

Electrophysiological Assessment and Singing-Based Intervention in Children with Central Auditory Processing Disorders (CAPD)

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Abstract:

Electrophysiological Assessment and Singing-Based Intervention in Children with Central Auditory Processing Disorders (CAPD) Central Auditory Processing Disorders (CAPD) in children are often challenging to assess and treat, particularly in multilingual contexts or when comorbid with attention or learning difficulties. Traditional behavioral evaluations may not always be feasible or reliable for all children. Electrophysiological recordings, including speech-evoked Auditory Brainstem Responses (S-ABR), Cortical Auditory Responses (e.g., P1, N1, P2, N2, MMN, P300), and Frequency Following Responses (FFR), offer an objective means to assess auditory neural function and inform clinical decision-making. This talk presents a study examining the electrophysiological profiles of school-aged children diagnosed with CAPD before and after a music-based intervention. A group of children participated in a structured six-month singing program integrated into their school routine. Electrophysiological recordings were collected pre- and post-intervention using speech ABR and cortical responses. Preliminary results suggest improved neural timing and enhanced auditory encoding in a subset of participants, indicating potential plasticity in auditory processing networks in response to musical training. The keynote will bridge science and clinical practice, highlighting how musical and enriched activities can drive auditory plasticity and improve listening outcomes. It will also discuss the integration of electrophysiological tools into real-world clinical settings and the broader implications for early identification, inclusive education, and interprofessional collaboration among audiologists, educators, speech-language pathologists, and pediatric healthcare professionals.



Biography:

Dr. Amineh Koravand is an Associate Professor at the University of Ottawa's School of Rehabilitation Sciences, Faculty of Health Sciences. Her research examines the relationship between peripheral and central auditory processing in children with and without Central Auditory Processing Disorders (CAPD). Prof. Koravand focuses on developing neurophysiological biomarkers to assess auditory function and neural plasticity during early development. Her work integrates auditory neuroscience and electrophysiology — including auditory brainstem responses (ABR), frequency-following responses (FFR), and cortical potentials (P1, N1, P2, MMN) — with behavioral measures to study how musical training, singing, bilingualism, multilingualism, and auditory-speech disorders influence brain plasticity. Prof. Koravand has led and collaborated on numerous international projects investigating auditory development and neuroplasticity, advancing evidence-based approaches in both research and clinical practice. Dr. Koravand is also deeply involved in graduate supervision and mentorship, guiding Master's and Ph.D. students whose work contributes to the growing field of pediatric auditory neuroscience. Her research and collaborations aim to strengthen audiology education and clinical practice worldwide.