

Marijuana prevention in a shifting legal environment

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What's Coming

Victory Checklist

2014

- Alaska
- Oregon
- Washington, D.C.

2016

- Maine
- Arizona
- California
- Nevada
- Massachusetts



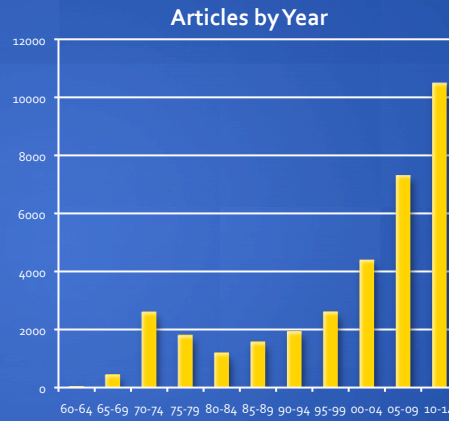
Together we can end the failed war on marijuana.
Join the fight today at www.mpp.org

Explosion of Research

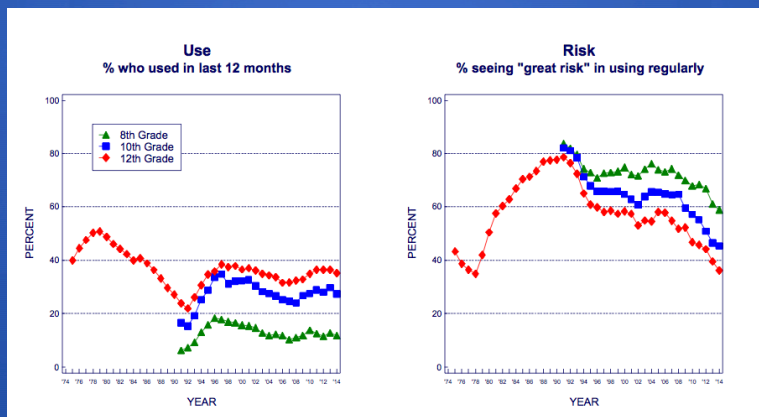
MEDLINE & PsychINFO database search by year.
 Search Term "Cannabis; Marijuana; Marihuana"

Within last...
 10 Years: 52%
 5 Years: 30%

- Publication Milestones:
- ✦ Isolation of THC (1964)
 - ✦ Existence of CB receptor confirmed (1984)
 - ✦ First studied endogenous CB agonist (1992)
 - ✦ First U.S. general population study on health conditions published (2010)



High School Use and Perceived Risk: Our future college students



Johnston, L. D., Miech, R. A., O'Malley, P. M., Bachman, J. G., & Schulenberg, J. E. (December 16, 2014). "Use of alcohol, cigarettes, and number of illicit drugs declines among U.S. teens." University of Michigan News Service: Ann Arbor, MI. Retrieved 12/16/2014, from <http://www.monitoringthefuture.org>

Predictors predict until they don't

Quotes from MTF Press Release: 12/16/14

Marijuana use, after five years of increasing among teens, actually declined slightly in 2014, with use in the prior 12 months declining from 26 percent to 24 percent for the three grades combined.

"The belief that regular marijuana use harms the user, however, continues to fall among youth, so changes in this belief do not seem to explain the change in use this year, as it has done over most of the life of the study," Johnston said.

Where does marijuana fit within the AOD issues at SDSU?

- Drug Free Schools and Community Act requires all IHEs to certify that it has a program to prevent illicit drugs. Illicit would be defined federally.
- The CSU System has made clear that medical marijuana is not permitted on its campuses.
- SDSU Student Health Services will not recommend marijuana to students.
- Use eCheckUptoGo-Marijuana as needed.
- Policy: Grounds upon which student discipline can be based... Use, possession, manufacture, or distribution of illegal drugs or drug-related paraphernalia, (except as expressly permitted by law and university regulations) or the misuse of legal pharmaceutical drugs. SDSU does not permit the possession or use of marijuana even with a medical recommendation.

GOT WEED?

Don't Bring It To Campus!

SDSU policy will remain unchanged...

- Possession, use or sale of marijuana on SDSU campus, including within residence halls, will continue to be prohibited.
- Possession, use or sale of marijuana in connection with any SDSU sanctioned activity will remain prohibited.
- Impaired driving laws will remain strictly enforced around campus.
- Counseling and Psychological Services remains open to those who may feel marijuana is causing problems for themselves or their friends.
- Students can take the Marijuana eCHECKUP TO GO to explore their use in an anonymous and confidential way.

QUESTIONS? CONTACT AOD@MAIL.SDSU.EDU

Just in Case

2010 Prop 19 Flyer
& perhaps for 2014



Even Without Prop 19

Table 2. Youth drug offense arrests, 2011 versus 2010.

Drug offense	2010	2011	Change
Marijuana possession	14,991	5,831	-61%
Other drug possession	2,106	1,770	-16%
Marijuana felonies	2,206	1,952	-12%
Narcotics felonies	1,363	1,174	-14%
Other drug felonies	2,628	1,671	-36%

Source: CJSC, 2012, 2012a, 2011.

Males, Mike. *California Youth Crime Plunges to All-Time Low*. Research Brief. San Francisco, CA: Center on Juvenile and Criminal Justice, October 2012. http://www.cjcj.org/files/CA_Youth_Crime_2011.pdf.

