

Cognitive executive dysfunction in children with mild sleep-disordered breathing.

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In children, moderate or severe sleep-disordered breathing (SDB) may impair cognitive executive functions (EFs), including working memory, attention, and mental flexibility. The main objective of this study was to assess EFs in children with mild levels of SDB. Subjects for this descriptive study were 12 children (5 girls, 7 boys) aged 8.0 to 11.9 years ($M = 9.0 \pm 0.85$) participating in an ongoing study of the effects of adenotonsillectomy on behavior. Each subject had a nocturnal polysomnogram (PSG) and a multiple sleep latency test (MSLT). Mild SDB was considered present if the child's apnea/hypopnea index (AHI) was ≥ 1 and < 10 . Between MSLT nap attempts, each child completed standardized tests of EFs. The sample showed significant impairment of sustained attention and vigilance on a computerized continuous performance test. Children with low mental flexibility scores on the Children's Category Test (CCT) spent more time in stage 1 sleep (12.2% v. 9.5%, $P = 0.028$ on PSG) and showed a marginally higher arousal index (9.7 v. 6.5, $P = 0.06$ on PSG) than children with average or above-average CCT scores. AHI accounted for a significant proportion of the variance in CCT scores when 1 outlier was removed ($N = 11$, $R^2 = 0.67$, $P = 0.002$). Mild levels of SDB and associated sleep architecture disruptions may be associated with impairment of EFs in children.

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