

Childhood obesity -- what are the health risks?

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It is widely suspected that the current wave of obesity among children will result in greater rates of cardiovascular disease and diabetes over the next few decades. But a second systematic review of research into childhood obesity and metabolic disease in adult life has shown there is little evidence of a direct link and suggests that treating obesity during childhood will remove any risk of lasting harm.

This new study, and the second of its kind carried out by nutrition experts at The University of Nottingham, has strengthened their original findings that we could in fact be more at risk of health problems if we are lean as children and become obese as adults. Unexpectedly the work suggests that there could even be a slight protective effect if we are overweight as children and reduce our [Body Mass Index](#) (BMI) in adulthood.

The research, funded by the Organix Foundation, and published online in the [International Journal of Obesity](#), warns that as a result dieticians and nutritionists are missing an important at-risk group.

This second review has been performed by Louise Lloyd, a graduate student in nutrition, Dr Sarah McMullen, lecturer in Human Nutrition, and Professor Simon Langley-Evans, Chair in [Human Nutrition](#), all based in the Division of [Nutritional Sciences](#) (School of Biosciences). The Division carries out research which focuses on the basis of the individual response to diet, development and ageing.

Their review shows that previous studies suggesting that childhood obesity permanently raises risk of disease failed to take into account adult BMI. As a result, there is insufficient evidence to demonstrate links with long term-risk which are independent of adult BMI.

The researchers reviewed 11 academic studies which considered the health of thousands of people living in westernised countries. They say that when adult BMI was accounted for, people at the lower end of BMI in childhood who became obese later in life actually had the highest chances of [high blood pressure](#), type 2 diabetes and heart disease.

Professor Langley-Evans said: "There is substantial evidence that childhood obesity tracks into adulthood and it is clear that adult obesity puts us at higher risk of [metabolic disease](#). We are not therefore suggesting that childhood obesity is without consequences. Targeting childhood and adolescence for prevention and treatment of obesity is wholly appropriate in order to establish a healthy weight moving forward into the adult years. However, we have found that the nature of the relationship between early BMI and adult disease risk is very complex. People at the lower end of the BMI range in childhood and go on to be obese as adults seem to be at particular risk. Therefore, by focusing on children who are overweight or obese for the promotion of health weight management we may be missing an important at-risk group."

Overweight and obesity are associated with a range of chronic diseases such as cardiovascular disease, type 2 diabetes and certain cancers. The World Health Organisation has estimated that around a third of coronary heart disease and ischaemic stroke cases are attributable to excess weight. As the prevalence of excess weight and obesity continues to increase there are significant implications for population morbidity and mortality with the increase in childhood obesity of particular concern.

Dr McMullen said: "We conducted the reviews because we were

interested in the impact of obesity during childhood on long term disease risk. We were surprised to see that when we adjusted for adult body mass index the relationships disappeared and, in fact, many of them reversed. Our analysis of the research as a whole goes against many of the conclusions from the individual studies. Most surprising to us was the finding that it is those who are relatively lean in childhood but go on to be obese during adulthood who are at particular risk.

"We must be very clear about one thing — obesity does have a very negative impact on health in many different ways. We know that people who are obese during childhood are more likely to be obese as [adults](#), and this has a direct impact on their health and wellbeing at that time. It is generally assumed that an earlier onset and longer duration of obesity is associated with a greater cardiovascular risk, which has increased concerns about childhood obesity trends. However, very important questions remain as to the nature of the relationship. For example it isn't clear whether weight loss interventions in [adult life](#) can fully ameliorate the risks associated with childhood obesity or whether an independent effect of [childhood obesity](#) remains, irrespective of the degree of adult weight."

More information: The two reviews can be found at:

[www.nature.com/ijo/journal/vao ... ull/ijo2011186a.html](http://www.nature.com/ijo/journal/vao...ull/ijo2011186a.html)

[www.nature.com/ijo/journal/v34 ... full/ijo200961a.html](http://www.nature.com/ijo/journal/v34...full/ijo200961a.html)

Provided by University of Nottingham

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