



## Public Webinar Series

Title: **Exercise is great, but how will that improve my function?**

Presenters: Cynthia Fox, PhD, CCC-SLP  
Bernie Kosir, OTR/L

Date Presented: August 10, 2016

### Disclaimer:

The information provided in this webinar and handout is not a substitute for medical or professional care, and you should not use this information in place of a visit, call consultation or the advice of your physician, speech, physical or occupational therapist, or other healthcare provider.

### Copyright:

The content of this presentation is the property of LSVT Global and is for information purposes only. This content should not be reproduced without LSVT Global's permission.

### Contact Us:

Web: [www.lsvtglobal.com](http://www.lsvtglobal.com) Email: [info@lsvtglobal.com](mailto:info@lsvtglobal.com)

Phone: 1-888-438-5788 (toll free), 1-520-867-8838 (direct)

## Exercise is GREAT, but how will that improve my function?

**Cynthia Fox, Ph.D., CCC-SLP**  
Co-Founder LSVT Global Inc.  
Vice President of Clinical Operations  
LSVT BIG and LSVT LOUD Training and Certification Faculty

**Bernie Kosir, OTR/L, CAPS**  
LSVT BIG Training and Certification Faculty

This work was supported, in part, by the: National Institutes of Health - R01 DC01150, R21DC006078, R21 NS043711, Michael J. Fox Foundation, Parkinson Alliance and Davis Phinney Foundation

## Greetings from Detroit, MI



## Plan for Webinar

Logistics

Brief Introduction

Discuss 3 areas of the LSVT protocol that focus on function to improve speech, mobility, and activities of daily living.

Ask questions live!

## Instructor Biographies

### Cynthia Fox, Ph.D., CCC-SLP

Dr. Fox received her doctorate degree in Speech and Hearing Sciences from the University of Arizona, Tucson. Dr. Fox is a research associate at the National Center for Voice and Speech and Co-Founder of LSVT Global. She is an expert on rehabilitation and neuroplasticity and the role of exercise in the improvement of function consequent to neural injury and disease. Dr. Fox is among the world's experts in speech treatment for people with Parkinson disease. She has multiple publications in this area of focus, as well as numerous national and international research and clinical presentations. Dr. Fox has worked closely with Dr. Ramig for the past 18 years on studies examining the efficacy of LSVT LOUD, the underlying mechanisms of speech disorders in PD, and the application of LSVT LOUD to other disorders (children and adults) and other motor systems (e.g., limb). She is an expert on rehabilitation and neuroplasticity and the role of exercise in the improvement of function consequent to neural injury and disease.

### 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.

## Greetings from Tucson, AZ LSVT Global, Inc. Headquarters

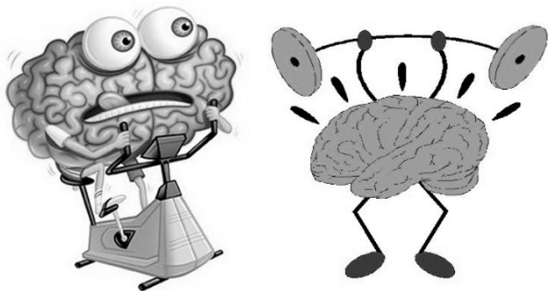


## Disclosures

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

## Exercise is VITAL in PD!

Needs to be sufficiently intensive, specific, challenging, consistent, ongoing and meaningful



Beall, et al. 2013, Petzinger et al, 2010

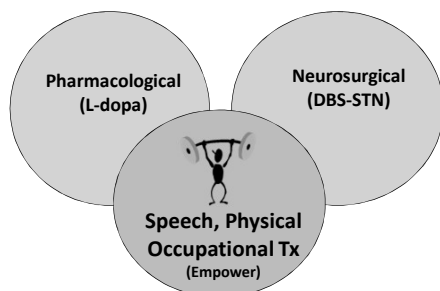
www.womeninneuroscience.org

## Our work – LSVT Protocols: based on 25 years of NIH funded research and clinical experience

- **LSVT LOUD is a speech therapy**
  - Delivered by LSVT LOUD Certified Speech-Language Pathologists
- **LSVT BIG is a physical/occupational therapy**
  - Delivered by LSVT BIG Certified Physical or Occupational Therapists

