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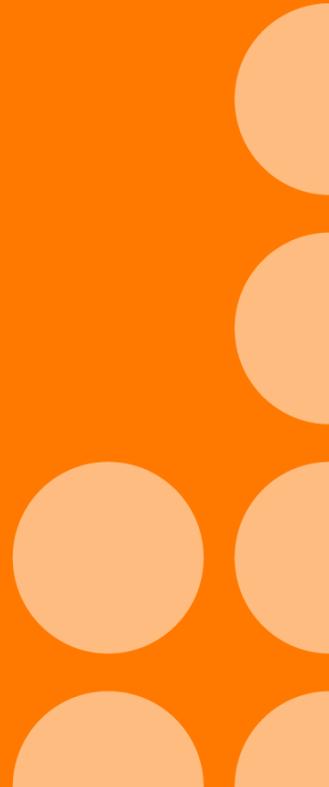
Tobacco and other substance co-use among young adults

AMY COHN, PH.D.

RESEARCH INVESTIGATOR

SCHROEDER INSTITUTE FOR TOBACCO RESEARCH AND POLICY STUDIES

ASSISTANT PROFESSOR (ADJUNCT) GEORGETOWN UNIVERSITY MEDICAL CENTER



Disclosures

Amy Cohn, PhD

**Director, Truth Tobacco Studies
Collaboratory**

The Schroeder Institute for Tobacco
Research and Policy Studies
at Truth Initiative

Assistant Professor

Department of Oncology
Georgetown University Medical Center

- I am an employee of Truth Initiative, developer of BecomeAnEx.org
- Research funded by the National Cancer Institute, National Institute on Drug Abuse, Food and Drug Administration
- No other financial relationships to disclose.

Today's objectives

- About me
- Test your knowledge (a few quizzes!)
- Provide basic information about alcohol, tobacco, and marijuana/other drug use and misuse in young people
- Discuss some hot-off-the-press data

Who am I?

- Research Investigator
- Schroeder Institute for Tobacco Research and Policies Studies at Truth Initiative
- Background in Clinical Psychology
- Specialize in alcohol, substance use, and mental health factors correlated with tobacco use
 - Young adults and college students

Why young adults?

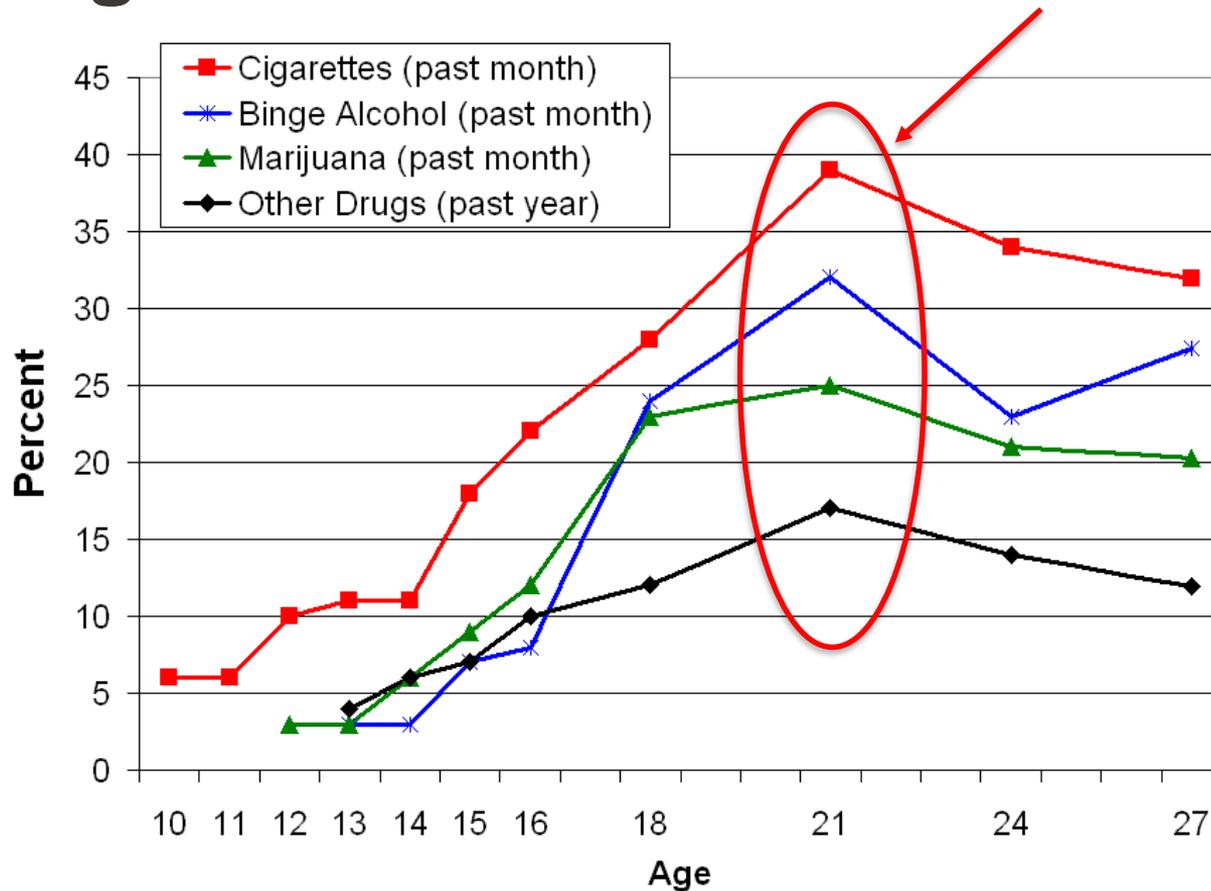
- Highest rates of alcohol, tobacco, and other drug use
- Initiation and escalation of substance use begins during this time period
- Ideal time disseminate public health messages
 - Prevent escalation to future use
 - Deter individuals from becoming problem users

