



# Effects of Recurrent Acute Otitis Media on Central Auditory Processing Disorder in Children

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## ABSTRACT

**Introduction:** Recurrent otitis media with effusion is a common condition in childhood. Various studies have demonstrated that in addition to hearing loss, otitis media can lead to significant complications, including central auditory processing disorders (CAPDs). CAPD refers to how the central nervous system processes auditory information. Given the high prevalence of recurrent otitis media in children and its impact on CAPD, along with its association with issues such as attention deficit and difficulties in reading and writing, we attempted to evaluate the effects of recurrent acute otitis media on CAPD in children.

**Methods and Materials:** Based on Cochrane systematic review principles and PRISMA guidelines, a comprehensive search was conducted using keywords "auditory cortex disorders", "Central auditory disease", "Central auditory pathway disorder", "central auditory processing disorder" AND "Otitis media" AND "children" in electronic databases such as PubMed, Scopus, and Web of Science until June 2024. Also, the Google Scholar search engine was used to review grey literature. Inclusion criteria were (1) original studies investigating the effect of otitis media in children suffering from CAPD and (2) English language articles. All review studies, interventional studies, commentary, and letters to editors were excluded. Two authors conducted screening and data extraction independently, and any discrepancies were resolved by consensus involving a third author. Cochrane risk of bias assessment (ROB 2) tool was used to evaluate the bias of studies.

**Results:** Among the 9,125 articles retrieved, 8,922 duplicates and irrelevant titles and abstracts were removed, leaving 203 articles that met the eligibility criteria, of which eight were included in the final analysis. Most studies were conducted in Asia, with a mean participant age of 7.6 years. All eight included studies demonstrated the negative impact of recurrent otitis media on auditory ability, particularly in children who experience recurrent otitis media in the first few months of life, a critical period for developing the auditory nervous system.

**Conclusion and Discussion:** One can influence the management of CAPD and the future direction of child research. It is recommended that greater emphasis be placed on studying otitis media during childhood.

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