**Alcohol and Other Drug Initiatives**

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# Marijuana Update
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### San Diego State University
Reprints will be available. Visit the Report Vault at iPrevention.com

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# What's to gain from this presentation?

- Help you plan for a changing environment
- You can be ready for an engaged and informed (if not necessarily accurately informed) student population
- You'll become a more competent player in shaping campus and community standards should the trend continue
- *Anything else you are hoping for??*

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# Questions

- Proposition 19 failed, are we done with legalization talk for now?
  - ☐ Yep, we dodged that bullet
  - ☐ Nope it may be coming back this fall
- Should lung health be our primary marijuana concern?
  - ☐ Sure, smoking anything has got to be bad
  - ☐ Who knows, the research is too murky
  - ☐ Nope, marijuana poses much more serious risks than lung problems.

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# Questions

- According to credible recent research, marijuana actually _____ crash risk.
  - ☐ Increases
  - ☐ Has no effect on
  - ☐ Decreases
  - ☐ None of the above, there is no credible research
- With such easy access to marijuana, we don't have to worry about synthetic marijuana.
  - ☐ True
  - ☐ False

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# Medical Marijuana

| Medical Marijuana States | | State Legislation Pending | |
|---|---|---|---|
| Alaska | Montana | Alabama | New Hampshire |
| Arizona | Nevada | Idaho | New York |
| California | New Jersey | Illinois | Ohio |
| Colorado | New Mexico | Indiana | Oklahoma |
| Delaware | Rhode Island | Iowa | Pennsylvania |
| Hawaii | Vermont | Kansas | West Virginia |
| Maine | Washington | Maryland* | Wisconsin |
| Maryland* | Washington, D.C. | Massachusetts | |
| Michigan | | Missouri | |

Marijuana Resource Center: State Laws Related to Marijuana | The White House. Retrieved February 7, 2012, from http://www.whitehouse.gov/ondcp/state-laws-related-to-marijuana

16 States with Pending Legislation to Legalize Medical Marijuana - Medical Marijuana - ProCon.org.. Retrieved February 7, 2012, from http://medicalmarijuana.procon.org/view.resource.php?resourceID=002481

Over 95 Million Americans live in a Medical Marijuana State*

* Using 2009 U.S. Census data

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# Varying Medical Marijuana Controls



## Spectrum of controls

- California does not require patient registration, list of conditions based upon physician judgment.
- Arizona's new law more specific list of conditions, and requires patient registration.

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# Marijuana Advertising

Sexualized images
Happy Hour Specials

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# 2012 Non-Medical Use Legalization Ballot initiatives so far

| State |
| --- |
| California – 2 Active Potential Initiatives |
| Colorado – 1 Initiative |
| Michigan – 1 Potential Initiative |
| Missouri – 1 Potential Initiative |
| Montana – 1 Potential initiative |
| Nebraska – 1 Potential Initiative |
| Oregon – 1 Potential Initiative |
| Washington – 1 Initiative 3 Potential Initiatives |

Proposed 2012 Ballot Initiatives to Legalize Marijuana for Recreational Use Floated in Six States | butwhataboutthechildren.org.. Retrieved February 7, 2012, from http://www.butwhataboutthechildren.org/?p=711

Montana Marijuana Initiative Saddles Up [FEATURE] | Cannabis News. (n.d.). Retrieved February 7, 2012, from http://cannabis.hawaiinewsdaily.com/2012/02/01/montana-marijuana-initiative-saddles-up-feature/

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# Potential CA Initiatives

The Regulate Marijuana Like Wine Act of - FAILED

The Reduce Marijuana Penalties Act of 2012 - FAILED

The Repeal Cannabis Prohibition Act of 2012 (Tracking Number 1524) – Thought to have one of the best chances of getting on the ballot.

The Cannabis Hemp and Health Initiative 2012 -

The Medical Marijuana Regulation, Control, and Taxation Act –

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# Already Decriminalized
## California Example – An 18 Year Old

| Holding < 1 oz Marijuana | Holding a Can of Beer |
|---|---|
| Infraction Citation | Misdemeanor |
| $100 Fine (no record) | $250 First Offense $500 Second |
| DMV Action Unclear | Loss of Drivers License for 1 year |
| | |

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# Conflict with Federal Law

- Federal law continues to take precedence.
- Court rulings that states need not have drug laws that match Federal law.
- State police need not enforce Federal law.
- Federal enforcement efforts are being substantially increased against medical marijuana in California with noticeable effects on advertizing and access.
- Drug Free Schools and Community Act requires IHE certify that it has a program to prevent illicit drugs. Illicit would be defined federally.

