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Use of a versatile acoustic room for audiology applications

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For several decades, hearing tests have been carried out in audiometric test rooms which must meet acoustical requirements set forth in standards on ambient noise levels (i.e. ANSI S3.1-1999 (R2003)). It is however generally accepted that acoustical environments in which individuals with hearing loss function daily seldom correspond to environments found in audiometric rooms. Constraints regarding the sound attenuation by room walls (i.e. costs) can thus be minimized with a more rigorous control over certain acoustical characteristics within the sound room (i.e. reverberation time), thereby allowing to recreate more realistic environments of daily living. During the planning stage of the Research Unit on Noise and Communication at the University of Ottawa, the researchers opted for a versatile acoustic room with reversible panels that not only offers adequate sound attenuation by walls but also some control over reverberation time, thereby allowing to recreate more typical acoustic environments. The characteristics of this versatile acoustic room, as well as examples describing applications of use (effect of repetition on speech recognition, attenuation by headphones used with portable audio systems, effect of hearing protection on speech recognition within military noise environments) will be presented.