



**INSURANCE
INFORMATION
INSTITUTE**

Driving While High: Facts and Public Attitudes

New England Cannabis Convention
Boston, Massachusetts
March 24, 2018

James Lynch, FCAS MAAA, Chief Actuary

Insurance Information Institute ♦ 110 William Street ♦ New York, NY 10038
Tel: 212.346.5533 ♦ jamesl@iii.org ♦ www.iii.org

What is the Insurance Information Institute?

Improving public understanding
of insurance...

...what it does and how it works

Who We Are and What We Do

- ▲ The mission of the Insurance Information Institute is to *improve public understanding of insurance—what it does and how it works.*
- ▲ We Are...
 - ◆ A voice for the property/casualty insurance industry.
 - ◆ The go-to source for credible and unbiased insurance information for the media, the industry and consumers.
 - ◆ Dedicated to ensuring the media covers our business fairly and accurately.
 - ◆ Ready to assist our member companies with their communications, research and planning needs.
- ▲ We do not lobby.



Insurance Industry Snapshot: By the Numbers



2.5 million

People in the U.S. employed, in a wide variety of careers, from human resource administrators to public relations managers to financial analysts



\$5.8 trillion

Assets under management at year-end 2016, including \$1.5 trillion for the property/casualty sector and \$3.7 trillion for the life sector



\$508 billion

Contributed to the U.S. gross domestic product in 2016, roughly 2.7% of the whole



\$40.0 billion

Federal and foreign income taxes paid in 2016, plus U.S. premium taxes paid



Today's Talk

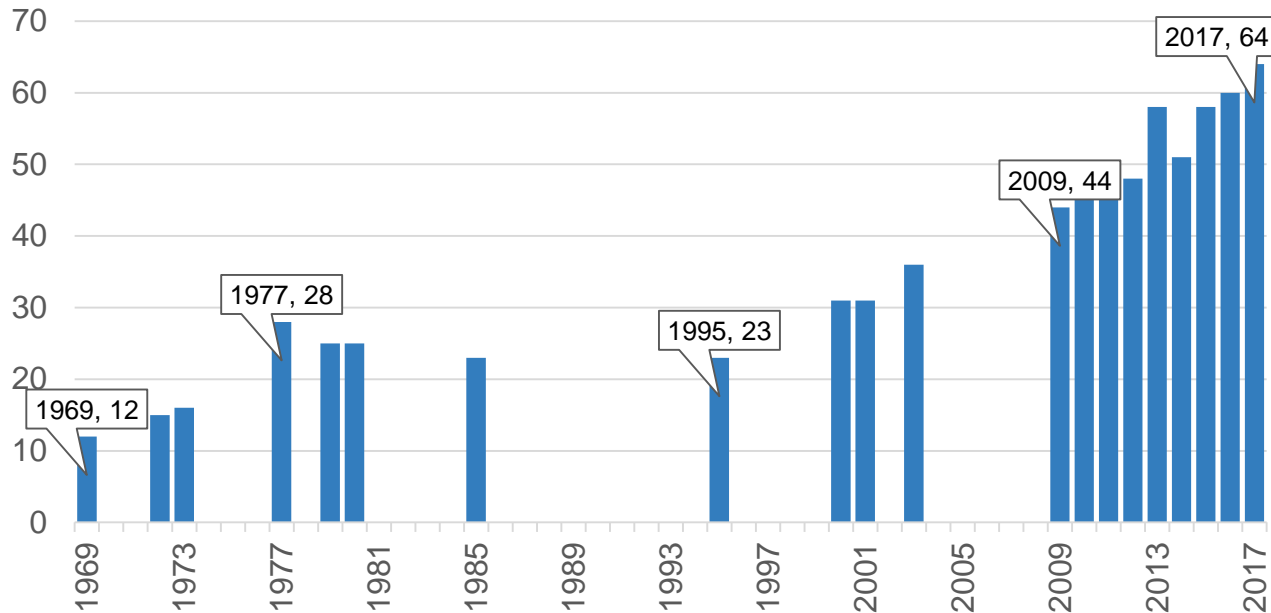
- ▲ Public attitudes toward legalization
- ▲ Research about cannabis use and driving
- ▲ Public attitudes toward cannabis use and driving



Public Attitudes Toward Legalization

Support for Legalization Grows

% Saying Yes



“Do You Think the Use of Marijuana Should Be Made Legal, Or Not?”

