

# Hunger can lead to anger, but it's more complicated than a drop in blood sugar, study says

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What makes someone go from simply being hungry to full-on "hangry"? More than just a simple drop in blood sugar, this combination of hunger and anger may be a complicated emotional response involving an interplay of biology, personality and environmental cues, according to research published by the American Psychological Association.

"We all know that [hunger](#) can sometimes affect our emotions and perceptions of the world around us, but it's only recently that the expression hangry, meaning bad-tempered or irritable because of hunger, was accepted by the Oxford Dictionary," said lead author Jennifer MacCormack, MA, a doctoral student in the department of psychology and neuroscience at the University of North Carolina at Chapel Hill. "The purpose of our research is to better understand the psychological mechanisms of hunger-induced [emotional](#) states—in this case, how someone becomes hangry."

The research was published in the journal *Emotion*.

When someone is hungry, there are two key things that determine if that hunger will contribute to negative emotions or not, according to MacCormack: Context and self-awareness.

"You don't just become hungry and start lashing out at the universe," said assistant professor Kristen Lindquist, Ph.D., the study's co-author. "We've all felt hungry, recognized the unpleasantness as hunger, had a sandwich and felt better. We find that feeling hangry happens when you feel unpleasantness due to hunger but interpret those [feelings](#) as strong emotions about other people or the situation you're in."

The researchers first conducted two online experiments involving more than 400 individuals from the United States. Depending on the experiment, [participants](#) were shown an image designed to induce positive, neutral or negative feelings. They were then shown an ambiguous image, a Chinese pictograph, and asked to rate the pictograph on a seven-point scale from pleasant to unpleasant. Participants were also asked to report how hungry they felt.

The researchers found that the hungrier participants were more likely to rate ambiguous Chinese pictographs as negative, but only after first being primed with a negative image. There was no effect for neutral or positive images. "The idea here is that the negative images provided a context for people to interpret their hunger feelings as meaning the pictographs were unpleasant," said MacCormack. "So there seems to be something special about unpleasant situations that makes people draw on their hunger feelings more than, say, in pleasant or neutral situations."

It's not just [environmental cues](#) that can affect whether someone goes from hungry to hangry,

according to MacCormack. People's level of emotional awareness also matters. People who are more aware that their hunger is manifesting as an emotion are less likely to become hangry.

In a laboratory experiment involving more than 200 university students, the researchers asked the participants either to fast or eat beforehand. After some of the students were asked to complete a writing exercise designed to direct their focus on their emotions, all participants were asked to participate in a scenario designed to evoke [negative emotions](#). Students were asked to complete a tedious exercise on a computer that, unbeknownst to them, was programmed to crash just before it could be completed. One of the researchers then came into the room and blamed the student for the computer crash.

Participants were then asked to fill out questionnaires on their emotions and their perception of the quality of the experiment. The researchers found that hungry individuals reported greater unpleasant emotions like feeling stressed and hateful when they were not explicitly focused on their own emotions. These individuals also thought that the researcher conducting the experiment was more judgmental or harsh. Participants who spent time thinking about their emotions, even when hungry, did not report these shifts in emotions or social perceptions.

"A well-known commercial once said, 'You're not you when you're hungry,' but our data hint that by simply taking a step back from the present situation and recognizing how you're feeling, you can still be you even when hungry," MacCormack said.

This research emphasizes the mind-body connection, according to MacCormack. "Our bodies play a powerful role in shaping our moment-to-moment experiences, perceptions and behaviors—whether we are hungry versus full, tired versus rested or sick versus healthy," she said. "This means that it's important to take care of our bodies, to pay attention to those bodily signals and not discount them, because they matter not just for our long term mental health, but also for the day-to-day quality of our psychological experiences, social relationships and work performance."

Although this study focused on hunger, MacCormack believes these results may extend to other bodily states that induce negative emotion, such as fatigue or inflammation, but that further research needs to be done to confirm this.

**More information:** "Feeling Hangry? When Hunger is Conceptualized as Emotion," by Jennifer MacCormack, MA, and Kristen Lindquist, PhD, University of North Carolina, Chapel Hill. *Emotion*, published online June 11, 2018.

Provided by American Psychological Association

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