

**Imaezue, G. C. (2024). Recursive self-feedback improves spontaneous speech in chronic aphasia within real-world settings. *Aphasiology*, 1–21.**

<https://doi.org/10.1080/02687038.2024.2432024>

## **Background**

Spontaneous speech generation, often impaired in chronic nonfluent aphasia, is essential for natural communication. Treatments aiming to optimize spontaneous speech in real-world settings are critical for improving the quality of life for persons with nonfluent aphasia (PWNA). Traditional treatments frequently rely on models and feedback from external agents, which may not be sustainable in the long-term. Preliminary evidence suggests that PWNA can use self-feedback alone, through recursive self-feedback, to improve their production of scripted sentences. This study developed and examined the impact of spontaneous speech with recursive self-feedback on enabling PWNA to self-improve their spontaneous speech in real-world settings.

## **Method**

Using a cross-over design, 3 participants received 2 treatments at their homes: spontaneous speech with recursive self-feedback and spontaneous speech with speech model. Recursive self-feedback treatment involved iterative self-monitoring and minimization/correction of errors during spontaneous speech response to narrative prompts. The speech model treatment provided corrective model responses to prompts from an external source which served as reference frames to help improve the participants' responses. Participants utilized a mobile app to practice the treatments intensively at home for 2 hours each day over a period of 12 to 14 days, spanning 2 to 3 weeks. Direct and generalized treatment effects on microlinguistic measures of spontaneous speech were determined using general linear mixed effects model and standardized mean difference.

## **Results**

Both treatments led to significant improvements in microlinguistic measures of spontaneous speech, with recursive self-feedback treatment showing broader post-treatment effects on treated prompts and generalization effects. to untreated prompts.

## **Conclusion**

Recursive self-feedback is a promising procedure for enhancing spontaneous speech in PWNA, providing a simple and flexible self-directed treatment option. This procedure relies primarily on speech-auditory stimulations and self-feedback loops to improve spontaneous speech, suggesting its potential applicability across various spoken language cultures. To validate these findings and assess their broader relevance, further research is recommended.

