

JAMA Highlights

Trends in the Prevalence of Extreme Obesity among U.S. Preschool-Aged Children Living in Low-Income Families, 1998-2010

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*The data for this study is from the Pediatric Nutrition Surveillance System (PedNSS), which includes almost 50% of preschool children eligible for federally funded maternal and child health and nutrition programs, primarily the WIC Program. The study population included 27.5 million children aged 2 through 4 years from 30 states and the District of Columbia that consistently reported data to PedNSS from 1998 -2010.

Extreme Obesity and Obesity decline among low-income preschool children

- The prevalence of **extreme obesity**:
 - From 2003 through 2010, decreased slightly from 2.22% to 2.07%
 - From 1998 through 2003, increased from 1.75% to 2.22%
- The prevalence of **obesity**:
 - From 2003 through 2010, decreased slightly from 15.21% to 14.94%
 - From 1998 through 2003, increased from 13.05% to 15.21%

Race

- The prevalence of **extreme obesity** from 2003 through 2010 decreased in all groups except American Indians/Alaska Natives; and the greatest decreases were among Asian/Pacific Islander children.
- The prevalence of **extreme obesity** from 1998 through 2003 increased in all racial/ethnic groups except Asians/Pacific Islanders; and the greatest average annual increases were among non-Hispanic whites.

Age

- From 1998 through 2003, the prevalence of extreme obesity increased among low-income children aged 2 years, 3 years, and 4 years; the greatest average annual increase was among 4-year-olds.
- From 2003 through 2010, the prevalence of extreme obesity decreased among low-income children aged 2 years, 3 years, and 4 years; the greatest decrease was among 2-year-olds.

Gender

- From 1998 through 2003, the prevalence of extreme obesity increased among boys and girls aged 2-4 years living in low-income families.
- From 2003 through 2010, the prevalence of extreme obesity decreased from 2.17% to 2.01% among boys and from 2.27% to 2.14% among girls.

Risk Factors

- Childhood obesity has been associated with cardiovascular risk factors, increased health care costs, and premature death.
- The prevalence of cardiovascular risk factors increases with severity of childhood obesity.
- Children who are obese or extremely obese during early childhood are also likely to be obese during middle or late childhood and adulthood.
- Obese adults are at increased risk for stroke and many chronic diseases, including coronary heart disease, hypertension, type 2 diabetes, and certain types of cancer.

Obesity and Extreme Obesity defined

A child's weight status is determined using an age- and sex-specific percentile for [BMI \(Body Mass Index\)](#), rather than the BMI categories used for adults, because children's body composition varies as they age and varies between boys and girls. The weight status of children 2 years and older is defined based on the sex-specific smoothed percentile curves for BMI-for-age in the [2000 CDC growth charts](#).

- Obesity is a BMI at or above the 95th percentile for children of the same age and sex. For example, a 3-year-old boy of average height who weighs more than 37 pounds would be considered obese.
- Extreme obesity is defined as a BMI at or above 120% of the 95th percentile for children of the same age and sex. For example, a 3-year-old boy of average height who weighs more than 44 pounds would be classified as extremely obese.