

Overweight, obesity early in life increase risk of cardiac death

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Overweight and obesity throughout adulthood, and especially elevated weight in early adulthood, were associated with increased risk of sudden cardiac death in a 32-year study of more than 72,000 women published today in *JACC: Clinical Electrophysiology*.

"We found that it is important to maintain a healthy [weight](#) throughout adulthood as a way to minimize the risk of [sudden cardiac death](#)," said Stephanie Chiuve, Sc.D., assistant professor of medicine at Harvard Medical School and lead author of the study. Excess weight or substantial weight gain may have an early or cumulative impact on the risk of sudden cardiac death that is not completely erased by weight loss later in life, the author said.

Researchers analyzed data from the Nurses' Health study, following 72,484 healthy [women](#) from 1980 to 2012. Participants provided information on their height and weight at the start of the study, as they remembered it at age 18, and through questionnaires administered every two years during the study period.

The study examined the relation between [body mass index](#) (BMI) and weight gain and the risk for sudden cardiac death, death from [coronary heart disease](#) and non-fatal heart attacks. Over the 32-year study period, researchers documented 445 cases of sudden cardiac death, 1,286 cases of fatal coronary heart disease, and 2,272 non-fatal heart attacks.

Body mass index is a person's weight in relation to their height and is

used to screen for overweight and obesity. Sudden cardiac death is a sudden, unexpected death usually precipitated by a lethal chaotic cardiac rhythm resulting in a loss of heart function. Sudden cardiac death is often the first manifestation of heart disease in women.

Women with a higher BMI during adulthood had a greater risk of sudden cardiac death. Women who were overweight (BMI 25-30) and obese (BMI 30 or greater) were respectively 1.5- and 2-times more likely to experience sudden cardiac death over the next two years as compared to women with a healthy weight (BMI 21-23). Women who were overweight or obese at the start of the study or obese at age 18 had an elevated risk of sudden cardiac death over the entire course of the study.

Researchers also found that [weight gain](#) in early-to-mid adulthood was associated with greater risk of sudden cardiac death regardless of BMI at age 18. The risk of sudden cardiac death was twice as high in women who gained 44 pounds or more during early to mid-adulthood.

"Nearly three-quarters of all sudden cardiac deaths occur in patients not considered to be high-risk based on current guidelines. We must seek broader prevention strategies to reduce the burden of sudden cardiac death in the general population," Chiuve said.

Women with a higher BMI had a greater risk of fatal coronary [heart disease](#) and non-fatal heart attacks, although the association was weaker compared with sudden [cardiac death](#).

"This study adds to a growing body of evidence that the adverse effects of obesity on cardiac rhythm, in this case, sudden death risk, begin in [early adulthood](#). It underscores the need for earlier identification and treatment of high risk individuals," said David J. Wilber, M.D., editor-in-chief of *JACC: Clinical Electrophysiology*.

Observational studies such as this one cannot determine cause and effect, and factors not measured could impact the results, though this study controlled for numerous clinical and lifestyle factors. The Nurses' Health Study includes a population of educated, primarily white women and may not apply to other ethnic groups. All studies with self-reported measures have some degree of error.

Provided by American College of Cardiology

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