

## Study: BMI is positively associated with blood pressure



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There is a positive correlation between body mass index (BMI) and blood pressure, according to data from a large ongoing study of 1.7 million Chinese men and women. In individuals who were not taking an antihypertensive medication, researchers observed an increase of 0.8 to 1.7 mm Hg (kg/m<sup>2</sup>) in blood pressure per additional unit of BMI. These findings are published by JAMA Network Open.

The participants' blood pressure was recorded by researchers, from the Yale Center for Outcomes Research and Evaluation (CORE) and China, between September 2014 and June 2017 as part of the larger China PEACE (Patient-Centred Evaluative Assessment of Cardiac Events) Million Persons Project. The PEACE project captures at least 22,000 subgroups of people based on age (35-80), sex, race/ethnicity, geography, occupation, and other pertinent characteristics – such as whether or not they are on antihypertensive medication.

Overall, the population had a mean BMI of 24.7 and a mean systolic blood pressure of 136.5, which qualifies as stage I hypertension according to American Heart Association guidelines.

"The enormous size of the dataset – the result of an unprecedented effort in China – allows us to characterise this relationship between BMI and blood pressure across tens of thousands of subgroups, which simply would not be possible in a smaller study," explained George Linderman, first author and doctoral candidate at Yale.

In China, the frequency of obesity is expected to more than triple in men – from 4.0 percent in 2010 to 12.3 percent in 2025 – and more than double in women – from 5.2 percent to 10.8 percent. Meanwhile, high blood pressure already affects one-third of Chinese adults, and only about one in 20 of those with hypertension have the condition under control, according to an earlier Yale-CORE China paper for the Lancet based on data gathered in the same Million Persons Project cohort.

"If trends in overweight and obesity continue in China, the implication of our study is that hypertension, already a major risk factor, is likely to become even more important," said senior author Harlan Krumholz, MD, the Harold H. Hines, Jr. Professor of Cardiology and director of CORE. "This paper is ringing the bell that the time is now to focus on these risk factors."

One way for the Chinese healthcare system to address these risk factors, the researchers say, is to manage high blood pressure with antihypertensive drugs. A January 2018 study by Yale-CORE China compared the widespread and successful use of antihypertensive drugs in the United States for blood pressure management to their infrequent use in China, suggesting that by prescribing antihypertensives earlier and more frequently, China might begin to take control of its high blood pressure crisis, according to the research team.

Source: [Yale University](#)  
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