

# Why does LSVT LOUD research matter for you and for your patients?

Research provides confidence and assurance that you are providing your patients with treatment that has strong evidence to support its efficacy. LSVT LOUD® is the only speech treatment for Parkinson's disease (PD) that is supported by over 30 years of research with 8 million dollars of funding from the National Institutes of Health (NIH). Read on to learn more about LSVT research and what it means for you as you consider treatment interventions for PD.



*To view the LSVT research bibliography, scan the QR code to the right with the camera on your phone.*

## **3 Randomized controlled trials (RCT) have been published on LSVT LOUD.**

- RCTs are the highest standard of behavioral research. They are the most rigorous in design and controls. RCTs assign participants at random to treatment or control groups to compare treatments more fairly.
- RCTs help define if a cause and effect relationship really exists between a treatment and the outcomes measured. They control for factors that influence treatment outcomes, such as attention, dosage, bias, etc.
- RCTs on LSVT LOUD have compared it to high effort respiratory treatment, articulatory treatment and no treatment. LSVT LOUD was superior to all alternative treatments in these RCTs for the primary outcome variable of sound pressure level (SPL) of speech and voice (i.e. loudness).
- These studies have been published in high quality, peer-reviewed scientific journals.

*This research provides you and your patients confidence that LSVT LOUD has known treatment outcomes. The RCT evidence is fuel for you to advocate that your patients receive LSVT LOUD within your clinical practice setting.*

## **LSVT LOUD studies document short- and long-term outcomes.**

- Documenting immediate improvements in communication (vocal loudness, perceptual voice quality, speech intelligibility, etc.) is a good first step, but examining how long treatment effects last is an important next step.
- LSVT LOUD has documented treatment effects immediately post-treatment and as long as 6, 12, and 24 months after treatment is over. In the research studies, no additional treatment was offered. Participants were instructed to continue their home exercise program that was established during therapy.

*Patients who you treat with LSVT LOUD can expect that their improvements will last over time - at least 6 months, and perhaps longer. This lasting effect is without continued face-to-face maintenance treatment. In the clinical world, adding maintenance sessions may result in even longer or more robust treatment effects, but the research on maintenance practice still needs to be done.*

## **Over 30 studies have documented the spread of treatment effects post LSVT LOUD beyond vocal loudness.**

- Not only does the voice get louder (more normal) post LSVT LOUD, but many other aspects of speech, voice and communication improve.
- Studies have documented changes in voice quality, patient self-perception, facial expression, articulation, and speech intelligibility.

*The spread of effects beyond loudness means that LSVT LOUD is efficient. Specifically, multiple improvements occur with a single focus on vocal loudness as a treatment target. This efficiency of treatment is valuable for improving communication in complex patients with a degenerative condition.*



## **Neural imaging studies document changes in brain activity post LSVT LOUD.**

- Two PET and one fMRI imaging studies have identified changes in brain functioning post LSVT LOUD treatment.
- Collectively these studies show increased activity in speech motor areas and a right-sided shift of activity to multi-modal association areas that monitor prosodic elements of speech (loudness, frequency).

*Imaging studies showing changes in brain activity may be evidence of neuroplasticity. These brain changes may underlie the short- and long-term treatment outcomes and help us understand how the treatment is working and what we may be able to do to make the treatment work even better.*

## **LSVT LOUD publications are from multiple research laboratories, in multiple languages.**

- Research on LSVT LOUD applications in telepractice, atypical PD, deep brain stimulation as well as acoustic and speech intelligibility outcomes have been published by laboratories other than the core LSVT research group.
- The effects of LSVT LOUD have been published in speakers of multiple languages including French, German, Cantonese, Japanese, Persian, and Spanish.

*Research with similar improvements post LSVT LOUD from multiple laboratories and countries provides external validity of research results. Findings in different languages suggest that the target in LSVT LOUD may be “universal” due to targeting underlying deficits in hypokinesia/impaired perception - important across all languages.*

## **Research extends beyond PD to adults and children with other neurological disorders.**

- LSVT LOUD has been studied in case series, single-subject, and small group designs in other populations with positive outcomes.
- These studies include adults with dysarthria secondary to stroke, multiple sclerosis, ataxia, cerebral palsy and children with cerebral palsy and Down syndrome.

*These findings suggest there are core components of LSVT LOUD that facilitate improvements in neural based disorders and conditions. The focus on voice (a core aspect of speech), intensive and high effort treatment (consistent with principles of neuroplasticity) and sensory recalibration are well founded treatment principles.*

## **Research shows technology applications can enhance accessibility.**

- The effectiveness of LSVT LOUD using telepractice delivery has been documented in the US, Australia and England. Outcomes show telepractice delivery to be as effective as in-clinic treatment.
- A novel software program (LSVT Companion) was used to deliver seven of the 16 treatment sessions at home with independent use of the device. Outcomes were as effective at post- and 6 months as in-clinic treatment.

*Having proven alternatives to all in-clinic treatments increases access to LSVT LOUD. You can have confidence that technology does not diminish the effectiveness of LSVT LOUD.*

## **Application to other motor systems has been extended with LSVT BIG®.**

- Two RCTs have documented LSVT BIG physical and occupational therapy to be effective in improving the motor score of the United Parkinson’s Disease Rating Scale (gold standard measure).
- Multiple case series, single-subject, small group designs and retrospective chart reviews have documented improvements in a range of measures including gait speed, balance, and activities of daily living.

*No other speech treatment for Parkinson’s disease has a parallel PT/OT counterpart. These combined approaches offer patients a comprehensive, interdisciplinary treatment package with one treatment focus: amplitude (speak LOUD and move BIG).*