

What is SpeechATAX?

SpeechATAX is an intensive speech rehabilitation program designed to be completed in the home by the patient over 20 sessions within one month (5 x 30-45 minute sessions per week). It is delivered via purpose-built software on a tablet. The program uses biofeedback to enhance self-monitoring of speech. On each treatment day, the patient is required to complete exercises designed to improve vocal control, prosody and intelligibility. Treatment is based on principles of motor learning and neuroplasticity and is designed specifically for people with hereditary ataxia.

Daily Exercises:

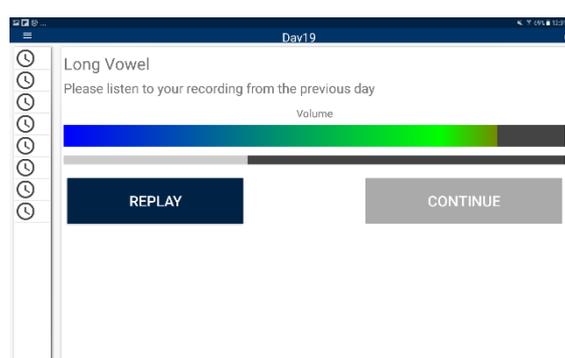
On each treatment day, the patient is required to complete seven exercises designed to improve vocal control, prosody and intelligibility:

- i) Long vowel x 10 repetitions
- ii) Loudness exercise: crescendo/decrescendo x 10 repetitions
- iii) Pitch glide x 10 repetitions
- iv) Emphasis/Stress: Short phrases with target word designed to improve prosody x 15
- v) Articulation: words and short phrases to practice over-enunciation
- vi) Reading task
- vii) Transfer exercise (daily question)
- viii) Conversation (introduced on day 16).

The first 3 tasks are designed to improve breath support and vocal control as a foundation for speech. The final 4 tasks are designed to focus on over-enunciating speech to be as clear as possible to improve overall intelligibility.

Biofeedback:

From day 2 onwards the software allows the patient to replay their recording from the previous day. During the replay the patient is encouraged to monitor their own speech and identify areas of strengths and ways to improve for the next attempt. Graphs are also displayed for tasks 1-3 and 6-7 which are a visual representation of progress. For example, in the long vowel task, the first graph of duration shows the length of today's long vowel compared to the previous day. "Better" and "Worse" labels are displayed on the graphs.



Screenshots of SpeechATAX Therapy App: Comparative graphs and replay

About the project

The research will be conducted across five different sites in Australia, France, Germany and New Zealand. The SpeechATAX project is an individually randomized controlled, assessor blinded parallel group design of existing care vs treatment. The aim of the trial is to evaluate the efficacy of SpeechATAX. Patients will be assessed at screening, pre-treatment, immediately post-treatment and 4-weeks post treatment. Speech data will be measured using objective and subjective speech assessments.

This research project has been approved by the Human Research Ethics Committee of The University of Melbourne (Ethics approval number: 1339394) and the Medical Ethics Board, University Hospital Tübingen, Germany (003/2015BO2)