

## Commentary

June 10, 2013

### *Marijuana Use is a Serious Highway Safety Threat: 5 ng/ml Marijuana Impairment Limits Give Drivers a Free Pass to Drive Stoned*

The threat to public safety on the roadways posed by marijuana-impaired driving has been pushed to the top of nation's agenda by the legalization of marijuana in Colorado and Washington as well as by the legalization of "medical" marijuana in 18 states and the District of Columbia. Marijuana has significant impairing psychological and physiological effects on driving.<sup>1</sup> Marijuana use by drivers puts everyone at risk on our nation's roadways; research shows that marijuana is a major cause of impaired driving and serious and fatal injury crashes.<sup>2</sup> To address marijuana-impaired driving, there has been an interest in identifying an impairment standard for marijuana that is the equivalent to the 0.08 g/dl Blood Alcohol Concentration (BAC) now used to prosecute alcohol-impaired drivers. Proposals have been put forward ranging from 2 ng/ml to 5 ng/ml tetrahydrocannabinol (THC) in whole blood. The science on this issue is clear: it is not possible to identify a valid impairment standard for marijuana or any other drug equivalent to the 0.08 g/dl limit for alcohol.<sup>3</sup>

Alcohol is a poor model for studying the impairing effects of drugs because it is metabolized in simpler ways. Unlike alcohol, there is no close relationship between blood levels of drugs (or drug metabolites) and impairment.<sup>4</sup> The vast number of impairing drugs and drug combinations often used with marijuana prevent any single measure from effectively covering all drivers.<sup>5</sup> For example, a combination of low levels of alcohol and low levels of marijuana is severely impairing.<sup>6,7</sup> Tolerance is another important factor preventing setting blood limits for marijuana and other drugs.

The Obama administration has strongly endorsed the implementation of drug *per se* laws which specify that the presence of THC or marijuana metabolites (as well as other drugs) in a driver's system is itself (i.e. "per se") a criminal violation.<sup>8,9</sup> Zero tolerance *per se* laws use the limits of detection, the lowest concentration needed to reliably detect a drug.

Drastically different from zero tolerance, the marijuana legalization measure passed in 2012 in Washington State included a 5 ng/ml THC *per se* limit for drivers age 21 and older. The 5 ng/ml *per se* limit provides the appearance of protecting the public, but in reality it only protects marijuana users driving under the influence of marijuana from prosecution. Nearly all marijuana users test below 5 ng/ml of active THC in blood only a few hours after their last use.<sup>10</sup>

A study of impaired drivers in Sweden with measurable THC in blood (>0.3 ng/ml) showed that 43% had THC concentrations less than 1 ng/ml; 61% had THC concentrations below 2 ng/ml

and over 90% of had THC levels under 5 ng/ml even though all of these drivers were judged to be impaired.<sup>11</sup>

Because of the unavoidably long delay between arrest and blood collection, it is certain that THC concentrations were higher when these drivers were stopped for suspicion of drugged driving because of rapidly declining THC levels after marijuana use stops.<sup>12</sup> THC concentrations were higher when drivers did not have other detected drugs in their blood “suggesting either more recent use or more frequent use of cannabis in these individuals.” Researchers concluded that the majority of drivers impaired by recent marijuana use would not be identified at cutoffs between 3 ng/ml and 5 ng/ml because THC is rapidly cleared from the blood after smoking marijuana. Therefore, under a 5 ng/ml THC *per se* limit, only 10% of the drivers identified as impaired in this study would have been prosecuted.

Although Washington’s 5 ng/ml THC *per se* limit is a poor policy for public safety, the law remains stronger than the 5 ng/ml THC permissible inference limit signed into law in Colorado after several previous failed attempts to pass *per se* marijuana bills. While under the Washington law, a driver arrested for suspicion of drugged driving who tests at or above 5 ng/ml THC is in violation of the *per se* law, in Colorado there is merely an inference that the same driver was under the influence when arrested and the driver can fight the charge in court. Given that over 70% of drivers in Colorado arrested for suspicion of driving under the influence of marijuana test below 5 ng/ml THC, these drivers are unlikely to be prosecuted at all.<sup>13</sup> Moreover, the “permissible inference” will give almost all of the remaining 30% of arrested drivers a free pass to drive stoned. Underage drivers in Washington are subject to a zero tolerance *per se* limit while in Colorado minors are subject to the same 5 ng/ml permissible inference limit as drivers age 21 and older.