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# Synthetic vs Real Marijuana

- Designer drug enhanced herbal products. Distinct from Salvia divinorum.
- Five chemicals often included in Spice or K2 (JWH-018, JWH-073, JWH-200, CP-47,497, and cannabicyclohexanol) have been made illegal by the Federal Government. Some products have been reformulated.
- Many States and local governments have not followed with matching laws. California, for instance, has only outlawed sale.
- MTF reports that 11.4% of 12th graders had used synthetic marijuana in the past year (2011) which is the highest non-marijuana substance used.
- Hu and Colleagues (2011) reported use rates of 8% in one college sample.

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# Beyond THC...

Products can contain opioids, many other psychoactive chemicals, and ever changing THC mimicking chemicals that actually bond more strongly to cannabinoid receptors.
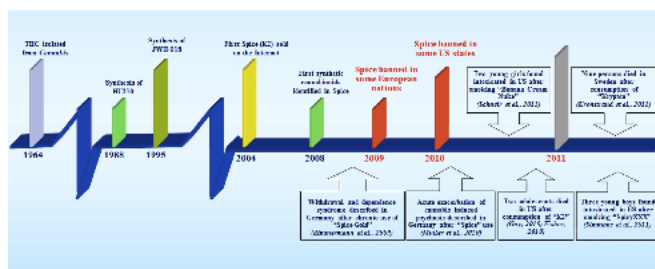
Fattore, Liana, and Walter Fratta. "Beyond THC: The New Generation of Cannabinoid Designer Drugs." *Frontiers in Behavioral Neuroscience* 5 (2011).

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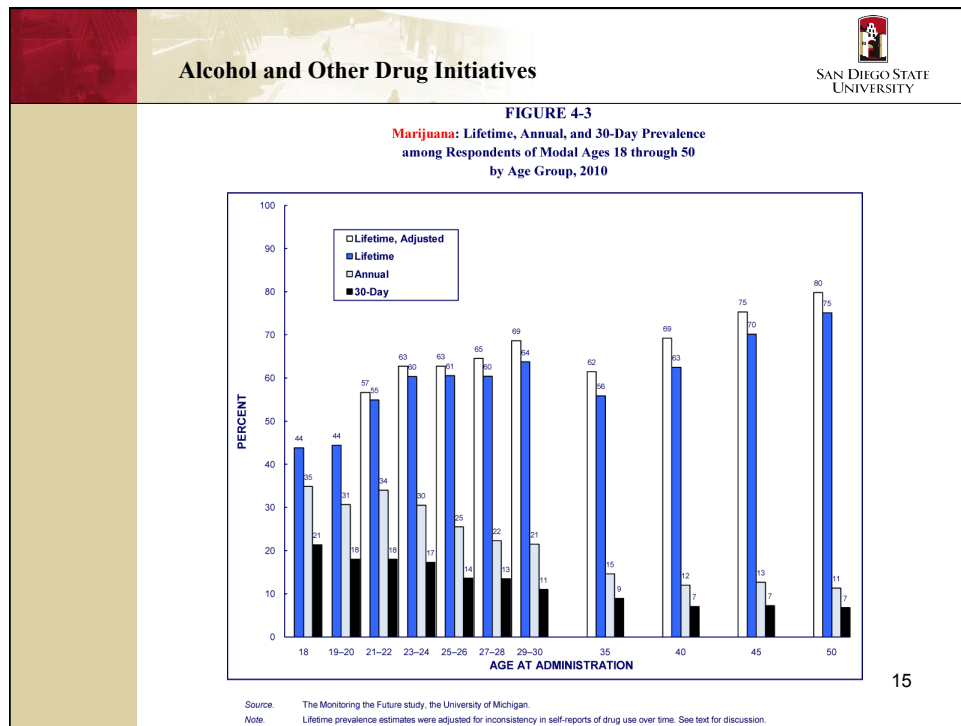
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# Prevalence

