

When you eat matters: How your eating rhythms impact your mental health

14 March 2022, by Elena Koning & Elisa Brietzke



When the main circadian clock in the brain is out of sync with eating rhythms, it impacts the brain's ability to function fully. Credit: Shutterstock

Eating is an essential part of human life and it turns out that not only what we eat but when we eat can impact our brains. Irregular eating times have been shown to contribute to poor mental health, including depression and anxiety, as well as to [cardio-metabolic diseases and weight gain](#).

Fortunately, it is possible to [leverage our eating rhythms](#) to limit [negative mood](#) and increase mental health. As a doctoral student in the field of neuropsychiatry and a psychiatrist studying nutrition and [mood](#) disorders, our research focuses on investigating how eating rhythms impact the brain.

Here's how it all works: The circadian clock system is responsible for aligning our internal processes at optimal times of day based on cues from the environment such as light or food. Humans have evolved this wiring to meet energy needs that change a lot throughout the day and night, creating a [rhythmic pattern](#) to our eating habits that follows the schedule of the sun.

Although the main clock manages metabolic function over the day-night cycle, our eating

rhythms also impact the main clock. Digestive tissues have their own clocks and show regular oscillations in functioning over the 24-hour cycle. For example, the [small intestine](#) and liver [vary throughout the day and night in terms of digestive, absorptive and metabolic capacity](#).

When the main circadian clock in the brain is out of sync with eating rhythms, it impacts the brain's ability to function fully. Even though the brain is only two percent of our total body mass, it consumes up to 25% of our energy and is particularly [affected by changes in calorie intake](#). This means that abnormal meal times are bound to have negative health outcomes.

Food and mood

Although the underlying mechanisms are still unknown, there is overlap between neural circuits governing eating and mood. Also, digestive hormones exert effects on dopamine, a neurotransmitter that plays a large role in mood, energy and pleasure. Individuals with [depression and bipolar disorder have abnormal dopamine levels](#). Altered eating rhythms are thought to contribute to the poor maintenance of mood.

Irregular eating may even play a role in the complex underlying causes of mood disorders. For example, individuals with depression or [bipolar disorder exhibit disturbed internal rhythms and irregular meal times](#), which significantly worsen mood symptoms. In addition, shift workers—who tend to have irregular eating schedules—[demonstrate increased rates of depression and anxiety](#) when compared to the general population. Despite this evidence, assessing eating rhythms is not currently part of standard clinical care in most psychiatric settings.



There is overlap between the neural circuits governing eating and mood. Credit: Shutterstock

For the [general population](#), it is important to increase [public knowledge](#) on accessible and affordable ways to maintain healthy eating. This includes paying attention not only to the content of meals but also to eating rhythms. Aligning eating rhythms with the schedule of the sun will have lasting benefits for general well-being and may have a protective effect against mental illness.

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Optimizing eating rhythms

So, what can be done to optimize our eating rhythms? One promising method we have encountered in our research is time-restricted eating (TRE), also known as intermittent fasting.

TRE involves restricting the eating window to a certain amount of time during the day, [typically four to 12 hours](#). For example, choosing to eat all meals and snacks in a 10-hour window from 9:00 a.m. to 7:00 p.m. reflects an overnight fasting period. Evidence suggests that this method optimizes brain function, energy metabolism and the healthy signaling of metabolic hormones.

TRE has already been shown to [prevent depressive and anxiety symptoms in animal studies designed to model shift work](#). The antidepressant effects of TRE [have also been shown in humans](#). Eating on a regular schedule is also beneficial to reduce the [risk of health issues such as obesity, diabetes and cardiovascular disease](#).

Circadian rhythms in a 24-hour world

We live in a 24-hour world filled with artificial light and round-the-clock access to food. That makes the effects of disturbed eating rhythms on [mental health](#) an important topic for modern life. As more research provides data assessing eating rhythms in individuals with [mood disorders](#), incorporating eating [rhythm](#) treatment into clinical care could significantly improve patient quality of life.

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