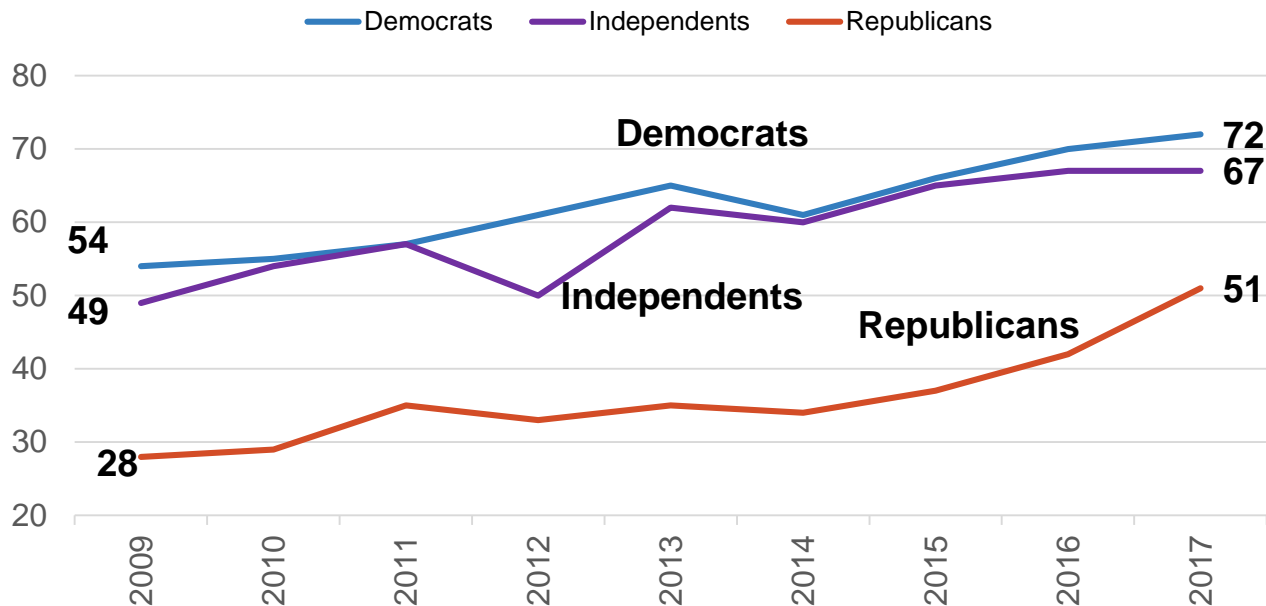


No survey in years where no data appears.

SOURCES: Gallup Poll Social Series, <http://news.gallup.com/file/poll/221027/171025Marijuana.pdf>.

