

With Specialist Shortage, Obese Kids Turn to PCPs

The data suggest that geographic differences in endocrinologist supply may be driving variation.

BY BRUCE K. DIXON
Chicago Bureau

The distribution of children with diabetes and obesity does not parallel that of pediatric endocrinologists in the United States, largely because of geographic disparities in the supply of these specialists, according to Dr. Joyce M. Lee and colleagues at the University of Michigan, Ann Arbor.

This patient-specialist disparity is made especially acute by the growing epidemic of obesity, wrote the authors.

Data from the American Board of Pediatrics were used to estimate the number of board-certified pediatric endocrinologists by state, and national estimates of children with diabetes and obesity were derived from the National Survey of Children's Health, a representative cross-sectional random-digit-dial telephone survey of households with children aged younger than 18 years.

The investigators compared the observed ratios of obese children to pediatric endocrinologists under "index" conditions of greater supply and equitable distribution. They assumed that the ratio of the child population to specialists for each state was similar to that in the state with the largest supply, Massachusetts, where the ratio of obese children to endocrinologists was 5,132:1. The highest ratio—99,984:1—was in Mississippi. Two states, Montana and Wyoming, had no endocrinologists.

Nationwide, there were 17,741 obese children for each board-certified pediatric endocrinologist. By region, the northeast had the lowest ratio (9,994:1) and the south had the highest (25,796:1).

When the scientists examined the ratio of endocrinologists to children with diabetes, they found the best conditions in New England (113:1) and the worst in the east south-central region (594:1). The nation as a whole had a ratio of 290:1 (*Journal of Pediatrics* 2008;152:331-6).

With an almost sixfold difference in ratios of children with diabetes to certified pediatric endocrinologists across census divisions, and no ideal benchmark ratio for children with chronic disease to pediatric subspecialists, the authors believe it is unclear what effect this distribution has on access to the pediatric endocrinologist and health outcomes across geographic areas.

When observed ratios were compared with "index" ratios calculated under assumptions of equitable supply, the "index" ratios showed considerably less variation, the investigators explained. The data suggest that geographic differences in endocrinologist supply, not geographic differences in diabetes and obesity prevalence, might be driving the variation.

The authors point out that childhood obesity clinics are receiving increasing attention as a possible solution to the treatment of pediatric obesity. However, given the scope of the problem in the United States, "it is unclear whether childhood obesity clinics run by subspecialty providers represent a model of care that is either sustainable or effective in addressing the increasing burden," they said.

Given this state of affairs, the role of the primary care physicians and the medical home in caring for the obese child becomes even more critical, Dr. Lee said in an interview.

"Our study may actually underestimate the ratios because most pediatric endocrinologists are affiliated with academic medical centers and spend a lot of time teaching and conducting research rather than seeing patients," said Dr. Lee of the university's division of pediatric endocrinology.

The huge demand for obesity care and diabetes treatment is expected to continue to outpace the slow growth in new specialists, so emphasis should be placed on helping primary care pediatricians prevent and treat childhood obesity, she said.

"The American Diabetes Association states that, ideally, these children should be treated by pediatric endocrinologists, but they also can be treated by adult endocrinologists and even internists and family practitioners," Dr. Lee said in an interview.

"The bottom line is these children need a medical home," and that home really resides with the primary care physician, she concluded. ■

Responsiveness to External, Internal Cues Tied to Obesity

BY KERRI WACHTER
Senior Writer

BALTIMORE — Children with greater body mass indexes appear to be more responsive to external food cues and less responsive to internal satiety signals, according to a study involving almost 11,000 children.

The findings, which were presented at the annual meeting of the American Psychosomatic Society, suggest that variation in responsiveness to internal and external cues could contribute to variation in adiposity, said Jane Wardle, Ph.D., who is the director of the Health Behaviour Research Centre at University College London.

It's long been speculated that obese individuals have an over-responsive meal-initiation system (high food responsiveness) and/or inability to end a meal (low satiety sensitivity).

For this study, the researchers looked at two samples: a preschool group of 572 children (aged 3-5 years) and an older group of 10,364 twins (aged 8-11 years). The twins are part of the larger Twins Early Development Study (TEDS), which involves more than 16,000 families whose twins were born between 1994 and 1996.

