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Prosody perception in cochlear implant recipients wearing a hearing aid in the contralateral ear.

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Information in speech is carried mainly by phonetic segments like vowels, diphthongs, and consonants. In addition to phonetic segments information is also transmitted by prosodic cues like stress, tempo, rhythm, and intonation. Cochlear implants (CI) and hearing aids (HA) are not able to convey prosodic features without information loss. CI-patients are mostly able to recognize temporal changes but have difficulties to discriminate spectral changes, especially the contour of the fundamental frequency (F0). Hearing aids are able to transmit low frequency information such as F0 and additionally improve the recognition of spectral changes. Thus bimodal fitting utilizes residual acoustic hearing in the low frequencies for better place coding and might improve the perception of prosodic cues. The present study investigates prosody perception of cochlear implant recipients who are using their hearing aid on the non-implanted ear. Prosody perception was examined by employing a prosody-testbatterie (see presentation H. Meister) with focus on intonation and stress for five conditions: CI alone, HA alone, CI plus HA (CIHA), CIHA with filtered stimuli where fundamental frequency has been removed and CIHA with filtered stimuli where frequencies up to the third harmonic have been removed. Five postlingually deafened CI-patients with bimodal fitting participated in the study. Results of the prosody-testbatterie revealed a range of different response patterns in the five conditions that will be discussed further by means of individual parameters such as speech processing strategies, and results of a loudness scaling test.

