Marijuana use, as indicated by the presence of cannabis metabolites, is not associated with crash culpability among injured drivers, according to data presented at the annual conference of the Association for the Advancement of Automotive Medicine [in Baltimore].

Researchers at the University of Maryland's National Center for Trauma and EMS obtained clinical toxicology reports for more than 2,500 injured drivers to identify the presence of alcohol, cocaine, and marijuana. Authors found that drivers who tested positive for alcohol in the blood had "significantly higher crash culpability" than sober drivers. Authors further found a "significant association" between cocaine use and crash culpability for male drivers between 21 and 40 years of age.

"In contrast, for both men and women, [the] study did not find an association between crash culpability and marijuana use," researchers determined. Drivers between the ages of 41 and 60 who tested positive for marijuana were less likely to be culpable than drug-free drivers, they added.

Because researchers based their analysis on the presence of drug metabolites in the urine rather than the presence of controlled substances in blood, authors could not determine whether the drivers' drug use directly preceded their injury or had taken place days earlier.

"While the current study does not provide evidence of cocaine and marijuana impairment, or use at the time of injury, it provides information about culpability relative to users of cocaine and marijuana," authors concluded. "To clarify the role of marijuana use in crash culpability, a large study of injured patients treated in acute care settings using blood tests to assess for marijuana use proximal to time of injury would be quite useful."

According to an analysis of on-road crashes released earlier this month by an international expert panel: "The most meaningful recent culpability studies indicate that drivers with THC concentrations in whole blood of less than 5 ng/ml have a crash risk no higher than that of drug-free users. The crash risk apparently begins to exceed that of sober drivers as THC concentrations in whole blood reach 5-10 ng/ml." Authors added,
however, "Because recent studies involved only a few drivers with THC concentrations in that critical range, a reliable assessment of the associated crash risk is still lacking."

THC blood levels typically fall below 5 ng/ml in recreational cannabis users within 60 to 90 minutes after inhalation.

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Full text of the study, "Crash culpability relative to age and sex for injured drivers using alcohol, marijuana or cocaine," appears in the 2005 Annual Proceedings of the Association for the Advancement of Automotive Medicine.

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