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Audible Contrast Threshold (ACT™) test: From research laboratory to clinic

This contribution presents evidence from a series of studies that has matured research versions of spectro-temporal modulation sensitivity testing into a clinically viable tool: the Audible Contrast Threshold (ACT) test. Over the last decade, ACT and earlier measures of spectro-temporal modulation sensitivity have shown high predictive power over speech-in-noise performance in several research studies with aided hearing impaired test subjects. ACT is clinically interesting, as upfront knowledge about a prospective hearing aid user's realistic speech-in-noise performance can be useful for individualising the hearing aids' help-in-noise features, and can contribute to more targeted patient counselling. Among the important novelties are that ACT stimuli are shaped according to the individual audiogram to ensure audibility throughout the frequency range of interest, a unique test procedure very similar to that of the pure-tone audiogram, and particularly promising results when the speech-in-noise comparison data were obtained in a complex "ecologically valid" test condition including speech maskers and reverberation. Notably, compared with ecologically valid speech-in-noise testing, ACT requires minimal equipment and can be used worldwide as it uses non-language specific stimuli.