

# Study examines association between weight amount and cause of death

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The association between weight and causes of death can vary considerably, with obesity associated with a significantly increased mortality from cardiovascular disease (CVD), underweight associated with increased mortality from primarily non-cancer, non-CVD causes, and overweight associated with increased mortality from diabetes and kidney disease combined, but with reduced mortality from other non-cancer non-CVD causes of death, according to a study in the November 7 issue of JAMA.

“In a previous study, we estimated excess all-cause mortality associated with underweight, overweight, and obesity in the United States in 2000 using data from national surveys,” the authors write. “We found significantly increased all-cause mortality in the underweight and obese categories and significantly decreased all-cause mortality in the overweight category compared with normal weight. To gain further insight into these findings, we now extend that work, using additional mortality data with longer follow-up, to examine the association of cause-specific mortality with different weight categories among U.S. adults in 2004.”

Katherine M. Flegal, Ph.D., of the Centers for Disease Control and Prevention, Hyattsville, Md., and colleagues estimated the cause-specific excess deaths associated with underweight (body mass index [BMI] less than 18.5), overweight (BMI 25 to less than 30), and obesity (BMI 30 or greater). BMI is calculated as weight in kilograms divided by height in meters squared. The researchers analyzed data from the National Health

and Nutrition Examination Survey (NHANES) I, 1971-1975; II, 1976-1980; and III, 1988-1994, which was combined with data on BMI and other covariates from NHANES 1999-2002 with underlying cause of death information for 2.3 million adults 25 years and older from 2004 vital statistics data for the United States.

Based on total follow-up, underweight was associated with a significantly increased mortality from noncancer, non-CVD causes (23,455 excess deaths) but not associated with cancer or CVD mortality. Overweight was associated with a significantly decreased mortality from noncancer, non-CVD causes but was not associated with cancer or CVD mortality.

Obesity was associated with a significantly increased mortality from CVD (112,159 excess deaths) but not associated with cancer mortality or with noncancer, non-CVD mortality. In further analyses, overweight and obesity combined were associated with increased mortality from diabetes and kidney disease (61,248 excess deaths) and decreased mortality from other noncancer, non-CVD causes. Obesity was associated with an increased mortality from cancers considered obesity-related (13,839 excess deaths) but not associated with mortality from other cancers. Comparisons across surveys suggested a possible decrease in the association of obesity with CVD mortality over time.

“Some evidence suggests that modestly higher weights may improve survival in a number of circumstances, which may partly explain our findings regarding overweight. Overweight is not strongly associated with increased cancer or CVD risk, but may be associated with improved survival during recovery from adverse conditions, such as infections or medical procedures, and with improved prognosis for some diseases. Such findings may be due to greater nutritional reserves or higher lean body mass associated with overweight,” the authors write.

“... our data indicate that the association of BMI with mortality varies

considerably by cause of death. These results help to clarify our earlier findings of excess overall mortality associated with underweight and obesity but not with overweight.”

Source: JAMA and Archives Journals

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