

# Ghrelin stimulates an appetite for drinking alcohol

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Ghrelin is a hormone released by the stomach and it stimulates appetite and food intake. Alcohol is commonly viewed as a psychoactive substance that primarily affects brain function, but it is also a highly caloric food.

This knowledge, combined with findings from animal studies, led researchers to the hypothesis that ghrelin has the potential to stimulate alcohol craving.

Dr. Lorenzo Leggio and his colleagues tested this in humans and found that, as they had anticipated, alcohol craving was increased in heavy drinkers following administration of ghrelin. Their work is published in the current issue of *Biological Psychiatry*.

"This study provides a direct translation on the role of ghrelin in alcohol-seeking behaviors in humans from previous research conducted in rodents," said Dr. Leggio, Clinical Investigator in the National Institute on Alcohol Abuse and Alcoholism (NIAAA) and the National Institute on Drug Abuse at the National Institutes of Health. Dr. Leggio is also Chief of the Section on Clinical Psychoneuroendo-crinology and Neuropsychopharmacology, in NIAAA's Laboratory of Clinical and Translational Studies.

The study was conducted in the laboratory, where 45 men and women, all of whom were alcohol-dependent, heavy-drinking individuals not seeking treatment, were randomized to receive one of three different

doses of ghrelin. One of those doses, at 0 mcg/kg, served as a placebo.

Following intravenous administration of the drug, the volunteers then completed a cue-reactivity task, during which they were exposed to both neutral and alcohol cues. Throughout the laboratory session, their craving (e.g., urge to drink) for alcohol or juice was repeatedly assessed.

Compared to placebo, ghrelin significantly increased alcohol craving, but had no effect on urge to drink juice. There were no differences in reported side effects between those who received placebo versus those who received ghrelin.

Dr. John Krystal, Editor of Biological Psychiatry, commented, "This study sheds new light on a role for ghrelin in alcohol craving, raising the possibility that ghrelin signaling might be targeted by future treatments for [alcohol use disorders](#)."

Leggio added, "There is a crucial need to identify neurobiological pathways linked to alcohol craving that may help in the development of novel effective medications aimed to reduce excessive alcohol use. In this context, future studies may explore the potential of blocking [ghrelin](#) signaling as a new promising treatment for alcoholism."

**More information:** "Intravenous Ghrelin Administration Increases Alcohol Craving in Alcohol-Dependent Heavy Drinkers: A Preliminary Investigation" by Lorenzo Leggio, William H. Zywiak, Samuel R. Fricchione, Steven M. Edwards, Suzanne M. de la Monte, Robert M. Swift, and George A. Kenna ([DOI: 10.1016/j.biopsych.2014.03.019](https://doi.org/10.1016/j.biopsych.2014.03.019)). The article appears in *Biological Psychiatry*, Volume 76, Issue 9 (November 1, 2014)

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