

**Publication****A neurophysiological marker of preparation in an 11-year follow-up of Attention-Deficit/Hyperactivity Disorder****JournalArticle (Originalarbeit in einer wissenschaftlichen Zeitschrift)****ID** 2363393**Author(s)** Steinhausen, H. -C.**Author(s) at UniBasel** [Steinhausen, Hans-Christoph](#) ;**Year** 2013**Title** A neurophysiological marker of preparation in an 11-year follow-up of Attention-Deficit/Hyperactivity Disorder**Journal** Journal of Child Psychology and Psychiatry**Volume** 54**Number** 3**Pages / Article-Number** 260-70**Keywords** ADHD, developmental lag, CPT, CNV, RT-SD

Background: This longitudinal electrophysiological study investigated the course of multiple impaired cognitive brain functions in attention-deficit/hyperactivity disorder (ADHD) from childhood to adulthood by comparing developmental trajectories of individuals with ADHD and typically developing controls. Methods: Subjects with ADHD (N=11) and normal controls (N=12) diagnosed in childhood [mean age ADHD/CTRL=10.9years [SD 1.72]/10.0years (SD 1.03)] were followed up after 1.1 and 2.4years, and as young adults [ADHD/CTRL: 21.9years (SD 1.46)/21.1years (SD 1.29)]. At all four times, event-related potential (ERP) maps were recorded during a cued continuous performance test (CPT). We focused on residual deficits as adults, and on developmental trajectories (time and timexgroup effects) for CPT performance and attentional (Cue P300), preparatory (CNV: contingent negative variation) and inhibitory (NoGo P300) ERP components. Results: All ERP components developed without significant timexgroup interactions. Only the CNV remained reduced in the ADHD group, although 8/11 individuals no longer met a full ADHD diagnosis as adults. Cue P300 and NoGo P300 group differences became nonsignificant in early adulthood. The CNV parameters correlated with reaction time (RT) and RT-SD. Perceptual sensitivity improved and the groups' trajectories converged with development, while RT-SD continued to be elevated in adult ADHD subjects. Conclusions: Attentional and preparatory deficits in ADHD continue into adulthood, and the attenuated CNV appears to reflect a particularly stable ADHD marker. Although some deficit reductions may have gone undetected due to small sample size, the findings challenge those developmental lag models postulating that most ADHD-related deficits become negligible with brain maturation.

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