

Study links longer exposure to obesity and earlier development of obesity to increased risk of type 2 diabetes

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Cumulative exposure to obesity could be at least as important as actually being obese in terms of risk of developing type 2 diabetes (T2D),

concludes new research published in *Diabetologia*. The study is by Dr. Juhua Luo, School of Public Health, Indiana University, Bloomington, IN, USA, and colleagues.

Although obesity is a well-established risk factor for T2D, little is known about the relationships between age of onset of obesity and cumulative exposure to obesity and risk of T2D, especially among young adults. In this study, the authors used data from the Australian Longitudinal Study on Women's Health (ALSWH) to identify body mass index (BMI) trajectories over the early adult life course. They then examined the relationship between distinct BMI trajectories and risk of T2D. Also investigated were the associations between timing of obesity onset, obese-years and T2D.

Women aged 18-23 years at baseline (n=11,192) enrolled in the ALSWH in 1996 were followed up about every three years via surveys for up to 19 years. Self-reported weights were collected up to seven times. New cases of T2D were self-reported. A total of 162 (1.5%) women newly developed T2D over an average of 16 years of follow-up. Six distinct BMI trajectories were identified, varying by different initial BMI and different rates of increase of obesity.

Higher initial BMI was associated with an increased risk of [diabetes](#). Increased age at onset of obesity was associated with a lower risk of diabetes, with a 13% lower risk of developing T2D per one-year delay in onset. A higher number of obese-years was associated with increased risk of developing T2D. Obese years is calculated by person's BMI minus the BMI for obesity (30), then multiplying by the number of years of exposure. The authors estimate* that for each extra 10-obese years, the risk of diabetes increased by 25%.

Among 10,521 (94%) women who were not obese at baseline, the researchers observed that women who became obese during follow-up

had a 3-fold increased risk of T2D compared to women who remained not obese. More specifically, compared with women who did not become obese during the follow-up, women who became obese and had obese-years of

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