

# Waist-hip ratio better than BMI for gauging obesity in elderly

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Body mass index (BMI) readings may not be the best gauge of obesity in older adults, according to new research from UCLA endocrinologists and geriatricians. Instead, they say, the ratio of waist size to hip size may be a better indicator when it comes to those over 70.

In a new study published online in the peer-reviewed journal *Annals of Epidemiology*, researchers from the David Geffen School of Medicine at UCLA found that the waist-to-hip circumference ratio was a better yardstick for assessing obesity in high-functioning adults between the ages of 70 and 80, presumably because the physical changes that are part of the aging process alter the body proportions on which BMI is based.

"Basically, it isn't BMI that matters in older adults — it's waist size," said Dr. Preethi Srikanthan, UCLA assistant professor of endocrinology and the study's lead investigator. "Other studies have suggested that both waist size and BMI matter in young and middle-aged adults and that BMI may not be useful in older adults; this is one of the first studies to show that relative waist size does matter in older adults, even if BMI does not matter."

Using data from the MacArthur Successful Aging Study — a longitudinal study of high-functioning men and women between the ages of 70 and 79 — researchers examined all-cause mortality risk over 12 years by BMI, waist circumference and waist-hip ratio. They adjusted for gender, race, baseline age and smoking status. The average age of participants was 74.

Obesity is often associated with premature mortality because it leads to an increased risk of diabetes, heart attack, stroke and other major health problems, the study authors say.

The researchers found no association between all-cause mortality and BMI or waist circumference; the link was only with waist-hip ratio. In women, each 0.1 increase in the waist-hip ratio was associated with a 28 percent relative increase in mortality rate (the number of deaths per 100 older adults per year) in the group sampled. Thus, if the waist-hip ratio rose from 0.8 to 0.9 or from 0.9 to 1.0, it would mean a 28 percent relative increase in the death rate. Put another way, if hip size is 40 inches, an increase in waist size from 32 to 36 inches signaled a 28 percent relative death-rate increase.

The relationship was not graded in men. Instead there was a threshold effect: The rate of dying was 75 percent higher in men with a waist-hip ratio greater than 1.0 — that is, men whose waists were larger than their hips — relative to those with a ratio of 1.0 or lower. There was no such relationship with either waist size or BMI.

The study may have some limitations, the authors noted. For instance, participants' BMI may be underestimated because height and weight were self-reported and [older adults](#) tend to report those numbers from their younger, peak years. Also, waist-hip ratios, waist circumference and BMI numbers were based on single measurements, limiting the researchers' ability to gauge how changing body size in old age can affect mortality risk.

Source: University of California - Los Angeles

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