**Marijuana use continues to rise among U.S. teens, while alcohol use hits historic lows**

ANN ARBOR, Mich.--- Among the more important findings from this year's Monitoring the Future survey of U.S. secondary school students are the following:
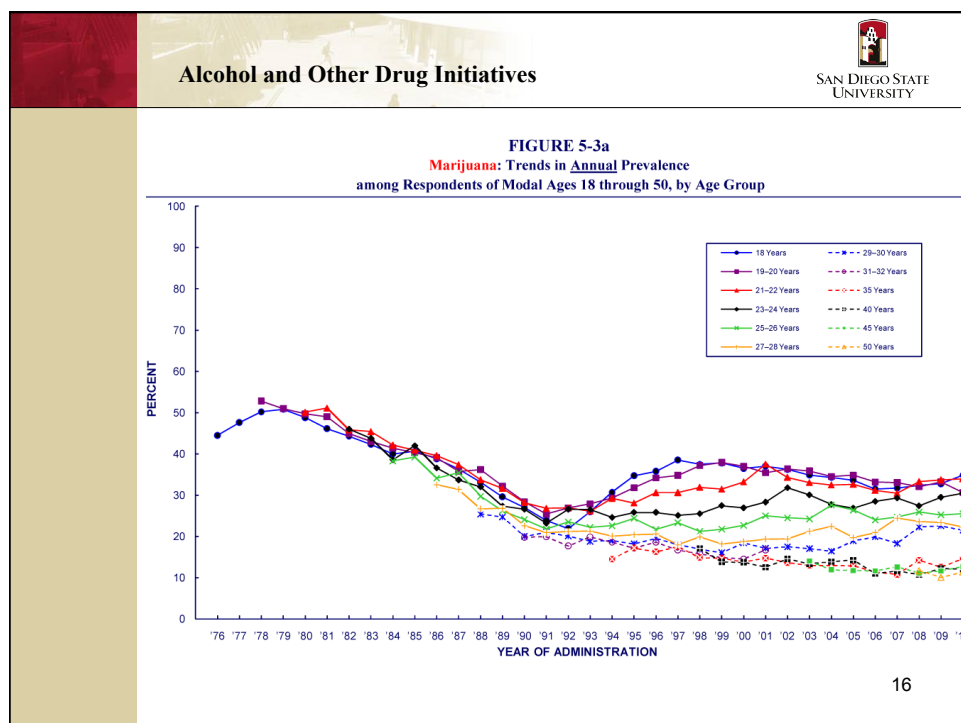
- Marijuana use among teens rose in 2011 for the fourth straight year—a sharp contrast to the considerable decline that had occurred in the preceding decade. Daily marijuana use is now at a 30-year peak level among high school seniors.

- "Synthetic marijuana," which until earlier this year was legally sold and goes by such names as "K2" and "spice," was added to the study's coverage in 2011; one in every nine high school seniors (11.4%) reported using that drug in the prior 12 months.

- Alcohol use—and, importantly, occasions of heavy drinking—continued a long-term gradual decline among teens, reaching historically low levels in 2011.

- Energy drinks are being consumed by about one third of teens, with use highest among younger teens.

Johnston, L. D., O'Malley, P. M., Bachman, J. G., & Schulenberg, J. E. (2011, December 14). Marijuana use continues to rise among U.S. teens, while alcohol use hits historic lows. University of Michigan News Service, Ann Arbor.

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FIGURE 4-3
Marijuana: Lifetime, Annual, and 30-Day Prevalence
among Respondents of Modal Ages 18 through 50
by Age Group, 2010



Source.    The Monitoring the Future study, the University of Michigan.
Note.    Lifetime prevalence estimates were adjusted for inconsistency in self-reports of drug use over time. See text for discussion.

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FIGURE 5-3a
Marijuana: Trends in Annual Prevalence
among Respondents of Modal Ages 18 through 50, by Age Group



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# Consequences of Use

- Cannot rely on illegal status to frame discussion.
- Need to avoid "Reefer Madness" mistakes.
- What does the research show?
- What levels of use are most harmful?
- Are there ways of preventing harmful?

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# Physical Health

- Conflicting evidence of lung cancer (c.f. Han et al., 2010 and Chen et al., 2008).
- Pulmonary functioning improvements (Pletcher et al., 2012).
- Possible increase in testicular germ cell tumors with very heavy use (Trabert et al., 2011).
- Decrease in head and neck tumors (Aldinton et al., 2008). Also other therapeutic effects of cannabinoids on tumors (see Bifulco et al., 2006).

