

# LSVT LOUD® Speech Treatment

Empowering People with Parkinson's disease  
to Live LOUDER and BETTER lives



Innovation in Science. Integrity in Practice.

# Speech disorders in Parkinson disease

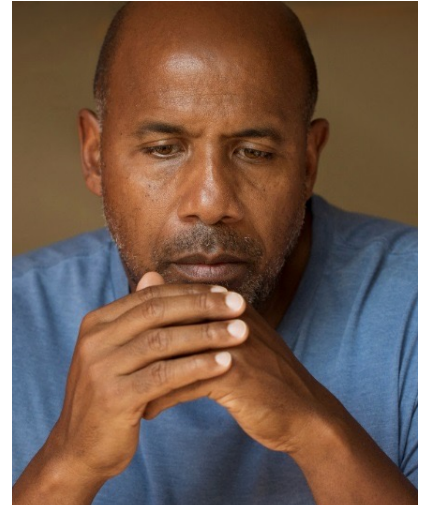
**Over 89% of individuals with Parkinson disease worldwide suffer from voice and speech disorders.**

- Reduced vocal loudness, monoloudness
- Hoarseness, harsh or breathy voice quality
- Monotone voice
- Imprecise articulation

Aronson, 1990; Harel et al, 2004; Little, et al, 2008; Logemann et al., 1978; Ruiz et al., 2011; Sapir et al., 2001; Skodda, et al, 2009; Stewart et al, 1995

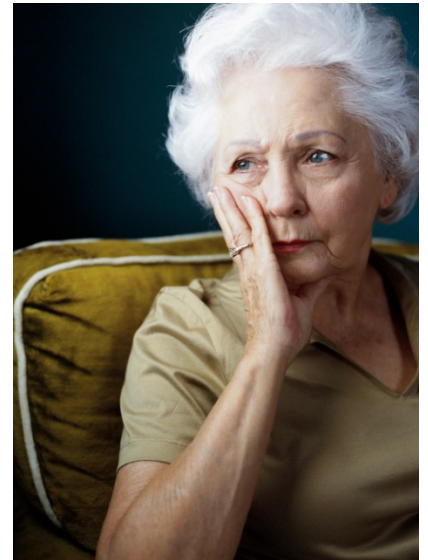
# Impact of speech changes in PD

- Even people who are clinically asymptomatic for speech deficits report feelings of embarrassment, social stigma and social 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)



***“If I have no voice, I have no life.”***

-Natalie, individual with PD

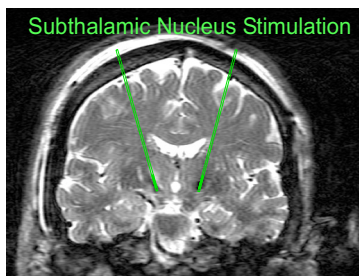
# Classic Medical Treatments Alone do not Consistently or Significantly Improve Speech in PD



## Pharmacological Treatment:

“...no evidence of systematic improvement in dysarthria owing to dopamine replacement therapy.”

e.g., Pinto et al, 2004



## Surgical Treatment:

Neurosurgical interventions do not consistently or effectively improve speech in PD

e.g., Freed et al., 1992; Goberman, 2005; Pinto et al., 2004; Rousseaux et al., 2000; Tripoliti et al., 2008; Astromet et al., 2010

# **Voice and Speech Disorders in PD have been Historically Unresponsive to Speech Treatment**

## **Despite efforts to improve voice and speech in PD**

(e.g., Sarno, 1968; Allan, 1970; Greene, 1980; Weiner and Lang, 1980; Robertson and Thompson, 1984 ; Johnson and Pring, 1990).

**1987 no effective voice and speech treatments for PD**

# 30+ year LSVT LOUD journey from invention to scale-up



## Phase I, II Invention

- 1987-89: Initial invention; Pilot data Lee Silverman Center
- 1989-91: Treatment development OE-NIDRR



## Phase III Research

- 1991-94: Treatment follow-up OE-NIDRR
- 1990-95: Treatment Efficacy NIH R01 **RCT**
- 1995-00: Underlying Mechanism NIH R01 **RCT**
- 2002-07: Distributed effects NIH R01
- 2007-12: Target/mode NIH R01 **RCT**



## Phase IV, V Clinical Implementation

- 2001-02: LSVT Companion Coleman Institute
- 2002-04: LSVT Companion NIH & MJ FOX Foundation NIH R21
- 2002-04: LSVT Virtual Therapist Coleman Institute
- 2004-06: LSVT Virtual Therapist NIH R21
- 2004: LSVT Down Syndrome Coleman Institute
- 2006: Technology Enhanced Clinician Training NIH SBIR
- 2009: Telehealth Delivery of Software Enhanced LSVT NIH SBIR
- 2010: Independent Delivery of Software Enhanced LSVT NIH SBIR
- 1993-present: Global LSVT LOUD Training & Certification Courses

# LSVT LOUD Key Concepts

Incorporates principles of neuroplasticity  
Administered in an intensive manner to  
challenge the impaired system