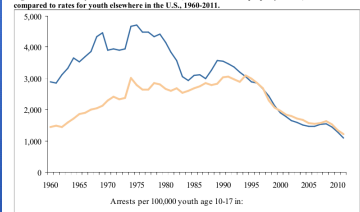


Figure 3. California youth arrest rates for Part I (serious violent and property crimes) compared to rates for youth elsewhere in the U.S., 1960-2011.

Arrests per 100,000 youth age 10-17 in:
— CA
— US outside CA

Sources: CJSC, 2012, 2012a, 2011; Department of Finance, 2012; FBI, 2012; Census Bureau, 2012.

The Medicine

- The FDA has this to say "... has not been proven to have a positive impact"
- No peer-reviewed publication of randomized development trials showing benefits.
- Reported adverse side effects include: Psychotic behavior (hallucinations, impulsive/destructive behavior) vehicle crashes, and even suicide.

Of course *the* "Medicine" here is...

Tamiflu

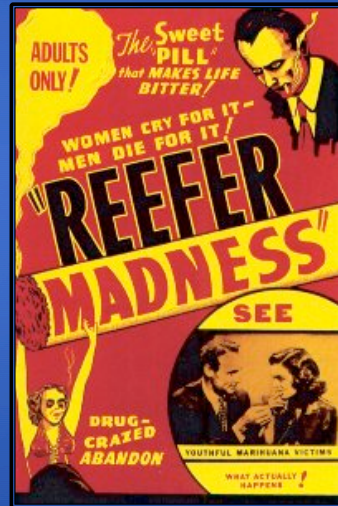
British medical journal claims there is no proof that Tamiflu can stop influenza

INFLUENZA | NOVEMBER 14, 2012 | BY: JEANNIE STOKOWSKI-BISANTI | [Subscribe](#)

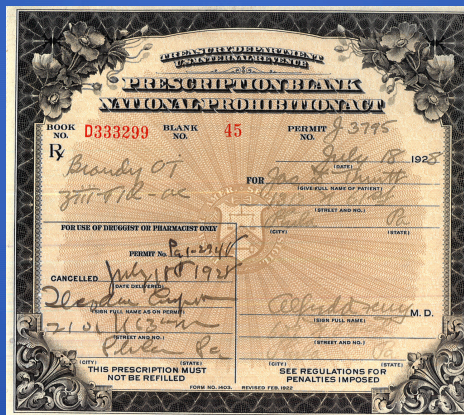


College Students are Hypocrisy, Faux-Expert, and Bias Detectors

- We are faced with an educated, skeptical and capable group.
- The ghost of *Reefer Madness* is always hanging over our efforts.
- Sometimes they are right and we need to approach this with a proper sense of historical and public health understanding.
- However, like all of us, they can suffer from confirmatory biases.



Perspective: Is this déjà vu? From a distance, it seems to be.



1921 to 1933

ONLY 9 STATES GET BEER AS MEDICINE

Brewers Are Preparing to Supply It—Seven Plants to Open in Milwaukee.

DRYS' COUNSEL SEES HOPE

Believes People Will Resent Turning 'Drug Stores Into Booze Shops'—Rush Expected Here.

Brewers in the nine States where beer may be legally prescribed as medicine began preparations yesterday for the

ONLY 9 STATES GET BEER AS MEDICINE. (1921, October 26). *The New York Times*. Retrieved from <http://www.nytimes.com>

Prohibition Nears Its Doom As 6 States Vote Today

By The Associated Press

Voters in half a dozen widely scattered states today are inscribing the answer to whether thirteen years of national prohibition shall end next month.

Lindberghs Forced Back into Holland

AMSTERDAM, Nov. 7.—(AP)—Col. and Mrs. Charles A. Lindbergh returned to Holland today, when unfavorable flying conditions prevented them from continuing to Geneva after a flight over Belgium and France in a heavy fog. They hopped off this morning.

A dispatch from Geneva, where they were expected to land shortly before nightfall, said a large crowd had waited for them several hours at the Nautical Club in Geneva.

Confidence that the balloting in Pennsylvania, Ohio, North and South Carolina, Kentucky and Utah would climax the administration's campaign to restore liquor was expressed by Postmaster General Farley.

Wet organization leaders forecast anti-prohibition majorities in at least three of the six states voting—all that is necessary to assure elimination of the Eighteenth Amendment from the Constitution—while dry organization captains said there were good chances for halting the hitherto unbroken anti-dry parade.

Although voters express themselves today, actual repeal could not materialize until the first week in December—the balloting—about

Rochester Evening Journal (1933, November 7). Retrieved July 3, 2013, from <http://news.google.com/newspapers>

Today



sLkYX.jpg (JPEG Image, 640 x 428 pixels). (n.d.). Retrieved July 12, 2013, from <http://i.imgur.com/sLkYX.jpg>

Federal Legislation, Executive, Judicial Action



Senators Booker, Paul, & Gillibrand introduce sweeping **medical marijuana** reform.

Compassionate Access, Research Expansion and Respect States (CARERS) Act introduced March 10, 2015

Is pot as bad as LSD? Heroin? Judge to rule on 1970 law



Is pot as bad as LSD? Heroin? Judge to rule on 1970 law. (n.d.). *Los Angeles Times*. Retrieved from <http://www.latimes.com/local/politics/la-me-marijuana-lsd-heroin-controlled-substances-act-20150113-story.html#page=1>



Obama Predicts Marijuana Will Be Rescheduled

BY MIKE ADAMS - THU MAR 19, 2015



M. A. - T. M., 2015. Obama Predicts Marijuana Will Be Rescheduled. Retrieved March 23, 2015, from <http://www.hightimes.com/read/obama-predicts-marijuana-will-be-rescheduled>

What happens on campus if/when marijuana is de-scheduled

- ADA and fair housing may force medical marijuana on campus
- Age-21 restrictions become meaningless for medical users. This may also include allowing growing own.
- Smoking bans may or may not apply if focus on nicotine and tobacco. Eatables will be difficult to control.

