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## **Variation of cognition and achievement with sleep-disordered breathing in full-term and preterm children.**

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**OBJECTIVE:** Pediatric sleep-disordered breathing (SDB) has a disproportionately high prevalence in children who were preterm infants (preterm children) and is associated with behavioral comorbidity. Exposure to intermittent hypoxemia and sleep disruption may contribute to cognitive impairment. We quantified the association of SDB with cognition and achievement and determined whether preterm children are at a differentially increased risk for SDB-related impairments. **DESIGN:** Cross-sectional analyses. **SETTING:** Urban community. **PARTICIPANTS:** Eight hundred thirty-five children, aged 8 to 11 years. **Intervention(s)** None. **MAIN OUTCOME MEASURES:** Scores on the Peabody Picture Vocabulary Test-Revised, Kaufman Assessment Battery for Children, and Continuous Performance Test. **RESULTS:** One hundred sixty-four children had SDB. In unadjusted analyses, children with SDB had poorer scores on almost all tests of cognition and achievement. Group differences were attenuated after adjusting for socioeconomic status; in these analyses, children with SDB scored lower on the Peabody Picture Vocabulary Test-Revised (mean +/- SE score, 100.5 +/- 1.4 vs 103.6 +/- 0.7; P = .04), and the Kaufman Assessment Battery for Children riddles and triangles subscales. Associations were stronger in preterm than in full-term children. Of the sleep measures, snoring history was most strongly correlated with indices of cognition and achievement. **CONCLUSIONS:** Although moderate group differences were observed for almost all cognitive measures, an attenuation of effects was observed once socioeconomic status was considered. The deficits in selective measures of academic abilities, language comprehension, and planning and organizational skills suggest a negative impact of SDB on achievement and cognition. Stronger associations in preterm children suggest the importance of screening for snoring, a good predictor of cognitive function in this population.

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