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# Marijuana Re-Shapes Brains of Users, Study Claims

by BILL BRIGGS

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This is your brain on drugs -- only now, with real pictures.

Two neural regions key to emotions and motivation become misshapen or abnormally large after repeated pot smoking, scientists reported Tuesday. They call their study the first "to show casual use of marijuana is related to major brain changes."

No need for that iconic, anti-drug image from the '80s -- a piping-hot pan and a frying egg -- to make the latest visual point. To bolster this claim, researchers used an MRI machine and the brains of 40 live people. They assert that the more joints a person smokes, the more those two neural hubs get "damaged."


"Anytime you find there's a relationship to the amount of marijuana consumed, and you see differences of core brain regions involved in processing of rewards, the making of decisions, the ability to assess emotions, that is a serious issue," said Dr. Hans Breiter, professor of psychiatry and behavioral sciences at Northwestern University Feinberg School of Medicine and a study co-author.

The research team -- including experts from Massachusetts General Hospital and Harvard Medical School -- compared MRI images from the brains of 20

recreational weed smokers (who puff a mean of 11 joints per week) and the brains of 20 non-users. All 40 people shared similar demographics: ages, education levels, personalities, alcohol use, and general anxiety levels.

Among the pot partakers, scientists measured differences in the sizes and shapes of their nucleus accumbens, which has a role in pleasure and reward, and their amygdalas, which handles emotional memory and the assessment of negative consequences.

The National Institutes of Health, the Office of National Drug Control Policy, and Northwestern Medicine's Warren Wright Adolescent Center paid for the study. The paper will be published Wednesday in the Journal of Neuroscience.

"When we saw that there was a consistent abnormality and that it was directly related to the amount of cannabis one took in, it gave us some significant pause," Breiter said. "Seeing these differences raises a cautionary flag that we need to do more research." 



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