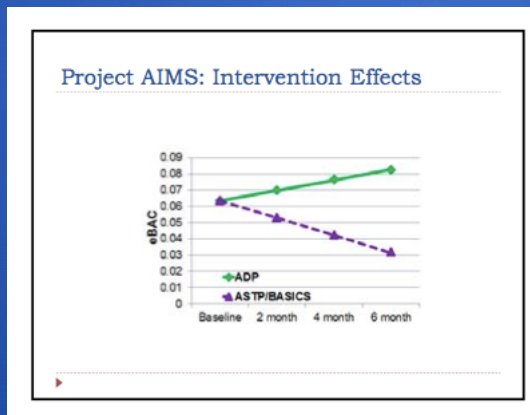
How to respond: Tell us how to argue...

- We must acknowledge that many of the moral and even public health oriented arguments against marijuana use are fraught with shaky foundations
 - Lung health: Cigarette analogy fails both on research-based harms and legal grounds. It also does not address other forms of consumption. Second-Hand smoke harms not studied.
 - "Medical" vs. *Recreational* distinction fails on epistemological grounds
 - Both Gateway Drug and Amotivational Syndrome have failed to be confirmed
 - Risk of dependence true, but legal and use guidelines are inconsistent with other drugs
 - Impaired driving is true, but legal and use guidelines are inconsistent with other drugs
 - THC-level inflations: Partially true, but public health implications have not been documented. Synthetic cannabinoids are not a model for informing this debate due to their action on CB₁ and also the lack of countervailing chemicals such as CBD.

College Population Considerations

- 18-24, and sometimes much older
- Well educated, critical and have the means to do independent study
- Activated towards social change, and social justice
- Experimenting with agency, leadership and protests
- Understand concepts of relative risk. Have a much better experiential-based understanding of the set and setting of actual use.

Don't just do something, stand there!



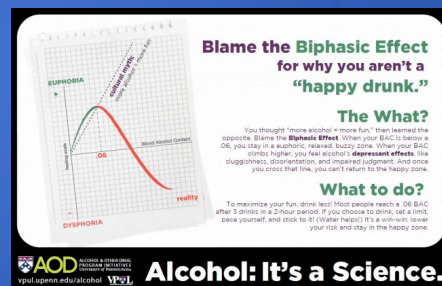
Logan, Diane, Jason R. Kilmer, and Timothy C. Marchell. "Connection versus Enforcement: Lessons Learned from the 'Teachable Moments.'" San Diego, CA, 2014.

Following the sanction effect the ADP approach... "suggests that the immediate effects may be undermined or at least not maintained in an education-only program."

Logan, D. E., Kilmer, J. R., King, K. M., & Larimer, M. E. (2015). Alcohol Interventions for Mandated Students: Behavioral Outcomes From a Randomized Controlled Pilot Study. *Journal of Studies on Alcohol and Drugs*, 76(1), 31-37.

Flexible and realistic alcohol prevention efforts

- BASICS
- ASTP
- SHAHRP
- Many Online Programs
- All these acknowledge a desired effect of alcohol, and seek to instruct the drinkers (even underage) how to maximize those, and minimize the negative.
- Implicit recognition that there is social or personal value "Consumer Surplus" to the activity that should be accepted by the prevention messaging.
- Some have argued that doing this for highly addictive substances with well documented harms (i.e., tobacco) is flawed logic (Chaloupka, Gruber, & Warner, 2015)



Responsible Use: What is it?

Illegality made the question of "responsible use" problematic; though for alcohol this is often considered on college campus.

Medical exemption appears to be exploited; Discomfort with the ethics of "cosmetic" medicines

Do we agree on what abuse or irresponsible use looks like?

A moving target and often based on socially constructed sense of "problems" Gusfield (1996)



Question: "Any plans to do a "Baked History" where pot is legal? GREAT SHOW!"

no way. That show would never end.

It would be boring and very slow. Trust me.

IamA (Derek Waters, Creator of Drunk History) AMA! (2014).

Retrieved March 26, 2015, from <http://interviewly.com//derek-waters-jul-2014-reddit>

Societal Definitions of Problems and Responsible Change

Drunk driving was a concern since cars existed (Lange, 2008). But rarely mentioned by prohibitionists in the early 1900's. Now it's a major source of our justification for alcohol restrictions.

Technology may impact our definitions of reckless

Age 21, Age 18 and the various concerns over time

Various measures include "Hangovers". Are we also trying to prevent Munchies?

Time, February 2, 1928

PAY YOUR BILLS FIRST

No person should spend a cent for liquor until the necessities of living are provided — and paid for. Bills for groceries . . . clothes . . . shoes . . . rent . . . light . . . heat . . . doctors . . . bills such as these have the first call on America's payroll.

We don't want to sell whiskey to anyone who buys it at a sacrifice of the necessities of life. Whiskey is a luxury and should be treated as such. Fine whiskey can play a pleasing part in the scheme of gracious living . . . but only when taken in moderation and only after the bills are paid. This statement may seem contrary to our self interest. Actually it is not. As one of America's leading distillers we recognize a definite social responsibility. The very existence of legalized liquor in this country depends upon the civilized manner in which it is consumed. In the long run, we believe, it is good business for us to say "pay your bills first."

