

# Why do people with apple-shaped bodies have an increased risk of kidney disease?

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High blood pressure in the kidneys of people with apple-shaped bodies may be responsible for their increased risk of developing kidney disease later in life, according to a study appearing in an upcoming issue of the *Journal of the American Society of Nephrology (JASN)*. The findings suggest that these individuals may benefit from treatments that reduce kidney blood pressure.

People with "apple-shaped" bodies—when fat is concentrated mostly in the abdominal area—are more likely than those with "pear-shaped" bodies to develop kidney disease. The mechanisms underlying this risk are not well understood.

To study the issue, Arjan Kwakernaak, MD/PhD candidate (University Medical Center Groningen, in The Netherlands) and his colleagues looked for links between waist-to-hip ratio, which reflects central body fat distribution, and kidney measures in 315 healthy individuals with an average body mass index of 24.9 kg/m<sup>2</sup>. (A [body mass index](#) of 18.5 to 24.9 kg/m<sup>2</sup> is considered normal weight.)

Higher waist-to-hip ratios were associated with lower [kidney function](#), lower kidney blood flow, and higher blood pressure within the kidneys.

"We found that apple-shaped persons—even if totally healthy and with a [normal blood pressure](#)—have an elevated blood pressure in their kidneys. When they are also overweight or obese, this is even worse," said Kwakernaak.

This suggests that elevated blood pressure in the kidneys of individuals with apple-shaped bodies may be responsible for their increased risk of developing [kidney disease](#) later in life. Previous studies have shown that high blood pressure in the kidneys can be treated through salt restriction or with drugs that block what is known as the renin-angiotensin-aldosterone system. "Our current data suggest that such interventions could be particularly useful in subjects with a central [body fat distribution](#)," said Kwakernaak.

**More information:** The article, entitled "Central Body Fat Distribution Is Associated with Unfavorable Renal Hemodynamics Independent of Body Mass Index," will appear online on April 11, 2013, [doi: 10.1681/ASN.2012050460](https://doi.org/10.1681/ASN.2012050460)

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