Support for Legalization Grows

% Saying Yes



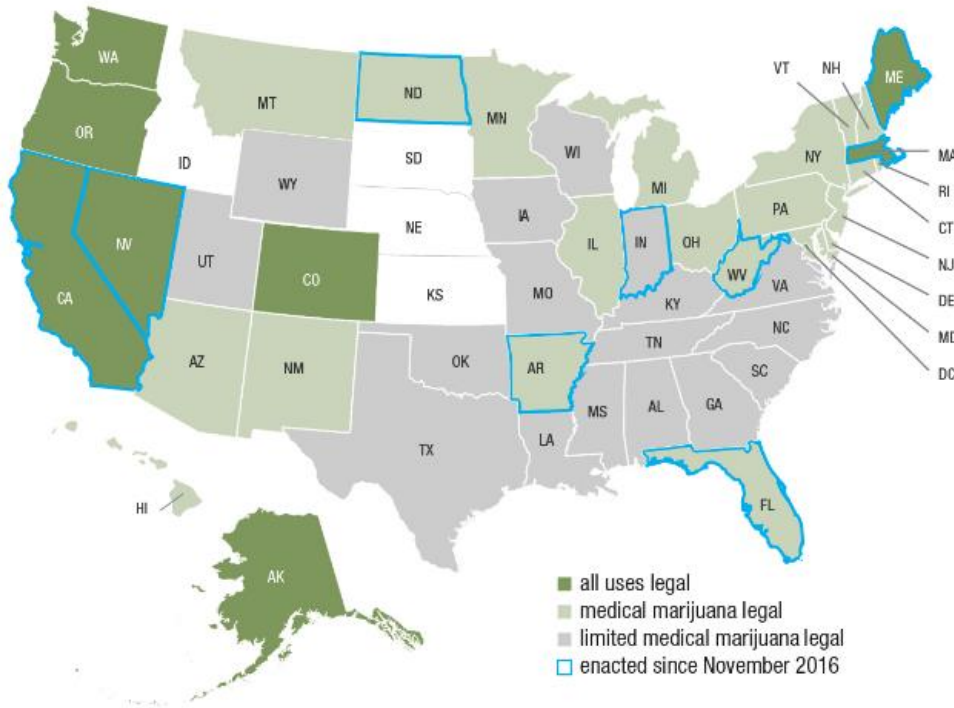
“Do You Think the Use of Marijuana Should Be Made Legal, Or Not?”



SOURCES: Gallup Poll Social Series, <http://news.gallup.com/poll/221018/record-high-support-legalizing-marijuana.aspx>

Cannabis in the USA

Legalization is Accelerating



Congressional Cannabis Caucus



Rohrbacher
(CA)



Blumenauer
(OR)



Young
(AK)



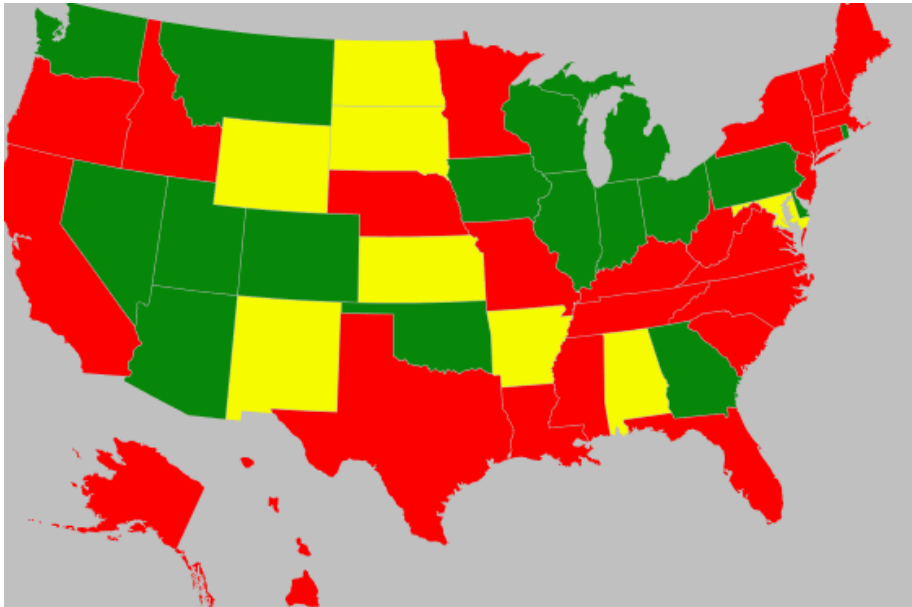
Polis
(CO)



SOURCE: National Journal.

Driving While High – the Legal Framework

Illegal Everywhere, but What Makes You High?