... THE HOUSE OF SEAGRAM ...
Fine Whiskies Since 1857

Medical Exemption Exploitation

Sampled ads placed in major weekly newspapers from all states with medical marijuana laws as of June 2010.

Coded them using a variety of methods

Found three main themes:

- Traditional medicine
- Holistic/alternative medicine
- Counterculture/recreation

Varies substantially by state.



The Student Medical User

- Survey of 729 undergraduates
 - 4.8% report some doctor recommended use of marijuana in past 12 months
 - 3.5% report having a current valid recommendation

Past 12 Month Marijuana Smokers

- 11.4% have valid recommendation
- 33.3% 50+ smokers have valid recommendation

Card Holders

- 94.2% have had card for 3 or fewer years
- Of 19 students who reported medical reasons:
 - 86.9% for anxiety, PTSD, depression, insomnia or ADD
 - 50% Pain management or nausea
- 50% purchase marijuana weekly, 66.7% report smoking before noon, and 84.8% smoke daily or almost daily.
- 24% used alcohol currently with their marijuana the last time they smoked.
- 58.9% drove while under the influence of marijuana in the past month
- 60.8% began using marijuana at age 16 or younger.

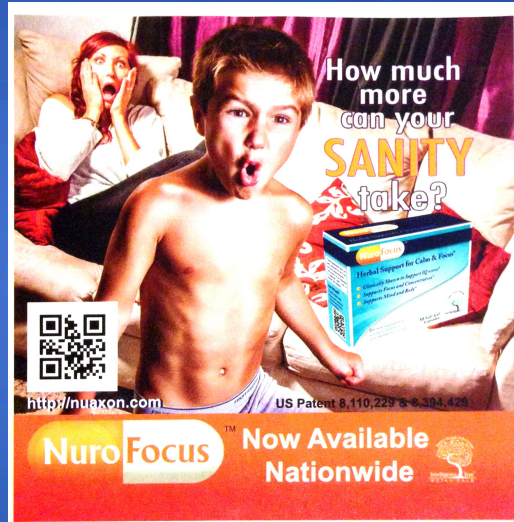
Institutional definition of medicine

Often rests on FDA approval, and medical consensus to define a substance as "medicine".

Roots run deep in counter narcotic, prohibition and Patent Medicines

But...Long tradition of cultural acceptance of alternative remedies

Sometimes medication "works" without our clear understanding of why. SSRI/Depression example (Anderson et al, 2015)

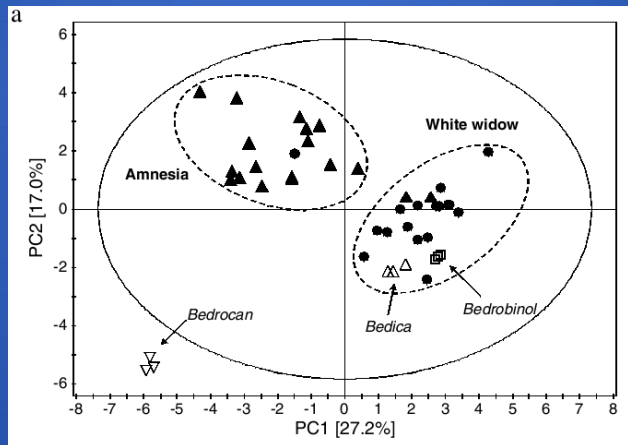


Standardization: Medical

"Cannabis as an herbal medicine poses serious challenges to modern medicine, which operates according to the 'single compound, single target' paradigm of pharmacology" (p. 66o).

- Hazekamp, A., & Fisdick, J. T. (2012). Cannabis - from cultivar to chemovar. *Drug Testing and Analysis*, 4(7-8), 66o-667

Chemical profiles of cultivars – Clusters of 28 tested components: 2 Coffee Shop varieties, 3 pharmaceutical



- Hazekamp, A., & Fischechick, J. T. (2012). Cannabis - from cultivar to chemovar. *Drug Testing and Analysis*, 4(7-8), 660–667

The Opposite of Responsible

Reckless - fights, noise, crashes, sexual assaults and other crimes

Harmful – Long term health effects, addiction, relational impacts

Quantity concerns tend to focus on “Reckless” consequences,

Frequency concerns tend to focus on “harmful” consequences.

Is “Responsible” merely the avoidance of reckless and harmful consequences?

Alcohol **low-risk** example

Age 21

No Binge (5/4)

Weekly limit 14/7

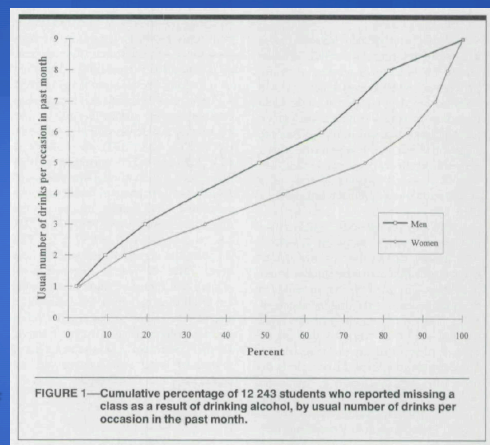


FIGURE 1—Cumulative percentage of 12 243 students who reported missing a class as a result of drinking alcohol, by usual number of drinks per occasion in the past month.

Wechsler, H., Dowdall, G. W., Davenport, A., & Rimm, E. B. (1995). A gender-specific measure of binge drinking among college students. *Am J Public Health*, 85(7), 982–985.