**TARGET:** Amplitude - Vocal loudness

**MODE:** Intensive and High Effort

**CALIBRATION:** Generalization

Ramig, Bonitati, et al., 1991; Ramig, 1992; Dromey, Ramig, Johnson, 1994; Sapir et al., 2003; 2007; Fox et al., 2002; Fox et al., 2006



## Intensity across sessions:

Treatment delivered 4 consecutive days a week for 4 weeks. One hour, individual treatment sessions

Daily homework practice  
(all 30 days of the month)

Daily carryover exercises  
(all 30 days of the month)

Life-long habit of continuous practice

**Intensity within sessions:** High effort



# LSVT LOUD Treatment Session

## Daily Exercises

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

## Hierarchy Exercises

Structured, personalized reading and spontaneous speaking – 25 min

Build complexity across 4 weeks of treatment

Week 1 – words, phrases

Week 2 – sentences

Week 3 – reading

Week 4 - conversation



Shorter, simple

Longer, complex

## Homework

Includes all daily exercises and hierarchy exercises. Assigned all 30 days

## Carryover Exercises

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

# LSVT LOUD Goal!



Treatment Exercise: “long ah”,  
“high/low ah”



Treatment Goal: louder voice in conversation

# After treatment, take your daily dose of LSVT LOUD homework exercises!



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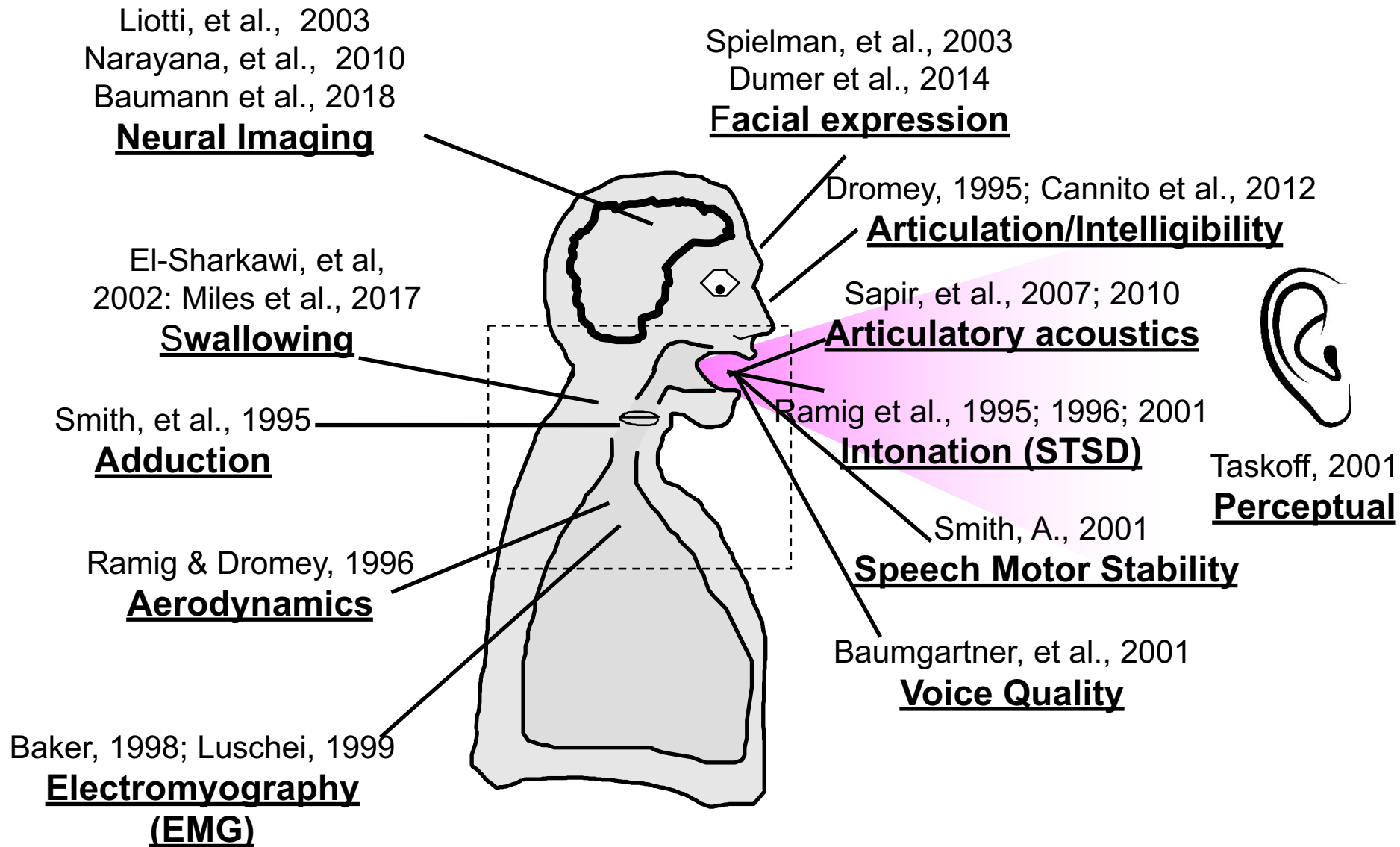


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## The best combination for success!

