Outcome of SPEAK OUT!® for Adults with Parkinson’s Disease
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Research Questions
In adults with idiopathic Parkinson’s disease (iPD), what is the effect of SPEAK OUT!® on acoustic metrics of intensity, articulation, and prosody; on patient self-assessment; and on listener perception (intelligibility and ease of understanding)? Only a subset of the acoustic data are presented here.

Participants
20 adults with iPD
- Age: median 69 yrs, range 47–83
- Hoehn & Yahr:¹ median 3, range 1–3
- Months since dx: median 45 days, range 1–189 months
- 12 men, 8 women
- No history of DBS
- No history of speech therapy within past few years
- Cognitive abilities sufficient to participate fully in therapy

Rationale for SPEAK OUT!®
SPEAK OUT!® addresses the abnormal sensory processing, decreased internal cueing characteristics, impaired automatic motor behaviors, and decreased vocal effort of iPD.²–³

SPEAK OUT!® adheres to the principles of behavioral-change-induced neuroplasticity and motor learning as applied to speech production, particularly intensive treatment with maximum effort.¹⁵

Study Design
Each participant served as his/her own control with three baseline assessments within approximately two weeks before starting treatment. Then, two follow-up assessments were conducted: within one week and six weeks after completing the SPEAK OUT!® protocol.

SPEAK OUT!® Protocol
A total of 12 treatment sessions, three sessions per week for four weeks, 40 minutes each session. Simple, global focus: intentional speech
Each session contained six components:
- Vocal warm-ups
- Vowel prolongation
- Intonation/gliding exercises
- Automatic sequences (e.g., counting)
- Oral reading mixed with short conversations
- Cognitive tasks (e.g., list three things to consider before buying a car)

Home practice (twice daily) was required, consisting of each of the six components listed above.

Some of the verbal cues to elicit intentional speech:
- Say it with intent!
- Say it purposefully!
- Speak deliberately!

Each participant was provided with a free workbook containing therapy and home practice components.

Acoustic Measurement Methods
Digital audio recorder at constant mouth-to-mic distance. Calibration of .wav files with 1kHz tone of known intensity. Acoustic analysis conducted in Praat.⁶ Methodology of calculation of speech timing metrics consistent with the literature.⁷ ⁸ All acoustic metrics calculated separately by two research assistants and checked for accuracy.

Summary and Looking Forward
To date, SPEAK OUT!® has been assessed retrospectively in 78 pts¹² and prospectively in 65 patients,¹³–¹⁵ including the 20 reported here. Our study continues to accrue participants and additional acoustic, perceptual, and intelligibility measures will be reported.

References provided in handout.

SPEAK OUT!® resulted in ~9 dB SPL increase in oral reading and ~7 dB SPL increase in monologue from baseline to 6 weeks after therapy, comparable with gains achieved by patients treated with LSVT®.

All data calculated from monologue task. Data from first 10 participants.

%V Percentage of total utterance composed of vocalic intervals.
VarcoC (Std dev of consonantal interval durations / mean vocal interval duration) X 100.

Consistent with the literature,¹⁰–¹¹ iPD talkers at baseline had a higher %V and lower VarcoC than healthy talkers, implying articulatory undershoot, resulting in shortened and less variable consonantal segments. Our novel data show that after therapy, %V and VarcoC more closely approximated that of healthy talkers, implying improved articulation.

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This study has been approved by the Institutional Review Board of Lehman College | CUNY and The Western IRB.