Contrast behavioral performances from school-aged children with and without signs and symptoms of auditory processing disorder (APD) using an experimental dichotic listening paradigm composed of low-pass filtered speech presented under divided-attention (DIV) and directed-attention (DIR) listening modes.

The direction and magnitude of interaural asymmetry (IA) on dichotic listening tests is often evaluated during diagnostic assessments for APD, with excessive IA (e.g., left-ear deficit) often taken as a sign of the disorder. It is worthwhile to consider that clinical decisions about IA might be improved when the dichotic test itself generates meaningful amounts of asymmetry in the non-clinical population, but without introducing extra-auditory factors on test performance.

In this regard, a recent study evaluated performances to dichotic low-pass filtered speech (dichotic filtered words, DFWs) presented under DIV and DIR test modes in healthy young adults with normal hearing. Previous studies have suggested that the combined utility of DIV and DIR modes may help discern the relatively contributions of perceptual (bottom-up) versus cognitive (top-down) processing biases underlying IA. Results showed that larger values of IA (e.g., REA) were produced using DFW as compared to traditional non-filtered stimuli. The magnitude of IA for DFWs was similar between test modes.

The purpose of this study was to further evaluate the DFW paradigm in a sample of school-aged children with and without symptoms of APD.

Study 1: Production of Dichotic Filtered Words (DFW) Stimuli

Sixty DFW trials were constructed from 120 digitally recorded monosyllabic words showing similar onsets/offsets and no obvious semantic or phonological relationships (e.g., rhyming words)

Three test lists incorporating 20 DFW trials each were assembled and transferred to compact disc for testing.

Study 2: Group Results to DFW Stimuli presented under DIV and DIR modes.

The maximum and minimum score, interquartile range (75% and 25%), median score, and mean score are denoted by the whiskers, large and small square, respectively.

ANOVA indicated that control listeners had an overall right-ear advantage (p = 0.008) as expected. There was no significant main effect of listening mode (p = 0.421) or interaction between mode and ear, indicating that the size of REA was comparable between modes.

Study 3: Results: Control Group

<table>
<thead>
<tr>
<th>Case 1 – 13 year-old male</th>
<th>Case 2 – 10 year-old female</th>
<th>Case 3 – 8 year-old male</th>
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<tbody>
<tr>
<td>Data</td>
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The DFW technique may be helpful in increasing task difficulty while producing meaningful IA in children without APD. The paradigm may also highlight different patterns of performance in children with suspected APD.

Profiles of atypical performance could potentially delineate between different weaknesses in dichotic listening. Profile A may suggest deficits within the supramodal domain whereas Profiles B and C potentially reflect contributions of supramodal (cognitive) factors.

**REFERENCES**