

Effects of Diotic Intensity Variations on  
Auditory Processing in Aphasia

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Abstract

Clinical observations have led several authors to suggest that talking louder improves auditory comprehension for the aphasic patient, while others suggest that it does nothing to help comprehension. To clarify these observations under experimental conditions, four measures of auditory processing (nonverbal intensity sequencing, phoneme in word discrimination and sequencing, a semantic-syntactic measure of comprehension, and cortical evoked responses) were used in diotic presentation of stimuli to ten left temporal lobe-damaged aphasic subjects. The stimuli were presented at 70, 85, and 100 dB SPL.

Auditory evoked response latencies and amplitudes were generally not significantly different between the damaged and intact hemispheres. The time-intensity trading function was demonstrated with the auditory evoked responses, particularly for the N<sub>2</sub> component.

The ear with the greatest advantage on dichotic listening was found to be contralateral to the lesion, and contralateral to the hemisphere with the shorter P<sub>1</sub> latencies, longer N<sub>2</sub> latencies, and the smaller auditory evoked response amplitudes.

Results suggest that a simple diotic (true binaural) increase of stimulus intensity is not a potent variable for influencing auditory processing in patients with aphasia. While a few individual subjects did improve their performance with an increase in stimulus intensity, on selected tests others' performance deteriorated.