



LSVT Global[®] Public Webinar Series

**Title: Early Parkinson Disease: A discussion on the
benefits of LSVT LOUD[®]**

**Presenters: Elizabeth Peterson, MA, CCC-SLP
Laura Gusé, MPT, MSCS**

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**EARLY PARKINSON DISEASE:
A DISCUSSION ON THE
BENEFITS OF LSVT LOUD®**



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Presented by:

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Plan for Webinar

Logistics

- Handout attached
- Microphone muted
- How to ask questions

Review and discuss Early PD and LSVT LOUD
Discuss your questions related to Early PD and LSVT LOUD

Complete survey at the end of the webinar
(5 minutes or less to complete)

Instructor Biographies

Elizabeth Peterson, MA, CCC-SLP

Ms. Peterson received her master's degree in Speech, Language and Hearing Sciences from the University of Colorado-Boulder. She began working with Dr. Lorraine Ramig's research team while completing her master's thesis. Ms. Peterson is LSVT LOUD certified and primarily delivers LSVT LOUD in the research setting. She has worked as a research associate at the National Center for Voice and Speech-Denver and the University of Texas Health Science Center, San Antonio. Ms. Peterson is currently involved in Dr. Ramig's research investigating the short and long-term impact of LSVT LOUD on neural underpinnings of speech in Parkinson disease.

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.

Disclosures

All of the LSVT Global faculty have both financial and non-financial relationships with LSVT Global. Non-financial relationships include a preference for the LSVT LOUD as a treatment technique and equipment which will be discussed as a part of this workshop.

Ms. Peterson and Ms. Guse are employees of and receive lecture honorarium and travel reimbursement from LSVT Global, Inc.



STATEMENT ON DISCLOSURE AND CONFLICT: All members of this research team have fully disclosed any conflict of interest. The conflict of interest management plan has been approved by the Office of Conflict of Interest and Commitment at the University of Colorado, Boulder (Ramig, Fox and Halpern).

Information to Self-Report CE Activity

- This LSVT Global webinar is NOT ASHA or state registered for CEUs, but it may be used for self-reported CEU credit as a non-registered CEU activity.
- If you are a speech, physical or occupational therapy professional and would like to self-report your activity, e-mail webinars@lsvtglobal.com to request a certificate after completion of the webinar which will include your name, date and duration of the webinar.
- Licensing requirements for CEUs differ by state. Check with your state licensing board to determine if your state accepts non-ASHA registered CEU activities.
- Attendance for the full hour is required to earn a certificate.

Learning Outcomes

After finishing this webinar, participants will be able to:

1. Summarize common communication issues facing individuals with Early PD.
2. Discuss how early therapy intervention helps with brain change in positive ways.
3. Discuss research findings on LSVT LOUD in Early PD.
4. Describe practical solutions for completing LSVT LOUD.

What is “Early PD”?

Early PD

Defined as 5 years or less since diagnosis and
Hoehn and Yahr stages 1-2

Rating Parkinson Disease Severity

Hoehn and Yahr scale (1967)

- STAGE 1 = Unilateral disease.
 STAGE 1.5 = Unilateral plus axial involvement.
 STAGE 2 = Bilateral disease, without impairment of balance.
 STAGE 2.5 = Mild bilateral disease, with recovery on pull test.
 STAGE 3 = Mild to moderate bilateral disease; some postural instability; physically independent.
 STAGE 4 = Severe disability; still able to walk or stand unassisted.
 STAGE 5 = Wheelchair bound or bedridden unless aided.

Early PD may not be so “early”

- By the time the clinical diagnosis of PD is made, neuropathology is advanced (Braak et al., 2003).
- This deterioration may precede clinical diagnosis by 4-6 years.
- Delaying intervention may put rehabilitative efforts at a disadvantage due to reduced neural substrates available for behavioral recovery or compensation

(Woodlee & Schallert, 2006; Zigmond et al., 2009)

Pathological Findings

Loss of Pigmented, Dopaminergic Neurons in the SNpc



50-60% cell death at DX;
70-80% loss of DA terminals
Precedes DX ~5-6 years

Early PD vs. Young Onset PD

YOPD is the diagnosis of PD before the age of 50

Approximately 10% of the 1 million people with PD are thought to be below the age of 40.3

(National Parkinson's Foundation, 2011)

All patients with PD will have a stage of Early PD whether they are diagnosed at a young or old age!

What voice/speech symptoms can be detected in early PD?

Early Changes in the Speech Motor System

- Previous medical “chart review” literature suggested a mid or late-stage onset of speech and swallowing symptoms (Müller et al., 2001)
- Recent investigations with sensitive and valid measures consistently report speech and swallowing symptoms very early in the course of PD (e.g., Harel et al., 2004; Rusz et al., 2011; Sung et al., 2010).

