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Cognitive function and behavior of children with adenotonsillar hypertrophy suspected of having obstructive sleep-disordered breathing.

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OBJECTIVE: The purpose of this study was to determine whether risks of impaired cognitive function could be predicted for children or groups of children with adenotonsillar hypertrophy who were suspected of having obstructive sleep-disordered breathing, from historical and polysomnographic variables used separately or in combination. **METHODS:** We studied 114 consecutive 6- to 12-year-old children with adenotonsillar hypertrophy, who were referred because of suspected obstructive sleep-disordered breathing, with questionnaires, assessment of tonsil size, general and memory cognitive tests, and attended polysomnography with the use of nasal pressure recording to detect flow. **RESULTS:** There were important significant relationships between snore group (snored every night versus less often), sleep efficiency, and race and 2 of 3 general cognitive tests (vocabulary and similarities). Significant but weaker relationships were observed between sleep latency and 2 memory indices (verbal memory and general memory) and between sleep efficiency and 2 behavior indices (attention-deficit/hyperactivity disorder summary and hyperactive-impulsive summary). The number of episodes of apnea and hypopnea per 1 hour of sleep predicted the vocabulary score as well as did the snore group, but it did not predict other tests as well as other variables. Tonsil size did not predict any cognitive or behavior score. Confidence intervals for group means were small, whereas prediction intervals for individual children were large. **CONCLUSIONS:** Risk of impaired cognitive function and behavior can be predicted from snoring history, sleep efficiency, sleep latency, and race but not tonsil size. The combination of snoring history and polysomnographic variables predicted impaired cognitive scores better than did either alone. The snoring history predicted more test scores than the number of episodes of apnea and hypopnea per 1 hour of sleep.

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