Michigan uses the zero tolerance *per se* standard for all Schedule I controlled substances, including marijuana;<sup>14</sup> however, in May 2013, the Michigan Supreme Court ruled that “medical” marijuana users were not subject to the zero tolerance *per se* standard for marijuana.<sup>15</sup> In cases of drugged driving by an approved “medical” marijuana user, the state must prove the driver was impaired by marijuana at the time of arrest. This is similar to the way drivers impaired by legally prescribed controlled drugs are treated in many states. In these states, drivers with valid prescriptions for controlled drugs can be prosecuted for drugged driving using the impairment standard. The prosecution of these drivers under the impairment standard is more challenging and less likely to be successful. The proliferation of drivers using “medical” marijuana has reignited calls for the development of a marijuana impairment standard.<sup>16</sup>

The U.S. Department of Transportation (DOT) provides an important precedent for the use of the zero tolerance *per se* standard. DOT has successfully used this standard for nearly three decades for all safety-sensitive personnel including commercial drivers, airline pilots and train engineers. Any detected evidence of recent marijuana use is a violation because it is incompatible with the safe operation of vehicles. Either this standard is unwarranted for the people engaged in these safety-sensitive actions or it is the standard that should be applied to all motor vehicle drivers. The Institute for Behavior and Health, Inc. (IBH) strongly supports that the zero tolerance *per se* standard be applied to *all* drivers to protect the public safety on the nation’s roads and highways.

Advocates for permissive marijuana laws fear that the implementation of zero tolerance – or even in Colorado fear that 5 ng/ml – THC *per se* drugged driving laws will translate to law enforcement officers targeting innocent marijuana users who will be wrongly prosecuted for impaired driving. Their concerns in part stem from a misunderstanding of the enforcement and drug and alcohol testing procedures related to driving under the influence (DUI). Individuals arrested for DUI have demonstrated behavioral impairment warranting their arrest before they are tested for alcohol or drugs. After arrest, these drivers now are tested for the presence of alcohol at the police station. If drivers produce a BAC of 0.08 g/dl (or higher), the testing procedure almost always stops. Typically only drivers arrested for impairment with low or zero BACs are tested for the presence of drugs. This means that *only* drivers who have already been arrested for being impaired will be drug tested.

Marijuana advocates also fear *per se* drugged driving laws because of a misperception that most drivers testing positive for marijuana will not be impaired and will only test positive for marijuana (or its metabolites) because of use that occurred long before the arrest. As noted, drivers are tested for drugs only after they are arrested for DUI, or alternatively, if they are involved in serious or fatal crashes depending on the state procedures. No matter the circumstances under which drug testing of drivers takes place, the testing is unfortunately almost always long-delayed. Drug testing of DUI suspects typically is administered between 90 and 120 minutes after arrest while drug testing of injured drivers is done a few hours or longer after crashes.

Crucially important new research has shown that daily chronic marijuana users show observable deficits in driving skills as long as three weeks of abstinence compared to controls.<sup>17</sup> It is possible that impairment was even longer lasting given that subjects were not tested after three weeks following their last use of marijuana. This is part of a large body of research that supports the use of the zero tolerance *per se* limit for marijuana.

Meta-analyses of epidemiological studies have concluded that smoking marijuana doubles risk of motor vehicle crash.<sup>18 19</sup> Studies of drivers involved in motor vehicle crashes support this conclusion. A study of seriously injured drivers admitted to a Maryland Level-1 shock trauma center showed that 26.9% of all seriously injured drivers tested positive for marijuana; half of drivers age 16 to 20 were positive for marijuana.<sup>20</sup> A study of fatally injured drivers in Washington State showed 12.7% tested positive for marijuana and that among alcohol-positive drivers, 17.3% also tested positive for marijuana.<sup>21</sup> The combination of marijuana use and alcohol is of great concern as evidence shows that low doses of marijuana combined with low doses of alcohol causes severe impairment.<sup>22</sup> These data also show that combining alcohol and marijuana is common among seriously injured and fatally injured drivers.

Despite the evidence that marijuana use by drivers is a serious threat to public safety, there has been limited implementation and enforcement of drugged driving laws nationally, in part due to the widespread misperceptions actively spread by marijuana advocates who seek to limit any restrictions on drivers who use marijuana. Letting drivers arrested for DUI who test positive for marijuana walk away with no charge is a serious highway safety risk. New research conclusively demonstrates the folly of this approach.

