

Modification Of Auditory Temporal Processing Thresholds In Language-Based Learning Disabled Children

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Language-based learning disabled (LLD) children show severe deficits in their ability to perceive rapidly presented, brief duration information (Tallal et al., 1993). Recent behavioral and electrophysiological evidence suggest auditory psychophysical thresholds can be modified through training (Recanzone et al., 1993). The present investigation, conducted within the context of a larger four-week intervention study, examined the extent to which temporal processing thresholds can be modified in LLD children, as well as the extent to which these changes were related to improvements in language skills.

At study onset, each LLD child (n=7) had well-documented deficits in auditory temporal processing, auditory memory and related language skills. After the four week training program, all children showed a significant improvement in temporal integration thresholds and similarly in measures of speech and language performance (see poster by Tallal et al.).

Importantly, post-training measures of language comprehension were significantly correlated with improvements in temporal processing thresholds ($r=.73$) and the number of training sessions ($r=.85$) on different adaptive non-verbal training procedures (see poster by Jenkins et al.).

These results have implications for the continued application of models of learning and cortical plasticity for the treatment of deficits of higher cognition. Moreover, these data provide additional empirical evidence that similar temporal processing mechanisms may underlie speech and nonspeech perception.