Comparative risk based on overdose

Lachenmeier, D. W., & Rehm, J. (2015). Comparative risk assessment of alcohol, tobacco, cannabis and other illicit drugs using the margin of exposure approach. *Scientific Reports*, 5.

LD50 ≈ 575 mg/kg (150 lbs = 39,032mg (39g or 1.4 oz)

Human threshold dose = .04 mg/kg (150 lbs = 2.7mg)

MOE is "defined as the ratio between the point on the dose response curve, which characterizes adverse effects in epidemiological or animal studies." The lower the MOE, the higher the risk the substance poses

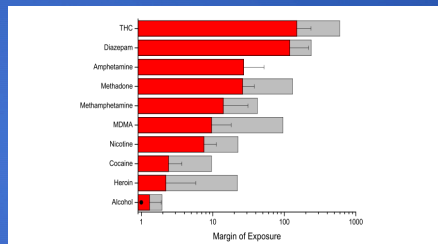


Figure 1 | Margin of exposure for daily drug use estimated using probabilistic analysis (left red bar; average; error bar: standard deviation; right grey bar; relevant user; circle symbol (for alcohol) value based on human data).

What's too frequent?

Table IV. Accuracy predicting at least one harm from use in past 12 months (n = 881)^a.

	Cannabis use daily	CUDIT6+	CUDIT8+	ASSIST4+	ASSIST8+
Sensitivity (%)	38.7	63.0	47.9	81.5	68.9
Specificity	80.8	82.9	89.3	46.5	77.2
AUC	59.8	73.0	68.6	64.1	73.1
PPV	24.5	37.3	41.9	19.7	32.7
NPV	89.1	93.3	91.4	94.0	93.9
Efficiency	75.0	80.1	83.5	51.3	76.0

Note: ^aAmong past 3-month cannabis users who reported no other illicit drug use in the past 12 months (participants who indicated past 12-month use of cocaine, speed, methamphetamine, ecstasy, or hallucinogens were excluded).

Thake, Jennifer, and Christopher G. Davis. "Assessing Problematic Cannabis Use." *Addiction Research & Theory* 19, no. 5 (October 2011): 448–58. - (1179 Canadian Adult Last 3-month Users)

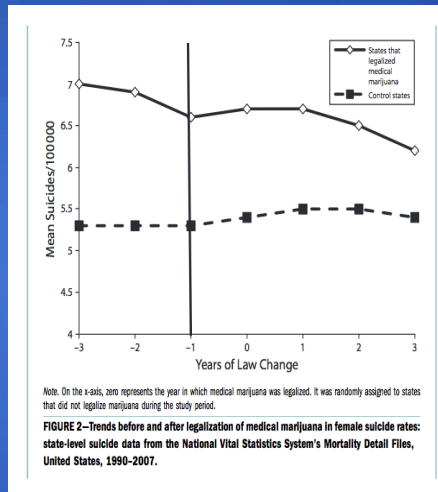
Suicide: Possible Reckless or Harmful crossover

Conflicting evidence:

Legalization effect on suicide rates. Significant reduction for men ages 20-29.

But news reports of incidents of apparently intoxication related suicide.

Role of setting and access to weapons not investigated.



Anderson, D. M., Rees, D. I., & Sabia, J. J. (2014). Medical Marijuana Laws and Suicides by Gender and Age. *American Journal of Public Health*.

Education Success: A Harmful Consequence?

Grant, Julia D., Jeffrey F. Scherrer, Michael T. Lynskey, Arpana Agrawal, Alexis E. Duncan, Jon Randolph Haber, Andrew C. Heath, and Kathleen K. Bucholz. "Associations of Alcohol, Nicotine, Cannabis, and Drug Use/Dependence with Educational Attainment: Evidence from Cotwin-Control Analyses." *Alcoholism: Clinical and Experimental Research* 36, no. 8 (August 1, 2012)

Table 4. Unadjusted and Adjusted Conditional Logistic Regression Results: Likelihood (ORs and 95% CIs) of the At-Risk Twin (Based on Substance Use History) Having Lower Educational Attainment than His Cotwin^a

Predictor	Number of discordant pairs	Unadjusted conditional odds ratio	Adjusted conditional odds ratio ^b
Early drinker	889	1.47 (1.05 to 2.05)	1.44 (1.02 to 2.05)
Daily nicotine use ^c	702	2.42 (1.50 to 3.89)	2.54 (1.55 to 4.17)
Early cannabis use	276	1.32 (0.76 to 2.29)	1.35 (0.76 to 2.41)
Cannabis initiation	947	0.86 (0.64 to 1.16)	0.90 (0.65 to 1.24)
Alcohol dependence	1,023	1.67 (1.24 to 2.25)	1.76 (1.27 to 2.44)
Nicotine dependence	1,059	1.34 (1.00 to 1.80)	1.31 (0.98 to 1.77)
Cannabis dependence	282	0.93 (0.56 to 1.56)	0.93 (0.48 to 1.78)
Any illicit drug dependence	379	1.39 (0.89 to 2.18)	1.23 (0.72 to 2.09)

^aThe only significant interaction between zygosity and risk behavior was for daily nicotine use in the adjusted model ($p = 0.04$; all others $p > 0.20$), conditional logistic regression analyses were collapsed across zygosity for all measures except daily nicotine use (for which the interaction was retained in both the unadjusted and adjusted models).

^bAll adjusted models included 4 covariates: depression, conduct disorder, Southeast Asia service, and posttraumatic stress disorder; no covariates were significant at $p < 0.05$.

^cInteraction OR = 0.51 (0.25 to 1.04) in the unadjusted model and 0.46 (0.22 to 0.97) in the adjusted model. Bold text indicates significant at $p < 0.05$.

