Ultrasound Visual Biofeedback in the Clinical Management of Speech Sound Disorders
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Ultrasound visual biofeedback (U-VBF) has been used in intervention to treat:
- 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, 44.8%)\(^1,2\)

U-VBF can be used to treat many targets:

<table>
<thead>
<tr>
<th>/ʃ/</th>
<th>/s, ʃ/</th>
<th>/k, ɡ/</th>
<th>Vowels</th>
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</thead>
</table>

Across the evidence base, U-VBF has typically been used as an adjunct to other phonetic-based approaches\(^1\)

Facilitates the acquisition of targets, but some difficulties with generalisation for some participants\(^1,3\)

**Interpreting the Ultrasound Image**

- Hyoid shadow
- Jaw shadow
- Tongue Surface
- Mid-sagittal
- Coronal

The ultrasound can be used in *assessment* to confirm transcriptions, identify unusual speech errors, or identify covert contrasts

Comparing /k/ and /t/

**Steps in Ultrasound Intervention\(^4\)**

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

**Consider the Principles of Motor Learning in therapy\(^5\)**

- High dose
- Target complexity and variability
- Blocked vs random practice
- Type, frequency and timing of feedback

**References**


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