One of the genes behind cannabis use disorder identified

June 18 2019, by Bob Yirka

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A large team of researchers with members from Denmark, Iceland and the U.S. has isolated a gene associated with cannabis use disorder (CUD). In their paper published in the journal *Nature Neuroscience*, the

group describes their genome-wide association study surrounding CUD and what they found.

For many years, users of cannabis claimed that it was not addictive. More recent research has suggested that such claims are both right and wrong. Most people who consume cannabis do not become addicted, but some do. Prior research has found that approximately 10 percent of users have CUD—when they stop using cannabis, they experience withdrawal symptoms similar in some respects to withdrawal from other drugs. Symptoms include cravings and engaging in behavior to fulfill their need. This finding has added evidence to theories that there is a genetic component involved in addiction. In this new effort, the researchers sought to find that possible genetic component for CUD.

To isolate the possible gene or genes involved, the researchers tapped into a European genome database to compare the genomes of 2,000 people known to have CUD against another 50,000 people who it was assumed did not have the condition. The researchers found a gene variant called CHRNA2. The team followed up those findings by carrying out the same kind of comparison with an Icelandic database—in that instance, they were able to compare the genomes of 5,500 people who had CUD against 30,000 controls. They report that they found the same result—the gene variant CHRNA2.

The researchers are quick to point out that having the gene does not turn someone into a pot smoker—instead, it makes them more likely to become addicted to it if they start using it. They also note that they believe the gene they isolated is likely one among several that are involved in cannabis addiction. But they suggest that their findings could contribute to other studies that seek to understand the nature of addiction and perhaps lead to a treatment for people with CUD who are struggling with their addiction.

More information: Ditte Demontis et al. Genome-wide association study implicates CHRNA2 in cannabis use disorder, *Nature Neuroscience* (2019). DOI: 10.1038/s41593-019-0416-1