

Slow driving while Marijuana Impaired is a Myth!

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Abstract

Drivers in fatal crashes under the hallucinogenic effects of marijuana DO speed more than drivers with No Alcohol or Drugs. **20 years of government crash data dispel the slow driving myth.** Drivers in “medical” Marijuana states speed more than drivers in completely illegal Marijuana states. Marijuana drivers speed at a higher percentage than drivers with no alcohol or drugs at both the lowest and highest posted speed limits. Marijuana drivers are more likely to drive off the road in fatal crashes. Finally, the percentage of drivers with marijuana use has nearly doubled in the last ten years, and is more than 6 times the 1994 level

The marijuana driver’s inability to concentrate on multiple stimuli facing them while driving results from marijuana’s hallucinogenic effect of time and space distortion. This altered reality and limited ability to focus their attention are thought to be a major factors in marijuana drivers speeding and leaving the roadway in fatal crashes.

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Slow driving while Marijuana Impaired is a Myth!

Background

Driving slow when impaired by marijuana is commonly accepted as fact. An internet search on this subject reveals numerous simulator driving studies that concur. This myth has been perpetuated in movies by the fictional characters Cheech and Chong. However, the data to support their conclusions are limited in power or do not completely mimic actual current driving situations with it numerous distractions (phone use, music on radio, texting, etc.) to prove their assertions.

Data from the National Highway Traffic Safety Administration (NHTSA) Fatality Analysis Reporting System (FARS) helps us answer this question definitively by looking at routine facts collected from actual fatal crash reports for drivers all over the country.

In the crash report completed after all fatal crashes is a determination by the investigating officer of speeding as a fatal crash factor. Usually, this is based on the cars' occupant restraint control module which records the car's speed before deployment of airbag technology. This data was used to determine if drivers with marijuana in their system were or were not speeding. Since marijuana drivers may also be driving under the influence of alcohol (DUI, BAC = 0.08 or above), we have broken out the speeding data to look at speeding while marijuana driving both with and without the effect of alcohol.

National fatal crash data for 2014 shows that drivers with no evidence of Alcohol or Drugs were noted for speeding in 24% of the cases. This is compared to 33% for those Marijuana drivers with No Alcohol. This is statistically higher than the No Alcohol or Drug group.

Fatal crashes following drinking Alcohol when using Marijuana is nearly as common as Marijuana use without drinking. Of the 1974 Marijuana drivers, 947 were also DUI. Speeding with Marijuana and Alcohol is common in almost half (49.7%) of the Marijuana drivers which is more than the speeding incidence for DUI driving alone at 42.3%.

Table 1. US Passenger Vehicle & Light Truck Drivers in Fatal Crashes with Marihuana compared to Alcohol & Other Groups, 2014 FARS Data				
Drivers	Not Speed	Speeding	Total	% speed
No Alcohol or Drugs	3,526	1,114	4,640	*24.0%
Marijuana and No Alcohol	644	317	961	*33.0%
All Marijuana	1172	802	1974	40.6%
DUI = 0.08+ BAC	1,137	832	1,969	**42.3%
Marijuana and DUI	476	471	947	**49.7%

* Chi square test statistically significant difference (p < 0.05)

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State Data on Speeding Marijuana Drivers

State data shows wide variation but statistically significant evidence that speeding is associated with marijuana driving. Nearly 65% of “medical” Marijuana (MMJ) states (15 of 23) had a speeding incidence of 40% or more during fatality crashes. Only 30% of “illegal” Marijuana (IMJ) states (8 of 27) had 40% or more speeding drivers. Three MMJ states (Illinois, New Hampshire, and New York) had 60% or more of drivers speeding during the crash; accounting for 13% (3 of 23) of the MMJ states. Pennsylvania and Utah were the only two IMJ states with speeders at 60% or more; accounting for 7% (2 of 27) of the IMJ states.

Speeding may be statistically higher in MMJ states because drivers have a feeling of less caution since the substance consumed is legal and more common place. In IMJ states, drivers may be more cautious because they know that they are driving after using an illegal substance and need to monitor their speed to avoid drawing attention to themselves.

Speeding in Medical Marijuana States				Speeding in Illegal Marijuana States			
State	Speeding	Total	Percent Speeding	State	Speeding	Total	Percent Speeding
Alaska	4	18	22.2%	Alabama	23	63	36.5%
Arizona	15	26	57.7%	Arkansas	10	73	13.7%
California	101	232	43.5%	Florida	13	84	15.5%
Colorado	21	41	51.2%	Georgia	24	85	28.2%
Connecticut	6	11	54.5%	Idaho	2	9	22.2%
Delaware	9	16	56.3%	Indiana	18	43	41.9%
D.C.	1	1	100.0%	Iowa	3	16	18.8%
Hawaii	1	5	20.0%	Kansas	5	19	26.3%
Illinois	49	77	63.6%	Kentucky	22	68	32.4%
Maine	1	2	50.0%	Louisiana	9	25	36.0%
Maryland	No Data			Mississippi	1	12	8.3%
Massachusetts	7	20	35.0%	Missouri	41	78	52.6%
Michigan	34	71	47.9%	Nebraska	2	6	33.3%
Minnesota	5	12	41.7%	N Carolina	No Data		
Montana	11	27	40.7%	N Dakota	1	3	33.3%
Nevada	8	24	33.3%	Ohio	30	82	36.6%
New Hampshire	11	14	78.6%	Oklahoma	5	20	25.0%
New Jersey	12	38	31.6%	Pennsylvania	36	53	67.9%
New Mexico	6	15	40.0%	S Carolina	38	75	50.7%

