

SCIENCE

Prevent undue weight gain in young children

Obese adolescents have higher rates of depression, which may foster poor eating and exercise patterns that result in a poor quality of life that persists into adulthood

By Jane E. Brody
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Life-threatening ailments such as heart disease, cancer, stroke and Type 2 diabetes most often afflict adults. But they are often consequences of childhood obesity.

Two new studies, conducted among more than half a million children in Denmark who were followed for many years, linked a high body mass index in children to an increased risk of developing colon cancer and suffering an early stroke as adults. The studies, presented at the European Obesity Summit in Gothenburg, Sweden, this spring, underscore the importance of preventing and reversing undue weight gain in young children and teenagers.

One study, of more than 257,623 people, by Dr Britt Wang Jensen and colleagues at the Institute of Preventive Medicine, in Bispebjerg, Denmark, and Frederiksberg Hospital in Copenhagen, grouped children according to standard deviations from a mean BMI, adjusted for a child's age and sex.

They found that each unit of increase in being overweight at age 13, generally corresponding to a 2- to 3-point increase in BMI, increased the risk of developing colon cancer 9 per cent and rectal cancer 11 per cent.

The second study, involving 307,677 Danish people born from 1930 to 1987, used a similar grouping of BMI. The risk of developing a clot-related stroke in early adult life increased by 26 per cent in women and 21 per cent in men for each unit of increase in being overweight at all stages of childhood, but especially at age 13.

Although neither study proves that excess weight in childhood itself, as opposed to being overweight as an adult, is responsible for higher rates of cancer and stroke, overweight children are much more likely to become overweight adults — unless they adopt and maintain healthier patterns of eating and exercise.

According to the American Academy of Child and Adolescent Psychiatry, obesity most often develops from ages 5 to 6 or during the teen years, and “studies have shown that a child who is obese between the ages of 10 and 13 has an 80 per cent chance of becoming an obese adult.”

In a study published in 2014 in *The New England Journal of Medicine*, Solveig A. Cunningham and colleagues at Emory University found that “overweight 5-year-olds were four times as likely as normal-weight children to become obese by age 14.” The study, which involved a representative sample of 7,738 kindergartners, found that the risk of becoming obese did not differ by socioeconomic status, race or ethnic group, or birth weight. Rather, it showed that excess weight gain early in life is a risk factor for obesity later in childhood across the entire population.

Children are generally considered obese when their BMI is at or above the 95th percentile for others of the same age and sex. About one-third of American children are overweight or obese. By 2012, the Centers for Disease Control and Prevention reports, 18 per cent of children and 21 per cent of adolescents were obese.

The adverse effects of excess weight in childhood and adolescence don't necessarily wait to show up later in life. In a review of complications resulting from youthful obesity, Dr Stephen R. Daniels, a paediatrician at the University of Colorado School of Medicine and the Children's Hospital in Denver, found that problems in many organ systems were often apparent long before adulthood. They include high blood pressure; insulin resistance and Type 2 diabetes; high blood levels of heart-damaging triglycerides and low levels protective high-density lipoprotein (HDL) cholesterol; nonalcoholic fatty liver disease; obstructive sleep apnea; asthma; and excess stress on the musculoskeletal system resulting in abnormal bone development, knee and hip pain, and difficulty walking.

Problems of youthful obesity go beyond physical ones. Obese adolescents have higher rates of depression, which in itself may foster poor eating and exercise patterns that add to their weight problem and result in a poor quality of life that persists into adulthood.

In a study conducted in Singapore, researchers reported that "individuals who were obese in childhood are more likely to have poor body image and low self-esteem and confidence, even more so than those with adult onset obesity."

Another study by Dr Jeffrey B. Schwimmer of the University of California, San Diego, and colleagues found that obese children and adolescents reported a diminished quality of life that was comparable to that of children with cancer.

Taken together, the data speak to the critical importance of preventing undue weight gain in young children, a task that depends largely on parents, who are responsible for what and how much children eat and how much physical activity they engage in. As researchers from the University Medical Center Groningen in the Netherlands put it, "Early recognition of overweight or obesity in children by their parents is of utmost importance, allowing interventions to start at a young age." Yet, they found in a study of the parents of 2,203 5-year-olds, "parents underestimated their overweight child in 85 percent of the cases."

Though it seems logical that parents who think their children are overweight would make a special effort to assure they would "grow into" their weight as they get older, research has shown the opposite. Such children tend to get even fatter, according to findings from the Longitudinal Study of Australian Children reported in April in the journal *Pediatrics* by Eric Robinson of the University of Liverpool and Angelina R. Sutin of Florida State University College of Medicine.

Even being labelled overweight can itself be damaging and make it harder for children to avoid bad habits, the authors suggested. A 2014 study of girls ages 10 to 19 found that "regardless of actual weight, adolescents who reported having been labelled 'too fat' by family member or peer were more likely to become obese nearly a decade later."

"I encourage parents to change the environment at home," Daniels of the University of Colorado said in an interview. "Without being authoritarian, they should limit high-calorie-dense foods, keep sugar-sweetened beverages out of the house and assure that kids eat the right amount of fruits and vegetables and fewer calorie-dense snacks. Parents also need to be tuned into opportunities for physical activity and set hard-and-fast rules about television and time spent on electronics."

Following the "5210" daily programme can help: Aim for five fruits and vegetables a day; keep recreational screen time to two hours less; include at least one hour of active play; and skip sugar-sweetened beverages and drink water.

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