

Obesity and mortality association differs between individuals with and without diabetes

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The relationship between body mass index (BMI) appears to be stronger in adults without diabetes than those with existing diabetes. These findings¹ are published in the *Journal of General Internal Medicine* in a study by Chandra Jackson of the Harvard School of Public Health and colleagues. The researchers suggest that studies on body weight and mortality should take into account the impact of diabetes status in the population.

In their analysis, Jackson's team used data from a nationally representative sample of 74,710 Black and White American adults between 35 and 75 years old who were part of the National Health Interview Survey. Of the participants, 5 percent reported physician-diagnosed diabetes. The participants were followed over a six-year period and death was confirmed by the National Death Index.

The so-called [body-mass index](#) (or BMI) takes height and [weight](#) into account to measure a person's [body fatness](#). Someone with a high body-mass index is generally considered to have a higher risk of death, and to experience a poorer health-related quality of life.

Obesity, which is defined as BMI \geq 30, is a serious public health issue in the United States. Obesity is a well-established risk factor for various serious and costly health conditions, including heart disease, Type 2 diabetes and certain cancers. People with excess adiposity or body fat

are generally considered to have a significantly higher risk of death than others in a normal weight population. However, the relationship between mortality and BMI in diseased populations is still unclear and remains a controversial topic.

The results of the study suggest that weight may have a different impact on mortality for diabetics than for the general population. Throughout, [death rates](#) were substantially higher among diabetics than nondiabetics. However, compared to individuals with normal weight, at a higher body weight, death rates dipped considerably for diabetics, but rose sharply in people who do not suffer from the disease.

Because of these differences, Jackson and her colleagues believe that Type 2 diabetes status should be taken into account in future BMI-mortality studies, much as is done with heart disease, smoking and cancer to ensure valid population estimates because these conditions can influence body weight and may distort the relationship between BMI and mortality. She concludes: "This finding was surprising, but it may be due to a commonly observed phenomenon in chronic disease epidemiology called 'reverse causation' where a person's weight at the time of the survey can be affected by their disease if it leads to weight loss and muscle wasting during advanced stages. This apparent obesity paradox that has been observed in the past among individuals with diabetes may actually be due to methodological limitations that can bias these types of studies. From clinical and public health points of view, achieving and maintaining a healthy weight should continue to be recommended for both those with and without diabetes."

More information: Jackson, C.L. *et al* (2013). Body-Mass Index and All-Cause Mortality in US Adults With and Without Diabetes, *Journal of General Internal Medicine*; [DOI: 10.1007/s11606-013-2553-7](https://doi.org/10.1007/s11606-013-2553-7)

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