

Effect of Lee Silverman Voice Treatment on habitual voice use
in Parkinson's disease studied with a portable voice
accumulator in a monozygotic twin patient-control pair
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The leading behavioral treatment option to improve speech in Parkinson's disease (PD) is the Lee Silverman Voice Treatment (LSVT LOUD®). This method has been shown to result in positive outcomes with increased vocal loudness lasting for up to two years after treatment. Treatment effects are usually studied in controlled environments such as studio recordings and many patients struggle with the carry-over of treatment effects to spontaneous speech outside the clinic.

Portable voice accumulators such as the VoxLog make it possible to study voice use in habitual speech outside a clinical setting. The VoxLog allows for long-term monitoring of voice use during the speakers' regular activities. Four voice parameters can be monitored including voice sound level (dB SPL), phonation frequency (Hz), phonation time (percent time spent phonating during the registration period), and level of environmental noise (dB SPL). The purpose of the study was to analyze changes in voice use following PD and to evaluate effects of LSVT on habitual speech outside the clinic.

One participant with PD and one healthy control participated in the study. The patient/control dyad consisted of a monozygotic twin pair with similar jobs and living conditions. Voice use was monitored for one week at a time before LSVT treatment, after LSVT treatment and at 6 and 12 months follow-up. The patient's voice use was also monitored during the four weeks of treatment. Furthermore, the participants continuously rated their voice use to allow for correlation analysis to be made between subjective ratings and objective data from the VoxLog.

The patient increased his vocal loudness in habitual speech during studio recordings after treatment (+5.6 dB). The increase in vocal loudness in habitual speech outside the clinic was lower but still comparable (+5.1 dB). The presentation will include follow-up data and comparisons of voice use between the patient and control both before and after treatment.