IBH strongly opposes the use of a 5 ng/ml THC limit or permissible inference standard and strongly supports the zero tolerance *per se* standard for marijuana in drivers. This has been the standard for safety-sensitive roles for decades. This standard is supported by the White House Office of National Drug Control Policy and by the U.S. Department of Transportation. It is the standard that best protects the public roads from the serious threat of marijuana-impaired driving.

For more information on the Institute for Behavior and Health, Inc. visit [www.ibhinc.org](http://www.ibhinc.org). For more information on drugged driving visit [www.StopDruggedDriving.org](http://www.StopDruggedDriving.org).

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<sup>1</sup>Couper, F.J., & Logan, B.K. (2004). Drugs and human performance fact sheets. Washington, DC: National Highway Traffic Safety Administration. DOT HS 809 725. Available:

[http://www.nhtsa.gov/people/injury/research/job185drugs/drugs\\_web.pdf](http://www.nhtsa.gov/people/injury/research/job185drugs/drugs_web.pdf)

<sup>2</sup>Hartman, R. L., & Huestis, MA. (2013). Cannabis effects on driving skills. *Clinical Chemistry*, 59(3), 478-492;

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<sup>3</sup>Reisfield, G. M., Goldberger, B. A., Gold, M. S., & DuPont, R. L. (2012). The mirage of impairing drug concentration thresholds: A rationale for zero tolerance *per se* driving under the influence of drugs laws. *Journal of Analytical Toxicology*, 36(5), 353-356.

<sup>4</sup>Hartman, R. L., & Huestis, MA. (2013). Cannabis effects on driving skills. *Clinical Chemistry*, 59(3), 478-492.

<sup>5</sup>DuPont, R. L., Reisfield, G. M., Goldberger, B. A., & Gold, M. S. (2013). The seductive mirage of a 0.08 g/dL BAC equivalent for drugged driving. *DATIA Focus*, 6(1), 36-43.

<sup>6</sup>Ramaekers, J.G., Robbe, H.W., O'Hanlon, J.F. (2000). Marijuana, alcohol and actual driving performance. *Human Psychopharmacology*, 15(7), 551-558.

<sup>7</sup>Robbe, H. (1998). Marijuana's impairing effects on driving are moderate when taken alone but severe when combined with alcohol. *Human Psychopharmacology*, 13(S2), S70-S78.

<sup>8</sup>Office of National Drug Control Policy. (2013). Drugged driving. Available:

<http://www.whitehouse.gov/ondcp/drugged-driving>

<sup>9</sup>Office of National Drug Control Policy. (2012). *National Drug Control Strategy, 2012*. Washington, DC: Office of National Drug Control Policy. Available: [http://www.whitehouse.gov/sites/default/files/ondcp/2012\\_ndcs.pdf](http://www.whitehouse.gov/sites/default/files/ondcp/2012_ndcs.pdf)

<sup>10</sup>Ellison, J. (2013, January 30). Marijuana research: Is the limit for stoned-while-driving too high? *Seattle PI*. Available: <http://www.seattlepi.com/local/article/Is-the-limit-for-stoned-while-driving-too-high-4233733.php>

<sup>11</sup>Jones, A.W., Holmgren, A., & Kugelberg, F.C. (2008). Driving under the influence of cannabis: A 10-year study of age and gender differences in the concentrations of tetrahydrocannabinol in blood. *Addiction*, 103(3), 452-461.

<sup>12</sup>Ibid.

<sup>13</sup>Wood, E. (2013, January 13). Should Colorado adopt a permissible limit for THC? No. *Denver Post*. Available:

[http://www.denverpost.com/opinion/ci\\_22351390/no-allowing-5-ng-limit-thc-lev](http://www.denverpost.com/opinion/ci_22351390/no-allowing-5-ng-limit-thc-lev)

<sup>14</sup>Walsh, J. M. (2009). A state-by-state analysis of laws dealing with driving under the influence of drugs. Washington, DC: National Highway Traffic Safety Administration.

<sup>15</sup>*People v. Koon*. Syllabus of Michigan Supreme Court. (2013, May 21). Lansing, Michigan. Available:

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Established in 1978, the Institute for Behavior and Health, Inc. (IBH) is a 501(c)3 non-profit organization working to reduce substance abuse through the power of good ideas. IBH websites include: [www.ibhinc.org](http://www.ibhinc.org), [www.StopDruggedDriving.org](http://www.StopDruggedDriving.org), [www.PreventTeenDrugUse.org](http://www.PreventTeenDrugUse.org), and [www.PreventionNotPunishment.org](http://www.PreventionNotPunishment.org).

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