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EEG based supplementary biomarkers for diagnosing pediatric ADHD and High Functioning Autism (HFA)

Neurodevelopmental disorders like ADHD and HFA are considered brain based disorders, but diagnostic criteria do not include measures of brain function. This is a problem, because we know that there are different underlying mechanisms for symptoms like inattention or social dysfunction, with implications for treatment. DSM 5 opens up for subsuming different phenomena under the same umbrella, and subjective interpretations of the diagnostic criteria may be an important reason for public skepticism and large variations in reported incidences. A multicenter study in Norway and Sweden searching for profiles of EEG based biomarkers distinguishing between ADHD, HFA, ADHD+HFA and controls, is in progress. Patients referred for assessment of ADHD and/or HFA will be included and diagnosed according to DSM 5. A test procedure, WinEEG (www.mitsar-medical.com) will be completed after diagnostic conclusions are reached. It consists of EEG registrations 3 minutes eyes closed, 3 minutes eyes opened and a 20 minutes task condition – a cued visual go/no-go task for computing ERPs. Based on the research literature and clinical experience with the methods, we have a number of hypotheses that, if confirmed, may result in clinically useful supplementary biomarkers that can help clinicians make evidence based diagnostic formulations in shorter time.

Biography

Geir Ogrim is a Senior Clinical Neuropsychologist working in a Neuropsychiatric team in Child- and Adolescent Psychiatry at Østfold Hospital Trust, Fredrikstad, Norway, combining research and clinic. His university affiliations are NTNU, Trondheim Norway and Gillberg Neuropsychiatry Centre (GNC), Gothenburg, Sweden. His PhD thesis was on, "Electrophysiology in ADHD: Diagnosis, Predictions and Treatment". His research focuses on quantitative EEG (QEEG) and event related potentials (ERPs) in combination with neuropsychological tests as methods to be used as supplementary biomarkers in diagnosing developmental disorders and predictions of treatment outcome. He is the Head of the professional board in patient organization ADHD Norge, and a consultant at NevSom – National Resource Centre for Neurodevelopmental Disorders and Hypersomnias

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