

## **Development of a Dichotic Digits Test, Pitch Pattern Test and Duration Pattern Test for Sri Lankan Young Adults: Preliminary Findings**

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Dichotic Digits Test (DDT) involves listening to simultaneous digits presented bilaterally with different digits presented to each ear. Pitch Pattern Test (PPT) and Duration Pattern Test (DPT) are temporal processing tests that involve ordering auditory patterns in frequency and duration respectively. Dichotic listening and temporal processing are auditory processes that play a crucial role in everyday speech understanding. Poor performance shown in one or more of these auditory processes are an indication for Central Auditory Processing Disorder (CAPD). Research evidence suggest that performance scores are influenced by the language spoken by the population tested. Therefore, this study aimed to develop a DDT, PPT, and a DPT and establish norms for Sinhala speaking young adults. 25 single pair digits, 30 frequency patterns and 30 duration patterns were recorded using 6 bisyllabic Sinhala digits, 880 Hz and 1122 Hz, and 250ms and 500ms stimuli respectively. All tests were developed based on gold standards for CAPD test material construction. Initially, the stimuli were piloted on 20 participants who met the inclusion criteria, but not included in the main study. A sample of 128 right-handed normal hearing young adults aged 20 to 28 years were tested to establish cut-off scores, ear differences and gender differences in performances for all three tests. The participants were limited to young adults in order to minimize effects of aging on test performance. The DDT was performed under free recall, directed right and directed left listening conditions. Free recall involved repeating digits heard in both ears while directed recall involved repeating the digit in the monitored ear and ignoring the digit in the other ear. The cut-off scores for the DDT were 91.64% in the right ear and 85.96% in the left ear for the free recall and 69.15% in the right ear and 68.75% in the left ear for the directed recall listening condition. The PPT and DPT reported cut-off scores that were 27.82% in the right ear and 29.90% in the left ear, and 72.99% in the right ear and 73.33% in the left ear respectively. The right ear scores were significantly higher than the left ear scores ( $p < .001$ ) in the DDT free recall listening condition, re-establishing the phenomena of right ear advantage. Interestingly, ear differences were not significant ( $p > .001$ ) for PPT and DPT. No gender differences were noted for any of the tests. The study provide audiologists in Sri Lanka access to feasible tests and preliminary cut-off scores that would help diagnose CAPDs in young adults.

Keywords: “DDT; PPT; DPT; CAPD; cut-off scores”

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