

A Test Battery To Assess The Benefits Of Bilateral Amplification With Hearing Aids (part II: Detection, Localization, Listening Effort, and Acceptable Noise Level)

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AIM: The aim of this study was to investigate the bilateral benefit in a multicenter study. This presentation covers detection, localization, listening effort (LE), and acceptable noise level (ANL) measurements compared to daily life ratings. **METHODS:** The general procedure is described in part I. In the localization and detection task subjects had to detect or locate a telephone bell in a mixture of daily life sounds in an 8-loudspeaker setup. Subjects had to rate listening effort on a 13 point scale at different SNRs with noise coming from the unilaterally aided side and speech from the unaided side. Additionally, a newly designed questionnaire on LE was administered in Oldenburg to evaluate the subjective bilateral benefit. **RESULTS:** LE, detection and localization showed a significant bilateral advantage which was larger for more severe hearing losses ($p < 0.001$). There was no difference in the ANL test between unilateral and bilateral provision. The LE Questionnaire showed a tendency for a bilateral benefit. The results of the AVETA questionnaire indicated a consistent benefit from the second hearing aid for detection and localization ($p < 0.05$) and also a tendency towards a larger benefit with increasing hearing loss. **CONCLUSION:** The current analyses indicate a bilateral benefit regarding the ability to detect sound from different directions and on localization abilities for different hearing losses, especially when the source is located at the unilaterally unaided side. Also a benefit in subjective listening effort is evident, even for subjects with mild hearing losses. This is partly supported by the self reported measures in the questionnaires. All in all different measures from the extensive test battery showed a clear benefit of a second hearing aid

