

Obese Girls Risk an Early Death as Adults

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BOSTON, July 18 -- Females who are obese during adolescence are much more likely to die before they become elderly than slim counterparts, researchers here have found.

Among more than 100,000 women in the Nurses' Health Study II, those with a body mass index (BMI) greater than 30 kg/m² when age 18 had a nearly threefold risk for premature death compared with women with BMIs below 18.5 kg/m² at age 18.

"Effects of childhood overweight on quality of life at younger ages may be substantial, and higher mortality rates in middle age may represent 'the tip of the iceberg' of detrimental health consequences, said Rob M. van Dam, Ph.D., of Harvard School of Public Health and Harvard Medical School, and colleagues.

"Our findings support preventive action in children aimed at reducing their risk for becoming overweight," they wrote in the July 18 issue of *Annals of Internal Medicine*.

To see whether there is a relation between adiposity in adolescence -- measured as BMI at age 18 -- and premature death in adult women, the authors conducted a prospective cohort study of 102,400 women who took part in the Nurses' Health Study II, a prospective, longitudinal study of oral contraceptives, diet, and lifestyle risk factors in a population younger than the original Nurses' Health Study cohort.

The cohort in the study by Dr. van Dam and colleagues included women who were 24 to 44 years of age and free of cancer at baseline. In 1989, they used validated questionnaires to report their current weight and height and recalled weight at age 18 years, and body mass index (BMI) was calculated for each participant.

The primary study outcome was hazard ratio for death adjusted for potential confounders, including cigarette smoking, alcohol use, and physical activity during adolescence.

"Given the young age of the cohort, we considered all deaths to be premature," the authors wrote.

A total of 710 participants died during the 12-year followup period. There were 258 cancer deaths, 55 deaths due to cardiovascular disease, 124 deaths from other diseases, 144 deaths from external causes such as suicides or accidents, with the remainder of deaths from cause not specified by the authors.

They found that women with higher BMIs in their late teens were at greater risk of premature death.

Compared with women who had a BMI between 18.5 and 21.9 kg/m² at age 18, the hazard ratio for premature death for women between the ages of 22 and 44 at baseline was 0.98 (95% confidence interval, 0.78 to 1.23) for those with a BMI less than 18.5 kg/m², 1.18 (95% CI, 0.97 to 1.43) for a BMI of 22.0 to 24.9 kg/m², 1.66 (95% CI, 1.31 to 2.10) for a BMI of 25.0 to 29.9 kg/m², and 2.79 (95% CI, 2.04 to 3.81) for a BMI of 30 kg/m² or greater.

"During adolescence, women with a higher BMI at age 18 years had higher levels of alcohol consumption, were more likely to smoke cigarettes, and were less likely to engage in physical activity or use oral contraceptives," the authors wrote.

When they controlled for smoking by looking only at participants who never smoked, they found that a BMI of 22.0 to 24.9 kg/m² (normal range) at age 18 years was also associated with increased risk for premature death (hazard ratio, 1.50, 95% CI, 1.16 to 1.94).

"This paper underscores the importance of efforts to prevent excessive weight gain in children, not only to prevent obesity but also to prevent moderate overweight," said Frank Hu, M.D, Ph.D., of the Harvard School of Public Health, a co-author.

"Given the prevalence of overweight, large-scale preventive strategies aimed at increasing physical activity and stimulating healthy eating habits in U.S. children and adolescents are warranted," he added.

The authors acknowledged that their study was limited by the observational design, which is subject to residual confounding and by the fact that height and weight were self-reported, and therefore subject to recall bias. In addition as 90% of the participants in the study were non-Hispanic whites, the results cannot be extrapolated to other ethnic groups.

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Action Points

Explain to interested patients that this study adds to the substantial body of evidence indicating that excessive weight in childhood is associated with significant negative health consequences later in life, including increased risk for premature death.

Point out however that this observational study cannot determine causality.

Primary source: Annals of Internal Medicine

Source reference:

van Dam RN et al. ["The Relationship between Overweight in Adolescence and Premature Death in Women."](#) *Ann Intern Med.* 2006;145:91-97