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Performance on auditory temporal-processing tasks for speech and non-speech stimuli by young and elderly listeners

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Results from three auditory tasks are presented from a larger series of temporal-processing tasks completed in three sensory modalities by young and older adults. The first task measured temporal gap detection in noise bands. The second and third tasks used digitally processed vowels in four words (pit, pet, pot, put) as the stimuli. The second task required listeners to identify the order of either two- or four-vowel sequences presented monaurally or dichotically. The third task measured the identification of these four vowels when presented either before or after a noise or vowel-like masker (forward- or backward-masking tasks). Altogether, performance was obtained for 14 auditory temporal-processing measures. Young (N=20) and older (N=50) adults participated. Preliminary analyses (based on data from 50 of the 70 subjects) indicate that young listeners performed significantly better and with less variability than elderly listeners on all tasks. For most tasks, there was considerable overlap between the data from young and elderly listeners, indicating a modest negative impact of aging. At the individual level, correlational analyses among the older adults indicated that pure-tone thresholds were not predictive of temporal-processing performance and that performance on many of the temporal-processing tasks was moderately correlated. [Supported by NIA R01 AG022334.]