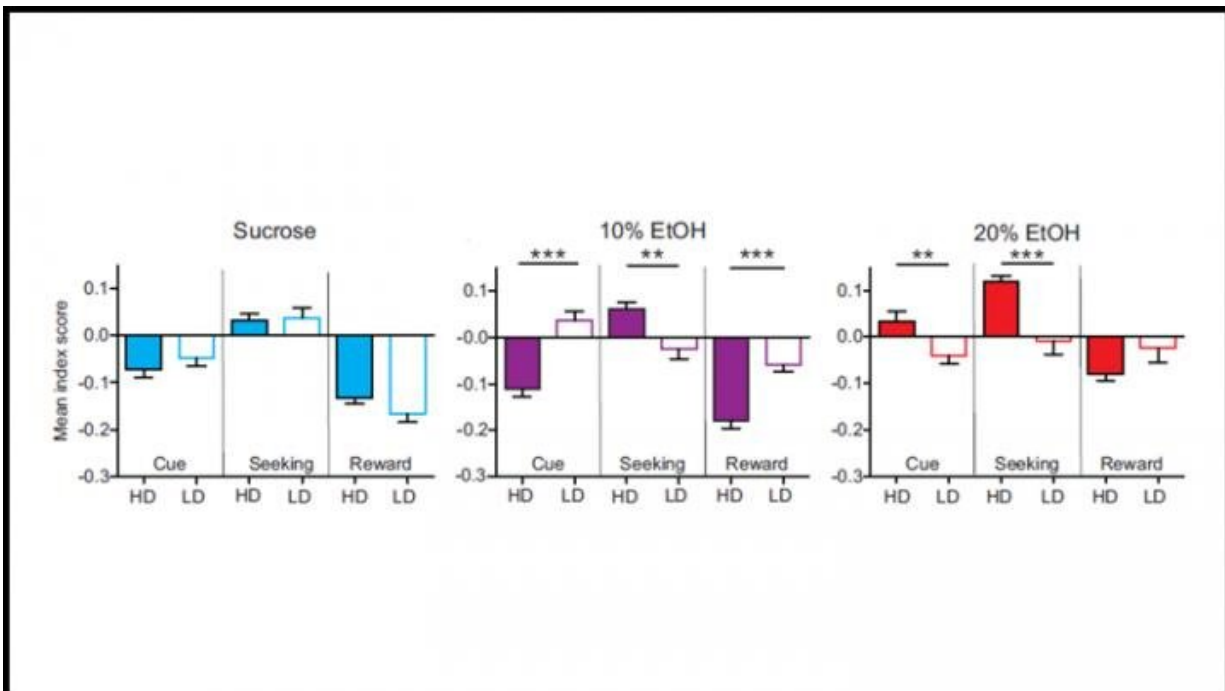


Rats' brain activity reveals their alcohol preference

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OFC activity was similar in high and low drinking rats during sucrose consumption (blue). But it was significantly different for the two groups during alcohol consumption (purple and red). Credit: Hernandez and Moorman, *eNeuro* 2020

The brain's response to alcohol varies based on individual preferences, according to new research in rats published in *eNeuro*.

Not everyone is prone to developing an [alcohol use disorder](#). Some people can drink every day without acquiring a dependence, yet far less drinking may drive another person into addiction. This difference may be explained by how the brain interprets [alcohol](#) as a reward. The [orbitofrontal cortex](#) (OFC) stores reward value and regulates reward seeking, so OFC activity corresponds to individual preferences for drugs. Its malfunctioning may be involved in drug use disorders.

To see if the same pattern held true for alcohol, Hernandez and Moorman measured the OFC activity of rats while they alternated consuming sugar and alcohol. Neurons in the OFC behaved differently in each rat but correlated with how much alcohol the rat consumed when given free access—a marker of preference. The OFC in high-drinking rats responded to alcohol in a similar fashion to sugar, a universally rewarding substance to rats. But OFC responses to alcohol were suppressed in low-drinking rats, a sign that they did not find it as rewarding as sugar. If the brains of high-drinking rats find alcohol more rewarding than low-drinking [rats](#), they may have a higher risk for developing a dependence.

More information: John S. Hernandez et al, Orbitofrontal cortex encodes preference for alcohol, *eNeuro* (2020). [DOI: 10.1523/ENEURO.0402-19.2020](#)

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