Early Changes in the Speech Motor System

Early speech/voice dysfunction 78%

- **Reduced loudness, monoloudness**
- **Monotone**
- **Hoarse, harsh, breathy voice quality**

Individuals perceived as bored, disinterested, apathetic

(Aronson, 1990; Harel et al, 2004; Little, et al, 2008; Ruiz et al., 2011; Skodda, et al, 2009; Stewart et al, 1995)

Non-motor characteristics of Early PD related to communication

- Even people who are clinically asymptomatic for speech deficits report feelings of embarrassment, social stigma and isolation due to speech concerns (Miller et al., 2006a, b)



Does this matter?

- Consequences include being excluded from conversations, a loss of dignity and feelings of misery for many (Miller et al., 2006a, b)



“I haven’t noticed any changes in my voice or speech.

Why should I do intensive therapy now?”

Speech-Language Pathologist's Role in Early PD

Assess and Treat Speech and Swallowing Disorders

Improve physical capacity:
Physical exercise of the speech and swallowing mechanism

Prevention of inactivity:
Keep people speaking/participating in social situations, jobs, community

Education:
Prevent fear of losing voice and speaking abilities,
Recognize sensory/internal cueing deficits - attend to environmental feedback

Speech-Language Pathologist's Role in Early PD

LSVT LOUD SLP is trained to "unmask" the deficits

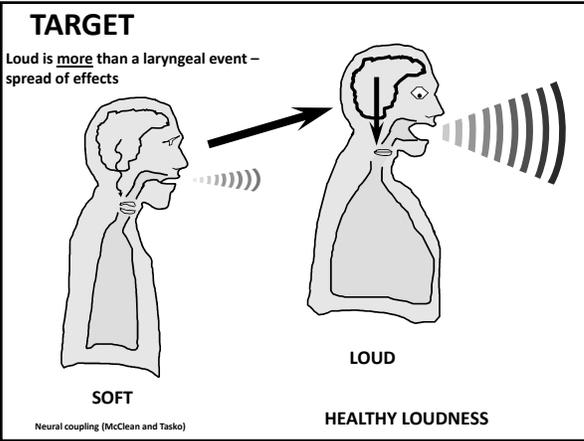
- Use dual tasking with assessment tasks (added cognitive or motor load)
- Added "load" may unmask soft, monotonous voice
- Look for negative impact on communication participation (CPIB, Baylor et al, 2013)
- Identify subtle changes that a person might not overtly identify with changes in speech and voice (e.g., lack of enjoyment, depth of interaction)

Top Four Considerations

1. SLPs are the voice experts in PD and will be the best ones to educate you, establish a baseline, and help you design a customized treatment plan for you.
2. General vocal exercise does not include functional task specific training important for your life now and later.
e.g. Singing does not improve speech.
3. SLPs understand the underlying pathology to assure that vocal exercise is safe and comprehensively addresses your PD.
4. General vocal exercise does not address the sensory deficits in PD.



What exactly is LSVT LOUD?



MODE: Intensive and High Effort

Treatment delivered 4 consecutive days a week for 4 weeks
 Individual 1 hour sessions (↑ repetitions)

Daily homework practice
 (all 30 days of the month)

Daily carryover exercises
 (all 30 days of the month)

LIFE LONG HABIT OF PRACTICE!

Consistent with practice principles that drive activity-dependent neuroplasticity.

Kleim & Jones, 2008; Kleim et al, 2003; Zigmund et al, 2009

LSVT LOUD Treatment Session Summary

<p><u>Daily Exercises</u></p> <ol style="list-style-type: none"> 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 	<p><u>Hierarchy Exercises</u></p> <p>Structured reading – multiple reps, 20+ min. Off the cuff – bridge the gap to conversation</p> <p>Build complexity across 4 weeks of treatment towards your long-term communication goal</p> <p><u>Homework</u></p> <p>Includes all daily exercises and hierarchy exercises Assigned all 30 days</p> <p><u>Carryover Exercises</u></p> <p>Use loud voice in real life situations outside of the treatment room Assigned all 30 days</p>
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LSVT LOUD Example




Treatment Exercise:
long “ah”

Treatment Goal:
louder voice in conversation

CALIBRATION
Addresses Barriers to Generalization

If you don't feel like you are talking "too loud" you are not talking loud enough!!

Retrain sensory perception of the amount of effort and loudness needed to speak with a normal loudness level.

Arnold et al., 2014; Fox et al, 2002; Mollaei et al., 2013; Sapir et al, 2011

How Can LSVT LOUD be Applied in Early PD?

