

# Longer work hours for moms mean less sleep, higher BMIs for preschoolers

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Preschoolers of working moms get less sleep, which may explain why these children are at greater risk of becoming overweight, according to a new study by (from left) Janet Liechty, professor of medicine and social work; Katherine Speirs, postdoctoral research associate in human and community development; and Chi-Fang Wu, professor of social work. Credit: L. Brian Stauffer

The majority of preschoolers may not be getting the amount of sleep they need each night, placing them at higher risk of being overweight or

obese within a year, according to a new study.

Published online by the journal *Sleep Medicine*, [the study](#) investigated links between [mothers' employment status](#) and their children's weight over time, exploring the impact of potential mediators, such as children's sleep and dietary habits, the amount of time they spent watching TV and family mealtime routines.

"The only factor of the four that we investigated that mediated the relationship between maternal employment status and [child obesity](#) was how much sleep the child was getting each night," said lead author Katherine E. Speirs, a postdoctoral research associate in human and community development at the University of Illinois.

Speirs and co-authors Janet M. Liechty and Chi-Fang Wu for one year followed 247 mother-child pairs from the STRONG Kids study. A health awareness initiative for families that focuses on preventing child obesity, the study is coordinated by the university's Family Resiliency Center.

The children, who ranged from 3 to 5 years old, were weighed, measured and had their body mass index calculated at the outset of the study and again one year later.

At the second weigh-in, 17 percent of the preschoolers were overweight and 12 percent were obese, according to BMI-for-age growth charts.

Sixty-six percent of the mothers in the sample were employed full time, defined as working 35 hours or more per week. Another 18 percent of the women were employed part time, or 20 to 34 hours per week.

Children whose mothers worked full time got fewer hours of sleep than peers whose mothers worked less than 20 hours per week. The children

of women who worked full time also tended to have higher BMIs at the second weigh-in.

Just 18 percent of the preschoolers in the sample were getting the 11 to 12 hours of nightly sleep recommended by the National Heart, Lung and Blood Institute, the researchers found.

On average, the children were getting about 9.6 hours of nighttime sleep. Each additional hour of nighttime sleep that a child obtained was associated with a 6.8 percent decrease in their BMI at the second weigh-in, the researchers found.

"We looked at nighttime sleep in particular, because studies show that the amount of [nighttime sleep](#) matters for regulating weight," said Liechty, a professor of medicine and of social work.

"We think that it might be the more hours that mothers are working, the less time they have, and there may be some sort of tradeoff going on, 'Do I spend quality time with my child or do we get to bed early?'" Speirs said. "And then in the morning, when mothers leave for work, their children also wake up early to get to day care."

## **How much sleep is enough?**

Age	Recommended hours of daily sleep
Newborns	16-18
Preschool-aged children	11-12
School-aged children	At least 10
Teens	9-10
Adults, including the elderly	7-8

*Source: National Heart, Lung and Blood Institute*

Mothers whose children were enrolled in 32 licensed day care centers in Central Illinois were recruited for the study. Sixty-six percent of the women had college degrees; about a third had household incomes under \$40,000 a year, and just over half the sample had household incomes under \$70,000 a year.

"The challenges of ensuring that [children](#) obtain adequate sleep may be even greater for low-income women, who often hold multiple jobs or work rotating shifts or nonstandard hours," Speirs said.

"There are lots of characteristics about mothers' employment that are really important to help us better understand the relationship between mothers' employment status and child obesity, such as whether women are working part time voluntarily or involuntarily, or scheduled or nonscheduled hours," said Wu, a professor of social work.

The authors are exploring some of these characteristics and possible links with child obesity in a related study, which is currently underway.

**More information:** The paper, "Sleep, but not other daily routines, mediates the association between maternal employment and BMI for preschool children," is available online from ScienceDirect:  
[www.sciencedirect.com/science/.../S1389945714003499](http://www.sciencedirect.com/science/.../S1389945714003499)

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