

# Excess abdominal fat is associated with heart attack

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A large waist-hip ratio is a more important risk factor for heart attacks than weight, especially for younger to middle-aged women. This is shown in a new study from the Norwegian Institute of Public Health and the University of Bergen.

In this prospective study, researchers studied 140,790 healthy participants in health studies in Norway during the period 1994-2003 (Cohort of Norway) and obtained follow-up information about how many had suffered an [acute heart attack](#) in 2009.

The researchers found that a high waist-hip ratio (excess abdominal fat, or an "apple" shaped body) identifies individuals at risk of future heart attack even after considering conventional risk factors like smoking, diabetes, blood pressure, cholesterol and [body mass index](#).

Current guidelines emphasize BMI and waist circumference as measures for obesity. The current study however, as well as a few previous studies, suggest waist-hip ratio as a highly valuable measure.

"Although [body mass](#) index (kg/metres<sup>2</sup>) is useful, it is not a perfect indicator of obesity since it can be influenced by muscle mass and leg length, and doesn't tell us how the weight is distributed, " says the study's main author Professor Grace Egeland at the Norwegian Institute of Public Health and the University of Bergen.

Hip measurements tell us about pelvic size and the presence of muscle

and fat around the hips (gluteal muscle and gluteal fat) while the waist circumference tells us about the potential for fat accumulation around the organs, which is a health risk. When both waist and hip measures are combined (waist-hip-ratio) we get a better idea of future [heart disease risk](#).

Stronger effect among younger women

26 per cent of heart attacks in young to middle-aged women (under 60), and 9 per cent in young to middle-aged men, were associated with a high waist-hip ratio. This was after taking into account body mass index and the conventional cardiovascular [risk factors](#).

Waist-hip ratio was not as strongly related to risk of heart attack among study participants who were 60 years of age or older. This is because aging is associated with body composition changes which reduce the predictive value of measures of obesity.

The researchers found that even among men and women with a slim waistline (heart attack.

"These findings are important because they suggest that waist-hip ratio can be used to identify individuals at risk, particularly women who would not be identified through other means," says Egeland.

## **Risk factors**

High alcohol intake and lack of physical activity can increase the waist-hip ratio. Also, a high waist-hip ratio may be an indicator of underlying insulin resistance and hormone disturbances, such as high cortisol associated with stress and poor sleep.

**More information:** Grace M. Egeland et al. High population attributable fractions of myocardial infarction associated with waist-hip

ratio, *Obesity* (2016). [DOI: 10.1002/oby.21452](https://doi.org/10.1002/oby.21452)

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