LSVT LOUD

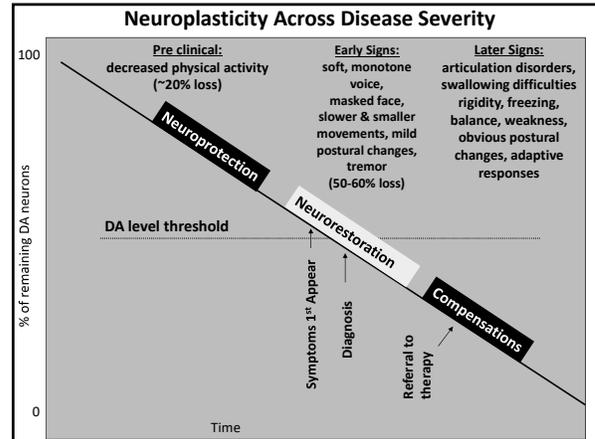
Consistent with principles of neuroplasticity
 (Kleim & Jones, 2008)

Administered in an intensive manner to to challenge the impaired system.

What is Neuroplasticity?

- Neuroplasticity = Brain Change
- In the initial phase of neurodegeneration the most neurons are rapidly lost.
- This is the time where treatment can have the most impact on preventing further degeneration and symptoms.
- If “exercise plays a powerful enough mitigating/palliative role, it should be performed very early and aggressively, and ideally prophylactic years before the onset of this process.”

Foster PP, et al. *Front Neurol.* 2011; 2: 28.



Key Ingredients to Neural Plasticity

Specificity: Exercise should target specific symptoms of PD and work on specific functional goals

Intensity: You must work hard to achieve results! Frequency, effort, reps, accuracy

Complexity: Exercises should never be boring or easy

Salience: Practicing rewarding tasks (success/emotionally salient) activates basal ganglia circuitry. Be motivated, engaged

Use it or lose it: Failure to drive specific brain functions can lead to functional degradation

Use it and improve it: Training that drives a specific brain function can lead to an enhancement of that function

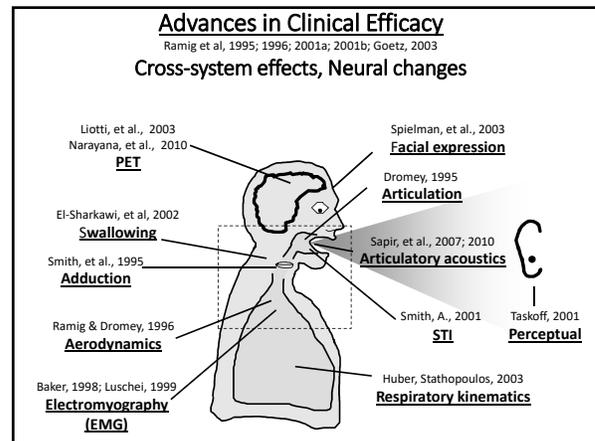
Timing: The sooner you start, the better the results

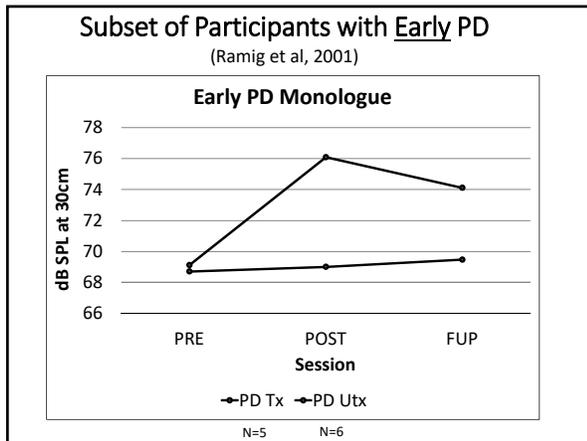
(Alexander et al., 1990; Fox et al., 2002; Graybiel 1998; Kleim et al., 2003; Kleim and Jones, 2005; Jones et al. 1999; Saint-Cyr JA, 2003; Tillerson et al., 2002; Vergara-Aragon et al., 2003; Black et al. 1990; Comery 1995; Fisher et al., 2004; Kleim et al., 2001; 1996; Perez et al. 2004; Pisani et al., 2005; Plautz et al., 2000)

Comments as treatment progresses?

- I hadn't realized how much I was repeating myself until I didn't have to do it anymore.
- I have so much more confidence with communication.
- My voice doesn't feel "wiped out" at the end of the day anymore.
- I love how people interact with me now.

Is there any evidence to support LSVT LOUD in Early PD?

