

Overweight and Obesity in People With Type 1 Diabetes Nearly Same as General Population

A new study led by researchers at the Johns Hopkins Bloomberg School of Public Health found that Americans with type 1 diabetes had overweight or obesity at almost the same high rates observed in persons without diabetes.

The researchers found that 62 percent of adults with type 1 diabetes in a national sample of the U.S. were affected by overweight or obesity, compared to 64 percent of persons without diabetes and 86 percent of adults with type 2 diabetes.

The findings, to be published in a research letter of Internal Medicine, turn on its head the perception that people with type 1 diabetes tend not to be overweight. The study is thought to be the first to estimate the prevalence of obesity among Americans with type 1 diabetes using a nationwide, population-based sample—in this case, nearly 130,000 people with and without diabetes.

The researchers also found that half of adults with type 1 diabetes who had overweight or obesity received lifestyle recommendations from health care providers or engaged in lifestyle interventions to control their weight. The authors believe this is likely because the insulin required to treat type 1 diabetes carries the risk of dangerously low blood sugar levels (hypoglycemia) if combined with intense exercise or severely reduced calorie intake.

"The lack of evidence for safe, effective methods of diet- and exercise-based weight control in people with type 1 diabetes may be keeping doctors from recommending such methods," says study first author Michael Fang, PhD, MHS, assistant professor in the Bloomberg School's Department of Epidemiology. "Large clinical trials have been done in type 2 diabetes patients to establish guidelines for diet- and exercise-based weight management, and we now need something similar for type 1 diabetes patients."

Unlike type 2 diabetes, which is common in older adults and persons who are overweight or obese, type 1 diabetes is an autoimmune condition that often develops in childhood but also occurs in adults. Type 1 diabetes arises when a person's immune system mistakenly attacks and destroys pancreatic cells that produce insulin, an essential hormone that directs cells to take up glucose from the blood. People who have type 1 diabetes can no longer produce adequate levels of insulin on their own, and must instead rely on an insulin pump or manual insulin injections. The Centers for Disease Control and Prevention estimates there are 1.6 million adults age 20 or older living with type 1 diabetes and using insulin.

Even in people who don't have diabetes, being overweight brings increased risks for a wide range of serious health conditions, from heart attacks and strokes to certain cancers. But patients with type 1 diabetes may face additional risks—for example, obesity tends to make the body less sensitive to insulin, which for people who rely on injected insulin could mean higher doses and/or less predictable blood glucose responses.

The study of overweight and obesity rates among persons with type 1 diabetes is an emerging area of research. A 2022 study from the same group of Bloomberg School researchers linked obesity in type 1 diabetes to a greater risk of chronic kidney disease.

In this new analysis, the researchers examined data from 2016 through 2021 on 128,571 people from the National Health Interview Survey, an annual nationwide survey of the U.S. population on health-related topics. Their central finding was that 34 percent of adults with type 1 diabetes were overweight, while 28 percent had obesity—virtually the same as the proportions—36 percent and 28 percent—seen in people without diabetes.

Despite the high rate of overweight and obesity, only slightly more than half of type 1 diabetes patients in the overweight or obese category reported receiving doctors' recommendations to increase physical activity or reduce fat intake or overall calories. A similar proportion reported adopting such lifestyle changes.

People with type 2 diabetes reported receiving lifestyle-change advice, and implementing such changes, at higher rates—for example, 60 percent reported receiving advice to lower calories and/or fat intake, compared to just 51 percent of type 1 diabetes patients.

The results show that people with type 1 diabetes are strongly affected by the overweight and obesity epidemic in the U.S., but aren't being advised to control their weight to the same extent as people with type 2 diabetes.

"Our study busts the myth that people with type 1 diabetes are not being affected by the global obesity epidemic," says Elizabeth Selvin, PhD, MPH, professor in the Bloomberg School's Department of Epidemiology and study senior author. "These findings should be a wake-up call that we need to be aggressive in addressing the obesity epidemic in persons with type 1 diabetes"