National prevalence of substance use by age

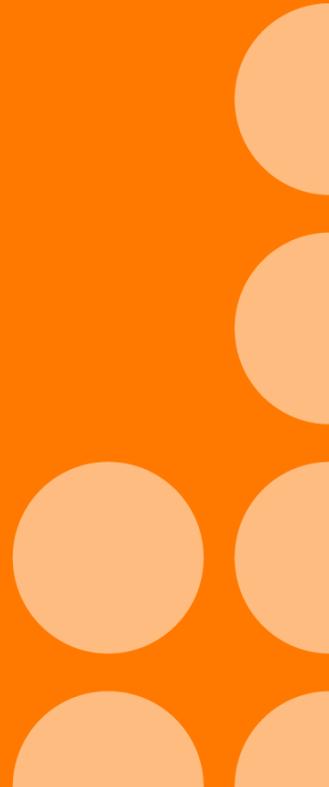
	Marijuana use (past month)	Binge drinking	Any tobacco use (past month)	Cigarette use (past month)	Cigar use (past month)	Hookah use (past month)	E-cigarette use (past month)
12-17	7.0%	5.8%	6.0%	4.2%	2.1%	1.7%	3.1%
18-25	19.8%	39.0%	33.0%	26.7%	8.9%	10.7%	12.5%
26+	6.5%	24.8%	24.5%	20.0%	4.3%	0.9%	5.8%

SOURCES: Marijuana, binge drinking, any tobacco, cigarette, cigar use. Results from the 2015 National Survey on Drug Use and Health: Detailed Tables. <https://www.samhsa.gov/data/sites/default/files/NSDUH-DetTabs-2015/NSDUH-DetTabs-2015/NSDUH-DetTabs-2015.pdf> The health effects of cannabis and cannabinoids. Released January 2017. Kasza KA, Ambrose BK, Conway KP, et al. Tobacco-Product Use by Adults and Youths in the United States in 2013 and 2014. *N Engl J Med.* 2017;376(4):342-353.

Peak age of substance use



Alcohol use and drinking



Quiz time???

What is a standard drink?

