

# Speech treatment for people with hereditary ataxia – a feasibility study

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## Background

- Communication impairment affects quality of life
- Little information available on how best to manage speech impairment in progressive ataxia
- At the start of our trial, no SLT studies published on this patient group, since then, 1 pilot study report on 7 patients with ARSACS<sup>1</sup>
- Lee Silverman Voice Treatment (LSVT)<sup>2</sup>: originally designed for Parkinson's Disease, also shown benefits for other disorders (stroke, TBI, MS, CP)
  - ➔ appropriate for speakers with ataxia?

## Aim & Objectives:

Perform a feasibility study into the effectiveness and acceptability of LSVT to improve communication in people with dysarthria due to hereditary ataxia.

1. Does LSVT result in positive changes to communication immediately following and 2 months post-treatment in speakers with hereditary ataxia and dysarthria?
2. Does LSVT lead to any undesirable outcomes in this population, such as increased fatigue level, or impact on voice quality?
3. What is the patient's experience of LSVT delivered by Skype as a treatment regime?

## Methods

### Participants

- 21 patients recruited, 20 started and 19 completed treatment
- 18 FA, 1 SCA6, 1 SPG7, 1 unspecified CA
- Age range 19 – 75 years, 10 male, 10 female
- Speech severity level: mild – severe

### Assessment:

- 2 baseline assessments
- 2 post-treatment assessment (immediate and @ 8 weeks)
- Administered via Skype

### Assessment tasks:

- Prolonged /a/, Reading passage, Monologue, Impact/fatigue questionnaires, Participant interview

### Outcome measures:

- Loudness, Voice quality, Prolonged vowel length, Phrase length, Intelligibility, Naturalness, Psychosocial impact, Fatigue

