Effects of Smart-Tablet-Based Neurofeedback Training on Cognitive Function in Children with Attention Problems.

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Abstract

We sought to determine whether smart-tablet-based neurofeedback could improve executive function-including attention, working memory, and self-regulation-in children with attention problems. Forty children (10-12 years old) with attention problems, as determined by ratings on the Conners Parent Rating Scale, were assigned to either a neurofeedback group that received 16 sessions or a control group. A comprehensive test battery that assessed general intelligence, visual and auditory attention, attentional shifting, response inhibition and behavior rating scales were administered to both groups before neurofeedback training. Several neuropsychological tests were conducted at posttraining and follow-up assessment. Scores on several neuropsychological tests and parent behavior rating scales showed significant improvement in the training group but not in the controls. The improvements remained through the follow-up assessment. This study suggests that the smart-tablet-based neurofeedback training program might improve cognitive function in children with attention problems.