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Speech intelligibility in quiet noise and loudness perception for quiet signals

A basic function of hearing aids is to restore audibility of signals. When quiet signals are not audible, we may expect reduced speech intelligibility.

Loudness perception with hearing aids was measured with 30 experienced hearing aid users using the loudness validation method. In addition, speech intelligibility with hearing aids at noise levels of 50 and 65 dB SPL was measured using the German matrix test with frontal presentation. The ten subjects with the least difference (group A) in speech intelligibility at 50 and 65 dB SPL were compared with the ten subjects with the largest difference (group B).

The results show on average lower-than-normal loudness perception for quiet signals in group B. In group A, on the other hand, there was on average normal loudness perception for quiet signals.

In the talk, I shall discuss whether the difference in speech intelligibility in noise between 65 and 50 dB SPL is suitable for checking gain setting for quiet signals in hearing aids.