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### Abbreviations

**ERPs:** Event-Related Potentials; **ADHD:** Attention-Deficit/Hyperactivity Disorder; **SLI:** Specific Language Impairment; **ASD:** Autism Spectrum Disorder; **OCD:** Obsessive-Compulsive Disorder; **LPP:** Late Positive Potential

### Introduction

Cognitive assessment plays a crucial role in understanding the complexities of neurodevelopmental disorders in children and adolescents. Traditional methods, such as questionnaires and standardized tests, provide valuable insights but often lack the precision necessary for early diagnosis and tailored intervention strategies. Event-Related Potentials (ERPs) offer a promising avenue for assessing cognitive function, providing real-time measures of neural activity in response to specific stimuli or tasks. In the realm of child and adolescent psychiatry, ERPs hold immense potential for unravelling the intricate neural underpinnings of cognitive processes and aiding in the identification and management of various disorders [1,2]. ERPs are electrical brain responses elicited by external events or stimuli, recorded through electroencephalography (EEG). These responses reflect the synchronized activity of large populations of neurons and are characterized by distinct components, each associated with different cognitive processes. By analysing the timing and amplitude of these components, researchers can gain insights into attention, memory, language processing, and other cognitive functions with millisecond precision.

### Applications in child and adolescent psychiatry

ERPs offer valuable markers for assessing attentional processes in children and adolescents with attention-deficit/hyperactivity disorder

