

# Association between high BMI and risk of death due to CVD is stronger among east Asians than south Asians

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A study led by researchers at NYU Langone Medical Center and Fred Hutchinson Cancer Research Center has found that the association between body fat and mortality due to cardiovascular disease differs between south and east Asians, a finding that has important implications for global health recommendations. Cardiovascular disease, a condition in which arteries thicken and restrict blood flow, kills more than 17 million people annually, making it the leading cause of death worldwide.

In an analysis published today in the *British Medical Journal* that looked at more than 1.1 million south and east Asians, the researchers found that a high body-mass index (BMI), a measure of body fat based on height and weight, is a weak risk factor for death among South Asians due to [cardiovascular disease](#). By contrast, the researchers found that a BMI above 24.9 among East Asians is a strong risk factor, just as it is in Western populations. (Generally, a BMI between 18.5 and 24.9 is considered normal; 25 to 29.9 is overweight; and greater than 30 is obese.) "This study is the first to compare east and south Asians for potential differences in the association between BMI and cardiovascular disease," says lead study author Yu Chen, PhD, MPH, associate professor of Epidemiology in the Departments of Population Health and Environmental Medicine at NYU School of Medicine. "Our findings suggest that BMI values that are associated with death due to cardiovascular disease in east Asians and Westerns populations may not be applicable to south Asians."

South Asia is a geographic region that includes Afghanistan, Bangladesh, Bhutan, India, Pakistan, and Nepal, among other countries. East Asia spans China, Japan, North and South Korea, and Taiwan, among other countries. In this study, south Asia was represented by Bangladesh and India and east Asia by China, Japan, Singapore, South Korea, and Taiwan.

Previous studies have shown that south Asians have more body fat and are more susceptible to diabetes at a lower BMI than Western populations. Given the relationship between diabetes and cardiovascular disease, the researchers expected to find a strong association between BMI and cardiovascular-disease mortality among south Asians. On the contrary, they found an unexpectedly weak association.

"Our findings stress the need for future studies that include other anthropometric measures such as waist circumference, thigh circumference, or waist-to-hip ratio in assessing the risk of [cardiovascular disease risk](#) in South Asians," says Dr. Chen.

The analysis also found striking differences in the association between too little body fat and the risk of death due to cardiovascular disease. A low BMI among east Asians (less than 17.5) actually increases the risk of dying due to cardiovascular disease, but this same association was not found among south Asians.

The research drew on data pooled from the Asia Cohort Consortium, an international research collaboration that followed 19 groups of similar people from East and South Asia—for a total of 1,124,897 volunteers—over an average of ten years.

Another important finding from the analysis showed that the association between BMI and death due to cardiovascular disease was stronger among east Asians below the age of 53. "This is consistent with what has

been observed in Western populations. We know that BMI is an important risk factor for cardiovascular disease during middle age but not so relevant during old age, when more [body fat](#) seems to confer an overall survival benefit," says Dr. Chen.

**More information:** [www.bmj.com/cgi/doi/10.1136/bmj.f5446](http://www.bmj.com/cgi/doi/10.1136/bmj.f5446)

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