Early obesity linked to increased probability of severe obesity later in life

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Exposure to long-term obesity has become more common with increases in obesity at younger ages. Researchers examined the relationship between BMI at age 25, obesity later in life, and biological indicators of health. They found that people who were obese by age 25 had a higher chance of more severe obesity later in life, but that current weight, rather than the duration of obesity, was a better indicator of cardiovascular and metabolic risk. Their findings are published in the June issue of the *American Journal of Preventive Medicine*.

Investigators looked at data from the 1999-2010 U.S. National Health and Nutrition Examination Survey (NHANES) and found that men who were obese at age 25 had a 23.1% estimated probability of class III obesity (defined as a BMI greater than 40) after age 35, while men of a normal weight at age 25 only had a 1.1% chance of severe obesity after age 35. For women, the statistics were even more dramatic with the likelihood of class III obesity jumping to 46.9% if obese at age 25, compared to just 4.8% for those at a normal weight.

While this seems to be a bleak projection for those battling obesity, the study also revealed some more hopeful findings. Examining the effects of long-term obesity, the study showed that present weight, as opposed to the duration of obesity, was a much better indicator of cardiovascular and metabolic risk. This means that losing weight at any stage may help reduce risks, regardless of how long a person has been overweight.

"The current findings suggest that the biological risks of longer-term

obesity are primarily due to the risk of more severe obesity later in life among those obese early in life, rather than the impact of long-term obesity per se," explains study lead author Jennifer B. Dowd, PhD, Associate Professor, Epidemiology and Biostatistics, City University of New York (CUNY) School of Public Health, Hunter College. "This is good news in some respects, as overweight and obese young adults who can prevent additional weight gain can expect their biological risk factors to be no worse than those who reach the same level of BMI later in life."

Although the study found that current weight was a better indicator of risk than the length of obesity, it is still significant that those obese at 25 years were more likely to be morbidly obese in middle age. By being more likely to reach severe levels of obesity, they are more susceptible to complications such as hypertension, inflammation, and diabetes. Also, investigators admit that long-term obesity may play a role in other chronic conditions.

"Duration of obesity may still have important implications for mobility and musculoskeletal disease, research questions that should be investigated. Prevention of weight gain at all ages should thus be a clinical and public health priority," adds study co-author Anna Zajacova, PhD, Assistant Professor of Sociology at the University of Wyoming.

As the obesity epidemic continues to unfold, studies like this give us better insight into both the short and long-term effects of being overweight, as well as a model to predict those who are most at risk later in life.

"This study adds to growing evidence that in terms of traditional cardiovascular, inflammatory, and metabolic risk, obesity duration confers little additional risk beyond the current level of attained weight," concludes Dr. Dowd. "The bad news, in turn, is that maintaining a stable

level of obesity from a young age is not the norm, and being obese at age 25 years places individuals at risk of a much more severe level of obesity later in life compared to those who are normal weight at age 25 years."

More information: "Long-Term Obesity and Cardiovascular, Inflammatory, and Metabolic Risk in U.S. Adults," by Jennifer B. Dowd, PhD and Anna Zajacova, PhD, is published in the *American Journal of Preventive Medicine*, Volume 46, Issue 6 (June 2014), DOI: dx.doi.org/10.1016/j.amepre.2014.01.016

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