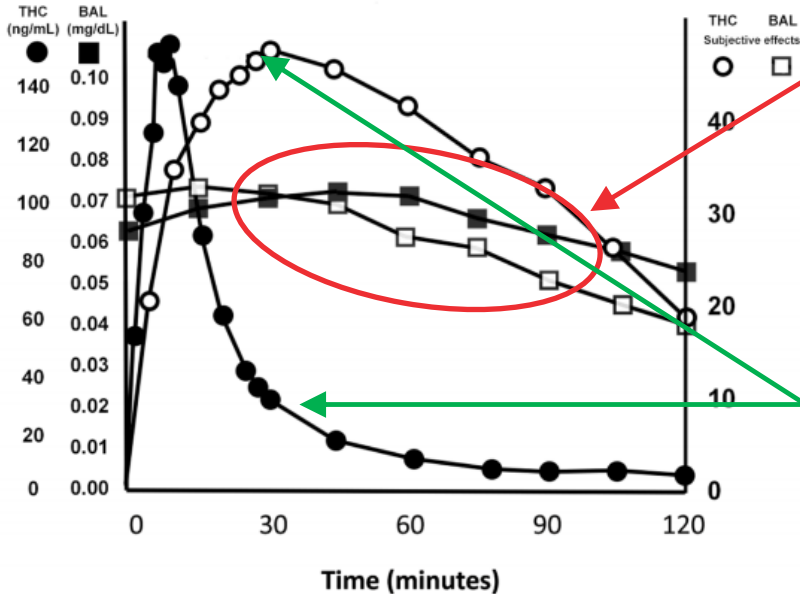
- Under the Influence
- Per Se
- Incapacitated

RI: 'Zero Tolerance (Medical Exception).' Rest of NE: 'Incapable of Driving Safely.'



SOURCE: National Conference of State Legislators, National Organization for Reform of Marijuana Laws (NORML),

Blood Levels vs. Intoxication



BAC and 'feeling drunk' rise and fall in lockstep

THC levels in blood and 'feeling high' rise and fall at different rates

It Is Difficult to Use Blood Test to Measure Whether Someone is High.

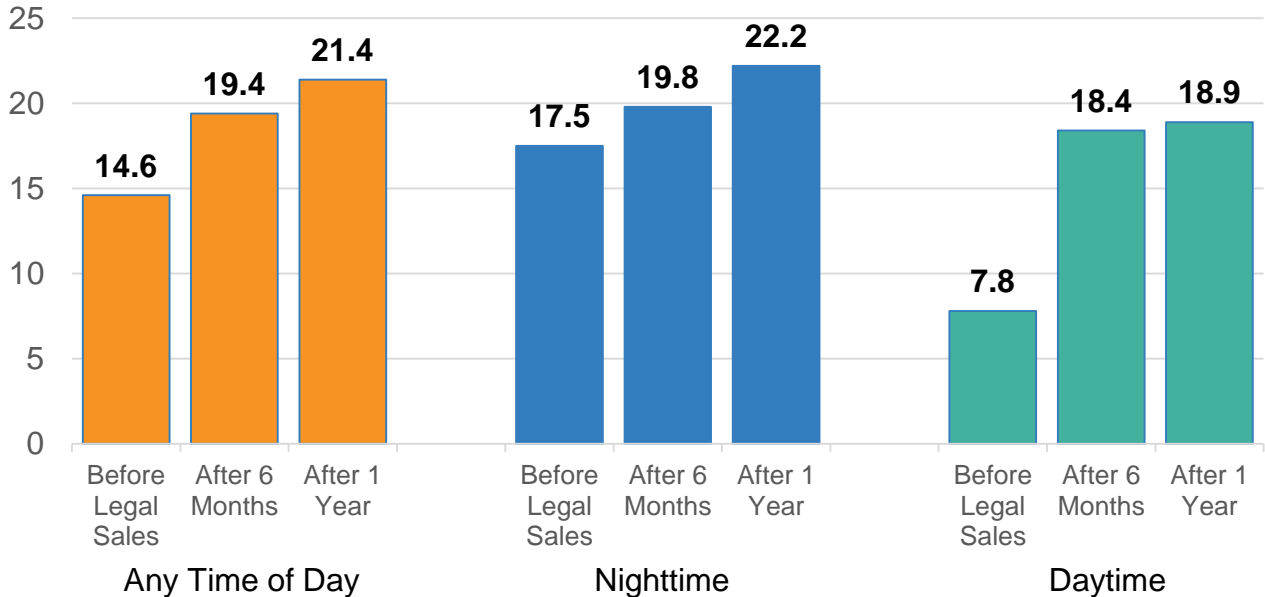


SOURCE: Sewell, Poling, Sofuoglu, "The Effect of Cannabis Compared with Alcohol on Driving," American Journal on Addictions, 2009.