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# Proposed DSM V Revisions

- Cannabis Use Disorder – includes withdrawal as a possible criterion.
- Merges the abuse and dependence disorders.
- Has levels (moderate or severe).
- Categories:
  - With or without Physiological Dependence based upon withdrawal and tolerance.
- Separate cannabis withdrawal.

"APA DSM-5 | R 02 Cannabis Use Disorder", 2012. Retrieved February 14, 2012 from http://9 www.dsm5.org/ProposedRevision/Pages/proposedrevision.aspx?rid=454.

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# Impaired Driving?

- How prevalent is it?
- What are the risks?
- How would it be enforced in a legalized environment?

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# Prevailing view

- Some believe that marijuana posses no risk to road safety.

  "No one has ever been killed in a traffic accident because of marijuana, but look at the alcohol numbers," said Barbara Cooke, 24. "I think it should be regulated and legalized."

  - quote from VisaliaTimesDelta.com, 9/30/10

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# The Evolving Problem

- Arria, and colleagues (2011) found in their sample of college students that drugged driving prevalence is similar to drunk driving. Defined drugged driving as "drove while high."

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4/12/12

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# High School Seniors
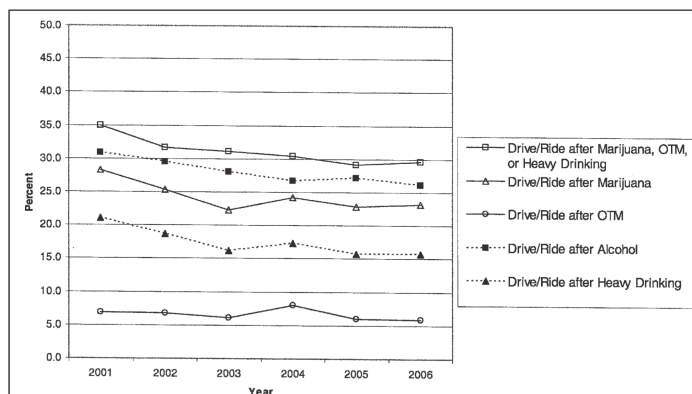


FIGURE 1. Trends in the percentage of high school seniors driving after alcohol/drug use or riding in a vehicle after alcohol/drug use by the driver, 2001-2006. OTM = illicit drugs other than marijuana.

For high school seniors, O'Malley & Johnston (2007) found that driving after marijuana was more common than driving after heavy drinking.

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# Do you think students know about this study?



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# It looks like good science:
## How can we convey the errors?

estimating a model that includes both state and year fixed effects. Specifically, the baseline estimating equation is:

(1)     $\ln(Fatalities\ Total_{st}) = \beta_0 + \beta_1 MML_{st} + X_{st}\beta_2 + \nu_s + w_t + \varepsilon_{st}$

where $s$ indexes states and $t$ indexes years.[21] The variable $MML_{st}$ indicates whether a MML was in effect in state $s$ and year $t$, and $\beta_1$, the coefficient of interest, represents the marginal effect of legalizing medical marijuana. In alternative specifications we replace $Fatalities\ Total_{st}$ with the remaining dependent variables listed in Table 5.

Page 12. Anderson, D. Mark, and Daniel Rees. *Medical Marijuana Laws, Traffic Fatalities, and Alcohol Consumption*. Discussion Paper. IZA, November 2011. http://www.iza.org/en/webcontent/publications/papers/viewAbstract?dp_id=6112.

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# Using trends to claim causation



Figure 1: 1996–2005 Fatal Trend for Under–16 Age Group

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# Crash Risk

- A student who has driven after marijuana (but not alcohol) had a crash risk equal to a student who had driven after <u>heavy</u> drinking (38% v. 39%). A student with no such history had a lower risk (23%).

- We are warned by the authors that no causal inference can be made from this.

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# Other Epidemiological Findings

- While there are conflicting results, reviews have found consensus that there is increased risk.
- Odds of being involved in crash about double (Asbridge et al., 2012).
- Possible cutoff level of 5 ng/mL.

