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Sound Localization in Unilateral Hearing Loss: Effects of Unilateral Hearing-Aid Use

In the World Report on Hearing (2021), the World Health Organization (WHO) introduced unilateral hearing loss (UHL) as a new, independent grade of hearing loss. UHL is defined as normal hearing (NH) on one side and moderate or greater hearing loss on the contralateral side. The WHO hypothesizes that people with UHL “may have difficulty [...] locating sounds”. In our study, we assessed localization performance in a group of eleven participants with UHL. In addition to UHL, the participants were fitted with a hearing aid (HA) on the hearing-impaired ear. Localization performance in the frontal horizontal plane was measured without and with the own HA. We were able to confirm the WHO’s hypothesis. The localization performance of participants with UHL in the unaided condition was significantly worse than in bilaterally normal-hearing participants. Contrary to popular expectation, the use of a HA further worsened localization performance. Thus, the deterioration of localization performance with HA use in UHL could be part of the explanation for the limited acceptance rate of unilateral HA fittings.