Cannabis and Drivers

THC on the Road

% THC-Positive Drivers (WA)



Legalization Put More Drivers With THC in Their System on the Road.



SOURCE: National Highway Traffic Safety Administration.

Driving While High

The Science

Review of Literature

- ▲ **Conclusive evidence**
 - ▲ Improves the lot of adults in chronic pain.
- ▲ **Substantial evidence**
 - ▲ Increases the risk of motor vehicle crashes.



Marijuana and Driving Skills

What the Studies Say

Cognitive Studies

- ▲ 'Impairment in every performance area that can reasonably be connected with safe driving'

Culpability Studies

- ▲ Suffer from
 - ◆ Sampling delay
 - ◆ Reliance on carboxy-THC

Experimental Research

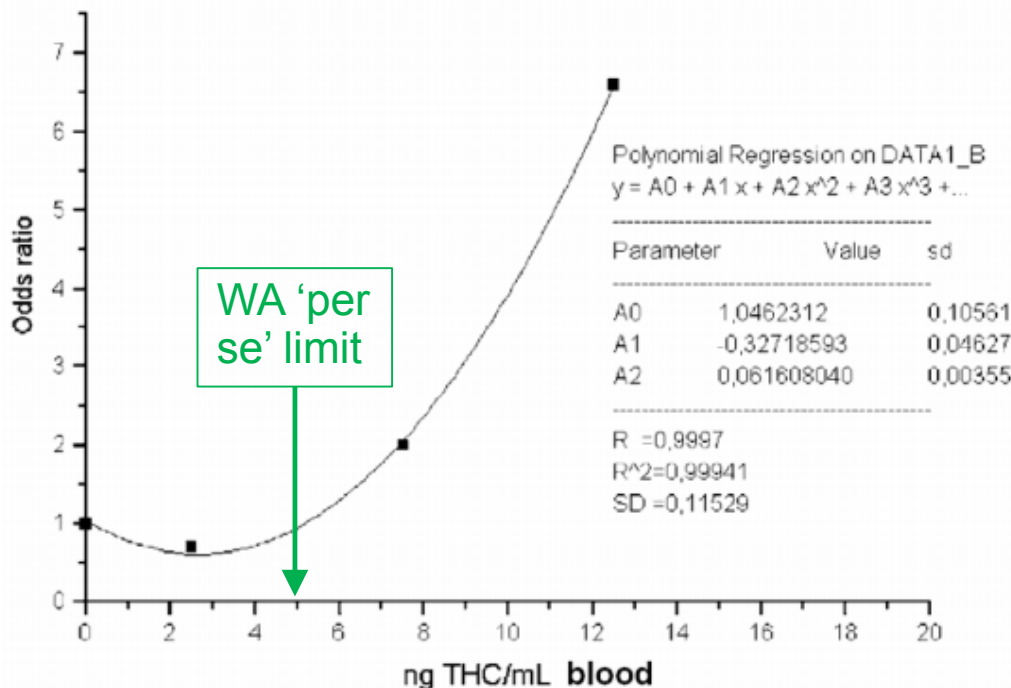
- ▲ 'Marijuana users tend to overestimate their impairment, and consequently employ compensatory strategies.'

Case Control Studies

- ▲ Hard to create a good control group (accidents that didn't happen)



Accident Probability



Chance of Accident Rises Sharply As Consumption Rises.



SOURCE: Sewell, Poling, Sofuoglu, "The Effect of Cannabis Compared with Alcohol on Driving," American Journal on Addictions, 2009.

But Blood Tests Aren't Perfect

Blood Test vs. Drug Recognition Experts (DREs)

THC Concentration (ng/mL)	Sensitivity ("Catches the Bad Guys")	Specificity ("Frees the Good Guys")	Overall Accuracy ("Gets It Right")
1	80.4%	70.2%	77.0%
2	72.3	75.2	73.3
3	60.1	78.0	66.1
5	39.7	84.2	54.8
7	29.7	89.9	50.0
10	14.1	95.0	41.5



SOURCE: AAA Foundation, An Evaluation of Data from Drivers Arrested for Driving Under the Influence in Relation to Per se Limits for Cannabis, March 2016.

