

# Positive hormone balance can protect people with alcohol use disorder from problematic alcohol consumption: Study

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Researchers from the Central Institute of Mental Health,  
Charité—Universitätsmedizin Berlin and the Technical University of

Dresden have published study [results](#) in the *American Journal of Psychiatry* that provide a better understanding of the relationship between hormones and alcohol consumption.

In the multi-center longitudinal study, the researchers analyzed individual data on real-life [alcohol consumption](#), which was collected via smartphone over a 12-month period, the [menstrual cycle](#) and the ratio of progesterone to [estradiol](#) in the blood (a total of 667 [blood samples](#) from four study visits) in 74 women and 278 men with alcohol use disorder.

The study shows that during the late luteal phase of the menstrual cycle, the probability of days with binge drinking in women was 13% and lower than in the menstrual (17%), follicular (19%) and ovulatory phases (20%). At the same time, the mean value of the progesterone-to-estradiol ratio was higher in the late luteal phase compared to other cycle phases. In men, a higher progesterone-to-estradiol ratio was directly associated with a lower likelihood of binge drinking and any alcohol consumption.

These results suggest that a higher progesterone-to-estradiol ratio may protect women and men with alcohol use disorder from problematic alcohol consumption. This makes the hormone ratio a promising target for future treatment of alcohol use disorder. This could pave the way for personalized, menstrual cycle-dependent treatments, especially for women with alcohol use disorder.

Professor Dr. Bernd Lenz and Sabine Hoffmann from the Department of Addictive Behavior and Addiction Medicine at the Central Institute of Mental Health in Mannheim emphasize the importance of this finding: "Our research opens up new perspectives for the treatment of alcohol use disorder. The findings can contribute to the development of gender-specific therapeutic approaches that take into account the biological differences between women and men."

**More information:** Sabine Hoffmann et al, Associations of Menstrual Cycle and Progesterone-to-Estradiol Ratio With Alcohol Consumption in Alcohol Use Disorder: A Sex-Separated Multicenter Longitudinal Study, *American Journal of Psychiatry* (2024). [DOI: 10.1176/appi.ajp.20230027](https://doi.org/10.1176/appi.ajp.20230027)

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