Marijuana Use Trajectories

“Specifically, infrequent, increasing, and chronic/heavy marijuana use patterns were associated with significantly increased risk for discontinuous enrollment (adjusted odds ratio = 1.66, 1.74, and 1.99, respectively) compared with minimal use.”

The Trajectories also correlated with use of other drugs: Alcohol, Illicit and Rx.

Reasons for discontinuous enrollment were not identified, and could include suspension, expulsion and transfer.

Arria, Amelia M, Laura M. Garnier-Dykstra, Kimberly M. Caldeira, Kathryn B. Vincent, Emily R. Winick, and Kevin E. O’Grady. “Drug Use Patterns and Continuous Enrollment in College: Results From a Longitudinal Study.” *Journal Of Studies On Alcohol And Drugs* 74, no. 1 (2013): 71–83.

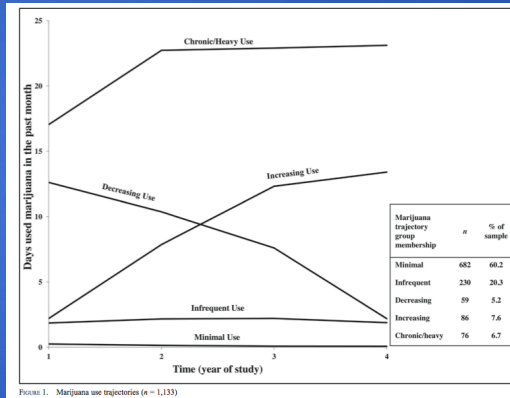


FIGURE 1. Marijuana use trajectories (n = 1,133)

Earlier Start Trajectories

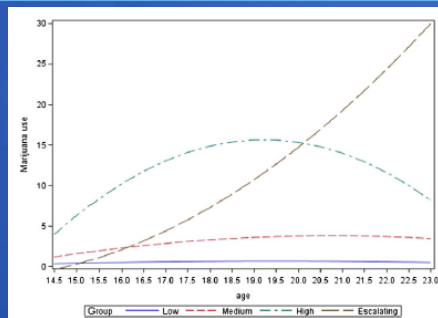


Fig. 1. Illustration of estimated trend lines for the three classes of non-escalating users (i.e., low, medium and high groups) and one class of escalating users. “Marijuana use” is defined as follows: 0 = zero time; 1 = once a month or less; 3 = more than once a month but less than once a week; 9 = more than once a week but less than daily; 27 = every day.

Cigarette smokers over sampled

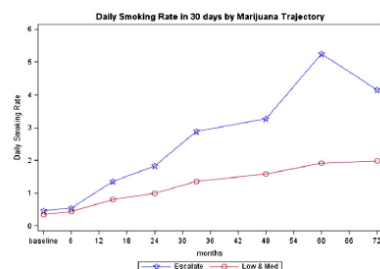
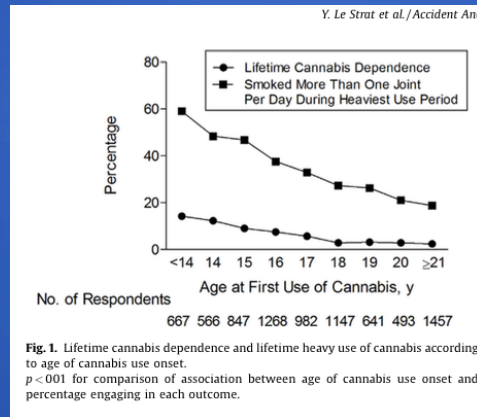


Fig. 2. Daily cigarette smoking rate in 30 days, in Escalators and Non-escalators, from baseline to 72 months. Cigarette smoking rate is defined in terms of cigarettes per day.

Predictor of Escalating/High:
Baseline: Males, Cigarettes, GPA
6 Yr: Lower Education Status,
Cigarettes

Passarotti, A. M., Crane, N. A., Hedeker, D., & Mermelstein, R. J. (2015). Longitudinal trajectories of marijuana use from adolescence to young adulthood. *Addictive Behaviors*, 45, 301–308. <http://doi.org/10.1016/j.addbeh.2015.02.008>

What's Early?

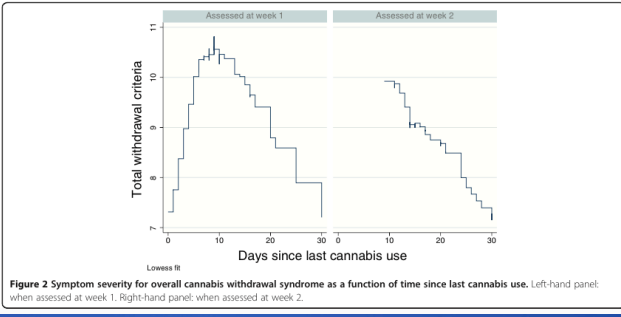


Le Strat, Yann, Caroline Dubertret, and Bernard Le Foll. "Impact of Age at Onset of Cannabis Use on Cannabis Dependence and Driving under the Influence in the United States." *Accident Analysis & Prevention* 76 (March 2015): 1-5.

Withdrawal Symptoms

Table 5 Time course descriptions

	Peak in days since last cannabis use	Peak from Budney study [11]
Irritability/anger	14	18,33
Nervousness	4	9
Insomnia	1	
Loss of appetite	5	
Restlessness	6	
Depression	5	
Physical symptoms	5	
Vivid dreams	11	



Hesse, Morten, and Birgitte Thylstrup. "Time-Course of the DSM-5 Cannabis Withdrawal Symptoms in Poly-Substance Abusers." *BMC Psychiatry* 13, no. 1 (2013): 258. doi:10.1186/1471-244X-13-258.