Marijuana + Alcohol

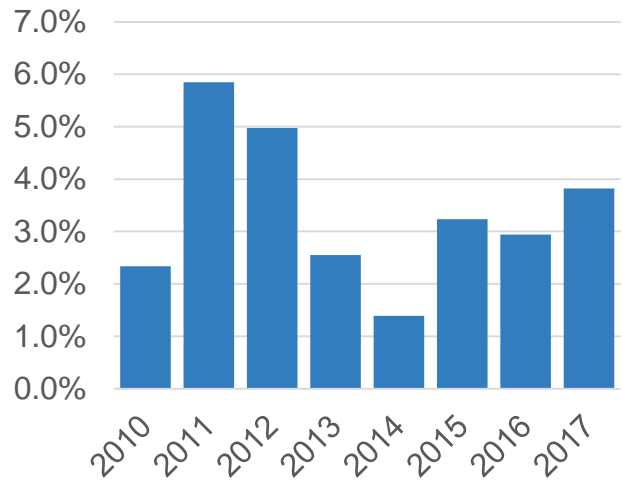
A Killer Combination

Studies Agree

- ▲ Cannabis Hurts Automatic Functions (Lane Usage) More Than Complex Tasks
- ▲ Alcohol Does the Opposite
- ▲ Cannabis Users Become Less Daring
- ▲ Alcohol Users Become More Daring

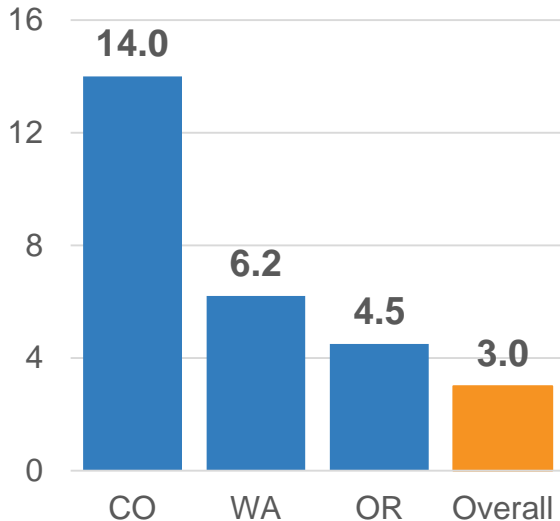
Cannabis Doesn't Supplant Drinking

Liquor Tax Collection, %
Change from Year Earlier



Legal Sales Lead to More Accidents

Percent Change in Collision Frequency, 2012-2016*



* Vs. Neighboring States.

- ▲ Look at ‘Real World’ Crashes
- ▲ All Measures Statistically Significant
- ▲ ‘Overall’ Measure a Good Proxy for What Will Happen in Any State

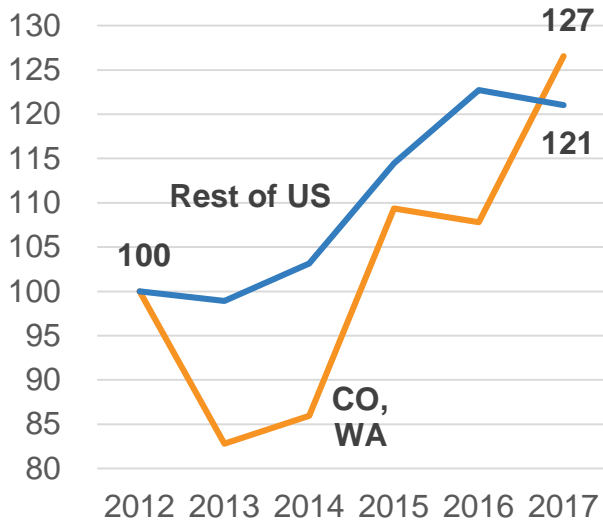


Pedestrian Deaths and Cannabis

Walking While High?

