

Using Ultrasound to Treat Speech Sound Disorders

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Ultrasound visual biofeedback (U-VBF) has been used in intervention to treat¹:

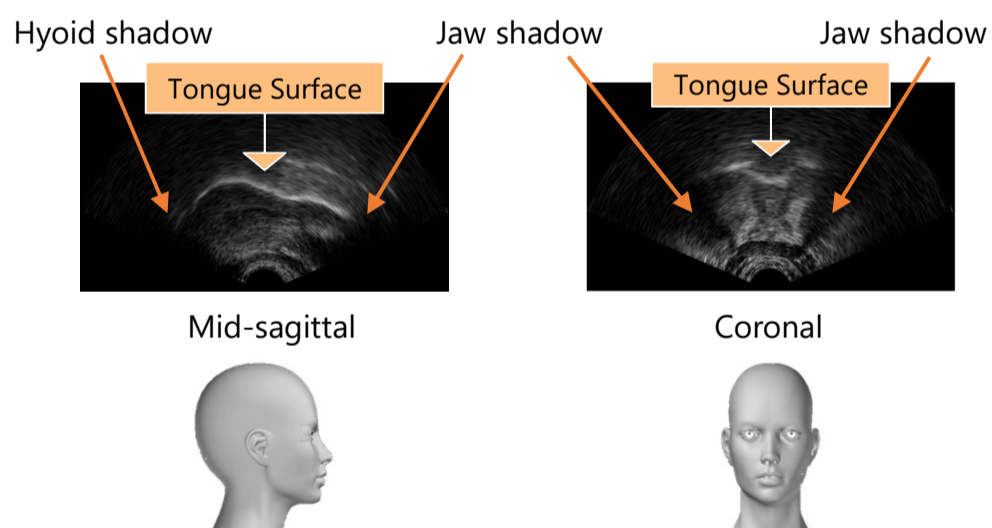
- Residual speech sound errors
- Persistent speech disorders
- Childhood apraxia of speech
- Speech errors from cleft lip and/or palate

Evidence ranges from case studies to RCTs (mostly single case studies)^{1,2}

U-VBF can be used to treat many targets:

/r/	Sibilants /s, ʃ/	Velars /k, g/	Vowels
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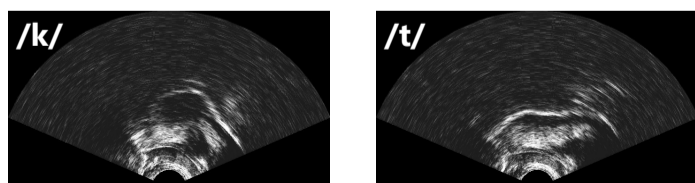
Interpreting the Ultrasound Image



The ultrasound can be used in **assessment** to

identify speech sound errors, or identify covert contrasts

Comparing /k/ and /t/



Steps in Ultrasound Intervention³

1. Mapping / familiarisation with the image

2. Show / explain features of the target sound

3. Pre-practice / eliciting a new articulation

4. Practice target in different contexts

1. Sugden, E., McCabe, P., & Cleland, J. (submitted). Systematic review of ultrasound visual biofeedback in intervention for speech sound disorders.

2. Furniss, R., & Wenger, T. (2018). Seeing the big picture: The use of ultrasound in treating functional speech disorders in school-aged children in a community health setting. *Journal of Clinical Practice in Speech-Language Pathology*, 20, 76-82.

3. Cleland, J., Wrench, A., Lloyd, S., & Sugden, E. (2018). *ULTRAX2020: Ultrasound Technology for Optimising the Treatment of Speech Disorders: Clinicians' Resource Manual*. Glasgow: University of Strathclyde. <https://doi.org/10.15129/63372>

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