New York	32	52	61.5%	S Dakota	1	3	33.3%
Oregon	4	18	22.2%	Tennessee	21	70	30.0%
Rhode Island	1	4	25.0%	Texas	74	151	49.0%
Vermont	3	6	50.0%	Utah	11	16	68.8%
Washington	33	80	41.3%	Virginia	5	34	14.7%
Total Med Mj	375	810	46.3%	W Virginia	7	16	43.8%
US Total (802/1974) 40.6%				Wisconsin	22	49	44.9%
				Wyoming	3	11	27.3%
				Total Il. Mj	427	1164	36.7%

Percentages in **RED** are for states with 40%+ speeding.

Speeding Marijuana Drivers during Peak Marijuana Driving Time

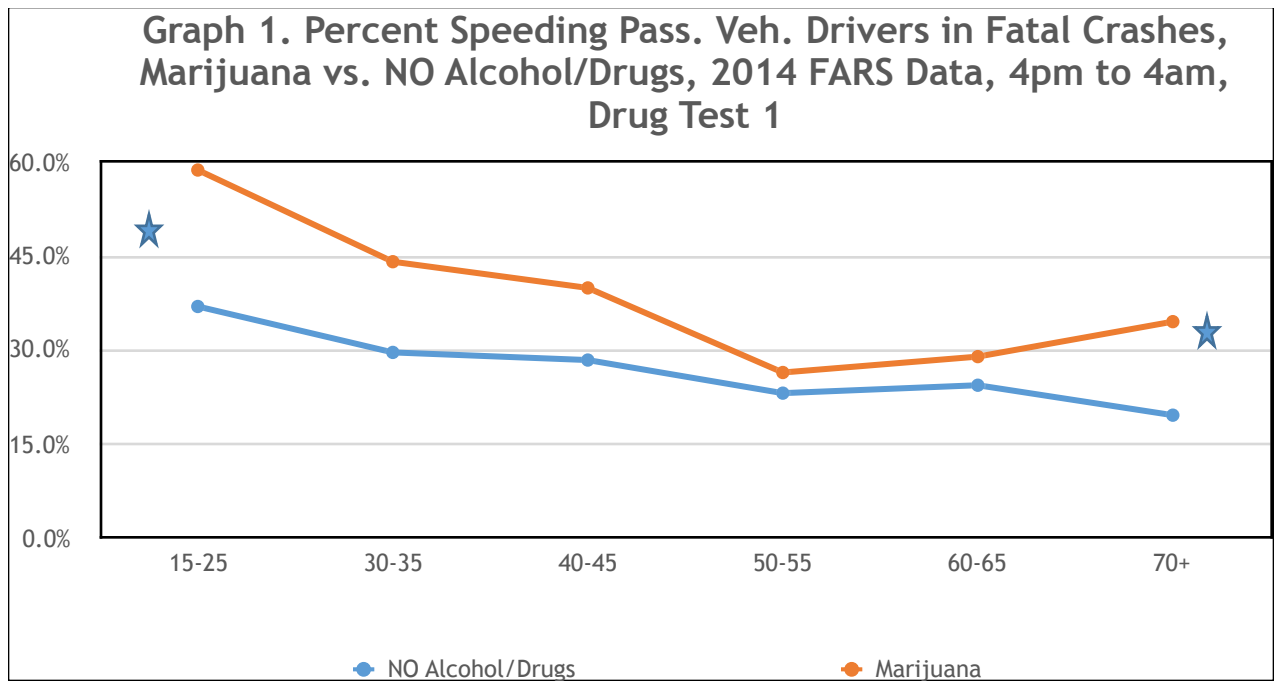
As previously reported, about 80% of the fatal crashes involving marijuana drivers are from 4pm to 4am. The following table looks at those drivers by posted speed limit for both Marijuana drivers and drivers with No Alcohol or Drugs. Marijuana drivers are consistently speeding at all speed limits above No Alcohol or Drugs drivers and at a statistically higher percentage than No Alcohol or Drugs drivers at both the low and at the high posted speed limits. At the low end where speed limits are at 15-25 MPH the Marijuana drivers were speeding 59% of the time and at the 70+ posted speed limit they were speeding about 76% of the time. The posted speed of 50-55 MPH had the largest number of Marijuana drivers in fatal crashes but only 14.2% more speeders than the No Alcohol or Drug group.

