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**Title:** An algorithm that administers adaptive speech-in-noise testing to a specified reliability at selectable points on the psychometric function

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**Abstract:**

*Objective:* To introduce and verify an algorithm designed to administer adaptive speech-in-noise testing to a specified reliability at selectable points on the psychometric function.

*Design:* Speech-in-noise performances were measured using BKB sentences presented in diffuse babble-noise, using morphemic scoring. Target of the algorithm was a test-retest standard deviation of 1.13 dB within the presentation of 32 sentences. Normal-hearing participants completed repeated measures using manual administration targeting 50% correct, and the automated procedure targeting 25%, 50%, and 75% correct. Aided hearing-impaired participants completed testing with the automated procedure targeting 25%, 50%, and 75% correct, repeating measurements at the 50% point three times.

*Study sample:* Twelve normal-hearing and 63 hearing-impaired people who had English as first language.

*Results:* Relative to the manual procedure, the algorithm produced the same speech reception threshold in noise (p = 0.96) and lower test-retest reliability on normal-hearing listeners. Both groups obtained significantly different results at the three target points (p < 0.04) with observed reliability close to expected. Target accuracy was not reached within 32 sentences for 18% of measurements on hearing-impaired participants.

*Conclusions:* The reliability of the algorithm was verified. A second test is recommended if the target variability is not reached during the first measurement.