

# Informant-related effects of neurofeedback and cognitive training in children with ADHD including a waiting control phase: a randomized-controlled trial

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## Abstract

There is controversy regarding the clinical efficacy of neurofeedback (NF) and computerized cognitive training (CogT) as treatments for ADHD. Meta-analyses claim that probably blinded teachers observe smaller effects than parents, because they are less biased. We investigated informant-specific effects by manipulating the involvement of informants, by controlling for waiting time effects, and by adding a blinded outcome measure. Seventy-seven children with ADHD were randomly allocated to slow cortical potential NF or to individualized CogT (of attention, working memory or inhibition). The training was conducted in schools (NF:  $n = 19$ , CogT:  $n = 19$ ) or in outpatient clinics (NF:  $n = 19$ , CogT:  $n = 20$ ). Three assessments were scheduled: baseline, followed by a waiting period, pre-training, and post-training. Multivariate Analyses of Variance were conducted to assess parent- and teacher-rated changes in ADHD symptoms and executive functions (EF), and changes according to standardized classroom observations. Both treatments resulted in significant improvements according to informants, with larger effects for parents (ADHD symptoms: parent  $\eta^2 = .32$ ; teacher  $\eta^2 = .10$ ), and according to observations ( $\eta^2 = .19$ ). The setting had no effect on outcome. Considerable waiting time effects were revealed for ADHD symptom ratings by both informants, for EF ratings only by teachers. Changed classroom behavior was uncorrelated with teacher-rated changes. Overall, the results do not support the notion that teachers are more objective while being as sensitive to change as parents. The three sources seem to contribute differential and mostly unrelated pieces of information to the evaluation of treatments.