Speed Limit	No Alcohol or Drugs			Marijuana			Percent Marijuana Higher
	Total	Speeding	% Speed	Total	Speeding	% Speed	
15-25	81	30	37.0%*	17	10	58.80%	58.8%*
30-35	303	90	29.70%	43	19	44.20%	48.80%
40-45	481	137	28.50%	85	34	40.00%	40.40%
50-55	694	161	23.20%	117	31	26.50%	14.20%
60-65	233	57	24.50%	31	9	29.00%	18.70%
70+	188	37	19.7%**	26	9	34.60%	75.9%**
Total	1980	512	25.90%	319	112	35.10%	35.80%

* Chi square test statistically significant difference (p < 0.05)

** Chi square test statistically significant difference (p<0.05)

The graph below illustrates the statistically higher percentage of marijuana speeders at both ends of the posted speed limits.



★ Statistically significant by Chi Square test ($p < 0.05$).

Marijuana Drivers Found Speeding Since 1994

Speeding data is part of the FARS reporting system allowing a look at data in years past. Table 4 shows that speeding was a problem for marijuana drivers for 20 years, since 1994 when FARS data collection began. The table also shows an increase in marijuana involvement in fatal crashes with the percentage of drivers with marijuana use has nearly doubled in the last ten years, and is more than 6 times the 1994 level.

Group	Percent Speeding			
	1994	2004	2009	2014
% Marijuana Speeding	61.2 %	34.8 %	46.2 %	42.2 %
% NO Alcohol/Drug Speeding	30.6 %	31.2 %	25.2 %	19.1 %
Overall % Drivers with Mj	2.3%	7.9%	11.9 %	15.3 %

First Harmful Event for Marijuana Drivers in Fatal Crashes

Table 5 shows that marijuana drivers in fatal crashes are statistically more likely to run off the road into ditches or objects than drivers with No Alcohol or Drugs in their system.

Table 5. First Harmful Event in Fatal Crash for Pass. Veh. Drivers with Marijuana vs. No Alcohol or Drugs, 2014 FARS Data, Drug Test1 for Marijuana				
First Harmful Event	Marijuana		No Alcohol or Drugs	
	#	%	#	%
Motor Vehicle on Road	532	35.8%	2,680	57.8%
Pedestrian/Bike on Road	80	5.4%	470	10.1%
On Road Total	612	41.2%	3150	67.9%
Off Road ,Ditch/ Objects	384	25.9%	651	14.0%
Rollover	143	9.6%	252	5.4%
Off Road Total	527	35.5%	903	19.5%
Total Selected Items	1139	76.7%	4053	87.3%
Total First Harmful Event	1,485	100.0%	4,640	100.0%

Items selected were the most frequent of the 45+ first harmful events possible. Items in red were statistically different (p< 0.05) by Chi Square test than their cohort in blue

Marijuana Impairment Related to Driving.

The common hallucinogenic effects of marijuana (1) may help explain some of the reasons drivers in fatal crashes are speeding and run off the road significantly more than drivers not using Alcohol and Drugs.

One of the effects of marijuana is the alteration (distortion) of time and space perception. When driving, this effect often gives the perception of driving slow. To compensate for this perception, some drivers have a tendency to increase their speed as shown in Table 3. The slow driving marijuana driver was popularized in chronic marijuana users Cheech and Chong’s 1978 movie, “Up in Smoke”. Cheech was shown driving extremely slow in their van throughout the movie. However in fatal driving cases, this myth is destroyed by the 2014 FARS data. It reveals that speeding occurs in 35.8% of all fatal marijuana driving cases compared to only 25.9% of the No Alcohol or Drug cases.

In addition, because marijuana impacts a person’s ability to multi-task, a key attribute of safe driving, they are unable to monitor travel speed adequately. This may be the reason marijuana drivers are more likely to run off the road than drivers with No Alcohol or Drugs, as shown in Table 4 above. Finally, some persons using high potency marijuana suffer psychosis which can lead to erratic and dangerous driving behavior of all sorts, including speeding and running off the road.

Monitoring speed when impaired by marijuana was found to be a problem when first studied. Forty-seven years ago in the nation’s first marijuana study (2) where the marijuana was supplied to the researchers by the federal government, speed monitoring was found to be a problem with marijuana drivers. Marijuana impaired drivers made statistically more errors on speed monitoring in simulator driving than when not impaired. Marijuana used in that study was relatively low dose, about 1% THC, when compared to today’s more potent marijuana, at 10 to 20% THC. The study published in Science,

also tested the same drivers DUI at 0.10% BAC, which garnered all of the attention since those drivers were worse at all simulator driving tasks.

1. <http://www.nhtsa.gov/people/injury/resear/ch/job185drugs/cannabis.htm>

2. A. Crancer, J.M. Dille, J. Delay, J.E. Wallace, M.D. Haykin. Comparison of the Effects of Marihuana and Alcohol on Simulated Driving Performance, Science, Vol. 16417, January 1969