

Population Study

Oral

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Absorbance value in middle-aged and older adult population using wideband tympanometry

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Introduction: Wideband tympanometry is a new version of tympanometry available for audiology clinics. The scarcity of information on middle-aged and older adult population leads to study. This study focuses on ear effect, tests re-test reliability, measurement of absorbance according to different age group and comparing current study finding with established normative. **Methods:** 27 participants (15 men, 12 women, and aged 50-73 years) which comprised of 13 adults with age more than 50 years, 10 adults that aged more than 60 years and 4 adults that aged more than 70 years were assessed using wideband tympanometry. Energy absorbance data were collected at 15 frequencies using a tympanometry developed by Interacoustics. Each side of the ear of the participants was measured three times. **Results:** An independent t-test and repeated measure ANOVA was done respectively showed that there is no variability observes on ear effect and test re-test reliability. Measurement of absorbance according to age group showed significant difference in middle-aged adults (50 years old group and 60 years old age group, $Z = -2.593$, $p = 0.03$) while no significant differences observed between middle-aged and older adults. The mean of absorbance was found to be higher than the other studies at 257 Hz until 1587 Hz and pattern were reverse for frequency 3174 Hz above. **Conclusions:** This study provides evidence of ear effect, test re-test reliability, and age of measurement of absorbance in middle-aged and older adult population. This finding supports the important establishing age specific norm starting from the middle-aged population.

KEYWORDS: Wideband tympanometry, middle ear, ear effect, test-retest reliability, age