- Wine?
 - **4-5 oz**
- Beer?
 - 12 oz
- Liquor?
 - 1.5 oz



Standard drink (SD) conversion



Glass of wine (SD) conversion



Party cup (SD) conversion



Percentage of U.S. adults 18+ with past-year alcohol abuse or dependence

Age group	Past-year disorder		Any treatment	Type of treatment		
	Abuse	Dependence		12-Step only	Other only	12-Step and Other
All ages	4.7	3.8	7.1	1.1	2.7	3.4
Young Adult (18-29)	7.0	9.2	5.9	1.3	2.3	2.3
18-24	6.7	11.6	6.4	1.4	2.8	2.2
25-29	7.3	5.7	4.9	1.0	1.2	2.7
Midlife (30-59)	5.0	3.0	8.5	0.8	3.1	4.5
30-44	6.0	3.8	8.9	0.7	3.2	5.0
45-59	3.9	2.0	7.5	1.0	3.0	3.5
Senior (60+)	1.4	0.5	3.4	1.9	0.8	0.6

You will see these untreated individuals in your practice

Quiz time???

What is the definition of **binge drinking**?

- a. 5 drinks per episode for men/4 drinks for women
- b. 2 drinks a week for men, 1 drink a week for women
- c. Drinking a lot in one night or until you black out
- d. None of the above

Quiz time???

What is the definition of binge drinking?

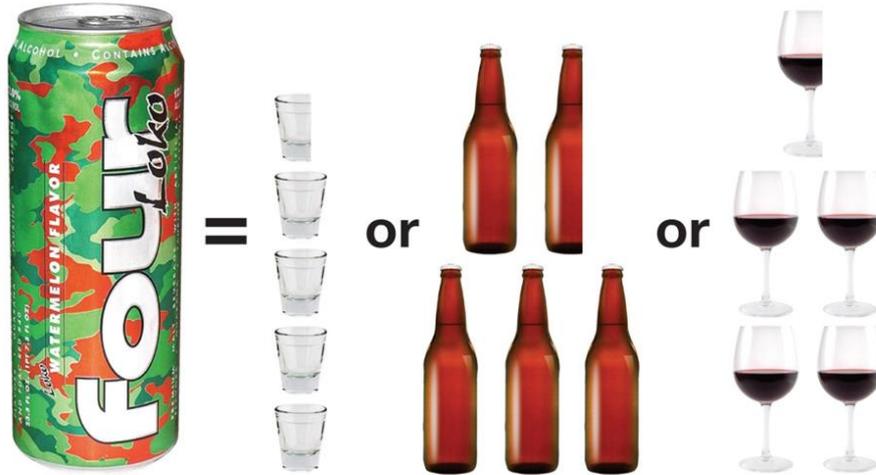
a. 5 drinks per episode for men/4 drinks for women

Why do we care about binge drinking?

- Binge drinking increases risk of tobacco use
- Binge drinking is very common

AlcoPops (“wine cooler”)

Just how much **FUEL** is there
in one can of Four Loko?



One 23.5oz can of Four Loko at 12 percent alcohol by volume contains the same amount of alcohol as 4.7 shots of 80 proof vodka, 4.7 bottles of beer or 4.7 glasses of red wine.

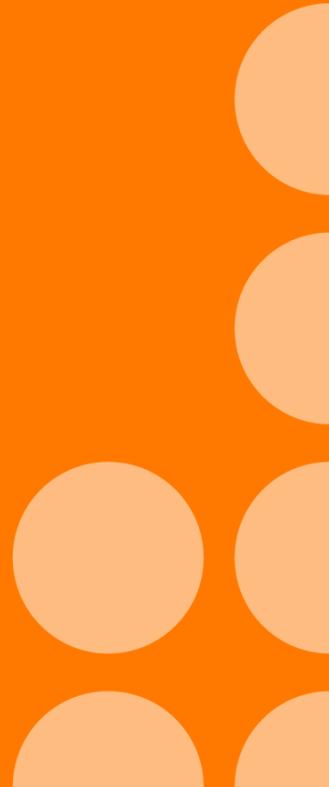
How “easy” it is to binge drink....

AlcoPops



Can you see the warning label?

Young people's “myths” about drinking



Myth 1

“Drinking coffee or other caffeinated beverages helps you sober up.”

