



## Marijuana and Other Drug-Impaired Driving

Drug-impaired driving (DUID) is a very complex issue and it is not easily researched. Science lags behind policy efforts and marijuana legalization presents the traffic safety community and policymakers with tremendous challenges.

Historically, states made it illegal to drive with any level of illicit drugs in the bloodstream. Marijuana legalization has resulted in new drug-impaired driving legislation. Some state lawmakers are trying to replicate the .08 BAC alcohol model by passing legal THC nanogram (ng) limits though researchers warn against using the alcohol model for drugs and say it will result in poor, ineffective policy.

Current BAC limits are based on more than 70 years of science on the study of alcohol impairment. However, research on defining the standard of impairment for marijuana – or any other drug – is nonexistent at this point in time.

Another complicating factor is the potency of today's marijuana. The psychoactive ingredient in marijuana, THC, averaged between 3-4% in the 1980s. Today's marijuana averages over 12% THC, with some strains reaching 30%.<sup>i</sup>

### **Research Highlights:**

#### **The Science of Defining Marijuana Impairment is Inconclusive:**

- At this time, it is impossible to identify a valid impairment standard for marijuana or any other drug equivalent to the .08 BAC limit for alcohol.<sup>ii</sup> Drugs are metabolized differently than alcohol. In particular, THC metabolizes faster than law enforcement can test for its presence.
- Several studies suggest that marijuana impairment begins at low levels (around 1-2ng).<sup>iii</sup> THC rapidly clears from a person's blood after smoking marijuana yet maximum impairment is found 20-40 minutes after smoking.<sup>iv</sup>
- Nearly all marijuana users test below 5 ng/ml of active THC in blood only a few hours after their last use.<sup>v</sup>
- A Swedish study of marijuana-impaired drivers showed that 43% had THC levels below 1 ng/ml and 61% had THC levels below 2 ng/ml while more than 90% had THC levels under 5 ng/ml.<sup>vi</sup> This study suggests that a 5ng limit will be unenforceable.
- Drug testing is almost always delayed. Drug testing of DUI suspects is typically administered between 90 and 120 minutes after arrest while drug testing of injured drivers is done a few hours or longer after crashes.<sup>vii</sup>

#### **Marijuana Impairs a Person's Ability to Drive:**

- Mortality studies have shown that marijuana impairment increases crash risk between two and seven times and studies on chronic use indicate that users are able to compensate for some but not all impairing effects.<sup>viii</sup>

- Other studies indicate marijuana affects the user's critical tracking and divided attention tasks, including highly automated behaviors, diminishes short-term and working memory, and correlates with lane deviation and failure to stop appropriately.<sup>ix</sup>
- New research has shown that daily chronic marijuana users show observable deficits in driving skills for as long as three weeks of abstinence compared to controls.<sup>x</sup>

#### **Drug-Impaired Driving is Under-Reported:**

- Drivers who provide breath or blood samples at or above the illegal alcohol BAC limit are not tested for drugs. DUI is the only crime where the police stop investigating once they obtain a minimum amount of evidence, saving time and money but clouding the ability to accurately measure drug-impaired driving involvement.<sup>xi</sup> The current standard operating procedures guarantee that the vast majority of DUI arrests are attributed to alcohol alone.
- Data collection on drug-impaired driving is limited. In fatal crashes, alcohol testing is done about 70% of the time yet drug testing is only done about 30% of the time. The current lack of statewide arrest or disposition data distinguishing drug-impaired from alcohol-impaired driving arrests significantly impedes the States' ability to assess the extent of drug-impaired driving and evaluate the impact of countermeasures. The lack of standardized and complete State record systems limits the National Highway Traffic Safety Administration's (NHTSA) ability to make clear inferences about the scope of the national drug impaired driving problem.<sup>xii</sup>
- States need record systems that distinguish between DUI, DUID, or both for impaired driving cases and document which drugs DUID drivers are using.<sup>xiii</sup>

#### **Marijuana Combined with Alcohol Exponentially Increases Traffic Crash Risk:**

- Evidence shows that low doses of marijuana combined with low doses of alcohol causes severe impairment and exponentially increases the risk of driving off of the road.<sup>xiv xv</sup>
- Cannabis and alcohol impair different driving skills.<sup>xvi</sup>
- Combining alcohol and marijuana is common among seriously and fatally injured drivers.<sup>xvii</sup>

