



# LSVT Global® Public Webinar

**Title: Expand your Clinical Reach: How to Apply LSVT BIG® Beyond Parkinson's Disease**

**Panelists:** Whitney Henderson, OTD, MOT, OTR/L  
Dusty Tolley, PT, DPT

**Moderator:** Laura Gusè, BSPT, MPT

**Date Presented:** July 18, 2022

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**Expand your Clinical Reach: How to Apply LSVT BIG® Beyond Parkinson's Disease**



**LSVT GLOBAL** Innovation in Science. Integrity in Practice.®

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**Panelists**



**Whitney Henderson, OTD, MOT, OTR/L**  
Associate Clinical Professor  
Department of Occupational Therapy  
University of Missouri-Columbia



**Dusty Tolley, PT, DPT**  
Holy City Pediatric Therapy  
Owner/ Physical Therapist

**Moderator:**  
Laura Gusé, MPT  
LSVT BIG® Faculty & Chief Clinical Officer

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**Presenter Biographies**

**Whitney Henderson, OTD, MOT, OTR/L**  
Whitney Henderson is an Associate Clinical Professor in the Department of Occupational Therapy at the University of Missouri-Columbia. She graduated with a Bachelor's degree [2006] and Master's degree [2008] in Occupational Therapy from the University of Missouri-Columbia and a Clinical Doctorate degree in Occupational Therapy [2017] from Creighton University. She currently teaches a wide variety of classes related to adult evaluation and intervention and supervises students in the adult outpatient clinic. Whitney does research with neurological condition such as individuals with stroke, Parkinson's disease, and concussion. Whitney has worked in a variety of healthcare settings treating individuals with neurological conditions.

**Dusty Tolley, PT, DPT**  
Dusty Tolley was born and raised in Erwin, Tennessee. He obtained a Bachelors of Science degree in Chemistry and a Doctorate of Physical Therapy degree from East Tennessee State University. Dusty began his career in orthopedics and felt a call to pediatrics while running an orthopedic clinic in Mount Pleasant, SC. Dusty has two wild little boys of his own, Luke and Levi. Professionally, Dusty has a strong background in both manual therapy and specific exercise prescription with certifications in Mulligan Manual Therapy, LSVT BIG, and Dynamic Movement Interventions (DMI). Dusty is heavily trained and excels in treatment of children with Cerebral Palsy, Neurodevelopmental Disorders, Genetic Conditions, and Acute/Post Surgical Musculoskeletal issues. In his free time, he loves having "adventures" with his boys. Dusty is extremely proud to lead Holy City Pediatric Therapy in Charleston, SC both as an owner and Physical Therapist.

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**Disclosures**



Financial Relationships include:

- All panelists were offered honorarium for their time and expert knowledge.
- Ms. Guse is an employee of LSVT Global, Inc.

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**Webinar Logistics**

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



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**Information to Self-Report CE Activity**

- Unless otherwise noted, the LSVT Global webinars are **NOT** ASHA or state registered for CEUs, but **they may be used for self-reported CEU credit** as non-registered CEUs. That is, the credit can count towards your CE maintenance progress if you choose to self-report your activity.
- You will receive a certificate after completion of the webinar which will include your name, date of the webinar and the number of hours earned. It may take 1-2 weeks for certificates to be emailed.
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- Licensing requirements for CEUs differ by state. Check with your state licensing board to determine if your state accepts non-state registered CEU activities.



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### Learning Objectives

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

1. Describe the assessment process used to determine if LSVT BIG is appropriate for a patient.
2. Identify at least two non-Parkinson diagnoses that may be appropriate for LSVT BIG.
3. Summarize emerging research on the use of LSVT BIG for chronic stroke.




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### Poll: Who is joining us?

- I am an LSVT BIG Certified Clinician
- I am a PT(A) or OT(A) but not LSVT BIG Certified
- I am a different type of healthcare professional
- I am a person living with a neurological condition or family member
- Other

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### How may LSVT BIG help patients with other conditions?

**Incorporates:**

- Principles of neuroplasticity
- Motor learning techniques
- Extrinsic feedback provided via LSVT teaching techniques

**Promotes:**

- Intrinsic feedback using calibration to help patients "re-set" their internal motor program
- Generalizability to other activities outside of treatment

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### Non- PD Diagnoses to Consider

Atypical and Secondary Parkinsonisms	Chronic Stroke/CVA	Multiple Sclerosis
Balance Dysfunction and Falls	Brain Injury	Pediatric Neurological Conditions (CP, Down Syndrome, etc.)

