

**METABOLIC RISK
AND NECK FAT**

Neck circumference is associated with cardiometabolic risk factors, according to an investigation conducted as part of the Framingham Heart Study.

“The location of adipose tissue within the body is an important determinant of metabolic risk,” explains principal researcher Caroline Fox (Harvard Medical School, Boston, USA). In particular, upper body subcutaneous fat seems to be an important contributor to levels of systemic free fatty acids, which are involved in insulin resistance.

The investigators measured the neck circumference of 3,307 individuals, as an indicator of the amount of upper body subcutaneous fat. These measurements were then related to cardiometabolic risk factors, such as hypertension, diabetes mellitus and raised lipid levels.

Individuals with a large neck circumference were more likely to have cardiometabolic risk factors than those with a small neck circumference. This association was stronger in women than in men. Interestingly, neck fat and visceral fat were synergistic; individuals with a large neck circumference and high levels of visceral fat were more likely to have adverse cardiovascular risk factors, compared with individuals who only had high measurements of fat in one location.

The researchers speculate that there might be an association between excess free fatty acids and upper body subcutaneous fat, which could explain the relationship between neck circumference and cardiometabolic risk factors. This theory would also account for the sex differences that were observed, as women store a higher proportion of free fatty acids in their upper body subcutaneous fat than men.

Upper body subcutaneous fat is a novel, easily accessible measurement for cardiometabolic risk factors. The researchers now plan to “explore whether neck circumference is an important predictor of the development of risk factors over time”.

Claire Greenhill

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