## Exercise-based rehabilitation (ST, PT, OT) is becoming a routine part of management in PD

To provide symptomatic relief; improve function



Kleim & Jones, 2008; Kleim et al., 2003; Zigmond et al, 2009

## LSVT Protocols

- Structured, evidence-based, rehabilitative treatment protocols developed specifically for PD
- Adhere to principles of motor learning and activity dependent neuroplasticity
  - Intensive and challenging EXERCISE, specific to the unique features of PD
  - Personalized and specific functional training of voice, mobility and activities of daily living

## BUT...will there be Generalization to my Individual Functional Needs? YES, IF...

- Specificity of Training
  - In sports
    - Train for the sport you are in!
  - In rehabilitation
    - Train the specific functional skill



- Specificity of Training
  - A key principle for driving neuroplasticity!

Kleim & Jones, 2008

## LSVT LOUD and LSVT BIG are SEPARATE protocols

### Each protocol consists of:

Treatment delivered 4 consecutive days a week for 4 weeks (16 sessions in one month's time)

One hour, individual therapy sessions

Daily homework practice and Daily carryover exercises (all 30 days of the month)

Develop a Life-long habit of continuous practice

## LSVT BIG and LSVT LOUD

### Goal for People with PD

You will use your louder voice and bigger movements habitually in everyday living.  
Your louder voice and bigger movements will last over time.

## LSVT LOUD Treatment Session Summary

### Daily Exercises

1. Maximum Duration of Sustained Vowel Phonation (Long Ahs) – 15+ reps
2. Maximum Fundamental Frequency Range (High/Low Ahs) – 15 reps each
3. Maximum Functional Speech Loudness (**Functional Phrases**) – 5 reps of 10 phrases

### Hierarchy Exercises

Structured reading – multiple reps, 20+ min.  
Off the cuff – bridge the gap to conversation  
Build complexity across 4 weeks of treatment towards your long-term communication goal

### Homework

Includes all daily exercises and hierarchy exercises

Assigned all 30 days

### Carryover Exercises

Use loud voice in real life situations outside of the treatment room  
Assigned all 30 days

## Questions Your LSVT LOUD or LSVT BIG Clinician will ask:

What are the things that YOU want to improve?

What things in life bring you JOY?

What do you want to KEEP doing, even with PD?

## 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
- Using cell phone

### Walking BIG

Distance/time may vary

### Hierarchy Exercises

Patient identified tasks: Getting out of bed, Playing golf, Getting in and out of a car  
Build complexity across 4 weeks of treatment towards long-term goal

### Homework

Includes all daily exercises and hierarchy exercises

Assigned all 30 days

### Carryover Exercises

Use bigger movements in real life situations outside of the treatment room  
Assigned all 30 days

## What does that look like in treatment?

**The Daily Exercises in LSVT Protocols (e.g. long ahs, rock and reach exercises) are tools to facilitate improved loudness and movements**

They are not the end goal of therapy

Improved FUNCTION is the goal!

## LSVT LOUD Example



Treatment Exercise: "long ah"



Treatment Goal: louder voice in conversation

## Functional Phrases/Movements

- Patient-driven
- Personalized to each patient
- Never change
- SIMPLE speech/SIMPLE movements
- Practice repetitively

## LSVT BIG Example



Treatment Exercise: rock and reach



Treatment Goal: better arm swing and stability when walking dog

## LSVT LOUD: Functional phrases

10 EVERYDAY PHRASES– 5 reps each

- Where are my glasses?
- Good morning sunshine.
- What's for dinner?
- Did you feed the dog?
- I love you!

