

# Alcohol tolerance 'switch' found

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Researchers at North Carolina State University have found a genetic "switch" in fruit flies that plays an important role in making flies more tolerant to alcohol.

This metabolic switch also has implications for the deadly liver disease cirrhosis in humans. A counterpart human gene contributes to a shift from metabolizing [alcohol](#) to the formation of fat in heavy drinkers. This shift can lead to fatty liver syndrome - a precursor to cirrhosis.

In the study, published in the October print issue of the journal *Genetics*, the research team measured the time it takes for flies to stagger due to [alcohol intake](#) while simultaneously identifying changes in the expression of all their genes. They used statistical methods to identify genes that work together to help the flies adapt to alcohol exposure. In looking at corresponding human [genes](#), a counterpart gene called ME1 was associated with alcohol consumption in humans, as people with certain variations of the gene showed a tendency to drink stronger alcoholic beverages.

Dr. Robert Anholt, William Neal Reynolds Professor of Biology and Genetics at NC State and the senior author of the study, says the research has possible clinical implications.

"Our findings point to metabolic pathways associated with proclivity for [alcohol consumption](#) that may ultimately be implicated in excessive drinking," he said. "Translational studies like this one, in which discoveries from model organisms can be applied to insights in human

biology, can help us understand the balance between nature and nurture, why we behave the way we do, and - for better or worse - what makes us tick."

More information: "Alcohol sensitivity in *Drosophila*: translational potential of systems genetics", Tatiana V. Morozova et al., Published: October 2009 in *Genetics*.

Source: North Carolina State University ([news](#) : [web](#))

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