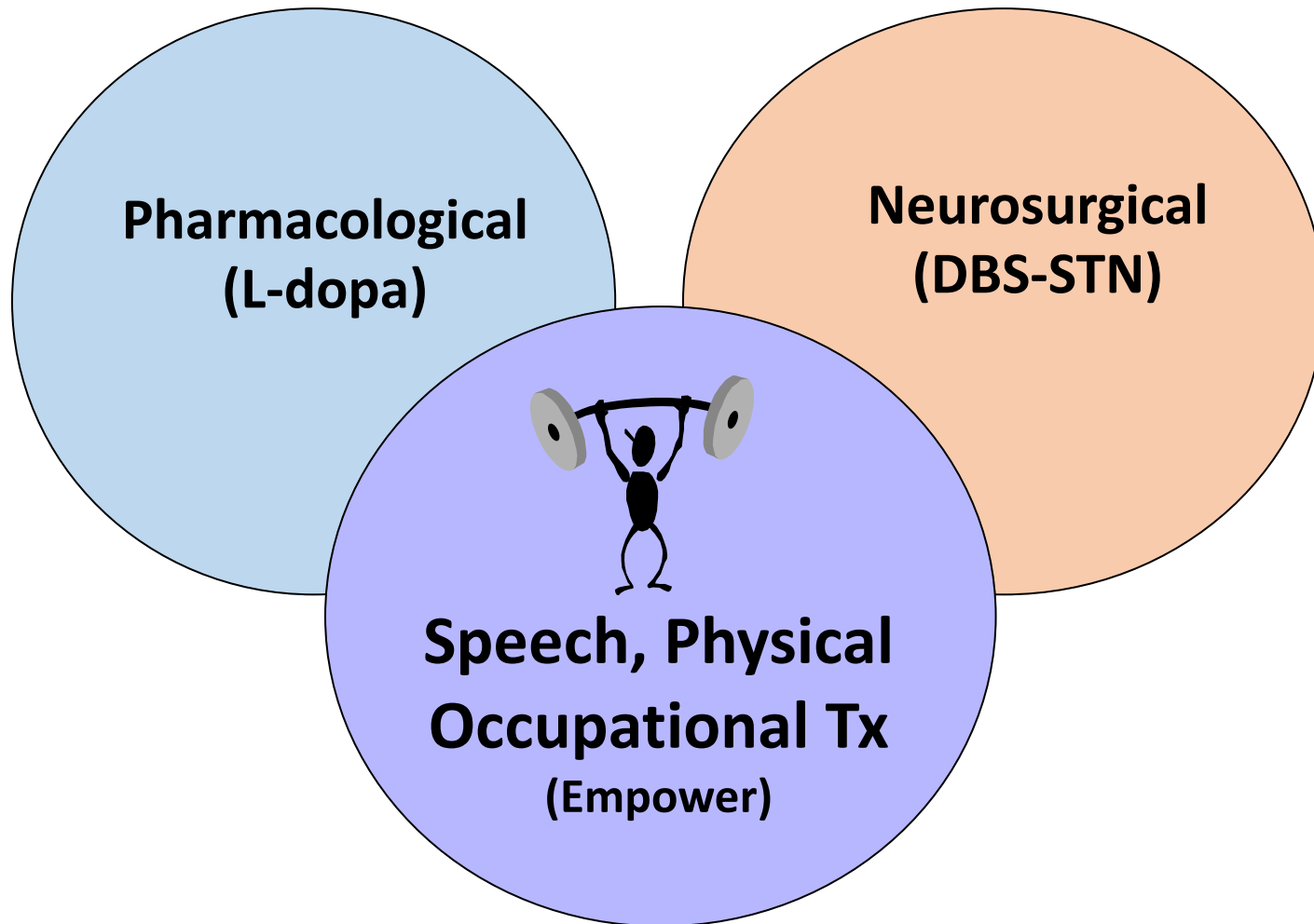
**What is the research on  
LSVT LOUD?**

# Beyond Efficacy – numerous studies (over 30) examining distributed effects, neural correlates, mechanism of change



# Rehabilitation (ST, PT, OT) is becoming a routine part of management in PD

To provide symptomatic relief; improve function



# Lifelong Support After LSVT



Daily exercise practice life-long

- [LSVT Homework Helper Video-](#)  
Purchase DVD or Download

New Group Exercise Options!

- [LOUD for LIFE®](#) and [BIG for LIFE®](#)

Regular LSVT “[Tune-ups](#)” every  
3-12 months

Other enjoyable activities and  
fitness for PD



# How to get started with LSVT LOUD and LSVT BIG

- 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



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GET LSVT CERTIFIED





***“If my possessions were taken from me with one exception, I would choose to keep the power of communication, for by it I would soon regain all the rest”***

***-Daniel Webster***