

RISK FACTORS

Body fat distribution and renal risk

An increased waist-to-hip ratio (WHR)—which reflects a central distribution of body fat—is associated with an unfavourable pattern of renal haemodynamics, say researchers.

“Weight excess and central body fat distribution are well-established risk factors for long-term kidney damage,” says corresponding author Arjan Kwakernaak. “By exploring the mechanisms we hope to be able to better combat the renal risk associated with these ubiquitous conditions. In a prior study we found that body mass index (BMI) affects renal haemodynamics, independent of hypertension or other co-morbid conditions. The present study investigated whether a central body fat distribution could also have an independent effect on renal haemodynamics.”

In the latest study, Kwakernaak *et al.* studied the association between body fat distribution, assessed by WHR, and renal haemodynamics in

315 healthy individuals. They found that higher WHR was associated with lower glomerular filtration rate, lower effective renal plasma flow and higher filtration fraction, even after adjustment for age, sex, BMI and mean arterial pressure.

“The fact that the association between WHR and renal haemodynamics remained significant after controlling for BMI indicates that body fat distribution is a stronger determinant of renal haemodynamics than overall weight excess,” says Kwakernaak. “Our data suggest that an unfavourable renal haemodynamic profile could underlie the increased renal risk associated with central body fat distribution reported in epidemiological studies.”

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Original article Kwakernaak, A. J. *et al.* Central body fat distribution associates with unfavorable renal hemodynamics independent of body mass index. *J. Am Soc. Nephrol.* doi:10.1681/ASN.2012050460