Marijuana: 
What’s the Risk?
Goals for Today

- Describe trends in use of marijuana at UofSC
- Describe the consequences of marijuana use for college students.
- Identify and discuss the impact of changing marijuana laws.
- Have a thought-provoking discussion of the current science related to marijuana.

““The good thing about science is that it’s true whether or not you believe in it.””

Disclaimer: we will reference the science and be honest when we don’t know or when the science isn’t clear.
Disclaimer: we will use the terms cannabis, marijuana, weed, interchangeably.
TRENDS IN USE
Aimee

Overall, good news!

University of Mississippi has had contract with NIDA for many years for the Potency Monitoring Program to analyze potency of cannabis products confiscated in the US. Number of samples tested across years range from 2283-4791. Taking out low or high outliers did not change trends.

Notes:
1) range across samples is often as large as the average.
2) Much of the increase over time is due to non-domestic samples, not domestic samples.
3) Limitations in variability in the age of samples.
4) Cannabidiol (CBD) content (found to have antipsychotic and antianxiolytic properties) is decreasing relative to THC content.
Marijuana refers to most prevalent cannabis product where buds or flowering tops have seeds.
Sinsidemma refers to flowering tops of unfertilized female plants.
EMILY

1990: 4%

Today: 20%

Concentrates: 90%

In 1990, 4-5 joints = 1 joint TODAY

*Source: EISohly MA. Potency Monitoring Project Quarterly Report #123. U of Mississippi, 2014*
What are Concentrates?

- Kief
- Earwax/Wax
- BHO: Butane Honey /Hash Oil
- Shatter
Dabbing allows the user to ingest a high concentration of Tetrahydrocannabinol (THC), the psychoactive ingredient in marijuana. Butane Hash Oil (BHO), an oil or wax-like substance extracted from the marijuana plant, is placed on a “nail” attached to a specialized glass bong called a “rig.” A blow torch is used to heat the wax, which produces a vapor that can then be inhaled. This ingestion method means the effects of dabbing can be felt instantaneously.

A practice related to dabbing includes placing hash oil in vaping devices, which look like e-cigarettes and don’t emit any smoke. This decreases opportunities to get caught using hash oil, and gives individuals the opportunity to get high in increasingly public places.
Cognitive & Mental Health Risks
Marijuana impacts the hippocampus, which controls most cognition related to attention, concentration, and memory. Long term impairment of memory, attention, decision-making, executive function with chronic use. THC suppresses activity of hippocampal neurons below the level needed to trigger memory formation. These are abilities that are important for students who are trying to learn and study!

Pope & Yurgelun-Todd, 1996; Pope, et al., 2001; Hanson et al. 2010
Pope & Yurgelun-Todd, 1996; Pope, et al., 2001; Hanson et al. 2010
Aimee

Stop out = take at least one semester off from college.

http://college.usatoday.com/2013/06/06/study-marijuana-usage-increases-risk-of-academic-problems/

frequent or heavy marijuana use in adolescence is associated with the development of anxiety disorder in young adulthood. Frequent use in teenagers predicts depression, as well as anxiety disorder, later in life, with daily users carrying the highest risk.

Several of these studies followed individuals from childhood (ages 6 or younger), before marijuana use began, all the way into their late 20's. So, they were able to determine whether symptoms of mental illness were present BEFORE marijuana use initiation, and perhaps contributed to individuals becoming marijuana users.

Even after controlling for the confounding effect of mental illness symptoms preceding marijuana use, these studies showed an increased risk of developing schizophrenia or mood disorders (depression, anxiety) in adulthood if individuals regularly smoked marijuana during adolescence. The risk was particularly heightened if there was any family history of mental illness (i.e., “genetics provided the loaded gun and marijuana pulled the trigger”). Also, mental illness, among those at risk, tended to show up earlier with marijuana use.

http://learnaboutmarijuanawa.org/factsheets/mentalhealth.htm
http://doi.org/10.3389/fpsyt.2013.00125
Two large European studies found that drivers with THC in their blood were roughly twice as likely to be culpable for a fatal accident than drivers who had not used drugs or alcohol. However, the role played by marijuana in accidents is often unclear, because it can remain detectable in body fluids for days or even weeks after intoxication and because users frequently combine it with alcohol. Accident-involved drivers with THC in their blood, particularly higher levels, are three to seven times more likely to be responsible for the accident than drivers who had not used drugs or alcohol. The risk associated with marijuana in combination with alcohol appears to be greater than that for either drug by itself. Several meta-analyses of multiple studies found that the risk of being involved in an accident significantly increased after marijuana use—in a few cases, the risk doubled or more than doubled. However, a large case-control study conducted by the National Highway Traffic Safety Administration (NHTSA) found no significant increased crash risk attributable to cannabis after controlling for drivers’ age, gender, race, and presence of alcohol.”