## Functional Phrases and Functional Movements

## LSVT BIG: Functional Movements

5 EVERYDAY TASKS– 5 reps each

### EXAMPLE:

- Sit to Stand
- Pulling keys out of pocket
- Opening refrigerator door
- Reaching for coffee mug
- Buttoning
- Turning
- Putting on shoes
- Brushing hair



Sit to stand BIG

## Progressing in Difficulty

- Tasks NEVER change
- Can add cognitive or motor challenges
  - ✓ Conversation, math problems, “lists”, recitation, distractors etc.
  - ✓ Memory or Balance challenges, speed challenges, wrist/leg weights
- Why? - We live in a dual tasking world.
  - ✓ Real world application!
  - ✓ Drives neuroplasticity!

## Hierarchy Exercises

- Identified through discussion on the person with PD’s interests and hobbies
- Made salient (meaningful) to each individual person
- Tailored to match severity of speech/movement symptoms
- Working towards long-term communication or movement goals
- Primary focus of the second half of the treatment session

## Mental Sticky Notes- Think LOUD, Think BIG!!!



## Hierarchy Task Examples

“Real-World” Goals – Patient DRIVEN!

### LSVT LOUD

- Maintain voice for teaching/lecturing or other job responsibilities
- Being understood at church/restaurant
- Reading to children/grandchildren
- Being understood on the telephone
- Communicate with care partners or care takers
- Converse with spouse and family without having to repeat all the time

### LSVT BIG

- 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

## Hierarchy Exercises

## LSVT LOUD Hierarchy Example

Functional Goal: Improve social communication

- Gain confidence to participate in conversations
- Not feel “ignored”
- Decrease the amount of times she has to repeat herself
- Enjoy conversations again

Hobby: Movie Buff



### LSVT LOUD Hierarchy

A combination of structured reading tasks and spontaneous speech activities at each level of the hierarchy

**Week 1 – words, phrases**  
 Structured: reading lists of movies  
 Spontaneous: name favorite movies, actors, genres


**Week 2 – sentences**  
 Structured: reading famous quotes from movies  
 Spontaneous: Longer questions about favorite movies

Shorter, simple ↑  
 ↓  
 Longer, more complex

### LSVT BIG Hierarchy Example

**Functional Goal:** Get in/out of cars with ease

- Be independent with getting in/out of car
- Move faster through the process
- Reduce burden on spouse
- Gain confidence he will not fall



### LSVT LOUD Hierarchy

**Week 3 – paragraph reading**  
 Structured: reading current movie reviews, movie magazines, movie history  
 Spontaneous: open ended questions about directors, scripts, role of movies in different cultures

**Week 4 - conversation**  
 Structured: discuss movies of client’s choice  
 Spontaneous: open ended questions as naturally occur in conversation, add distractors, change environment

Shorter, simple ↑  
 ↓  
 Longer, more complex

### LSVT BIG Hierarchy

Working towards complex, long-term goals while building endurance and complexity

**Week 1 – small units of movements, practiced separately**  
 Getting in/out of the car: “blocked” practice of opening/closing A door, lifting leg over a small obstacle like placing leg in/out of the car, Scooting and turning on a seat, simulation of buckling/unbuckling a seat belt.

**Week 2 – practice units together as a sequence; predictable context**  
 Walk up to a door, open it and lift leg up onto a box; sit and lift Legs onto a box. Scoot and turn on a seat and then simulate buckling/unbuckling with Wrist weights on. Reverse order of short sequences.

Shorter, simple ↑  
 ↓  
 Longer, more complex

### BIG Walking – part of all LSVT BIG Sessions including Hierarchy

- Part of every session
- Length and time vary
- Focus on Amplitude!
- Add in Real World Challenges Over Time: changes in environment, freezing triggers, distractors, endurance and speed challenges, cognitive “loads”, motor challenges (carrying things, using a phone, etc.)

### LSVT BIG Hierarchy

**Week 3 – Practice the whole behavior; use some real objects**  
 Use a real vehicle (patient’s vehicle preferred). Walk up to car, open door, get in, adjust position on seat and buckle belt. Reverse. Repeat. Do both sides of the car.