#### **Prevalence of Drug-Impaired and Marijuana-Impaired Driving:**

- Drug-impaired driving is on the rise. According to the NHTSA Fatality Analysis Reporting System (FARS) data on fatally injured drivers, 28% of the drivers with known test results were positive for a drug in 2005. In 2009, 33% were positive (as compared to 32% of fatally injured drivers who had blood alcohol levels of 0.08 or higher).<sup>xviii</sup>
- In 2009, marijuana accounted for 25% of all positive drug tests for fatally injured drivers for whom drug test results were known and for 43% among fatalities involving drivers 24 years of age and younger with known drug-test results.<sup>xix</sup>
- Between 2006 and 2011, Colorado traffic fatalities involving drivers who tested positive for marijuana (no other drug or alcohol present) increased 114%. Overall traffic fatalities in Colorado decreased by 16% in that same timeframe.<sup>xx</sup>

## **Responsibility.org Position:**

The Foundation for Advancing Alcohol Responsibility supports measures to eliminate marijuana and other drug-impaired driving through improved drug testing, passage of laws that provide separate and distinct sanctions for DUI and DUID, enhanced penalties for poly-drug impaired driving or drug and alcohol-impaired driving, drug-impaired driving education and training for criminal justice professionals, and adoption of legal limits based on a consensus of scientific evidence on marijuana and other drug-impaired driving.

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<sup>i</sup> Frum, D. "Don't Go to Pot." Commentary Magazine, April 1, 2014

<sup>ii</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>iii</sup> Halsor, C. (2013) "A New High in the Colorado Rockies." *Between The Lines*. Vol. 22, Number 2. National Traffic Law Center.

<sup>iv</sup> Smiley, A. The Health Effects of Cannabis. In: Kalant, H., editor. *Marijuana: On-Road and Driving Simulator Studies*. Toronto: Centre for Addiction and Mental Health; 1998.

<sup>v</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>vi</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>vii</sup> Dupont, Bob. (2013). Marijuana Use is a Serious Highway Safety Threat: 5 ng/ml Marijuana Impairment Limits Give Drivers a Free Pass to Drive Stoned. Institute for Behavior and Health.

<sup>viii</sup> Halsor, C. (2013) "A New High in the Colorado Rockies." *Between The Lines*. Vol. 22, Number 2. National Traffic Law Center.

<sup>ix</sup> Halsor, C. (2013) "A New High in the Colorado Rockies." *Between The Lines*. Vol. 22, Number 2. National Traffic Law Center.

<sup>x</sup> Bosker, W. M., Karschner, E. L., Lee, D., Goodwin, R. S., Hirvonen, J., Innis, R. B., Theunissen, E. L., Kuypers, K. P., Huestis, M. A., & Ramaekers, J. G. (2013). Psychomotor function in chronic daily cannabis smokers during sustained abstinence. *PLoS One*, 8(1):e53127.

<sup>xi</sup> Dupont, Bob. (2013). Marijuana Use is a Serious Highway Safety Threat: 5 ng/ml Marijuana Impairment Limits Give Drivers a Free Pass to Drive Stoned. Institute for Behavior and Health.

<sup>xii</sup> Compton, R., Vegega, M. and Smither, D. (2009) *Drug-Impaired Driving: Understanding The Problem & Ways to Reduce It. A Report to Congress*. The National Highway Traffic Safety Administration.

<sup>xiii</sup> Compton, R., Vegega, M. and Smither, D. (2009) *Drug-Impaired Driving: Understanding The Problem & Ways to Reduce It. A Report to Congress*. The National Highway Traffic Safety Administration.

<sup>xiv</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>xv</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>xvi</sup> Sewell, Poling, and Sofuoglu. (2009). The Effect of Cannabis Compared With Alcohol on Driving. *American Journal on Addiction*. 18(3):185-193.

<sup>xvii</sup> Dupont, Bob. (2013). Marijuana Use is a Serious Highway Safety Threat: 5 ng/ml Marijuana Impairment Limits Give Drivers a Free Pass to Drive Stoned. Institute for Behavior and Health.

<sup>xviii</sup> Dupont, Bob. (2013). Marijuana Use is a Serious Highway Safety Threat: 5 ng/ml Marijuana Impairment Limits Give Drivers a Free Pass to Drive Stoned. Institute for Behavior and Health.

<sup>xix</sup> Botticelli, M. (2014). Federal Marijuana Policy. ONDCP Testimony delivered to the Subcommittee on Government Operations, Committee on Oversight and Government Reform, United States House of Representatives.

<sup>xx</sup> O'Leary, B. (2014). NHTSA Drug Recognition Expert Program Presentation. Delivered to The Highway Safety Coalition.