

Science Spotlight

From the National Institute on Drug Abuse

EMBARGOED FOR TUESDAY, JUNE 23, 2015 – TIME TBD

Effects of marijuana – with and without alcohol – on driving performance

Using the most sophisticated driving simulator of its kind to mirror real-life situations, new research shows that marijuana use impairs one measure of driving performance. People driving with blood concentrations of 13.1 $\mu\text{g/L}$ THC – the main psychoactive ingredient in marijuana – showed increased weaving within the lane, similar to those with 0.08 breath alcohol, the threshold for impaired driving in many states. Drinking alcohol and smoking marijuana had an additive effect, so that drivers using both substances weaved within lanes even if their blood THC and alcohol concentrations were below the impairment thresholds for each substance alone. Alcohol, but not marijuana, increased the number of times the car actually left the lane and the speed of weaving. The National Institute on Drug Abuse, the Office on National Drug Control Policy, and the National Highway Traffic Safety Administration funded the study.



THC concentrations drop rapidly during the time required to collect a blood specimen in the U.S., generally within two to four hours. Oral fluid (saliva) tests for THC can be performed roadside without this long wait. However, oral fluid THC showed a two to five fold greater variability than blood tests. This indicates that while oral fluid may be an effective screening tool for detecting recent marijuana use by a driver, it may not be a precise measure of the level of impairment.

In the study, more than 50 percent of participants controlled their marijuana inhalations (called titration) so they had consistent blood THC peak concentrations, regardless of the percentage of THC in the marijuana (2.9% vs. 6.7%). This shows that past driving studies based on cannabis dose rather than blood THC may have missed the importance of dose titration. In addition, it was found that low amounts of alcohol significantly increased peak THC concentrations.

For a copy of the article (published **June 23, 2015** in *Drug and Alcohol Dependence*), go to **LINK**. To learn more about drugged driving, go to www.drugabuse.gov/publications/drugfacts/drugged-driving.

For more information, contact the NIDA press office at media@nida.nih.gov or 301-443-6245.

EMBARGOED FOR TUESDAY, JUNE 23, 2015 – TIME TBD