Middle ear muscle reflex in children with auditory processing and/or attention deficit/hyperactivity disorders

Nicole E. Johnson; Thierry Morlet; Rachele Sklar; Laura Grinstead; Julianne Nemith; Kyoko Nagao

doi: http://dx.doi.org/10.1121/1.4988776

ABSTRACT

Previous studies suggest abnormal auditory efferent systems in children with Auditory Processing Disorder (APD) and children with Attention-Deficit/Hyperactivity Disorder (ADHD). The current study examined the middle ear muscle reflex (MEMR) of three groups of children. The APD group consisted of 32 children with auditory processing deficits and the ADHD group consisted of 50 children. The children with ADHD were either taking ADHD-related medication (n = 31) or not taking such medication (n = 19). All subjects were selected from an existing database. Ipsilateral MEMR responses at 0.5, 1, 2, and 4 kHz in each ear were categorized as normal or abnormal (defined as any response over 90dB HL, or no response). Contingency table analyses and corresponding chi-square tests were used to compare the proportion of abnormal MEMR responses between groups and ears. We found no significant difference between APD and ADHD groups. The children with APD and children with ADHD medication showed no significant ear difference (ps > 0.5), whereas children without ADHD medication exhibited a marginally significant difference between the left and right ear (p = 0.044). The results suggest an abnormal asymmetry in auditory efferent pathways in ADHD. Further studies should include contralateral pathways to further evaluate asymmetrical patterns in these groups.