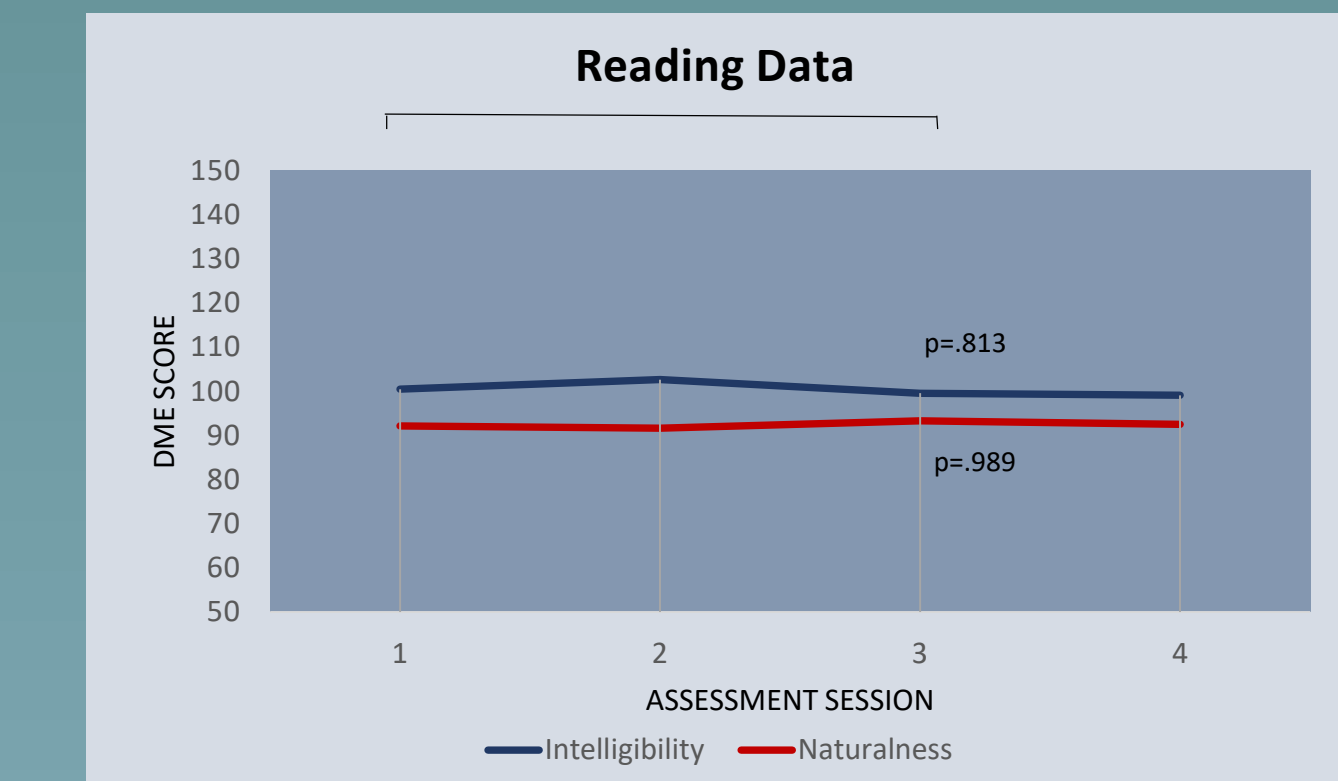
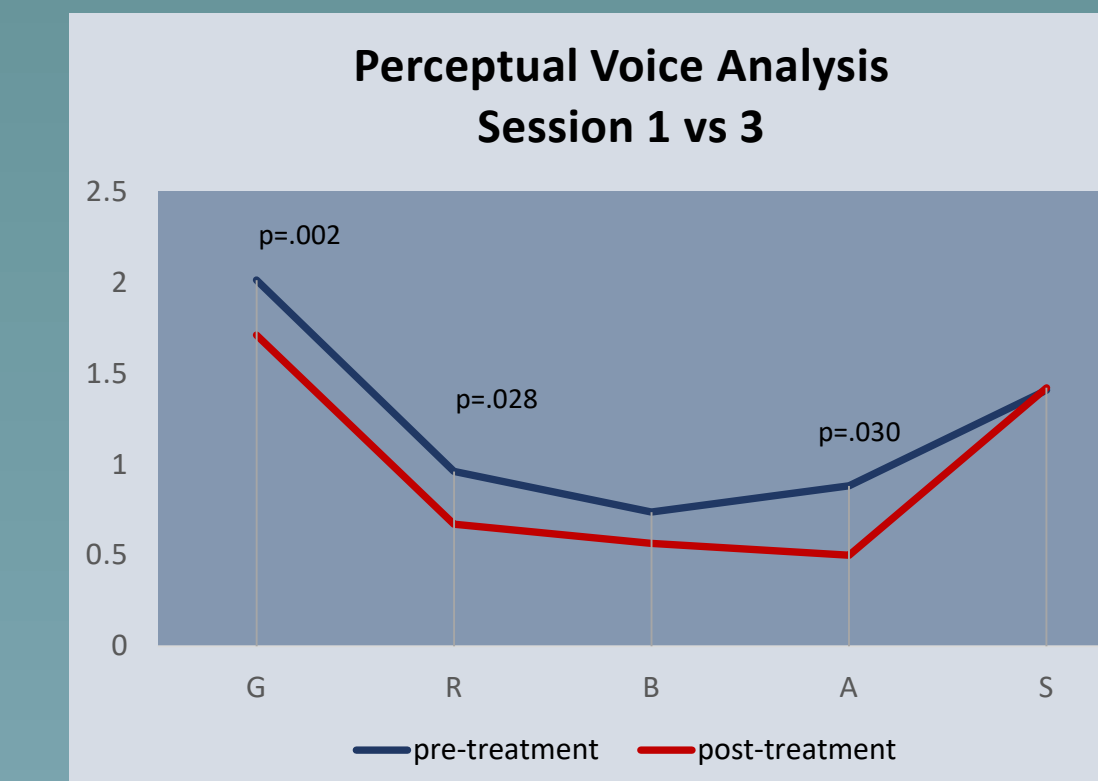
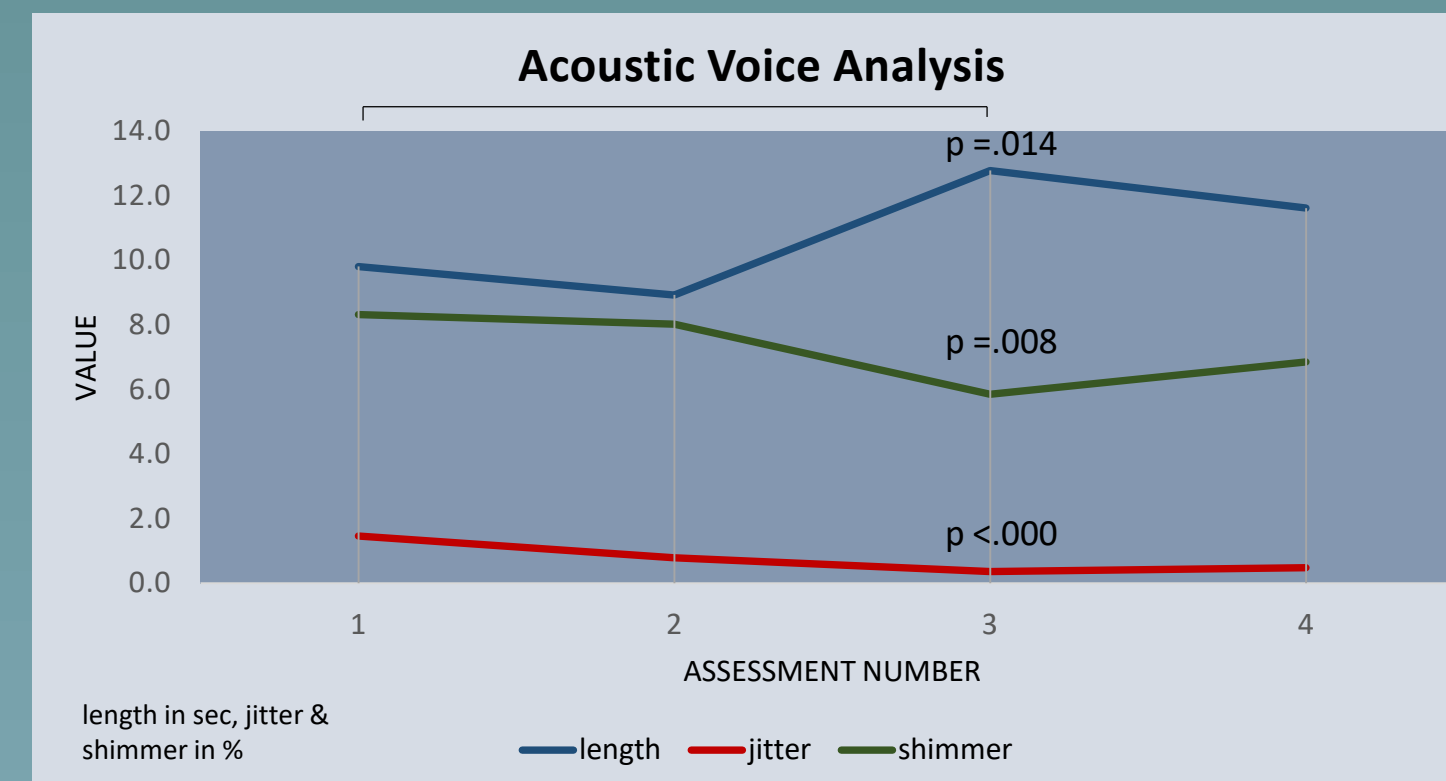
### Treatment:

- LSVT-X – 16 sessions @ 2 sessions a week over 8 weeks, administered via Skype

### References:

- 1 Vogel et al. (2019). Speech treatment improves dysarthria in multisystemic ataxia: a rater-blinded, controlled pilot-study in ARSACS. *Journal of Neurology*, 266(5), 1260-1266.
- 2 Ramig et al. (2018). Speech treatment in Parkinson's disease: Randomized controlled trial (RCT). *Movement Disorders*, 33(11), 1777-1791
- 3 Sapir et al. (2003). Effects of intensive voice treatment (the Lee Silverman Voice Treatment [LSVT]) on ataxic dysarthria: a case study. *American Journal of Speech-Language Pathology*, 12(4), 387-399.

## Results



Because of the changes in my voice I used to sound anxious in meetings, but now that I have the strategies my presentation went really well

I find it easier to complete all the syllables now

I'm not worried that people will ask me to repeat anymore

It's helped me to control my voice

Patient Perceptions*	No. of reports/19
Louder speech	14
Clearer speech	13
Longer phrases/speaking time	13
Better pacing / breath management	4
Better pitch/loudness control	2
Corroboration by others	7
Increased confidence / reduced anxiety	10

\* 15/19: considerable benefit; 2/19: a little benefit, 2/19: no benefit

I used to avoid phone conversations but I'm fairly confident now

Before it took a lot more effort to pronounce words

I recently met with some college friends who I'd not seen for 2 years and they thought I sounded better than last time

Before, I'd say "I can't be bothered", but now I've been able to be more involved in conversation

## Discussion

### Treatment outcomes:

- LSVT-X was beneficial for patients, cf<sup>3</sup>
- Improved voice quality
- Improved breath support
- Patient perceived benefits for communication and confidence
- BUT – no listener perceived changes to intelligibility and naturalness – different to<sup>1,3</sup>

### Treatment delivery:

- No negative impact on fatigue levels or voice
- 18/19 participants preferred Skype delivery to face to face
- Some issues with adherence due to prolonged treatment schedule – 4 weeks intensive delivery might be preferable

## Conclusion

Speech therapy can be beneficial for people with ataxia's communication and psychosocial wellbeing

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