

People with Type 2 diabetes who eat breakfast later, more likely to have a higher BMI

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Being an "evening person" is linked to higher body mass indices among people with Type 2 diabetes, and having breakfast later in the day seems

to be what drives this association, according to a new paper in the journal *Diabetic Medicine*.

Obesity is common among people with Type 2 [diabetes](#). Having an [evening](#) preference—waking up later and going to bed later—has been linked to an increased risk for obesity, but research is lacking regarding this phenomenon among people with Type 2 diabetes.

Researchers led by Dr. Sirimon Reutrakul, associate professor of endocrinology, diabetes and metabolism in the University of Illinois at Chicago College of Medicine, wanted to determine if morning or evening preference among people with Type 2 diabetes was associated with an increased risk for higher BMI and if so, what specific factors about evening preference contributed to the increased risk.

Reutrakul and her colleagues recruited 210 non-shift workers living in Thailand with Type 2 diabetes for their study. Morning/evening preference was assessed using a questionnaire that focused on preferred time for waking up and going to bed; time of day spent exercising; and time of day spent engaged in mental activity (working, reading, etc.). Scores on the questionnaire can range from 13, indicating extreme evening preference, to 55 indicating extreme morning preference. Participants with an evening preference were those who scored less than 45 on the questionnaire, while those with morning preference scored a 45 or higher.

Participants were interviewed regarding their meal timing, and daily [caloric intake](#) was determined via self-reported one-day food recalls. Weight measurements were taken and BMI was calculated for each participant. Sleep duration and quality were measured by self-report and questionnaire.

Self-reported average sleep duration was 5.5 hours/night. On average,

participants consumed 1,103 kcal/day. The average BMI among all participants was 28.4 kg/m²—considered overweight. Of the participants, 97 had evening preference and 113 had morning preference.

Participants with morning preference ate breakfast between 7 a.m. and 8:30 a.m., while [participants](#) with evening preference ate breakfast between 7:30 a.m. and 9 a.m.

Participants with [morning](#) preference had earlier meal timing, including breakfast, lunch, dinner and the last meal.

The researchers found that having more evening preference was associated with higher BMI. Caloric intake and lunch and dinner times were not associated with having a higher BMI.

Morning [preference](#) was associated with earlier breakfast time and lower BMI by 0.37 kg/m².

"Later breakfast [time](#) is a novel risk factor associated with a higher BMI among people with Type 2 diabetes," said Reutrakul. "It remains to be investigated if eating [breakfast](#) earlier will help with body weight in this population." Reutrakul speculates that later meal times may misalign the internal biological clock, which plays a role in circadian regulation. Circadian misalignment can lead to dysregulation of energy metabolism according to previous studies.

More information: H. Nimitphong et al. The relationship among breakfast time, morningness-eveningness preference and body mass index in Type 2 diabetes, *Diabetic Medicine* (2018). [DOI: 10.1111/dme.13642](#)

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