

Effects of alcohol in young binge drinkers predicts future alcoholism

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Credit: Kevin Casper/public domain

Heavy social drinkers who report greater stimulation and reward from alcohol are more likely to develop alcohol use disorder over time, report researchers from the University of Chicago, May 15 in the journal *Biological Psychiatry*. The findings run counter to existing hypotheses that innate tolerance to alcohol drives alcoholism.

In a double-blind, placebo-controlled study, a team led by Andrea King, PhD, professor of psychiatry and behavioral neuroscience at the University of Chicago, analyzed the subjective response of 104 young adult heavy social drinkers to [alcohol](#) and tracked their long-term drinking habits.

"Heavy drinkers who felt alcohol's stimulant and pleasurable effects at the highest levels in their 20s were the ones with the riskiest drinking profiles in the future and most likely to go on and have [alcohol problems](#) in their 30s," King said, "In comparison, participants reporting fewer positive effects of alcohol were more likely to mature out of [binge drinking](#) as they aged."

As part of a long-term study, King and her team carefully screened and studied heavy social drinkers who reported a pattern of binge drinking behavior as young adults—at least four (for women) or five (for men) drinks per occasion, between one and five times per week. A group of light [social drinkers](#) was used as a control. Participants engaged in three sessions, in which they were given a placebo drink with only the smell of alcohol, a low dose of alcohol or a high dose. They then answered questionnaires, took performance and memory tests, and were sampled for levels of the stress hormone cortisol.

The initial assessment when the participants were in their 20s revealed that the [heavy drinkers](#) showed a strongly positive preference to alcohol, reporting greater stimulating effects, 'liking', and 'wanting more', with lower sedative and cortisol effects. Participants were then assessed in regular follow-ups to track their drinking behaviors and symptoms of addiction over time.

Six years later, the heavy drinkers, now with an average age in their early thirties, fell into three distinct trajectory groups of [alcohol addiction](#) symptoms —high, intermediate and low. Light drinkers formed one low-risk drinking group over time with no addiction symptoms so they were not further examined. Searching for how those initially measured alcohol responses might predict which group the participants fell into, King and her team found that those in the high alcohol addiction symptom group reported far higher stimulation and pleasure from alcohol effects than members of the low or intermediate groups. Tolerance to alcohol's fatiguing effects was less predictive of the future course of addiction.

"We knew that at age 25, there were binge drinkers who were sensitive to alcohol's more positive effects," King said. "We just didn't know what was going to happen to them. Now we show that they're the ones more likely to go on to experience more

alcohol problems."

King and her colleagues are now engaged in pilot work to see if early intervention in drinkers with a positive response to alcohol is effective. They also continue to follow participants well into their 30's.

"Those who drink heavily might want to pay more attention to their response to alcohol for important warning signs," King said. "If you have sensitivity to the positive [effects of alcohol](#), it might be better to moderate your use earlier than later."

More information: "Alcohol Challenge Responses Predict Future Alcohol Use Disorder Symptoms: A 6-Year Prospective Study," *Biological Psychiatry* 2014.

Provided by University of Chicago Medical Center

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