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Effects of THC on driving performance, physiological state and subjective feelings relative to alcohol

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Abstract

Background: The effects of marijuana or THC on driving has been tested in several studies, but usually not in conjunction with physiological and subjective responses and not in comparison to alcohol effects on all three types of measures.

Objective: To assess the effects of two dosages of THC relative to alcohol on driving performance, physiological strain, and subjective feelings.

Method: We tested the subjective feelings and driving abilities after placebo, smoking two dosages of THC (13 mg and 17 mg), drinking (0.05% BAC) and 24 h after smoking the high dose THC cigarette, while monitoring physiological activity of the drugs by heart rate. Fourteen healthy students, all recreational marijuana users, participated in the study.

Results: Both levels of THC cigarettes significantly affected the subjects in a dose-dependent manner. The moderate dose of alcohol and the low THC dose were equally detrimental to some of the driving abilities, with some differences between the two drugs. THC primarily caused elevation in physical effort and physical discomfort during the drive while alcohol tended to affect sleepiness level. After THC administration, subjects drove significantly slower than in the control condition, while after alcohol ingestion, subjects drove significantly faster than in the control condition. No THC effects were observed after 24 h on any of the measures.

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