

Urine test for pediatric obstructive sleep apnea possible

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Researchers at the University of Chicago have discovered a technique that is able to determine whether a child has obstructive sleep apnea (OSA) or habitual snoring by screening their urine.

"These findings open up the possibility of developing a relatively simple [urine](#) test that could detect OSA in snoring [children](#). This would alleviate the need for costly and inconvenient sleep studies in children who snore, only about 20 to 30 percent of whom actually have OSA," said lead author David Gozal, M.D., professor and chairman of the pediatrics department at the University of Chicago.

The study results are published in the December 15 issue of the American Thoracic Society's [American Journal of Respiratory and Critical Care Medicine](#).

Dr. Gozal and researchers from University of Chicago and the University of Louisville studied 90 children who were referred to the sleep clinic to be evaluated for suspected [sleep disordered breathing](#). They also recruited 30 healthy, non-snoring children from the community to serve as controls. The children all underwent standard overnight polysomnography and were categorized either as having OSA, habitual snoring or no sleep disordered breathing.

The children's first sample of urine was collected the morning after the [sleep](#) study. The researchers used a sophisticated [electrophoresis](#) technique to screen hundreds of proteins simultaneously and found that a

number of the proteins were differently expressed in children with OSA compared to children with habitual snoring or healthy, non-snoring children.

"It was rather unexpected that the urine would provide us with the ability to identify OSA," said Dr. Gozal. "However, the field of biomarkers is one that is under marked expansion and this certainly opens the way for possible simple diagnostic screening methods in the future."

While it is estimated that one to three percent of all children up to the age of nine may suffer from OSA, many more (up to 12 percent) experience habitual snoring. Because OSA can lead to cognitive, behavioral, cardiovascular and metabolic consequences in children, differentiating it from habitual snoring is essential. The initial approach is surgical by removing the enlarged tonsils and adenoids, and some children may end up needing CPAP after their surgery.

"We wish to validate these findings in urine samples from many children from laboratories around the country and to develop a simple color-based test that can be done in the physician office or by the parents," said Dr. Gozal.

Source: American Thoracic Society ([news](#) : [web](#))

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