

Obesity Impacts Disability and Survival Outcomes in Elderly Women

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In older women, as with other segments of the population, the prevalence of obesity is increasing. As of 2010, 40% of US women aged 65-74 and 29% of women 75 years and older were obese. As obesity is a major risk factor for disease, disability, and death, this is a growing public health concern. Since body weight can be changed, and healthy aging is a desired goal for individuals, identifying whether obesity affects the capacity for a woman to reach late adulthood without major disease or disability is an important but unanswered question. A recent study published in *JAMA Internal Medicine*, by Dr. Eileen Rillamas-Sun and colleagues in the Public Health Sciences Division, demonstrates the negative impact of higher body weight on survival outcomes in elderly women.

The authors examined nearly 37,000 women participating in the Women's Health Initiative. Women aged 66 or older (average 72) were followed for up to 19 years and assessed for whether they had remained healthy, already had or developed major chronic disease or disability, or died by the time they turned the age of 85. While many studies tend to focus on specific outcomes, this study took a broader approach to healthy aging. "Our study was unique," says Rillamas-Sun, "because we chose to simultaneously examine a hierarchy of five mutually-exclusive outcomes that are common and concerning to the general aging population." These broader categories thus allowed for a more complete picture of the impact of obesity on late-age survival outcomes.

Over the 19 years of follow-up, the researchers found that baseline obesity was associated with a higher risk of mobility disability, major chronic disease, and death before reaching 85 years of age (see figure). These risks tended to increase with higher BMI, with those in higher categories of obesity having the greatest risk of death or disability. Women with a BMI of 35 or more, for example, had a more than 6-fold higher risk of mobility disability, and a more than 3-fold higher risk of death, by 85 years of age compared with women with a BMI of 18.5-24.9. Underweight women, with a BMI less than 18.5, also faced a 2-fold increased risk of death. Together, these results suggest a J-shaped association between BMI and mortality, which remained after adjusting for behavioral and socioeconomic risk factors.

Overall, this study "emphasizes the importance of maintaining a healthy body weight and waist circumference after menopause," says Rillamas-Sun. "It appears that doing this improves the chances of not only surviving to age 85, but getting there all the while retaining one's health and mobility."

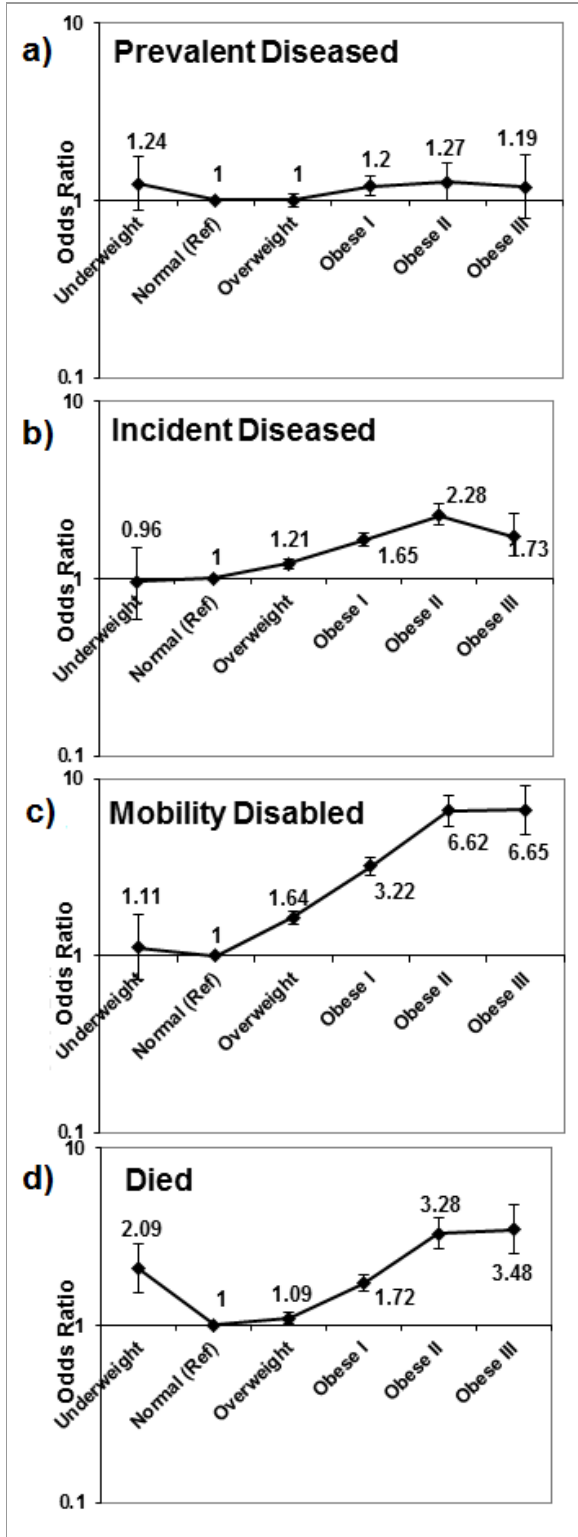
Beyond obesity, the researchers also found differences in the rates of morbidity and mortality by baseline smoking status and by race/ethnicity group. More than twice as many current smokers at baseline died before 85 years of age (49%) than past smokers (27%) or women who had never smoked (21%), and roughly half as many African American and Hispanic/Latina women (13%) as white women (25%) lived to 85 years of age without major chronic disease or mortality. These findings point to additional areas to target prevention efforts.

While this study demonstrates the effect of baseline weight on late-age morbidity and mortality, further research is needed. "We do not know if weight loss, for obese women in particular, will improve their chances of a healthier survival," says Rillamas-Sun. "Our team is interested in understanding what other factors might also contribute to healthy survival in the later ages." Towards this end, "we are currently exploring the role of physical activity and sedentary behavior, nutrition and caloric intake, alcohol use, and attitudes of well-being on these outcomes."

Other PHS investigators contributing to this project were Drs. Andrea LaCroix and Rebecca Seguin.

[Rillamas-Sun E, Lacroix AZ, Waring ME, Kroenke CH, Lamonte MJ, Vitolins MZ, Seguin R, Bell CL, Gass M, Manini TM, Masaki KH, Wallace RB.](#) 2014. Obesity and late-age survival without major disease or disability in older women. *JAMA Intern Med.* 174(1):98-106.

Based on BMI status at baseline, these graphs show the odds of having disease at baseline (a); or for those healthy at baseline, the odds of developing disease (b), developing disability (c), or dying (d) before age 85 years relative to being healthy (no disease or disability). These odds ratios are adjusted for study membership, race/ethnicity, and baseline age, education, marital status, hormone therapy use, smoking status, alcohol use, physical activity, and depression. BMI categories are underweight (<18.5), normal (18.5 to <25), overweight (25 to <30), obese I (30 to <35), obese II (35 to <40), and obese III (40+).



(Image provided by Dr. Eileen Rillamas-Sun)