Three groups of studies have examined the relationship between marijuana use and driving performance: (1) laboratory studies, which investigate the effects of marijuana on skills used in driving; (2) driving simulator studies, which test the effects of marijuana use on driving car simulators designed to replicate actual driving conditions; and (3) field studies, which explore the degree to which marijuana use is responsible for motor vehicle accidents.
in the real world.

Possible entry points for conversation with students

Walter, Kilmer, Logan, & Lee (2012)
Lee, Kilmer, Neighbors, Walters, Garberson, & Logan (in prep)

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<tr>
<th>Top 10 Endorsed Marijuana Consequences: Study 1</th>
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<tr>
<td>1. Eating (e.g., eating too much)</td>
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<td>2. Sleep problems</td>
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<td>3. Productivity, apathy, motivation issues, or boredom</td>
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<td>4. Cognitive abilities, attention, or concentration problems</td>
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<td>5. Memory problems</td>
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<td>6. Problems with lungs or coughing</td>
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<td>7. Feeling antisocial or experiencing social awkwardness</td>
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<td>8. Physical difficulties outside of lungs, cough, mouth, or throat (e.g., feeling dizzy, sick, uncoordinated, etc.)</td>
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<td>9. Not getting things done</td>
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<td>10. Spending too much money</td>
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Notes: Preliminary analyses suggested that among the top ten types of consequences generated by participants, only two (not getting things done and financial impact) were reflected in items from the RMPI, and these two were the ninth and tenth most mentioned consequences.
IMPACT OF LEGAL CHANGES
Timeline of State Marijuana Legalization Laws

- California
- Alaska
- Oregon
- Washington
- Colorado
- Hawaii
- Nevada
- Montana
- Vermont
- Rhode Island
- New Mexico
- Arizona
- New Jersey
- Washington, DC
- Illinois
- New Hampshire
- Connecticut
- Massachusetts
- Colorado
- Washington
- Maryland
- Minnesota
- New York
- Alaska
- Oregon
- Washington, DC
- Arkansas
- Florida
- North Dakota
- Ohio
- Pennsylvania
- California
- Maine
- Massachusetts
- Nevada

Recreational (8 states & DC)  Medical (28 states & DC)

Conditions reported least by users: HIV/AIDS, cancer, wasting syndrome, glaucoma

http://learnaboutmarijuanawa.org/factsheets/medicinalcannabis.htm


http://public.health.oregon.gov/DiseasesConditions/ChronicDisease/MedicalMarijuanaProgram/Pages/data.aspx
Marijuana-related traffic deaths increased 48 percent in the three year average (2013-2015) since Colorado legalized recreational marijuana compared to the three-year average (2010-2012) prior to legalization.
Youth past month marijuana use increased 20 percent in the two year average (2013/2014) since Colorado legalized recreational marijuana compared to the two-year average prior to legalization (2011/2012)
Increased arrests for marijuana possession by Black (+58%) and Hispanic (+29%) youth while arrests of white youth for marijuana possession decreased by 8%.
Emergency Department rates likely related to marijuana increased 49 percent in the two-year average (2013-2014) since Colorado legalized recreational marijuana compared to the two-year average prior to legalization (2011-2012).

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4762755/

Recreational Legalization: Impact in Washington

- Washington now has more marijuana businesses than McDonalds or Starbucks.
- 22% of traffic fatalities in 2014 involved a driver with THC, a 100% increase the year recreational marijuana sales began.
- Poison Center Control calls increased 68%.
- Past month use of marijuana by adults and teens has increased faster than the national average.


2012 Healthy Youth Survey
https://www.aaafoundation.org/cannabis-use-among-drivers-suspected-driving-under-influence-or-involved-collisions-analysis
Key Resources

Higher Education Center Cannabis Learning Collaborative: hecaod.osu.edu. Send email to sape@sc.edu for access.

Alcohol & Drug Abuse Institute from University of Washington: learnaboutmarijuanawa.org

Australia’s Cannabis Prevention & Information Centre: ncpic.org.au

National Institute on Drug Abuse: drugabuse.gov

Smart Approaches to Marijuana: sam.org

Key Updates: Merchant Outreach & Education

- First Bar Training: April 10th at 3pm
- Next steps:
  - Schedule additional training dates
  - Find establishments willing to host joint trainings
Key Updates: Laws & Enforcement

- Creating a presentation about state and local alcohol laws for Coalition
- Developing a comprehensive data report on:
  - Drink specials, hospitalizations, conduct cases, location of last beverage, alcohol related crimes, Alcohol Edu.
- Monitoring impact of new city ordinances on high risk behavior
- Law enforcement partner Coalition recruitment
Updates & Announcements

- SAPE
- SAVIP
- OSC
- UPD
- Any additions?
Questions & Answers

• Next Meeting: May 4th
  @ 4pm Russell #304

• Topic: Data & Statistics from Healthy Minds & Alcohol Edu