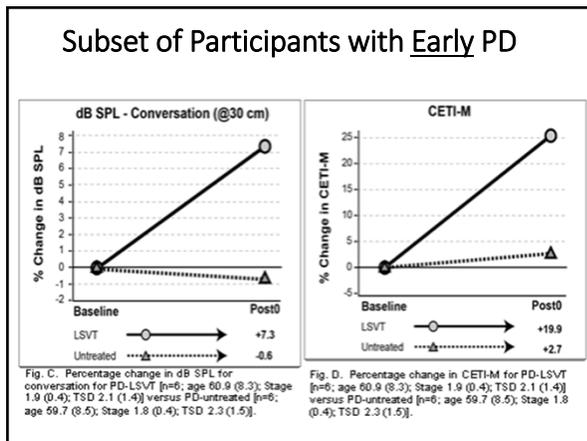




LSVT LOUD New Research

Methods

- 84 Subjects (4 Groups)
 - Two groups received intensive treatment (LSVT or ARTIC)
 - Two groups remained untreated (PD and non PD)
- Sample Size 20 Statistical Power .80



LSVT LOUD sounds like it can help me, but I cannot fit in 16 sessions with my busy schedule.

Practical Implementation – Challenges

- Working full-time
- Work/life balance if still raising kids
- Active members in the community

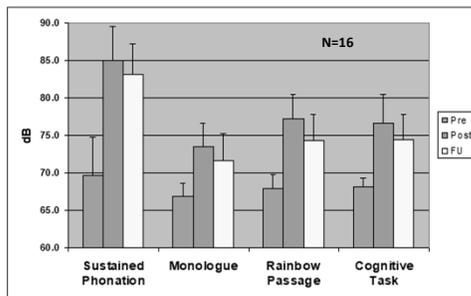
How can we help you make time for therapy?

Practical Implementation – Technology

LSVT eLOUD®
Telemedicine

LSVT Companion®
Funded by: NIH-NIDCD & Michael J. Fox Foundation

LSVT Companion Outcome Data



Changes consistent with those reported in previously published data (Halpern et al 2012, AJSLP)

Practical Implementation - Solutions

- Treatment during lunch hour
- Utilize technology
 - Combine tech and in-person to fulfill intensity requirements
 - If cannot attend post-tx maintenance group in-person, such as LOUD for LIFE, ask leader to “beam in” via telepractice
- Think of therapy as an investment –
 - May help keep clients at peak function longer so you can do the things they need or want to do!
 - May even help continue working longer, so 16 hours of life is worth it!
 - After treatment, continue with daily practice and follow-up visits (just like you continue to see a dentist/doctor regularly)

LSVT LOUD Treatment Sessions should never be EASY or BORING!

They should always BE LOUD!

Your therapist should be CREATIVE to maximally challenge you in order to DRIVE neuroplasticity.

Summary

- In early PD, pathology is not “early”.
- Seek out an LSVT LOUD SLP early! Don’t wait until symptoms are more noticeable or problematic.
- Begin LSVT LOUD as soon as possible after diagnosis...prevent decline
- Your LSVT LOUD sessions should be functional, challenging, meaningful and fun!
- Keep practicing every day!
- See your SLP lifelong just like you see the dentist. They are your partners in PD!

How to get started with LSVT LOUD

- Ask your doctor for a referral and a prescription for a speech therapy **evaluation** and **treatment**
- Visit www.lsvtglobal.com to find an LSVT LOUD Certified Clinician in your area
- Videos are available to purchase or rent introduce you to movement exercises used in LSVT BIG and voice exercises used in LSVT LOUD:
 - Purchase: www.lsvtglobal.com/products or www.amazon.com/shops/LSVTGlobal
 - Rent: vimeo.com/ondemand/lsvtcloud/160663321

Additional Tools and Resources for You

- LOUD for LIFE®
 - Exercise maintenance group after LSVT LOUD
 - LSVT Companion
 - Client Edition for home practice
 - LSVT eLOUD: LSVT LOUD via tele-practice
 - LSVT LOUD Homework Helper Video- DVD/download
 - LSVT BIG- Physical/Occupational Therapy
- Contact info@lsvtglobal.com**



Next Public Webinar:
Wednesday, December 12, 2018
2:00 P.M. EST in the United States!

**Research and clinical advances in LSVT
LOUD and LSVT BIG**

How to ask questions LIVE:

1. Type in the QUESTION BOX on your control panel
2. Raise your hand! (*Click on the hand icon*)
 - Your name will be called out
 - Your mic will be unmuted (make sure your mic is unmuted as well)
 - Then ask your question out loud
3. Email info@lsvtglobal.com if you think of questions later

Thank you!



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