Answer 1

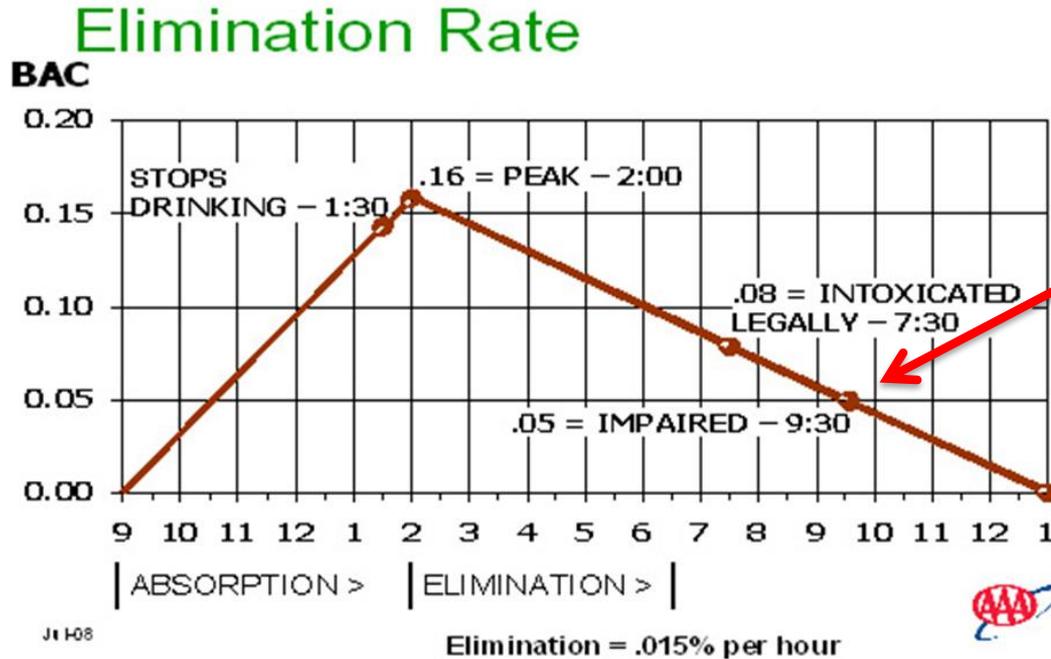
- Only time will remove alcohol from the system
- It takes the body approximately 1 hour to eliminate the alcohol in one standard drink
- “Give a drunk a cup of coffee and all you have is a wide-awake drunk.”

Answer 1

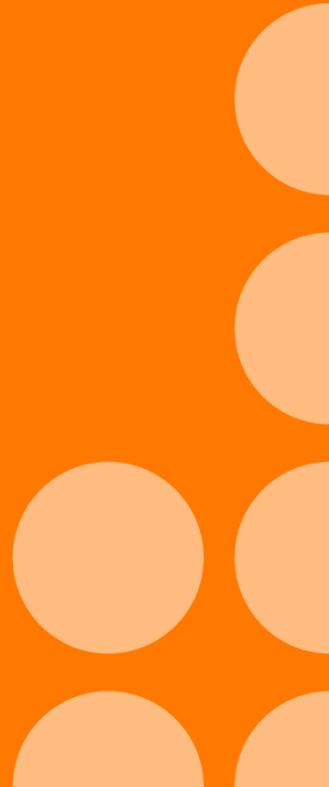
- The more quickly you drink, the more quickly you reach your peak BAC.
 - Peak BAC typically reached in 60-90 minutes (sex/gender, age, weight, etc)
- The liver eliminates alcohol at the average rate of one drink per hour.
- If a person drinks faster than this, the remainder will circulate in the blood stream until the liver can get rid of it (hence alcohol toxicity).

