

## Study shows smoking cigarettes makes quitting drinking harder

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Credit: Vera Kratochvil/public domain

(Medical Xpress)—A team of researchers working at Yale University has found that quitting drinking may be made harder if people continue to smoke cigarettes during recovery. In their paper published in the *Proceedings of the National Academy of Sciences*, the team describes their study that relied on both human volunteers and monkeys.

It's no secret that many alcoholics are also smokers—the two vices seem to go hand in hand. Many people who have tried to give up [drinking](#) have claimed that smoking while doing so makes it easier. Evidence from this new study suggests such people may be fooling themselves.

Prior research has shown that a neurotransmitter called gamma-aminobutyric acid A, or just GABA A, for short is involved in both drinking and smoking—the [researchers](#) with this new effort have found that it also plays a role in those who try to stop drinking while continuing to smoke.

To learn more, the researchers enlisted the assistance of 27 male and female alcoholics (and 25 people who were not, to serve as a [control group](#))—all were put into a normal treatment program, though with one difference. They all had their brains scanned while undergoing treatment. The goal was to note the level of GABA A availability of two distinct groups—those that were also smokers and those that were not. In looking at the data the researchers found what they describe as a clear link between GABA A receptor availability in drinkers who continued smoking—those who smoked while attempting to quit drinking had more activity than did the non-smokers. They also found that those who smoked during recovery reported double the rates of cravings for alcohol, which of course made it much more difficult to quit.

Perhaps just as interesting, the researchers conducted a separate study using monkeys and found that it wasn't nicotine in the cigarettes that was causing it to be more difficult to quit drinking—it was something else that they have yet to identify—[cigarette smoke](#) has a very large number of chemicals in it.

The findings by the research team suggest that alcoholics trying to kick the bottle might find more success if they quit [smoking cigarettes](#) first—a tall order to be sure, as many smokers have reported that

[quitting smoking](#) is harder than for any other addiction.

**More information:** Tobacco smoking interferes with GABA<sub>A</sub> receptor neuroadaptations during prolonged alcohol withdrawal , Kelly P. Cosgrove, *PNAS*, [DOI: 10.1073/pnas.1413947111](https://doi.org/10.1073/pnas.1413947111)

### **Abstract**

Understanding the effects of tobacco smoking on neuroadaptations in GABA<sub>A</sub> receptor levels over alcohol withdrawal will provide critical insights for the treatment of comorbid alcohol and nicotine dependence. We conducted parallel studies in human subjects and nonhuman primates to investigate the differential effects of tobacco smoking and nicotine on changes in GABA<sub>A</sub> receptor availability during acute and prolonged alcohol withdrawal. We report that alcohol withdrawal with or without concurrent tobacco smoking/nicotine consumption resulted in significant and robust elevations in GABA<sub>A</sub> receptor levels over the first week of withdrawal. Over prolonged withdrawal, GABA<sub>A</sub> receptors returned to control levels in alcohol-dependent nonsmokers, but alcohol-dependent smokers had significant and sustained elevations in GABA<sub>A</sub> receptors that were associated with craving for alcohol and cigarettes. In nonhuman primates, GABA<sub>A</sub> receptor levels normalized by 1 mo of abstinence in both groups—that is, those that consumed alcohol alone or the combination of alcohol and nicotine. These data suggest that constituents in tobacco smoke other than nicotine block the recovery of GABA<sub>A</sub> receptor systems during sustained alcohol abstinence, contributing to alcohol relapse and the perpetuation of smoking.

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