

# Asthma symptoms impair sleep quality and school performance in children

May 21 2013

---

The negative effects of poorly controlled asthma symptoms on sleep quality and academic performance in urban schoolchildren has been confirmed in a new study.

"While it has been recognized that missed [sleep](#) and school absences are important indicators of [asthma](#) morbidity in children, our study is the first to explore the associations between asthma, sleep quality, and academic performance in [real time](#), prospectively, using both objective and subjective measures," said principal investigator Daphne Koinis-Mitchell, PhD, Associate Professor of [Psychiatry](#) & Human Behavior (Research) and Associate Professor of Pediatrics (Research) at Brown University's Alpert Medical School in Providence, Rhode Island. "In our sample of urban [schoolchildren](#) (aged 7 to 9), we found that compromised lung function corresponded with both poor sleep efficiency and impaired academic performance."

The results of the study will be presented at the American Thoracic Society's 2013 International Conference.

The study included data on 170 parent-child dyads from urban and African-American, Latino, and non-Latino white backgrounds who reside in Greater Providence, RI. These data are part of a larger 5-year study of asthma and allergic rhinitis symptoms, sleep quality and academic performance (which will include 450 urban children with persistent asthma and healthy controls) funded by The Eunice Kennedy Shriver National Institute of Child Health and Human Development.

Project NAPS (Nocturnal Asthma and Performance in School) is administered through Rhode Island Hospital at The Bradley Hasbro Research Center.

[Asthma symptoms](#) were assessed over three 30-day monitoring periods across the school year by spirometry, which measures the amount and speed of exhaled air, and with diaries maintained by children and their caregivers. Sleep quality was assessed with actigraphy, which measures motor activity that can be used to estimate sleep parameters. Asthma control was assessed with the Asthma Control Test (ACT), a brief questionnaire used to measure asthma control in children. Academic functioning was assessed by teacher report during the same monitoring periods.

Compared with children with well-controlled asthma, those with poorly controlled asthma had lower quality school work and were more careless with their school work, according to teacher reports. Higher self-reported and objectively measured asthma symptom levels were associated with lower quality school work. Poorer sleep quality was also associated with careless school work. Increased sleep onset latency (the amount of time children take to fall asleep) was associated with more difficulty in remaining awake in class.

"Our findings demonstrate the detrimental effects that poorly controlled asthma may have on two crucial behaviors that can enhance overall health and development for elementary school children; sleep and school performance," said Dr. Koinis-Mitchell. "Urban and ethnic minority children are at an increased risk for high levels of asthma morbidity and frequent health care utilization due to asthma. Given the high level of asthma burden in these groups, and the effects that urban poverty can have on the home environments and the neighborhoods of urban families, it is important to identify modifiable targets for intervention."

"Family-level interventions aimed at asthma control and improving [sleep quality](#) may help to improve [academic performance](#) in this vulnerable population," Dr. Konis-Mitchell continued. "In addition, school-level interventions can involve identifying [children](#) with asthma who miss school often, appear sleepy and inattentive during class, or who have difficulty with school work. Working collaboratively with the school system as well as the child and family may ultimately enhance the child's [asthma control](#)."

Provided by American Thoracic Society

Citation: Asthma symptoms impair sleep quality and school performance in children (2013, May 21) retrieved 24 April 2024 from <https://medicalxpress.com/news/2013-05-asthma-symptoms-impair-quality-school.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.