

Lifetime 'dose' of excess weight linked to risk of diabetes

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Obesity is a known risk factor for developing type 2 diabetes. But it hasn't been clear whether the "dose" of obesity—how much excess weight a person has, and for how long—affects the risk of diabetes.

A new University of Michigan Health System study of about 8,000 adolescents and young adults shows the degree and duration of carrying extra pounds are important risk factors for developing type 2 [diabetes](#) in adulthood.

"Our study finds that the relationship between weight and type 2 diabetes is similar to the relationship between smoking and the risk of lung cancer," says study lead author Joyce Lee, M.D., M.P.H., a pediatric endocrinologist at U-M's C.S. Mott Children's Hospital. "The amount of excess weight that you carry, and the number of years for which you carry it, dramatically increase your risk of diabetes."

The study appears online ahead of print in the September issue of the *Archives of Pediatric Adolescent Medicine*.

"We know that, due to the childhood obesity epidemic, younger generations of Americans are becoming heavier much earlier in life, and are carrying the extra weight for longer periods over their lifetimes," says Lee. "When you add the findings from this study, rates of diabetes in the United States may rise even higher than previously predicted."

Researchers found that a measure of degree and duration of excess

weight (based on the number of years body mass index, a calculation of weight and height, of 25 or higher) was a better predictor of diabetes risk than a single measurement of excess weight. A BMI over 25 is considered overweight and over 30 is considered obese.

Lee and colleagues also found that black and Hispanic compared with white individuals had a higher risk for diabetes, for a same amount of [excess weight](#) over time.

For example, individuals with a BMI of 35 (10 points higher than healthy weight) for 10 years would be considered to have 100 years of excess BMI. Hispanics in this group were twice as likely to develop diabetes compared to whites, while blacks in this group had one-and-a-half-times greater risk than whites.

Based on the latest findings, Lee suggests obesity prevention and treatment efforts should focus on adolescents and young adults, especially racial minorities.

In addition, she believes that measuring and following BMI and the cumulative "dose" of excess BMI may be helpful for clinicians and patients in understanding risk of diabetes in the future.

Evidence from other research indicates that BMI increases with age, and children who are obese are more likely to become obese adults.

Obesity is a well-known contributor to type 2 diabetes, cardiovascular disease, disability and premature death.

More information: "Excess body mass index-years, a measure of degree and duration of excess weight, and risk for incident diabetes," Archives of Pediatric Adolescent Medicine, Sept. 5, 2011.

Provided by University of Michigan

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