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Fruit Fly Study May Provide Clues to Human Alcohol Dependence

Male fruit flies spurned by females are more likely to turn to food soaked in alcohol than their male counterparts who successfully mate, according to a study that may provide clues about human alcohol dependence.

Researchers at the University of California, San Francisco, let one group of male fruit flies mate with available females, while another group of males mingled with females who had already mated, and were not interested in the males' advances. After four days, the flies in both groups were able to feed from glass tubes that contained either yeast and sugar, or yeast, sugar and alcohol. The male flies that could not mate drank the alcohol mixture about 70 percent of the time, compared with about 50 percent of males who had mated, The New York Times reports.

The study found a strong link between levels of a brain chemical called neuropeptide F, or NPF, and the fruit flies' appetite for alcohol. When NPF levels were low, alcohol consumption was high, and high levels of NPF were correlated with low levels of alcohol consumption.

NPF in fruit flies is thought to be similar to a brain chemical in humans called neuropeptide Y, or NPY, according to the article.

This study suggests the development of drugs that enhance the activity of NPY might be useful in treating alcohol dependence, said George Koob, Professor of Neurobiology and Addiction at the Scripps Research Institute in La Jolla, California.

"The study implies that it is this system that goes haywire in addiction, and that it's very sensitive to stress," he told the newspaper. "For instance, after you lose a loved one, or a relationship has crashed, you get dysphoric, your NPY goes down, and this provides a strong urge to drink a lot — whether you're a mammal or a fruit fly."

Source: New York Times