

Obesity surgery linked to positive outcomes in very obese teens with diabetes

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Lori Laffel, MD, MPH, Chief, Pediatric, Adolescent and Young Adult Section at Joslin Diabetes Center and Professor of Pediatrics at Harvard Medical School.
Credit: John Soares

While it's not news that weight loss and medication control type 2 diabetes, a secondary analysis found that bariatric surgery could potentially be an effective option for very obese adolescents with type 2 diabetes, lowering blood glucose levels, improving weight loss and returning cholesterol and blood pressure levels to normal. The study is

published online by *JAMA Pediatrics*.

Over the last 30 years the number of obese adolescents with type 2 diabetes has dramatically increased. Diabetes drugs control [blood glucose](#) for most people with type 2 diabetes, but for severely obese teenagers, nearly half will need insulin therapy within one year of diagnosis, says study coauthor Lori Laffel, MD, MPH, Chief, Pediatric, Adolescent and Young Adult Section at Joslin Diabetes Center.

In the analysis, Dr. Laffel and colleagues from multiple institutions looked at existing data from two studies - the Teen-Longitudinal Assessment of Bariatric Surgery (Teen-LABS) and Treatment Options of Type 2 Diabetes in Adolescents and Youth (TODAY).

This study is the first to compare glycemic control in two groups of very obese adolescents with type 2 diabetes. It included 30 teenagers treated with medication (TODAY) and 63 teenagers who underwent [bariatric surgery](#) (Teen-LABS).

Teen-LABS examined the effectiveness and safety of [weight loss surgery](#) in teenagers. The key finding was that those who underwent the procedure showed significant improvements in cardiovascular disease risk factors. The key finding from TODAY was that metformin in combination with rosiglitazone resulted in more effective blood glucose control than metformin alone, or metformin plus an intensive lifestyle intervention.

In this analysis, researchers compared clinical outcomes at the two year mark and found that bariatric surgery was much more likely to improve blood glucose control than medication. In those who underwent bariatric surgery, two years on A1c dropped from 6.8 to 5.5, whereas in those who received medication, A1c increased from 6.4 to 7.8.

"In Teen-LABS, about 70 percent of participants

achieved a normal A1c (below 5.7) at the two year point, compared to only 10 percent of those in the TODAY study," says Dr. Laffel.

Provided by Joslin Diabetes Center

In addition, those who underwent [weight loss surgery](#) weighed, on average, 29 percent less than prior to surgery, whereas those who were treated with diabetes medication weighed 3.7 percent more. Also, the analysis showed significant improvements in blood pressure, cholesterol levels and kidney function in teenagers treated surgically, but not in those treated with medication.

But just because metabolic outcomes were better doesn't mean that bariatric surgery is an option for everyone.

"We do have to recognize that this is not a head-to-head comparison," says Dr. Laffel. "We also have to recognize that almost a quarter of the bariatric patients needed additional operations and patient care after surgery, so that approach is not without potential morbid complications."

What the study actually uncovered is that there is a need to find better ways to treat type 2 [diabetes](#) in this population. That might mean developing more family-based approaches to weight management or starting lifestyle programs at an even younger age.

"Gastric bypass is something you want to enter thoughtfully. Patients and their family need to be aware that complications and the need for reoperation could occur, as well as the fact they will need to revise and transform their approach to eating," says Dr. Laffel. "Our study suggests that if medical and lifestyle approaches fail, bariatric surgery should be considered."

These findings will need to be confirmed in additional studies.

More information: Thomas H. Inge et al. Comparison of Surgical and Medical Therapy for Type 2 Diabetes in Severely Obese Adolescents, *JAMA Pediatrics* (2018). DOI: [10.1001/jamapediatrics.2017.5763](https://doi.org/10.1001/jamapediatrics.2017.5763)

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