Drug Driving Challenges: Starting with the alcohol model

- Understanding of Risks
- Regulation of two behaviors:
 - Driving
 - Substance Access and Use
- Driver options, decisions, behaviors

Using Alcohol as a Model: Understanding the Risks

- In a sense, we've always known alcohol posed driving risk
 - The Horseless Age (1907) published that the "drunken driver" is the sort that would scare horses as he passed.
 - AAA banned alcohol at its races prior to 1917.
 - Hearings on Responsibility Legislation in 1930 identified drunk driving (even during prohibition) as a source of injury.

Very Early Images



Circa 1910



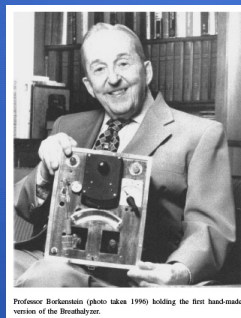
WPA Funded Art 1936 or 1937



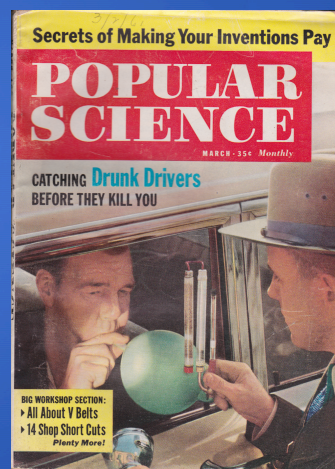
Kansas United Dry Forces, 1939

Technology made alcohol detection, regulation and research easier

- The Drunkometer (1930's);
Breathalyzer (1954)
- Grand Rapids Study Risk (1960's)



Professor Berkowitz (photo taken 1996) holding the first hand-made version of the Breathalyzer.



Is Drugged Driving a “Silent Epidemic”?

- Without good measures, we’re incapable of quantifying the frequency or relative risk of drugged driving.
 - FARS data codes for drugs started at 1991 with changes in 1993 and 2010
 - Active/impairing levels not known based on FARS methods
 - Often urine tests or DRT are used to gather driver drug use
 - Roadside surveys only recently being conducted.
 - Saliva being validated, but may be limited with respect to manner of use.
 - Extremely large menu of possible drugs, with combinations potentially complicating risk estimates.

THC in the Blood

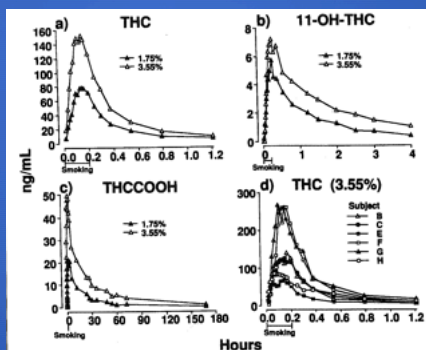


Figure 1. Plasma levels of (a) mean THC, (b) mean 11-OH-THC, (c) mean THCCOOH, and (d) individual THC levels for six subjects during and after smoking a single marijuana cigarette (1.75 or 3.55% THC). The paced smoking protocol consisted of eight evenly spaced inhalations (2-second puff and 10-second hold period) during an 11.2-min time period.

Huestis, M A, J E Henningfield, and E J Cone. "Blood Cannabinoids. I. Absorption of THC and Formation of 11-OH-THC and THCCOOH During and After Smoking Marijuana." *Journal Of Analytical Toxicology* 16, no. 5 (October 1992): 276–282.

Mixing with Alcohol

- Even very low levels of each can cause dramatic increases in impairment.
- THC level beginning to show impairment was 5 ng/mL dropped to 2.3 ng/mL when any alcohol was present.
- Grotenhermen et al. (2007) note that cannabis impaired automatic functions first (5-10 ng), while alcohol (BAC .05-.11) impaired controlled and automatic functions. Thus the compensatory ability of marijuana users is impaired by even small amounts of alcohol.

Recommendations for Driving

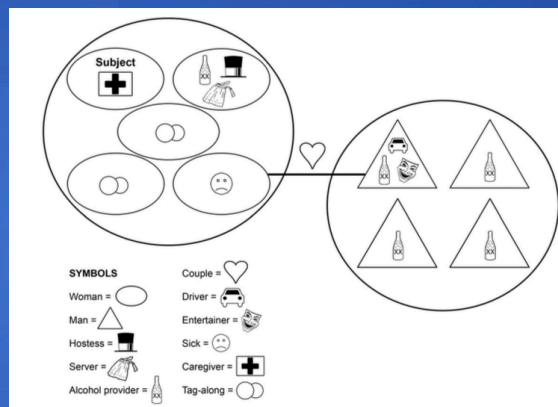
- *Still very much an open question:*
 - Some still advocate zero tolerance
 - Others look for an impairment *per se* level
 - *per se* limit set at 7-10 ng/mL. WA has set it at 5 ng/ml. Note that some talk of whole blood, others plasma. All *per se* discussions at this time involve THC.
- Guidelines: Advise users to wait 3 (though some say 3-5) hours before driving (Fischer et al, 2011; Grotenhermen et al, 2007).
- Drivers should not mix even low amounts of alcohol with cannabis.

Driver Decisions

- “The most common strategies for reducing DUIC-related [DUI Cannabis] risk involved compensating for perceived impairments, whereas strategies involving forward planning were more frequently implemented for DUICA [DUI Cannabis and Alcohol]” (Swift, Jones & Donnelly, 2010).

