Attention-deficit/hyperactivity disorder: the impact of methylphenidate on working memory, inhibition capacity and mental flexibility

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ABSTRACT

Objective
To compare children with attention-deficit/hyperactivity disorder (ADHD), before and after the use of methylphenidate, and a control group, using tests of working memory, inhibition capacity and mental flexibility.

Methods
Neuropsychological tests were administrated to 53 boys, 9–12 years old: the WISC-III digit span backward, and arithmetic; Stroop Color; and Trail Making Tests. The case group included 23 boys with ADHD, who were combined type, treatment-naïve, and with normal intelligence without comorbidities. The control group (n = 30) were age and gender matched. After three months on methylphenidate, the ADHD children were retested. The control group was also retested after three months.

Results
Before treatment, ADHD children had lower scores than the control group on the tests (p ≤ 0.001) and after methylphenidate had fewer test errors than before (p ≤ 0.001)

Conclusion
Methylphenidate treatment improves the working memory, inhibitory control and mental flexibility of ADHD boys.