Peak BAC

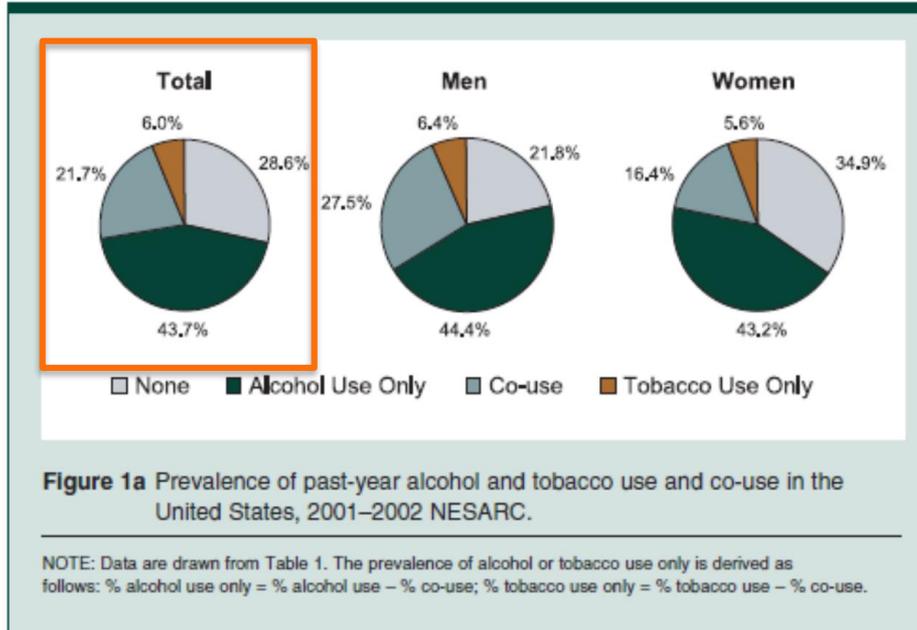
Example: Drinking starts at 9pm, stops at 1:30am, 2 drinks/hour. The BAC continues to rise for 30 minutes after drinking discontinues. There is an average elimination rate of 0.015% per hour. The drinker is still impaired at 9:30a.m.!



Tobacco co-use with other substances



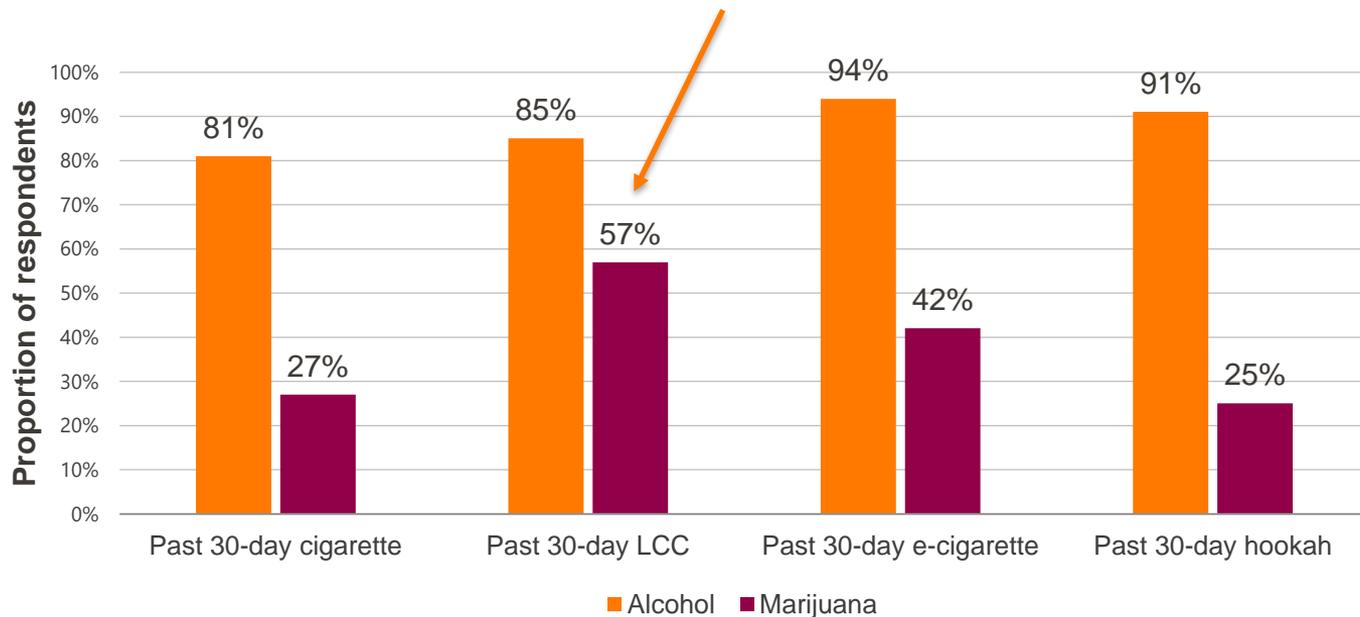
Tobacco co-use with other substances



Tobacco use alone is much less popular than alcohol and tobacco use!

Tobacco co-use with other substances

PREVALENCE OF ALCOHOL AND MARIJUANA USE BY PAST 30-DAY TOBACCO PRODUCT USE IN YOUNG ADULTS AGED 18-24.



