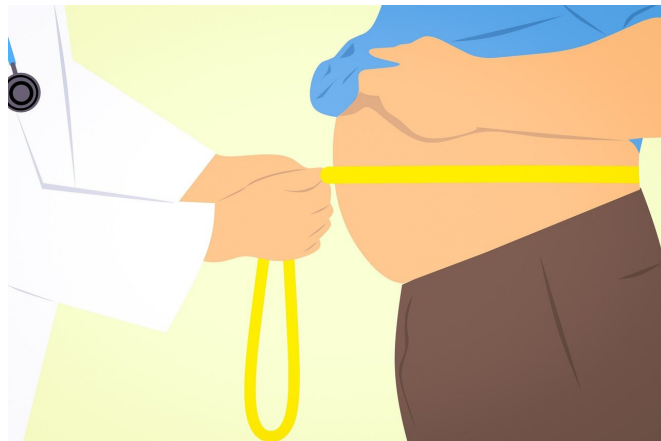


# Study in half a million adults with overweight or obesity suggests benefit of weight loss on serious health problems

4 September 2020



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People with obesity who intentionally (not because of illness) lost an average (median) 13% of their initial body weight reduced their relative risk of developing type 2 diabetes by 42%-44%, sleep apnoea by 22%-27%, high blood pressure by 18%-25%, and dyslipidaemia (unusually high levels of cholesterol and other fats in the blood) by 20-22%, according to a study of over 550,000 adults in primary care in the UK.

The study, being presented at The European and International Congress on Obesity (ECOICO 2020), held online this year from September 1-4, is the first of its kind to quantify the benefits of intentional weight loss on the risk of [obesity](#)-related conditions in real-world clinical practice.

In the study, researchers analysed anonymised data from the UK Clinical Practice Research Datalink (CPRD) database—which holds information on over 11 million patients from 674 general practice surgeries in the UK, dating from

1987 to the present—and Hospital Episodes Statistics. They extracted data on over 550,000 adults (average age 51 years) with overweight (BMI 25 to 30 kg/m<sup>2</sup>) or obesity (BMI of 30 or above) between January 2001 and December 2010.

Participants were divided into two groups based on their weight pattern during a 4-year period after the first BMI measurement was taken—492,380 individuals whose weight remained stable (margin allowed for BMI change -5% to +5%) and 60,573 who lost weight (requiring BMI change -10% to -25%). Average (median) BMI change in the weight-loss group was -13%. They also extracted information on weight loss interventions and dietary advice to confirm intention to lose weight.

The researchers compared the risk of developing six obesity-related conditions (type 2 diabetes, sleep apnoea, osteoarthritis, hypertension, dyslipidaemia, and unstable angina/heart attack) among those who lost weight and those who did not, during an average of 8 years follow up.

They then calculated the benefits of losing 13% of body weight for three risk profiles—BMI reduction from 34.5 to 30 kg/m<sup>2</sup> (obesity class I level); 40.3 to 35 kg/m<sup>2</sup> (obesity class II level), and from 46 to 40kg/m<sup>2</sup> (obesity class III level; see table 1). The results were adjusted for factors that could affect the findings including age, sex, smoking, and existing comorbidities (eg, type 2 diabetes, high blood pressure, abnormal blood fats, history of cardiovascular events).

Overall, the largest risk reductions were noted for type 2 diabetes. The estimates suggest that 13% weight loss in adults with obesity from BMI 34.5 to 30.0 kg/m<sup>2</sup> was associated with a 42% reduction in the relative risk of developing type 2 diabetes, a 25% reduction in the relative risk of developing high

blood pressure and sleep apnoea, and a 20-22% reduction in osteoarthritis and dyslipidaemia risk, compared to risks before weight loss. The trends for individuals who reduced their BMI from 40.3 to 35 kg/m<sup>2</sup> and 46 to 40kg/m<sup>2</sup> were similar. However, the reduction in unstable angina/[heart attack](#) risk was not significant (table 1).

Obesity

Further analyses looking at whether people with an average 13% weight loss were at the same risk of obesity-related conditions as if they been at this 13% [lower weight](#) from the start of the study, found that those who lost weight were at significantly lower risk of developing type 2 diabetes, [high blood pressure](#), and abnormal blood fats (table 2). However, at each of the three risk profiles, the risk of developing [sleep apnoea](#) and osteoarthritis after weight loss was still higher compared with having 13% lower stable weight from the start of the study (so called 'residual risk').

"Our results demonstrate the benefits of intentional weight loss in reducing the health burdens of obesity in real-world clinical practice," says Christiane L Haase from Novo Nordisk, Denmark, who led the research. "It is important to emphasise that this is an observational study and can only show that there is an association between weight loss and reduced cardiovascular risk factors, not that weight loss causes that reduction in risk. Nevertheless, the difference in the risk of these conditions is striking and indicates that people with obesity could markedly reduce their disease risk through intentional weight loss. What we need to focus on now is how we can support healthy, evidence-based approaches to losing [weight](#) and how best to maintain any [weight loss](#) achieved."

The findings are likely to be generalisable to the whole of the UK and most Western countries because of the diverse nature of the UK population within the CPRD database. However, the authors acknowledge several limitations, including that patients must have been to their doctor and had their BMI measured for a reason, and that other factors that could affect the results may be unknown or unmeasurable.

Provided by European Association for the Study of

APA citation: Study in half a million adults with overweight or obesity suggests benefit of weight loss on serious health problems (2020, September 4) retrieved 22 October 2020 from <https://medicalxpress.com/news/2020-09-million-adults-overweight-obesity-benefit.html>

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