Eating behavior of the twins and preschoolers was assessed when the children were between 8 and 11 years of age using parent reporting on the Child Eating Behaviour Questionnaire. The researchers

were particularly interested in satiety sensitivity (as measured by the satiety responsiveness scale) and food responsiveness (as measured by the enjoyment of food subscale). The researchers determined the height and weight of the preschool group, while the parents measured the height, weight, and waist circumference of the twin group.

Satiety responsiveness was negatively correlated with BMI (adjusted for age and sex) in both groups and also was negatively correlated with waist circumference in the twin group. So children with greater BMIs responded poorly to satiety signals. Food responsiveness was positively correlated with BMI (adjusted for age and sex) in both groups and with waist circumference in the twin group.

In terms of satiety responsiveness and food responsiveness, "it's not just a difference between the obese and everybody else. It's a quantitative variation across the distribution," Dr. Wardle said. The data provide evidence that "there are eating behavior traits that have long been implicated in obesity that show a gradient association with weight."

Dr. Wardle suggested that individuals with higher-risk eating behavior traits—less sensitivity to satiety signals and greater response to external food cues—are more responsive to the modern obesogenic environment, in which eating opportunities are everywhere. ■

Short Sleep Duration in Infancy May Predict Childhood Adiposity

BY MARY ANN MOON
Contributing Writer

Sleep duration of less than 12 hours per day during infancy may predict childhood overweight, researchers reported.

In a prospective study of 915 mother-child pairs, sleep curtailment at age 6 months to 2 years doubled the odds that, at age 3 years, a child would show increased adiposity, as measured by both body mass index and skinfold thickness, according to Dr. Elsie M. Taveras and her associates at Harvard Medical School, Boston.

They described this study as the first to report a link between infant sleep duration and childhood overweight. The findings are consistent with data from previous studies involving older children and adolescents, they noted.

They analyzed data from a cohort study of gestational factors and offspring health in Massachusetts residents. The children's sleep duration was assessed at ages 6 months, 1 year, and 2 years. Adiposity was assessed at age 3 years, at which time 9% of the children were overweight (defined as a BMI for age and sex at the 95th percentile or greater).

In the first analysis of the data, "[we] observed an approximately twofold higher prevalence of overweight in children who slept less than 12 hours in a 24-hour period." But short sleep duration was also associated with having a single parent, lower household income, lower maternal education status, nonwhite ethnicity,

and longer durations of television viewing.

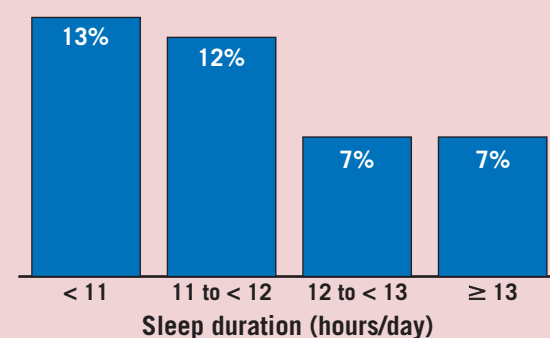
Further analysis adjusted for these potentially confounding factors, as well as for maternal BMI and smoking status, and for infant birth weight and activity level, but the association changed only minimally after the adjustments.

The combination of short sleep duration and extended durations (2 hours or more per day) of television viewing appeared to be synergistic and "was associated with markedly higher" adiposity, the investigators said (*Arch. Ped. Adolesc. Med.* 2008;162:305-11).

The mechanism by which infant sleep curtailment affects later adiposity is not yet clear. In adults, sleep restriction can reduce leptin levels and elevate ghrelin levels, both of which are likely to increase appetite.

Increased time awake also allows more time for eating. And it may increase daytime sleepiness, which in turn may reduce physical activity and promote overweight, the authors wrote. ■

Prevalence of Overweight at Age 3 Years Was Greater for Children Who Had Less Sleep



Notes: Sleep duration was measured in children aged 6 months to 2 years. Overweight was defined as a body mass index in the 95th percentile for age and sex.

Source: Archives of Pediatric and Adolescent Medicine