

Tendency to binge drinking runs in the blood

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Mice drink more alcohol during the dark cycle compared to daytime. The discovery made by scientists from Portland Alcohol Research Center and The Beckman Institute for Advanced Science and Technology at University of Illinois, led by John C. Crabbe and described in a paper published recently in *Addiction Genetics* by Versita – ties in with the reports describing a restricted access ethanol consumption paradigm where mice drink until intoxicated. Termed 'Drinking in the Dark' – this pattern has been used as model of binge drinking in humans. The paper demonstrates that genetic factor contributes to the drinking pattern.

Alcoholism is a widespread disorder characterized by compulsive and uncontrolled consumption of alcohol. The impact of repeated heavy use of alcohol can be shattering. Possible implications include cirrhosis of the liver, pancreatitis, epilepsy, and damage to the nervous system. Currently, very few pharmaceutical treatments are available to help prevent alcohol consumption and it has been unknown if [alcohol addiction](#) can run in the family.

For the scientists the main question indeed was if the drinking pattern is associated with genetic predisposition. To address this query, the authors have used 23 genetically different inbred [mouse strains](#), which have differential drinking patterns during the dark cycle. They found that a mouse line called HDID (high drinking in the dark) consume more alcohol after the chronic intermittent exposure to ethanol compared to control group, suggesting that [genetic predisposition](#) play an important role in ethanol drinking. However, withdrawal-induced drinking

experiment revealed that escalation of alcohol drinking appears similar in different strains, indicating that ethanol-induced pharmacological or epigenetic factors may contribute to ethanol drinking as well.

[Alcohol withdrawal symptoms](#) are seen when an individual reduces or stops [alcohol consumption](#) after prolonged periods of [excessive alcohol intake](#) and can begin as early as two hours after the last drink, persist for weeks, and range from mild anxiety and shakiness to severe complications, such as seizures and delirium tremens (also called DTs). According to the report released by WHO in 2011 - harmful use of alcohol results in the death of 2.5 million people annually, causes illness and injury to millions more, and increasingly affects younger generations and drinkers in developing countries.

Commenting on the research findings, Doo -Sup Choi from Mayo Clinic College of Medicine says: "Drinking pattern in 24h-period in humans is an important factor to understand alcohol abuse and alcohol dependence. Since most humans consume alcohol actively during the dark cycle, the findings in the paper contribute to understand individual difference in alcohol-preference during the dark phase and help us integrate the economic implications of addiction into the research".

Several researchers groups are active in the quest to identify the genes associated with drinking patterns in humans. "In the future, if we can identify genes or gene functions, we can develop a medication to treat patients who are suffering from withdrawal- or dark-induced drinking problems." adds Choi.

More information: [www.degruyter.com/view/j/addge ...
-0002.xml?format=INT](http://www.degruyter.com/view/j/addge...-0002.xml?format=INT)

Provided by Versita

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