

Passive Inhalation of Marijuana Smoke and Urine Drug Test Results

Can a person passively inhale enough marijuana smoke, when in the company of marijuana smokers, to cause them to have a positive urine test?

The answer is; NO, it is very unlikely!

The following studies published in scientific journals show no instances where passive inhalation of marijuana smoke, even under extreme conditions, caused urine specimens of non-marijuana users to test positive for THC (the active ingredient in marijuana) using the screening and confirmation cutoff levels currently mandated by SAMHSA (the Substance Abuse and Mental Health Services Administration). Reference to the actual studies are given below so that the information can be admissible in court when this issue is raised.

1983:

The first study was conducted by Perez-Reyes and co-workers in 1983. (1-3) The study consisted of three different experiments; one conducted in an automobile, and two in a small room. Of the specimens collected for analysis, two specimens were found positive for THC metabolites by the EMIT screening test at a cutoff level of 20 ng/ml. One of these was measured by gas chromatography-mass spectrometry (GC/MS) and gave only 3.9 ng/ml of the THC-acid metabolite. The conditions in these studies were relatively severe.

1984:

Law et al. (4) performed a passive inhalation study in a room approximately 10 x 12 x 8 ft., four nonsmokers played cards over a 3 hour period, at the start of which six other males each smoked marijuana. The concentrations found in the passive inhalers did not exceed 7 ng/ml of total THC metabolites. The authors concluded that the amount of THC metabolites detected in the urine is clearly dependent on the size and ventilation of the room and on the amount of marijuana smoked.

1985:

Morland et al. (5) performed a study in which subjects in a car smoked either marijuana or hashish mixed with tobacco, equivalent to 90 mg THC in the presence of naive passive inhalers. Analysis of the urine samples from the passive inhalers showed no detectable levels of THC metabolites in the subjects involved in the hashish study, but the subjects passively exposed to marijuana smoke did show occasional urine specimens that were positive at concentrations ranging from 14 to 30 ng/ml of total THC metabolites. The author noted that "the discomfort caused by the heavy cannabis smoke during the exposure period was universal among both active and passive smokers."

1985 - 1990:

Cone and co-workers (6-8) performed a series of rigorous double-blind marijuana passive inhalation studies. The maximum urine concentration of the THC-acid metabolite obtained by GC/MS analysis was 12 ng/ml. The conditions during this test were so extreme, that all the subjects wore goggles to protect their eyes from the dense smoke in the room. The exposure conditions of these studies were more severe than would be expected under "real world" conditions of passive exposure.

1988:

Mule' et al. (9) conducted a study involving eight marijuana smokers (each smoking four cigarettes with 27 mg THC per cigarette) and three nonsmokers passively inhaling the marijuana smoke in a closed 10x10x8 ft. room with no windows. He consistently reported less than 10 ng/ml of THC metabolites as a result of passive inhalation.

CONCLUSIONS:

These studies showed that although it is true that passive inhalation of marijuana smoke results in absorption of THC in the body, none of the THC levels from the non-marijuana users were high enough to cause a positive result using the current screening and confirmation cutoff levels mandated by SAMHSA; 50 ng/ml cutoff for the screen test and 15 ng/ml for the confirmation test.

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