Transfer use of BIGGER amplitude movements learned through Maximal Daily Exercises into **FUNCTION**.
- Make it meaningful! Motivate continued practice of Maximal Daily Exercises!
- Make the LINK!

Functional Translation is KEY!



IT'S ALL ABOUT...

FUNCTION!!

LSVT BIG Treatment Session

| | |
|--|--|
| <p><u>Maximal Daily Exercises</u></p> <ol style="list-style-type: none"> 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) | <p><u>Functional Component Tasks</u></p> <p>5 EVERYDAY TASKS– 5 reps each</p> <p><u>For example:</u></p> <ul style="list-style-type: none"> -Sit-to-Stand -Pulling pants up -Stepping into shower <p><u>Hierarchy Tasks</u></p> <p>Patient identified complex tasks:</p> <ul style="list-style-type: none"> Dressing Meal Preparation Toileting <p>Build complexity across 4 weeks of treatment towards long-term goal</p> <p><u>Walking BIG</u></p> <p>Distance/time may vary</p> |
|--|--|

What is a Functional Component Task?

5 EVERYDAY TASKS– 5 reps each

- SIMPLE (one step) movement
- Patient-driven
- Personalized to each patient
- Never change
- Practiced repetitively (300 reps/4 weeks!)

Fine Motor Specific Functional Component Task Examples

| | |
|--|--|
| <ul style="list-style-type: none"> • Buttoning • Thread zipper • Pull zipper up/down • Brush teeth back and forth • Open bottle • Pick up coins or handle coins • Pick up small objects | <ul style="list-style-type: none"> • Handwriting • Turn on/off light • Managing clasps • Buckling watch/belt • Fastening watch • Inserting earrings • Applying Makeup • Use a key • Tie shoes |
|--|--|

Buttoning Video

What is a Hierarchy Task?

COMPLEX TASKS

- Complex multi-step functional activities
- Emotionally salient/patient-driven.
- Identified through discussion on patient specific goals

Fine Motor Specific Hierarchy Task Examples

- Dressing (including buttoning, zipping, buckling)
- Donning jewelry (inserting earrings, clasping necklaces, bracelets, watches)
- Cooking (including opening bottles/cans, grasping utensils, cutting, etc.)
- Applying Makeup
- Tying shoes
- Handwriting – longer passages
- Nail clipping/painting

What is a Carryover Assignment?

- Daily assignment all 30 days!
- Fits into your regular plan for the day after therapy
- Addresses the sensory problem
- Mandates specific tasks with specific feedback (from others or self)
- Progresses in difficulty over 4 weeks – (complexity and duration)

Fine Motor Specific Carryover Assignment Examples

Week One:

- Open pill bottle BIG – See if you can get it open more easily and quickly

Week 2:

- Button your whole shirt thinking BIG and time yourself!

Week 3:

- Write a short note to someone thinking BIG while writing. Try to keep your letters BIG and see if your friend can read it!

Week 4

- Think "BIG" while dressing-buttoning, zipping, buckling etc. and have your spouse time you

Generalized treatment effects may occur too!

| | |
|-------------------------------|-------------------------------|
| 1) Climbing Drivetrain | 1) Walking Drivetrain |
| 2) Balance | 2) Balance |
| 3) Fear of falling | 3) Fear of Falling |
| 4) Getting out of seat chair | 4) Getting Out of Seat Chair |
| 5) Putting pants on | 5) Putting Pants On |
| 6) Shoes on and off | 6) Shoes on and off |
| 7) Standing for long periods | 7) Standing for Long Periods |
| 8) standing in shower | 8) Standing In Shower |
| 9) handwriting clarity | 9) Handwriting Clarity |
| 10) preparing meals on my own | 10) Preparing Meals on my own |

