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Study Finds Possible Link Between Gene Variation and Teen Binge Drinking

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Scientists in London have found a genetic variation that may play a role in binge drinking in teenagers, Reuters reports. The two-phase study included mice and teenage boys.

"People seek out situations which fulfill their sense of reward and make them happy, so if your brain is wired to find alcohol rewarding, you will seek it out," lead researcher Professor Gunter Schumann of King's College Institute of Psychiatry in London said in a news release.

The researchers found that a gene called RASGRF-2 is important in controlling how alcohol stimulates the brain to release the brain chemical dopamine, which triggers feelings of reward. Previous studies have suggested that this gene increases the risk for alcohol abuse, but the mechanism was unclear, the article notes.

The researchers began by studying mice whose RASGRF-2 gene was removed, to see how they would react to alcohol. The lack of the gene was found to significantly reduce alcohol-seeking activity in the mice. When the rodents did consume alcohol, the lack of the gene reduced the activity of dopamine-releasing activity in the brain, and limited any sense of reward.

The scientists then analyzed brain scans of 663 teenage boys. They found when the boys were expecting a reward in a mental test, those with genetic variations in the RASGRF-2 gene had more activity in the brain involved in dopamine release. This suggests people with the genetic variation release more dopamine when they anticipate a reward, and get more pleasure out of it, the researchers said.

Two years later, the researchers retested the boys, many of whom had begun drinking frequently. Those with the gene variation drank more often than those without it. Their findings appear in the Proceedings of the National Academy of Sciences.