

# Call them spare tires or love handles—belly fat is bad

April 1 2016

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Researchers believe that the obesity wave, combined with an ageing population, will lead to a significant increase in heart failure in the future. A review of all available research in this area shows a clear correlation between higher BMI, waist circumference and the risk of heart failure.

A BMI over 30 is considered obese, and the connection between [obesity](#) and the risk of heart failure has been established in several studies. Now, researchers from the Norwegian University of Science and Technology, Imperial College London and the Oslo University Hospital have conducted a new meta-analysis that shows that a BMI between 25 and 30 kg /m<sup>2</sup>, which is considered overweight, is also associated with increased risk.

"Overweight individuals had a 35 per cent increased risk of heart failure as compared with normal weight individuals, and our findings indicate that overweight should be considered a clear risk factor for heart failure," says first author and PhD candidate Dagfinn Aune.

Body mass index (BMI) shows the relationship between weight and height and is used internationally as a measure of body fat. The risk of heart failure rose on average by 41 per cent for an increase of five BMI units, and the increase in risk accelerated the further up on the BMI scale you scored.

Obesity increased the risk two to three times compared with normal

weight. The researchers found no differences between men and women in the analysis, which included 23 studies with a total of almost 650,000 participants. Four studies looked at the link between BMI and the risk of death from heart failure, and the results suggested a 26 per cent higher risk for an increase of 5 BMI units.

Meanwhile, the researchers saw that every ten-centimeter increase in waist circumference was linked to a 29 per cent higher risk of heart failure. These analyses were based on twelve studies with a total of just over 360,000 participants.

For example, men with a waist circumference of 105 cm virtually doubled their risk of heart failure compared with men whose waist measured 83 cm. For women, the risk was 80 per cent higher with a waist circumference of 90 cm than with a [waist circumference](#) of 70 cm. A higher waist-to-hip ratio was also correlated with a progressively greater risk of developing heart failure.

"Waist circumference measurements can easily be taken at a regular medical examination and can help when considering the patient's risk of heart failure," said Aune.

Obesity is associated with an increased risk of hypertension, diabetes and a poor blood fat (lipid) profile. All these factors increase the risk of a heart attack and subsequent heart failure.

Since several of the studies found similar results, even when adjusting for these and several other factors that may affect the link between BMI and heart failure, this model cannot explain the whole correlation.

"Several studies have shown increased concentrations of inflammatory substances in the blood of people with abdominal obesity, and these substances are linked to increased risk of heart failure. Overweight and

obesity increase the risk for heart muscle disease, which is an established risk factor for heart failure," said Aune.

The findings have great significance for clinical guidelines on preventing heart failure, and they are also important from a public health perspective.

"More and more people in the world are overweight or obese, and the population is steadily aging. Considered together, this could contribute to the number of new cases of heart failure increasing significantly in coming years," warns Aune.

This warning underscores the importance of increasing the investment in research and prevention.

"Physical activity and a more plant-based diet with lots of fruits and vegetables and whole grains are important to prevent overweight and obesity, and some studies suggest that they may also be beneficial in preventing [heart failure](#), but we need more studies on this," Aune says.

Provided by Norwegian University of Science and Technology

Citation: Call them spare tires or love handles—belly fat is bad (2016, April 1) retrieved 19 July 2023 from <https://medicalxpress.com/news/2016-04-handlesbelly-fat-bad.html>

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