Uncued and untrained improvements in writing pre/post LSVT BIG

**Handwriting Example –
Person with PD and Cognitive
Impairments**

- 85 year old male
- Hoehn and Yahr stage 3
- Ambulatory without a device
- Severe cognitive impairment
- Severe tremor

Handwriting Pre/Post Uncued

“Whales live in the blue ocean”

PRE

in can at 2 pm. on 4/2/18

POST

in can at 2 pm. on 4/2/18

Handwriting – Cued BIG

| PRE | POST |
|-------------------------|------------------------------|
| 1) <i>1/20/17</i> | 1) BALANCE |
| 2) <i>0/4/17</i> | 2) POSTURE |
| 3) <i>0/17/17/17/17</i> | 3) TREMOR |
| 4) <i>1/2/17</i> | 4) URGENCY |
| 5) | 5) EMOTION |
| 6) | 6) STARTLE |
| 7) | 7) PLEAS |
| 8) | 8) CAR |
| 9) | 9) COUCH |
| 10) | 10) WHEN IN THE OCEAN |

Anecdotal Reports of Improvement from LSVT BIG Therapists

- Piano playing
- Guitar playing
- Turning pages in a book
- Dealing and shuffling cards
- Getting money out of a wallet
- Counting change for customers
- Finding items in a purse
- Picking up sewing needle or pin

Future Directions in Research

- Prospective controlled studies examining effect of LSVT BIG on dexterity/hand function/fine motor control both for trained and untrained tasks
- Better understanding of how impaired fine motor control impacts quality of life and participation in "occupational activities" in life

Summary

- Fine motor control difficulties are very common in PD and affect ability to perform many ADLs
- There is a paucity of research related to effective treatment interventions for fine motor control issues
- LSVT BIG is one treatment which may increase independence, speed, quality and/or safety with fine motor tasks used in every day life.

LSVT Resources for You

- Patient (public) webinars- live and on demand
- LSVT BIG and LSVT LOUD seminars
- LSVT BIG and LSVT LOUD Homework Helper DVDs
 - **Volume 1:** Standard and Unilateral Support; Functional Components, BIG walking, progression ideas.
 - English and German
 - Available on DVD; download; or 1 year streaming (\$15)
 - <https://vimeo.com/ondemand/lsvtbig/159619597>
 - **Volume 2:** Seated and Supine; Caregiver Chapter
- BIG for LIFE and LOUD for LIFE Groups – contact info@lsvtglobal.com
- Find a Clinician
- Ask the Expert! Info@lsvtglobal.com

How Do I Locate LSVT Certified Clinicians?

1. www.lsvtglobal.com
 2. Find a Clinician
 3. Advanced Search Options
 - LSVT LOUD (Speech)
 - LSVT BIG (Physical Therapy & Occupational Therapy)
 4. Find your **COUNTRY**
- I agree to the terms and conditions

Then-Ask your doctor for a referral to one of these clinicians!

Where are Other Places One Can Learn More About PD?

- Parkinson’s Foundation:
 - www.parkinson.org
- American Parkinson’s Disease Foundation
 - <https://www.apdaparkinson.org>
- Michael J. Fox Foundation
 - <https://www.michaeljfox.org/>
- Davis Phinney Foundation
 - <https://www.davisphinneyfoundation.org/>
- World Parkinson Coalition
 - <http://www.worldpdcoalition.org/>

How to Ask Questions

1. Type in the question box on your control panel
2. Raise your hand! (click on the hand icon  in your control panel)
 - Your name will be called out
 - Your mic will be unmuted, then you can ask your question out loud.
3. Email info@lsvtglobal.com if you think of questions later!



"Here are some activities that I had avoided but which are now part of my routine again: getting up from a low couch, getting into and out of my car (which is low to the ground), putting bills into my wallet, retrieving my cell phone from a pants pocket and putting it back, properly donning a sports jacket, buttoning a shirt.
All in four weeks!
- Ralph F.

Questions????

www.lsvtglobal.com

info@lsvtglobal.com
