

# Fat but fit: Obese people can still be 'metabolically healthy'

By Nathan Gray, 07-Sep-2012

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**A large subset of people can be obese yet remain but metabolically healthy and fit, with no greater risk of developing or dying from heart disease or cancer than normal weight people, according to new research.**

The study – published in the *European Heart Journal* – is the largest ever to have investigated this seeming paradox, say the researchers, who analysed data from over 43,000 US participants. The striking result: being obese does not *per se* carry such a large health risk - with almost half of all obese people classed as 'metabolically healthy' and having no greater risk of cardiovascular disease and cancer than normal weight people.

Led by Dr Francisco Ortega of the University of Granada, Spain and the Karolinska Institutet, Sweden, the new study instead reveals a large subset (46%) of obese people who are metabolically healthy – meaning they do not suffer from conditions like insulin resistance, diabetes and high cholesterol or blood pressure – and who have a higher level of fitness than other obese (and even non-obese) people.

The researchers said that for these people, carrying extra weight does not seem to have a detrimental effect on health, leading to what is known as the 'obesity paradox'.

*"It is well known that obesity is linked to a large number of chronic disease such as cardiovascular problems and cancer," explained Ortega. "However, there appears to be a sub-set of obese people who seem to be protected from obesity-related metabolic complications."*

The lead researcher explained that until now it had not been known whether, or how much, people who are healthy and fit yet obese are at risk of obesity related diseases.

*"Our study suggests that metabolically healthy but obese people have a better fitness level than the rest of obese individuals,"* said Ortega who noted that there are two 'major findings' to take out of the study:

*"Firstly, a better cardio-respiratory fitness level should be considered from now on as a characteristic of this subset of metabolically healthy obese people. Secondly, once fitness is accounted for, our study shows for the first time that metabolically healthy but obese individuals have similar prognosis as metabolically healthy normal-weight individuals, and a better prognosis than their obese peers with an abnormal metabolic profile."*

## Study details

The project and investigation took place at the University of South Carolina (Columbia, USA) under the direction of Professor Steven Blair, who is responsible for the long-running 'Aerobics Center Longitudinal Study' (ACLS) which provided the 43,265 participants for this current analysis.

Participants were recruited to the ACLS between 1979 and 2003, with all completing a detailed questionnaire, including information on their medical and lifestyle history, in addition to receiving a physical examination that included a treadmill test to assess cardio-respiratory fitness and measurements of height, weight, waist circumference, and their percentage of body fat.

Blood pressure, cholesterol and fasting glucose levels were also measured.

Ortega and his colleagues found that 46% of the obese participants were metabolically healthy.

After adjusting for several confounding factors, including fitness, the metabolically healthy but obese people had a 38% lower risk of death from any cause than their metabolically unhealthy obese peers, while no significant difference was seen between the metabolically healthy but obese and the metabolically healthy, normal weight participants.

The risk of developing or dying from cardiovascular disease or cancer was reduced by between 30-50% for the metabolically healthy but obese people, and there were no significant differences observed between them and the metabolically healthy, normal weight participants.

Source: *European Heart Journal*

Published online ahead of print, doi: [10.1093/eurheartj/ehs174](https://doi.org/10.1093/eurheartj/ehs174)

*"The intriguing metabolically healthy but obese phenotype: cardiovascular prognosis and role of fitness"*

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