

## Odds for weight loss are stacked against children who are obese early on

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Credit: University of Southern California

The pudge on toddlers that some dismiss as "baby fat" is not a passing phase for some children.

A recent study by USC and Emory University researchers found that most children who are obese before they start [kindergarten](#) remain obese through adolescence. This raises the likelihood that they will be obese into adulthood and raises their risk of other [health problems](#).

One in five of the children starting kindergarten in 1998 were overweight or obese, the scientists determined based on their analysis of federal education and health data records that tracked U.S. kindergartners through 2007.

The scientists also identified a critical window for intervention: If the children did not lose the weight by third grade, their obesity became an "entrenched" problem, according to their study published in July in the *Annals of Epidemiology*.

"Once you reach adolescence and you're obese, then your risk of continuing to be obese into adulthood remains," said Ashlesha Datar, a senior research economist for the Center for Economic and Social Research at the USC Dornsife College of Letters, Arts and Sciences. "What our paper really pointed out is if kids enter kindergarten obese, then that is really the time when you need to intervene."

Datar was on a research team led by Solveig A. Cunningham of Emory University that analyzed data from the federal Early Childhood Longitudinal Study Kindergarten Class of 1998-99, examining the growth patterns of 6,600 children over time. The children's weight and other health indicators were recorded six times from 1998 to 2007.

## **A host of health problems loom**

An estimated 17 percent—or 12.7 million—American children and teens are obese, according to federal health statistics. Research has shown that children who are obese are at risk of a host of health problems—asthma,

diabetes, high blood pressure, high cholesterol, joint pain and sleep disorders, to name a few.

The team found that 55 percent of the 780 children who were obese in kindergarten were likely to remain obese into their teens—what the scientists referred to as "entrenched obesity."

"Our findings indicate that children who are measured as having obesity even at one health visit during the early elementary school years are at risk for long-term obesity," Cunningham said. "Based on this knowledge, prevention should be targeted toward early childhood."

## **The hard numbers**

The scientists found that children with severe obesity in kindergarten or who had obesity for more than a year during early elementary were very likely to experience obesity through age 14—regardless of their sex, race or socioeconomic backgrounds.

Thirty percent of U.S. elementary school children in the study experienced obesity at some point between ages 5 and 14. Most of the children remained obese, and this was particularly marked for children who had gained the weight early on, before third grade.

Sixty-two percent of the 170 children in the study who became obese sometime between first and third grade remained obese by the eighth grade. Forty-seven percent of the 310 children who became obese between first and third grade remained obese through eighth grade.

"How much a child's [body mass index](#) (BMI) changes during that year in kindergarten is a very significant predictor of whether they will have 'entrenched obesity,'" Datar said.

Body mass index is a weight-to-height ratio used to determine whether someone is at a healthy or unhealthy weight.

## Early intervention can work

Datar noted that scientific studies on interventions have found that school programs generally tend to be more successful in preventing and reducing [obesity](#) and overweight than programs that target [children](#) outside the school setting, such as at a home or neighborhood.

"You can reach a large number of kids in the school setting and provide them with healthier opportunities such as physical education classes and nutritional education. Children in kindergarten are at an age when they look to teachers for guidance, so teachers and schools can have an important role in influencing their [health](#), activities and habits."

Provided by University of Southern California

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