SOURCE: Cohn AM, Villanti AC, Richardson A, Rath JM, Williams V, Stanton C, & Mermelstein R (2015). The association between alcohol, marijuana use, and new and emerging tobacco products in a young adult population. *Addictive Behaviors*, 48: 79-88.

Tobacco co-use with other substances

MULTINOMIAL LOGISTIC REGRESSION MODELS OF CORRELATES OF PAST 30-DAY USE OF EMERGING TOBACCO PRODUCTS IN YOUNG ADULTS AGED 18-24.

	Model 1	Model 2	Model 3	Model 4
	Past 30-day cigarette use	Past 30-day LCC use	Past 30-day e-cigarette use	Past 30-day hookah use
	<u>AOR</u>	<u>AOR</u>	<u>AOR</u>	<u>AOR</u>
Alcohol use (every day/some days)	4.49**	6.66**	9.03*	9.97*
Marijuana use (every day/some days)	2.31*	8.06**	3.53*	1.93

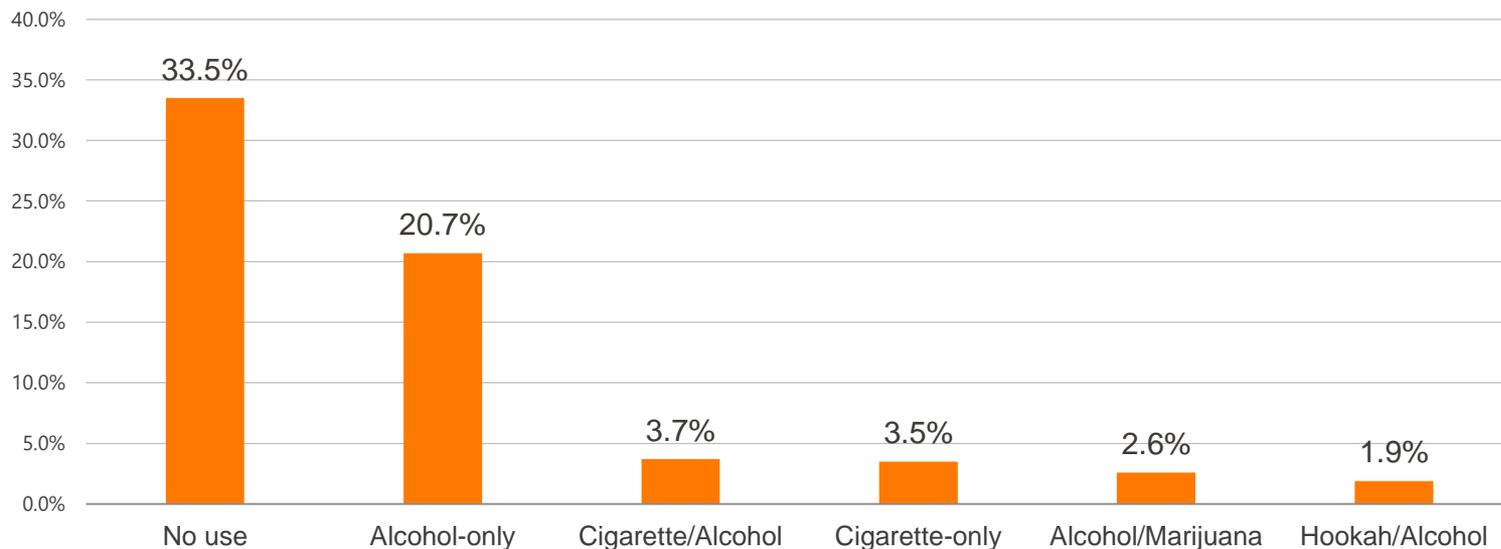
Note. Models control for age, gender, race/ethnicity, and education

Alcohol and marijuana use are differentially associated with a variety of tobacco products

Cohn AM, Johnson A, Ehlke SJ, Villanti AC (2016). Characterizing mental health and subprofiles of users of cigars, blunts, and marijuana from the National Survey of Drug Use and Health. *Drug and Alcohol Dependence*, 160, 105-111.