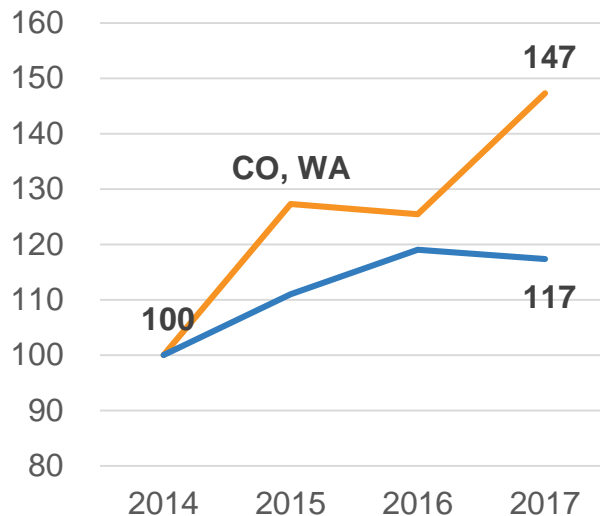
From Date of Legalization

Pedestrian Deaths (2012 = 100)



From Date of Legal Sale

Pedestrian Deaths (2014 = 100)

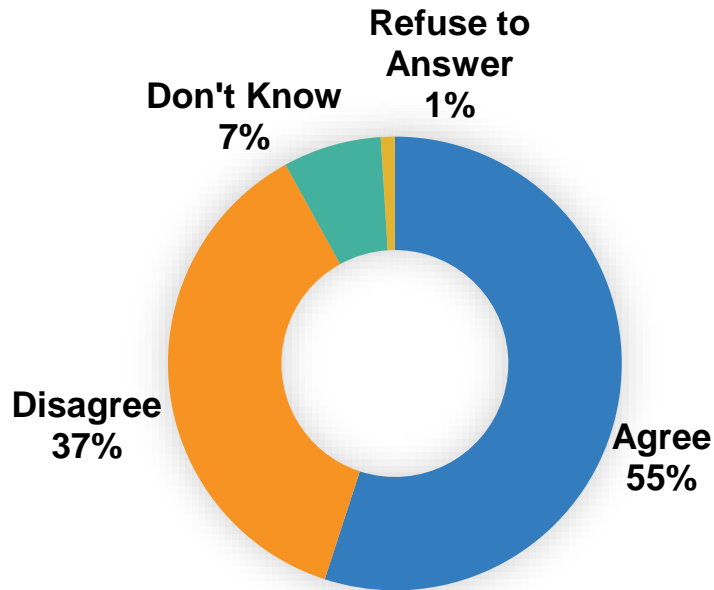


First six months of year.

SOURCE: Governors State Highway Association

Public Opinion On Driving While High

III Survey

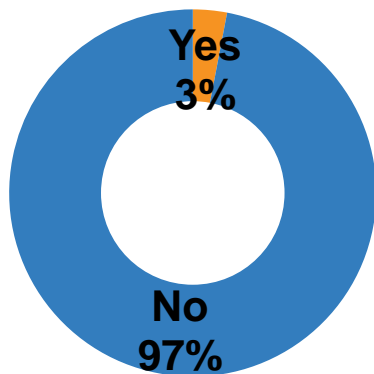


Agree or Disagree: Driving After Smoking or Consuming Marijuana Results in More Vehicle Crashes.

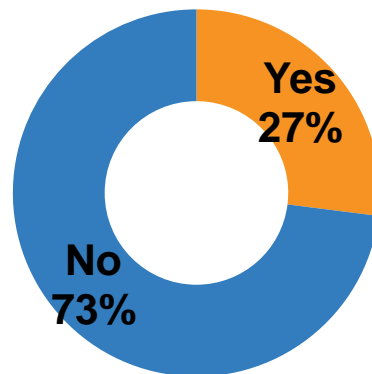


I.I.I. Survey: Cannabis vs. Alcohol

Would You Ride With a Driver Who Drank Too Much?



Would You Ride With a Driver Who Was High?



Respondents Seem Much More Tolerant of High Driver, Even Though They Understand the Risk.



Summary

Key Takeaways

Conclusions

- ▲ Driving While High Is Dangerous
- ▲ Better Roadside Testing Needed

Customers

- ▲ Don't Drive While High
 - ◆ Smokers wait at least 4-6 hours
 - ◆ Edibles: wait at least 6-8 hours
- ▲ Don't Mix Booze and Weed
- ▲ Don't Get in a Car With a Driver Who Is High



Thank You!