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# THC in the Blood
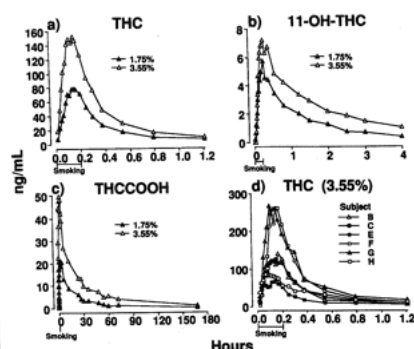


Figure 1. Plasma levels of (a) mean THC, (b) mean 11-OH-THC, (c) mean THCCOOH, and (d) individual THC levels for six subjects during and after smoking a single marijuana cigarette (1.75 or 3.55% THC). The paced smoking protocol consisted of eight evenly spaced inhalations (2-second puff and 10-second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

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# 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, while alcohol impaired cognitive functions. Thus the compensatory ability of marijuana users is impaired by even small amounts of alcohol.

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# The *National Drug Control Strategy*

- *Goal: By 2015, reduce* drugged driving in the United States 10%.
- Aim: Make preventing drugged driving a national priority on par with preventing drunk driving.
- The Strategy calls for:
  - Encouraging states to adopt *Per Se* drug impairment laws;
  - Collecting further data on drugged driving;
  - Enhancing prevention of drugged driving by education communities and professionals;
  - Providing increased training to law enforcement on identifying drugged drivers; and
  - Developing standard screening methodologies for drug-testing labs to use in detecting the presence of drugs.

Drugged Driving | The White House. Retrieved February 22, 2012, from          31
http://www.whitehouse.gov/ondcp/drugged-driving

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# Recommendations for Driving

- *per se* limit set at 7-10 ng/mL.
- Advise users to wait 3 hours before driving.
- Drivers should not mix even low amounts of alcohol with cannabis.
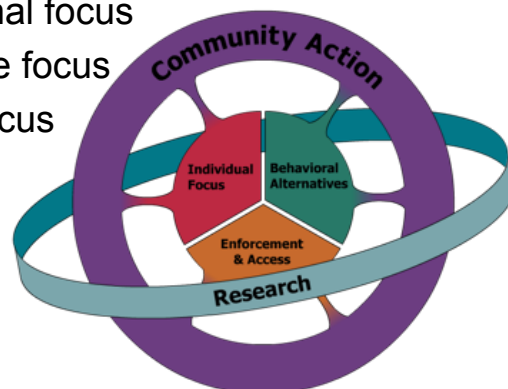
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# Academic Performance

- Hunt et al. (2010) found marijuana use disorder lessened the chance of college degree.
- Brill (1982) found no relationship between marijuana use and poor academic or other social adaptation.

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# Prevention Strategies

- Comprehensive Strategy:
  – Motivational focus
  – Alternative focus
  – Access focus

Community Action

Individual Focus

Behavioral Alternatives

Enforcement & Access

Research

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# Motivational Focus

- Computer delivered interventions.
- Motivational Interviewing.
- Educational approaches.
- Social norm misperception correction.
- Screening and Brief Intervention and Referral to Treatment.
- Need to agree upon use outcomes expected: Abstinence vs. "moderate use."

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# Alternative Focus

- Generalized effects from large scale events is plausible, but not tested.

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# Access Focused

- Most difficult to control in shifting environment.
- Advertising restrictions.
- Community Action:
  - Examples are forming such as www.butwhataboutthechildren.org
  - Conditional Use Permits around campus.
  - Enhanced DUID enforcement efforts.

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# Questions

- Proposition 19 failed, are we done with legalization talk for now?
  - ☐ Yep, we dodged that bullet
  - ☑ Nope it may be coming back this fall
- Should lung health be our primary marijuana concern?
  - ☐ Sure, smoking anything has got to be bad
  - ☐ Who knows, the research is too murky
  - ☑ Nope, marijuana poses much more serious risks than lung problems.

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# Questions

- According to credible recent research, marijuana actually _____ crash risk.
  - ☑ Increases
  - ☐ Has no effect on
  - ☐ Decreases
  - ☐ None of the above, there is no credible research
- With such easy access to marijuana, we don't have to worry about synthetic marijuana.
  - ☐ True
  - ☑ False

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# Network Plug



**Complete the Network Campus Member Institution Survey**

www.surveyscience.org/surveys

**Get a FREE PASS to the online Webinar:**

*What Are They Smoking?*

class.iprevention.com/wats

Contact Jim Lange (stc@thenetworkca.org) for details

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