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# TWO FACES OF REM SLEEP IN NORMAL AND PSYCHOPATHOLOGICAL DEVELOPMENT

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Introduction: We have previously found an increased rapid eye movement (REM) sleep in children with attention-deficit/hyperactivity disorder (ADHD).

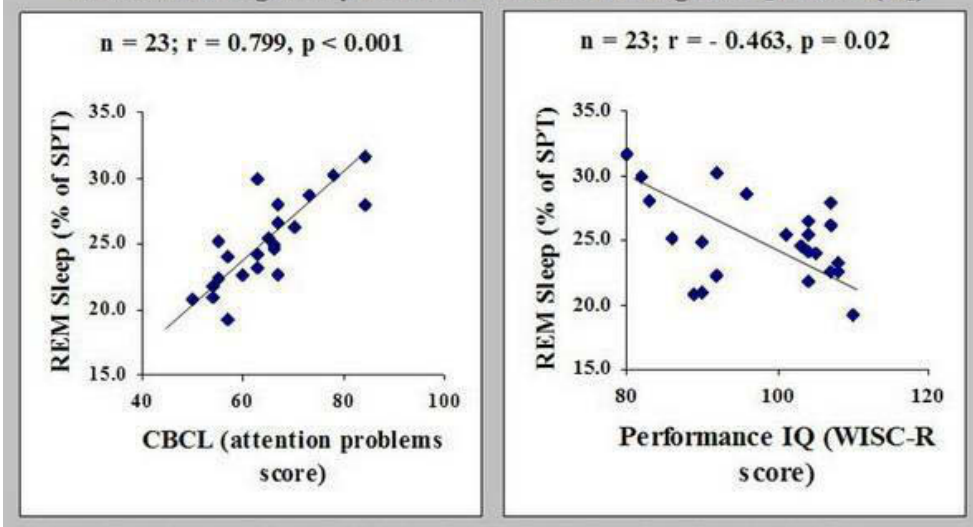
Objectives: To further investigate sleep characteristics in children with ADHD and their association with cognitive and neurobehavioral functions.

Aims: We asked whether and how REM sleep might have been associated with cognitive ability and neurobehavioral functions in children with ADHD compared with healthy children.

Methods: Twenty-three children with ADHD and 21 healthy controls underwent a two-night polysomnography and completed a number of standardized tests for cognitive and neurobehavioral functioning.

Results: Compared with controls, ADHD children exhibited a greater amount of REM sleep. In the ADHD group, the increased amount of REM sleep correlated positively with psychopathological scores (inattention) and negatively with performance intelligence quotient (IQ) (Fig. 1).

**Figure 1. Children with Attention-Deficit/Hyperactivity Disorder: Rapid Eye Movement (REM) Sleep Correlates Positively with Psychopathological Scores and Negatively with Performance Intelligence Quotient (IQ)**




SPT, Sleep Period Time; CBCL, Child Behavior Checklist; WISC-R, Wechsler Intelligence Scale for Children - Revised

[Kirov et al_Figure 1]

In contrast, in the healthy controls, the REM sleep amount correlated positively with performance IQ and negatively with psychopathological scores (inattention) (Fig. 2).

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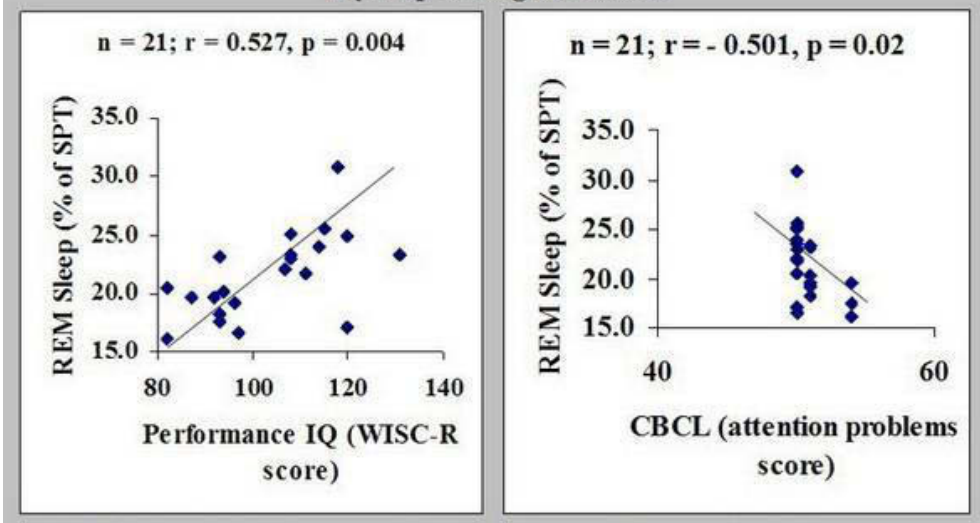
**Figure 2. Healthy Children: Rapid Eye Movement (REM) Sleep Correlates Positively with Performance Intelligence Quotient (IQ) and Negatively with Psychopathological Scores**




TST, Total Sleep Time; CBCL, Child Behavior Checklist; WISC-R, Wechsler Intelligence Scale for Children - Revised

[Kirov et al_Figure 2]

Conclusions: We conclude that REM sleep may have a bi-directional role in cognition and neurobehavioral functioning during childhood depending on the presence or absence of psychopathology.

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