

Blood pressure drug could help problem drinkers

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Credit: Queensland University of Technology

A drug used to treat high blood pressure may alleviate anxiety induced by long-term heavy alcohol use, and also halt the damage such drinking can cause to the brain's ability to grow new cells, QUT research shows.

The findings, from a study conducted in adult mice, have been published in the journal *Frontiers in Behavioral Neuroscience*.

Principal investigator and QUT neuroscientist, Professor Selena Bartlett, said the results add further evidence that the drug, pindolol, could be beneficial in treating alcohol use disorders.

"This is a drug that is inexpensive and already available in the US, Canada, Europe, and Australia," she said. "It's a beta-blocker that is prescribed for [high blood pressure](#), angina and heart arrhythmias.

"We have been studying it for a number of years and have already shown in animal models that it reduces alcohol intake when there is long-term consumption.

"In this latest study, we investigated the drug's effect on other alcohol associated issues—anxiety and neurogenesis.

"Long-term and [heavy drinking](#) can cause anxiety disorders, and people's anxiety can worsen when alcohol is withdrawn, and [alcohol abuse](#) can also reduce neurogenesis, which is the process by which new neurons (cells) are formed in the brain.

"We showed that pindolol reduced alcohol-associated anxiety-like behavior in mice and also alleviated the damaging effects of alcohol consumption on newly formed and immature brain cells."

Professor Bartlett said repurposing drugs like pindolol was a way to fast-track new treatments to manage alcohol dependence, binge-drinking and addiction, which are significant and [complex problems](#) both in Australia and globally.

The costs to society of alcohol-related problems in Australia in 2010 was estimated at more than \$14 billion, including costs to the health system and lost productivity.

"The next step is to conduct [clinical trials](#) with pindolol and we have started discussions with a medical specialist to progress that," Professor Bartlett said.

More information: Omkar L. Patkar et al. Pindolol Rescues Anxiety-Like Behavior and Neurogenic Maladaptations of Long-Term Binge Alcohol Intake in Mice, *Frontiers in Behavioral Neuroscience* (2019). [DOI: 10.3389/fnbeh.2019.00264](https://doi.org/10.3389/fnbeh.2019.00264)

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Omkar L. Patkar et al. The antihypertensive drug pindolol attenuates long-term but not short-term binge-like ethanol consumption in mice, *Addiction Biology* (2016). [DOI: 10.1111/adb.12359](https://doi.org/10.1111/adb.12359)

Provided by Queensland University of Technology

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