

Identifying Risk for Obesity in Early Childhood

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A new research study of children's growth, published in the September issue of *Pediatrics*, can help parents and pediatricians determine the risk that a child will be overweight at age 12 by examining the child's earlier growth. The study demonstrates that children who are overweight at any stage of their growth before age 12 are more likely to be overweight by the time they are 12, and the more times a child is measured as overweight during these growth years, the greater the chance that by 12 the child will be overweight.

For example, the researchers discovered that preschool-age children who were medically determined to be overweight at one of three points of measurement before age 5 were more than five times as likely to be overweight at age 12 than those who were below the 85th percentile for body mass index (BMI) during the same period. BMI is a standard measure calculated from a person's height and weight.

Philip R. Nader, M.D., Professor Emeritus of Pediatrics at the University of California, San Diego (UCSD) School of Medicine, is primary author of the study, with co-authors from 10 different institutions around the nation. He said the group pursued the study because obesity is a major public health problem in the United States.

According to Center for Disease Control growth standards developed before the obesity epidemic, children are considered to be overweight if their BMI is over the 85th percentile, or falls in the top 15% of children of the same height and gender. The Institute of Medicine considers these children obese if their BMI is over the 95th percentile or the top 5%. The rate of obesity among adults and children in the U.S. has nearly tripled over the time that the children in the study were growing up.

"Obesity produces physical and psychological health problems that lead to decreased life expectancy and increased health care costs," said Nader. "This study is particularly important because it gives parents and health care providers new data on the likelihood a child will become overweight in early adolescence. Once adolescents become overweight, there is a high likelihood that they will remain overweight as adults. This is one reason why doctors are seeing more children and adolescents with Type Two diabetes."

The study examined more than 1,000 children from ten U.S. locations born in 1991. "They grew up during the period when the 'obesity epidemic' began to be noticed," said Nader.

Nader and colleagues measured the heights and weights of participating children in the study at seven time points: three in the preschool age: two years, three years, and four-and-a-half years; three times in the school age period: seven, nine and 11 years; and finally, at age 12 years.

The researchers found that during the pre-school and elementary school period, the more times a child was overweight, the greater the likelihood of a child being overweight at age 12.

For example, if a school-age child was overweight one time, the child was 25 times more likely of being overweight at age 12, two times resulted in 159 times more likely, three times was 374 times more likely. The group determined that 60% of children who were overweight at any time during the preschool period and 80% of children who were overweight at any time during the elementary period were overweight at age 12.

"These results suggest that any time a child reaches the 85th percentile for BMI may be an appropriate time for intervention," cautioned Nader. "For this sample of children who are growing up during a period of increasing obesity rates, it is clear that the longer a child remains in the lower ranges of normal BMI, the less likelihood the child will become overweight by early adolescence. The more times a child entered a higher BMI category or was overweight there was a greater likelihood that the child would remain overweight."

In children, height and weight is routinely collected by healthcare providers and calculation of BMI could be an important step in the path to early detection of a tendency towards becoming obese," said Nader. "Factors such as parental weight status, genetic tendencies, and lifestyle/ environmental issues of healthy diet, TV watching, and opportunities for safe active play are important contributors to the problem of obesity."

The researchers concluded that based upon the reported growth data, health care providers can confidently encourage parents of overweight young children that they should address the child's eating and activity patterns immediately rather than delaying in the hope that the overweight and the patterns that support the continued addition of weight will resolve themselves in due course.

Nader stated that if parents can prevent the escalating rate of weight gain as the child grows taller, parents will be able to keep the child in the lower normal BMI ranges, which will greatly decrease the chances of becoming obese in adolescence and possibly later in life.

"Parents should demand that the environment that their child is exposed to include healthy foods, less exposure to TV and sedentary activities and safe active places for physical activity, including neighborhood parks and quality physical education in schools," said Nader.

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