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# Belly fat linked with repeat heart attacks

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**Topic(s):** *Myocardial Disease; Secondary Prevention; Prevention; Obesity;*

**Sophia Antipolis, 21 January 2020:** Heart attack survivors who carry excess fat around their waist are at increased risk of another heart attack, according to research published today in the *European Journal of Preventive Cardiology*, a journal of the European Society of Cardiology (ESC).<sup>1</sup>

Prior studies have shown that abdominal obesity is an important risk factor for having a first heart attack. But until now, the association between abdominal obesity and the risk of a subsequent heart attack or stroke was unknown.

“Patients are typically put on a stringent medical treatment regimen after their first attack to prevent second events (called secondary prevention),” said study author Dr. Hanieh Mohammadi of the Karolinska Institute, Stockholm, Sweden. “Secondary prevention works through reducing risk factors associated with heart attack and stroke such as high blood sugar, lipids and blood pressure. It was previously unknown whether abdominal obesity is a risk factor for recurrent events among patients on secondary prevention treatments.”

The study, the largest and most definitive ever conducted on this topic, followed more than 22,000 patients after their first heart attack and investigated the relation between abdominal obesity (measured by waist circumference) and the risk for recurrent cardiovascular disease events. The researchers specifically looked at events caused by clogged arteries, such



as fatal and non-fatal heart attack and stroke. Patients were recruited from the nationwide SWEDEHEART registry and followed for a median of 3.8 years.

Most patients - 78% of men and 90% of women - had abdominal obesity (waist circumference 94 cm or above for men and 80 cm or above for women).

Increasing abdominal obesity was independently associated with fatal and non-fatal heart attacks and strokes, regardless of other risk factors (such as smoking, diabetes, hypertension, blood pressure, blood lipids and body mass index [BMI]) and secondary prevention treatments. Waist circumference was a more important marker of recurrent events than overall obesity.

Dr. Mohammadi said: "The reason abdominal obesity is very common in patients with a first heart attack is that it is closely linked with conditions that accelerate the clogging of arteries through atherosclerosis. These conditions include increased blood pressure, high blood sugar and insulin resistance (diabetes) as well as raised blood lipid levels."

"Our results, however, suggest that there may be other negative mechanisms associated with abdominal obesity that are independent of these risk factors and remain unrecognised," she added. "In our study, patients with increasing levels of abdominal obesity still had a raised risk for recurrent events despite being on therapies that lower traditional risk factors connected with abdominal obesity - such as anti-hypertensives, diabetes medication and lipid lowering drugs."

This was the first study of its kind to analyse men and women together and separately. The relationship between waist circumference and recurrent events was stronger and more linear in men. In women the relationship was U-shaped, meaning that the mid-range waist circumference (rather than the lowest) was the least risky. It must be noted that the mid-range waist circumference for women included in the study was above the cut-off traditionally recognised for abdominal obesity (80 cm).

Dr. Mohammadi noted: "There were three times as many men in the study compared to women, contributing to less statistical power in the female group. Therefore, more studies

are needed before definite conclusions can be drawn according to gender, but this is a start.”

Regarding possible reasons for the different results between sexes, she said: “Some studies have suggested that abdominal obesity may be more directly associated with the evil visceral fat (fat that sits around your organs) in men compared to women. In women it is thought that a greater portion of the abdominal fat is constituted by subcutaneous fat which is relatively harmless.”

Dr. Mohammadi concluded: “Abdominal obesity not only increases your risk for a first heart attack or stroke, but also the risk for recurrent events after the first misfortune. Maintaining a healthy waist circumference is important for preventing future heart attacks and strokes regardless of how many drugs you may be taking or how healthy your blood tests are. Abdominal obesity can be tackled by eating a healthy and balanced diet and regular physical activity.”

The authors recommend using waist circumference in clinical settings to identify first-time heart attack patients at increased risk of recurrent events.

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## Notes to editor

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**Disclosures:** See the paper.

## References

<sup>1</sup>Mohammadi H, Ohm J, Discacciati A, *et al.* Abdominal obesity and the risk of recurrent atherosclerotic cardiovascular disease after myocardial infarction. *Eur J Prev Cardiol.* 2020. doi:10.1177/2047487319898019.

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