

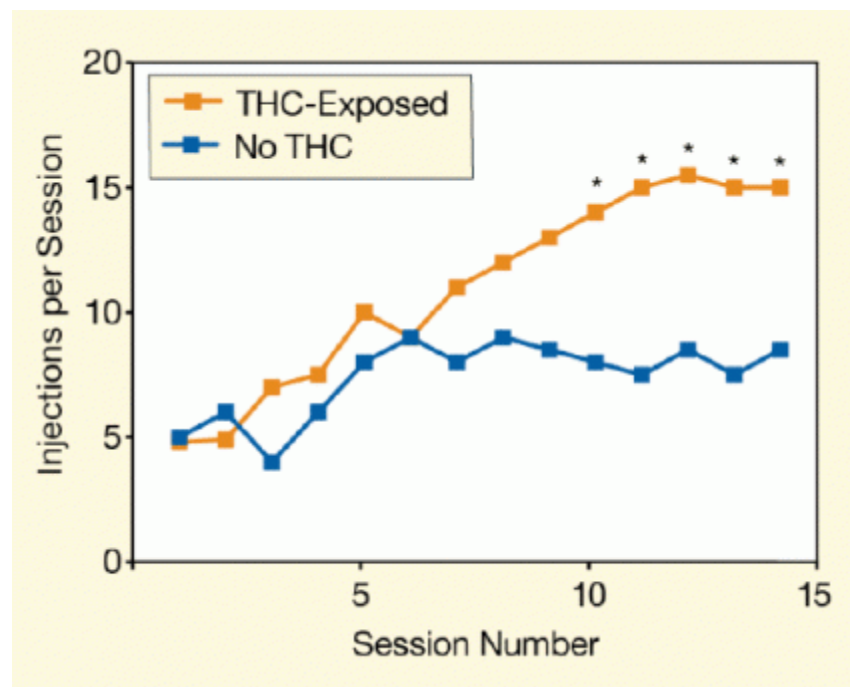
## Study: Marijuana Use May Increase Risk of Nicotine Addiction

BY JERYL BIER

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A study by the National Institute on Drug Abuse found that "[m]arijuana use makes tobacco use more pleasurable and may increase the user's risk for becoming addicted to nicotine." Experiments involving rats found that those animals exposed to THC, the psychoactive ingredient in marijuana, self-administered nicotine at higher rates than rats with no such exposure. This connection raises concern that pot may be a "gateway" drug to nicotine.

During the experiments, the subjects that had been exposed to THC were significantly more inclined to self-administer nicotine after ten sessions than those subjects who were not exposed to THC. The graph below illustrates the contrast in behavior:



Earlier studies have documented the connection between marijuana and cigarette use, but the results of this experiment seem to indicate the connection goes beyond personal, social, and environmental reasons to suggest a pharmacological link:

Most marijuana users smoke cigarettes, and about 1 in 5 individuals who use both substances (1 in 3 among African Americans) used marijuana first. In one recent study, adolescents who used marijuana weekly were more likely than less frequent marijuana users or nonusers to initiate tobacco use. These patterns occur in part because some of the same personal traits and social and environmental exposures that lead people to use marijuana also influence them to try other drugs. The new findings suggest that marijuana use itself, independently of these influences,

predisposes users to become regular smokers, increasing their odds of becoming addicted to nicotine.

Not only did the experiment subjects "self-administer nicotine more readily," but also to "work harder for it." Dr. Steven Goldberg, one of the scientists involved in the experiments, also pointed out the "relatively long time interval between THC exposure and nicotine consumption in the study."

"It is striking that the animals went a whole week without receiving any THC before we let them self-administer nicotine, yet they were still working harder for nicotine at the end of the experiment, more than a month after their last THC exposure. These observations demonstrate that the THC effect is persistent," says Dr. Goldberg. He and his colleagues suggest that this persistence indicates that THC causes lasting changes to the brain.

The researchers involved in these experiments believe that their results call for further study:

Studies have shown that people will go to great lengths to consume nicotine, and many who smoke try to quit but fail. Given the new evidence that exposure to THC intensifies nicotine's rewarding and addictive effects in rats, the researchers recommend examining the possibility that marijuana makes people more prone to nicotine use and addiction.

The recent drive for legalization of marijuana, successful in Colorado and Washington, and the apparent softening of the Obama administration's attitude of law enforcement regarding the drug has refocused attention on the potential long- and short-term effects of increased usage. With society's increased intolerance for cigarette and nicotine use even as toleration of marijuana use increases, the results of these experiments may add a new dimension to the debate.