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A comparison of speech performance in quiet and noise between persons using cochlear implants and hearing aids

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Abstract
The speech perception ability reported from profoundly hearing-impaired persons using hearing aids or cochlear implants varies widely among the subjects. In a previous study (Agelfors, 1995), it was shown that the subjects with cochlear implants, on the average, rated themselves better compared to the group of hearing-aid users regarding speech performance in quiet and environmental sounds. The present study was designed to assess the relative benefits of cochlear implants and hearing aids in quiet and in noise. A test-battery was constructed that consisted of vCv-syllables, prosodic information, and sentences. All tests were presented in quiet and in noise. Two groups of patients participated and all subjects were selected based on their performance on a connected discourse tracking test, auditory alone (>20 words/min.) Eight subjects were experienced hearing-aid users (HA) with a severe to profound hearing loss and eight subjects were postlingually deafened adults that have used cochlear implants for at least 12 months (CI). To obtain information about the perceived benefit of their assistive devices in two audiovisual situations, the subjects rated themselves on an open scale of 0-10 (dissatisfied to satisfied). The results on the self-rating inventory scale and on the speech perception tests in quiet and in noise for the two groups of subjects are compared and discussed.