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## **Neuropsychological and Behavioral Correlates of Obstructive Sleep Apnea Syndrome in Children: A Preliminary Study.**

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**STUDY OBJECTIVES:** The purpose of this pilot study was to evaluate a group of children with mild to moderate Obstructive Sleep Apnea Syndrome (OSAS) for baseline neurocognitive deficits and behavioral dysfunction. A subset of the sample were also reassessed, using the same test battery, after treatment with adenotonsillectomy. **DESIGN:** Baseline and post-treatment neuropsychological and behavioral assessment. **SETTING:** Pediatric sleep disorders clinic at a children's teaching hospital. **PATIENTS:** 18 children (12 males, 6 females, mean age 7.3 years plus minus 2.0) meeting polysomnographic criteria for OSAS underwent baseline assessment; 8 children (6 males, 2 females, mean age 8.4 years plus minus 2.6) also completed the post-treatment assessment phase. **MEASUREMENTS:** An age appropriate neuropsychological battery including measures of global cognitive functioning, language, executive functioning and attention, memory, visual perception/visual motor skills and motor skills; two parent rating scales of behavior. **RESULTS:** Modest impairments, largely in executive functioning/attention and motor skills, were found at baseline. Parents endorsed a variety of behavioral problems, especially somatic complaints and problems with learning. There appeared to be relatively little association between impairment and disease severity, although there was a trend for the children with less severe disease, who were also older, to have relatively more behavioral problems. Post treatment, there were modest improvements in executive functioning/attention and motor skills, as well as in parent-reported internalizing and externalizing behaviors. **CONCLUSIONS:** The preliminary results with a small sample suggest mild deficits in executive functions and motor skills in children with mild to moderate OSAS, with modest improvements in the same neuropsychological domains post-treatment. A variety of parent-reported behavioral problems were found at baseline, again with modest improvement post-adenotonsillectomy.

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