Social Context: Alcohol

- Source of benefits, protection, *and* risks
- We know, or at least have documented, very little about the social context of marijuana use.
- Context will change in legalized environment.



Lange, J. E., Devos-Comby, L., Moore, R.S., Daniel, J., and Homer, K. "Collegiate Natural Drinking Groups: Characteristics, Structure, and Processes." *Addiction Research & Theory* 19, no. 4 (August 2011): 312–22.

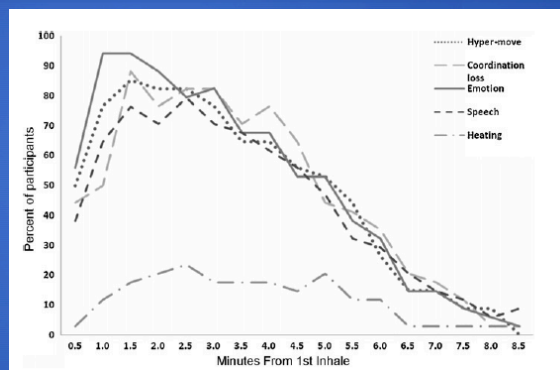
We need to better understand Use

- Let's watch a few people use...

Direct Observation is Helpful

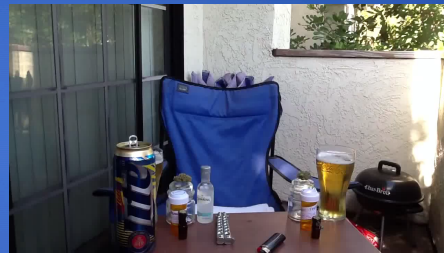
First use of YouTube in
behavior observation
research

Lange, J. E., Daniel, J., Homer, K.,
Reed, M. B., & Clapp, J. D. (2010).
Salvia divinorum: Effects and use
among YouTube users. *Drug and
Alcohol Dependence*, 108, 138–140.



High volume video blogs/shows

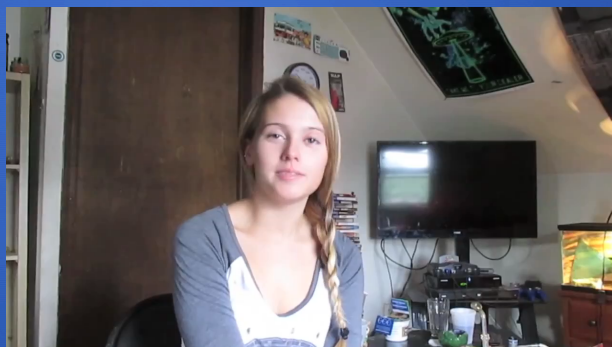
Tequila Beer and Weed
Strikeout! Beerfest style!
Downloaded 4/16/15
Nick420CA 56,177
Subscribers 33,123 Views
Appears to be commercial in nature
Extremely high tolerance



Urban Dictionary
"A Strikeout is possibly one of the most brilliant and best ways to get totally inebriated. The person in question must have ready a fully loaded [Bong, a shot of his or her favourite liquor, and a pint of his or her favourite Beer. The person in question then lights the bowl, takes a nice, long bong hit, then puts the bong down. While holding the weed smoke in, the person proceeds to take the shot of liquor back and then chugs the beer back. After they finish the beer, they exhale the weed smoke.](#)"

Hints into motivation and use history

The First Time I Smoked Weed &
Why I Smoke it - Edited
Allie in Weedyland
24,151 Subscribers
Viewed 231,952



So what do we say on college campuses? Consider these issues:

1. It's illegal and against campus policy. There is no age variance on this.
2. Since almost all are over 18, most of the research on early onset does not apply
3. Discontinuity of enrollment is a risk, but unclear at what level of use
4. Regular use (definition likely will fall somewhere between weekly and daily) is associated with more problems.
5. Occasional use can be safer if not associated with:
 1. Driving
 2. Other substances including alcohol and tobacco
6. High dose and especially oral use may prolong impairments substantially
7. And most importantly... any or all of this is subject to change at any moment

Various Directions

- *Motivational Interviewing* approaches appear to reduce use and problems.
- Argumentative and counter marketing approaches are not appearing to reduce use. These often rely on abstinence-only approach that may not be adaptable to legalized environments.
- Information campaign to change the views on driving may be warranted. Roadside survey found marijuana common (7.4%). Only 11% thought it harmed their driving. (Lacey et al, 2012).
- *Promotion instead of Prevention* messaging to avoid internal counter-arguing.

Things that worry me

- Delivery services
- THC-based edibles and drinkables – Detection, overdose and accidental use
- Sudden changes in federal law or legal interpretation: Policy holes like vaping or ADA accommodation justifications.
- Impaired driving
- High frequency off-campus users. Incoming earlier initiators



"Audiences know what to expect, and that is all they are prepared to believe in."

-The Player: Rosencrantz and Guildenstern are Dead.

- I've been accused of smirking when I say "medical." I am almost always accused by someone in the audience of having a "bias", though the direction of bias seems to reflect more on the listener... there is only so much I can do.
- Remember that students are on guard to rebut any attempt to dissuade use. They'll see *Reefer Madness* hidden behind any negative health claim.
- MI approach: "The Good' and the 'Not So Good effects.'" - *Jason Kilmer and colleagues*

Marijuana prevention in a shifting legal environment

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For reprints visit the Report Vault
at www.iPrevention.com