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### Amplitude – Size of Control

In LSVT BIG, the target of amplitude is sometimes to learn **control of movement** vs. overriding small movement

Bigger might NOT be better in those with:

- Ataxic movements
- Hyperkinetic movements (S/P DBS)
- Impulsivity



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### Deciding if LSVT BIG is appropriate for a patient

- ✓ Is there a muscle activation deficit?
- ✓ Is there a problem with sensory processing?
- ✓ How does your patient respond to stimulability testing?
- ✓ Is the patient medically stable?
- ✓ If the patient has cognitive impairments, is there a support system in place?



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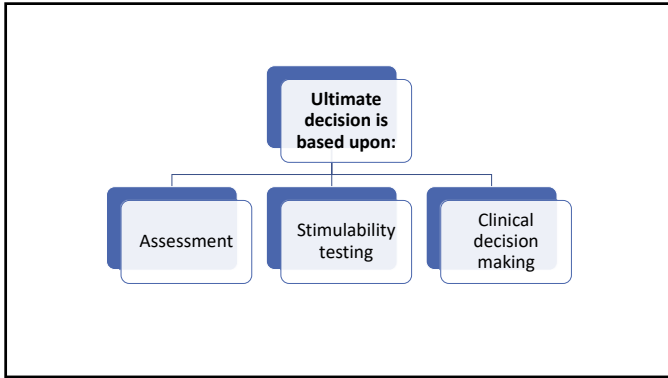
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### Trial a Week of LSVT BIG

- 1**

Try four consecutive initial sessions and evaluate impact
- 2**

Monitor progress in treatment
- 3**

Quantify treatment changes
- 4**

If you proceed to deliver LSVT BIG, always do it per protocol

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### Pediatric Case Example

- 10-year-old female
- Diagnosed with Anaplastic Ependymoma grade 3 brain cancer 5 years prior
- Tumor extended from 4th ventricle into cerebellum
- History of 3 open brain surgeries for tumor removal
- 50 doses of targeted radiation



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### Why LSVT BIG?

Traditional therapies had improved strength and ROM, but limited improvements to functional independence or gait independence.

#### Treatment Parameters

- Pre-assessment
- 4 sessions per week x 4 weeks
- LSVT BIG exercises conducted twice daily
- High parent buy in
- Post-assessment



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### Baseline Testing

- 30 Second Sit to Stand - 6 reps
- Floor to Stand - 7 seconds
- 6 Minute Walk Test using AD-800ft
- Bruininks-Oseretsky Test of Motor Development (BOT-2) Scores - below 1<sup>st</sup> percentile for Body Coordination and Strength and Agility
- Unable to perform single leg or tandem stance bilaterally
- Requires moderate assistance for majority of ADL's
- Using an anterior ETAC Walker all the time



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### Early Modifications

- Initially required balance support over the first week to improve focus on amplitude with consistent cues for BIG movements
- Balance bar removed at day 6 of in clinic treatments.
- Exercises nicknamed to make them a little more pediatric fun



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### LSVT BIG Exercise Nicknames

MAXIMAL DAILY EXERCISE	PATIENT'S NICKNAMES
Floor To Ceiling	Head, Shoulders, Knees and Toes
Side to Side	Big Scoops
Forward Step and Reach	Front
Sideways Step and Reach	New Girls
Backward Step and Reach	Back
Forward Rock and Reach	The Worst
Sideways Rock and Reach	Almost the Worst

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### Functional Practice Examples

**BIG Sit To Stands -**  
*"Wonder Woman"*

**Step Ups**  
*(working on stairs and curbs negotiation)*

**Step Backs**  
*(e.g. to chair)*

**BIG Walking-**  
*Emphasis on BIG STEPS and STOMPS*

**Hierarchy:**  
*Navigating in/out of bathroom*

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Post LSVT BIG

**Second Sit to Stand**  
15 times (6 times at eval)



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**Post LSVT BIG  
(6 weeks from  
pre-test)**

**Floor to stand-  
2 seconds**  
*(7 seconds at eval)*



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## Post LSVT BIG

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**6 Minute Walk Test using AD-1007 feet**  
*(25.9% improvement from 800 feet at eval)*

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**Bruininks-Oseretsky Test of Motor Development (BOT-2) Scores** - 5<sup>th</sup> percentile for Body Coordination and Strength and Agility *(Improved from 1st percentile at eval)*

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**Single Leg Stance:** R:L 3:4 sec *(0 sec at eval)*

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**Tandem Stance** R:L 14:17 sec *(0 sec at eval)*

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**Gait** - Using an anterior ETAC Walker only for long distance ambulation or uneven surfaces

