

Flies like us: They can act like addicts, too

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When given the chance to consume alcohol at will, fruit flies behave in ways that look an awful lot like human alcoholism. That's according to a study published online on December 10th in *Current Biology* that is one of the first to consider alcohol self-administration in the insects.

"The flies choose to consume [alcohol](#) to intoxicating levels, they will do so even if alcohol is made unpalatable, and they relapse to drinking high levels of alcohol after being deprived of it," said Ulrike Heberlein of the University of California, San Francisco. "Addiction is a purely human condition, but, surprisingly, flies show several key features of it."

Heberlein's group has been studying the [genes](#) underlying alcohol response and [addiction](#) using flies as a model for many years. (They are the team that [earlier this year](#) brought us the "happy hour" gene, which influences flies' susceptibility to alcohol's sedative effects.) Heberlein says she is a strong believer that the fly is a useful model of human conditions. Even so, she was "amazed" to find that flies will make such complex decisions when it comes to alcohol.

The researchers found that flies prefer to consume ethanol-containing food over regular food, and that the insects' preference increases over time. Flies are attracted to the smell of the alcohol, the researchers show, but they actually don't like its taste. Their attraction to alcohol isn't explained by the immediate sensory experience of it, or by its calories. Nevertheless, flies self-administer ethanol to intoxicating levels. They will put aside their aversion to particular tastes or smells in order to consume it, and they will rapidly return to high levels of ethanol

consumption after a period of imposed abstinence.

Heberlein doesn't really know in the case of the flies what drives the behavior, but she says she can only assume that they find [alcohol](#) rewarding and therefore choose to drink it despite its adverse consequences.

"Previously, we studied simple behaviors, such as intoxication and development of tolerance," Heberlein said. "This work opens the door for us to study much more complex alcohol-related behaviors, such as 'use despite adverse consequences' and 'relapse.'"

Source: Cell Press ([news](#) : [web](#))

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