**Week 4 - whole behaviors with obstacles; dual cognitive or motor loads**  
 As on week three, but add/try different vehicles, if possible park in tighter spaces, add in time challenge, conversation, carry something while entering/exiting

Shorter, simple ↑  
 ↓  
 Longer, more complex

## Hierarchy Considerations

### Calibration (Our Goal!)

- Patient self-critiques – they are engaged in sensory processing/problem solving

“Did you use your loud “ah” voice when answering the phone?”

“Did you use high effort/bigness To get out of the chair?”

## Carryover Exercises

Daily assignments to use **Loud voice or Big movements** in real life situations **outside** of the treatment room

**Difficulty** of the assignment **progresses** across the four weeks of treatment

Carryover exercises are **specific** and you are made **accountable** for doing them

## Carryover Exercises

## LSVT LOUD Carryover Examples

### Week 1

Example: When you leave the clinic, tell your spouse “Let’s go!” with your LOUD voice.

### Week 2

Example: When you call your friend tonight use your LOUD voice to ask her “What can I bring to the potluck? Do you need any help setting up?”

### Week 3

Example: tell your wife the four reasons why you think you should go to Italy this summer. Remember to use your LOUD voice!

### Week 4

Example: At your support group meeting today, use your LOUD voice to tell the group about the specific progress you have made for the upcoming fundraiser.

## WHY do we need Carryover Exercises?

MISMATCH between on-line perception of output (voice and movement) and how others perceive it in people with PD.

*“I’m not too soft.”*

*“I can’t speak like this, I am shouting!!”*

*“I had no idea how small my world had become”*

*“I can’t move like this, people will think I am crazy!!”*

Fox et al, 2002; Sapir et al, 2011

## LSVT BIG Carryover Examples

### Week 1

Example: When you leave the clinic, walk BIG to your car with your spouse. Walk BIG enough that he/she comments about your walking.

### Week 3

Example: When you go to the restaurant today with your family, open the door BIG for someone, walk to your table BIG and sit down BIG. Use your BIG posture when you order your meal and sit through dinner.



## Exercise CAN improve your function?

- Include task specificity
- Incorporates your individual goals
- Requires sufficient repetition and intensity
- Addresses sensory mismatch to increase likelihood of carryover
- You must KEEP practicing!!!!

## Summary

- Exercise is VITAL in the management of PD
- Exercise should be enjoyable, meaningful, intensive, consistent and specific to the nature of PD
- Functional application is critical when considering exercise based treatment for PD

## Make the commitment!!

16 hours of treatment

### How much time is it really?

Less than one full day's time

PD may last 10 -20 years or more (87,600 – 175,200 hours of living with PD)

VERY SMALL investment for HUGE potential return!!!

## 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](http://www.lsvtglobal.com) to find an LSVT LOUD or LSVT BIG Certified Clinician in your area
- Call our office at 1-888-438-5788 to have our staff assist you in locating clinicians

*"My voice is alive again!" - Lucy R.*

*"Public speaking was my life until the Parkinson's gremlin stole my voice! I fought back with an LSVT clinician, my own private Wizard of A-h-h-h-h's." - Peggy V.*

"By the end of the four weeks of extensive training, I had packed my cane away in the closet and I started riding my bike in 6 inch heels! I certainly attribute everything I've accomplished to LSVT BIG!" – Patti M.

"LSVT BIG has changed my life. I can free walk, arise from any armless chair, in or out of a car in a flash, the impact on my life is beyond a miracle." Charles H.

## Further Learning Opportunities

- Webinars-PD Community
  - FREE! Invite others!
  - "On Demand" <http://www.lsvtglobal.com/patient-resources/free-webinars>
  - LIVE <http://www.lsvtglobal.com/patient-resources/free-live-webinars>
- "Ask the Expert"-info@lsvtglobal.com
- LSVT Companion Home Edition
- LSVT LOUD and LSVT BIG Homework Helper DVDs
  - English

**QUESTIONS???**



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

[info@lsvtglobal.com](mailto:info@lsvtglobal.com)