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Summary of Evidence			
	Proffitt et al. (2021)	Metcalfe et al. 2019	Proffitt et al. (2018)
<b>Design</b>	Randomized, wait-list, cross-over pilot feasibility trial	Single-Case Experimental Design	Mixed Methods Case Study
<b>Participants</b>	5	2	1
<b>Data Points</b>	Baseline; after 4 weeks; after cross-over	Baseline; intervention; post	Pre; Post; 6-week follow-up
<b>Outcomes</b>	Feasibility and Acceptability COPM WMFT PASS NIH PROMIS-43 Active ROM Tone (MAS)	COPM REACH PQRS-OD CAHAI	COPM WMFT PASS SS-QOL Tone (MAS) ROM MMT
<b>Results</b>	4 of 5 participants rated performance and satisfaction of COPM higher Average task time on WOLF decreased Improved PASS scores PROMIS-43 changes	Increase performance in trained and untrained goals Improved CAHAI [not clinically significant]	COPM - (1.7 for performance and 2.7 for satisfaction) 45% decrease in WMFT time Elbow flexor tone reduced

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**Qualitative**

- "Automatically using arm."
- "Movements are smoother."
- "I can control my arm better."
- "Other people noticing me using my arm more."
- "Arms moving together more."

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**Comparison of PD versus Stroke**

Similarities	Differences
<ul style="list-style-type: none"> <li>• Evaluation</li> <li>• Stimulability Testing</li> <li>• Traditional protocol</li> </ul>	<ul style="list-style-type: none"> <li>• Assessment [similarities and differences]</li> <li>• Know that progress will happen, but may be a few set-backs here and there when fatigue [not used to moving like that] and tone fluctuations</li> <li>• Transportation</li> </ul>

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### Clients

Inclusion criteria	Exclusion criteria
<ul style="list-style-type: none"> <li>Over age of 18</li> <li>Diagnosis of first ischemic CVA &gt; 6 months</li> <li>Moderate impairments post-stroke [NIH Stroke Scale Score 6-20]</li> <li>Able to understand spoken English</li> </ul>	<ul style="list-style-type: none"> <li>More than mild cognitive impairment [&lt; 24 on MMSE]</li> <li>Minimal or no impairments post-stroke [NIH Stroke Scale Score &lt; 6]</li> <li>Currently receiving OT or PT services</li> </ul>

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Additional Considerations for Inclusion

Ask...

- “Can the client be cued to move differently”
- “Can the client be cued out of synergistic patterns”

Tone

Mobility

Active ROM

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### References

Proffitt, R., Henderson, W., Scholl, S., & Nettleton, M. (2018). Case Report—Lee Silverman Voice Treatment BIG(R) for person with stroke. *American Journal of Occupational Therapy*, 72, 7205210010. <https://doi.org/10.5014/ajot.2018.028217>

Metcalf, V., Egan, M., & Sauve-Schenk, K. (2019). LSVT BIG in late stroke rehabilitation: a single-case experimental design study. *Canadian Journal of Occupational Therapy*, 86(2), 87-94. <https://doi.org/10.1177/0008417419832951>

Proffitt, R., Henderson, W., Stupps, M., Binder, L., Irlmeier, B., & Knapp, E. (2021). Feasibility of the Lee Silverman Voice Treatment-BIG® intervention in stroke. *OTJR: Occupation, Participation, and Health*, 41(1), 40-46.

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## Summary

LSVT BIG is an evidence-based treatment program developed for Parkinson's but can be used for other diagnoses to improve mobility and occupational performance.

Clinical assessment and decision making by LSVT BIG Certified Clinicians should be employed to determine candidacy.

Early research shows possibility that LSVT BIG was helpful in improving function and arm use in some clients post stroke.

Occupational performance measures are useful in identifying tasks which are meaningful to the client and evaluating change as a result of LSVT BIG.

Limitations exist and continued research is needed.

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Public Webinar

## Bonus webinar for PTs and OTs in August!

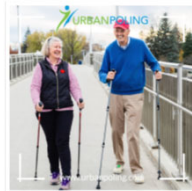
Let's get moving! Increase your activity level safely with uniquely designed mobility products

Representatives from the U-Step Neuro Walker and Urban Poling will demonstrate how their innovative walking devices, the U-Step Neuro Walker and Activator Walking Poles, are designed to prevent falls, increase mobility and function, and improve participation in life's activities.

Date: Wednesday, August 10, 2022

Time: 2:00 PM – 3:15 PM Eastern Daylight Time (EDT)

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



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Public Webinar

## Join us in September!

Everything you need to know about LSVT LOUD® and LSVT BIG®: A guide for people with PD and those who support them!

Tune in for a general overview of the treatments, recommendations on how to help facilitate homework and carryover exercises outside of the treatment sessions, and suggestions for motivation and encouragement.

Date: Wednesday, September 21, 2022

Time: 2:00 PM - 3:00 PM Eastern Daylight Time (EDT)

Intended Audience: Individuals with PD and their caregivers

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



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**How to ask questions**



1. Type in the chat box on your control panel
2. Raise your hand!
3. Email [info@lsvtglobal.com](mailto:info@lsvtglobal.com)

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**Thank you!**



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[www.lsvtglobal.com](http://www.lsvtglobal.com)

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

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