Tobacco co-use with other substances

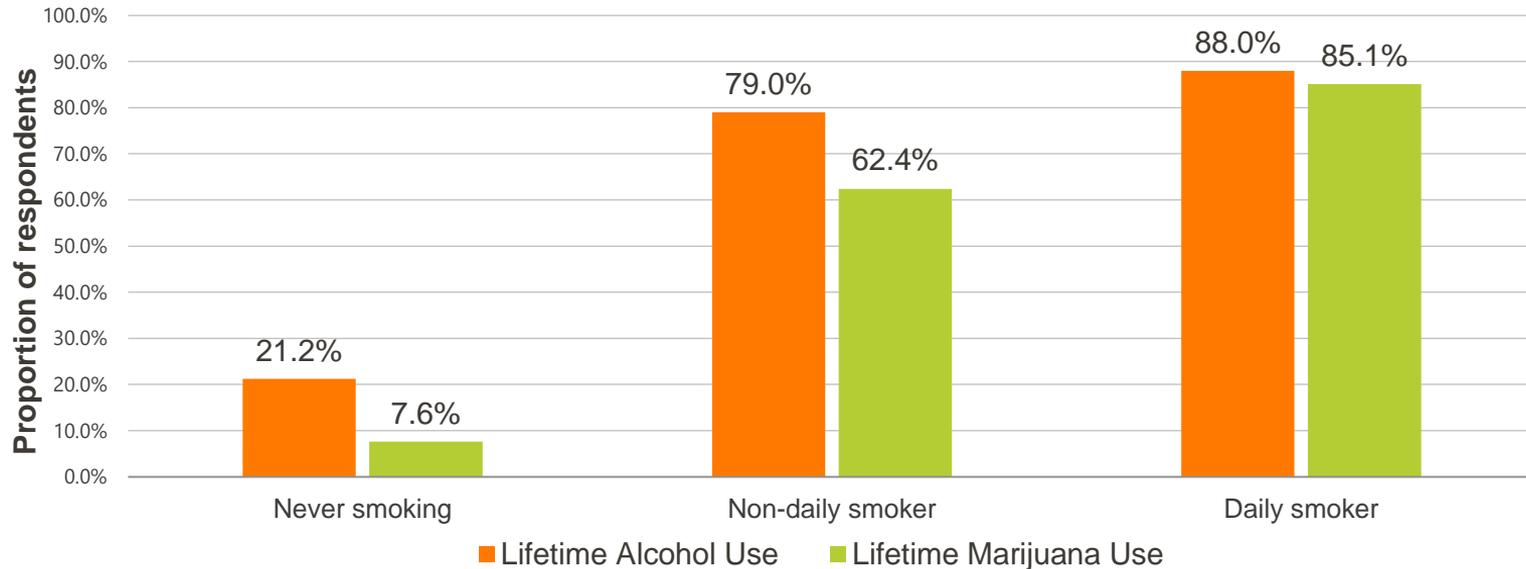
WEIGHTED PREVALENCE OF PATTERNS OF ALCOHOL, MARIJUANA, AND TOBACCO PRODUCT USE AND CO-USE AMONG YOUNG ADULTS AGED 18-24.



SOURCE: Population Assessment of Tobacco and Health Study, Wave 1

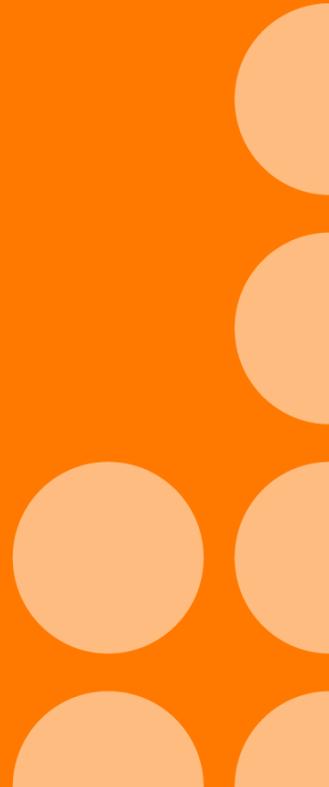
Tobacco co-use with other substances

PREVALENCE OF ALCOHOL AND MARIJUANA USE AMONG YOUTH (AGED 12-17) WHO ARE NEVER, NON-DAILY, AND DAILY CIGARETTE SMOKERS, 2013-2015.



SOURCE: National Survey of Drug Use and Health

Marijuana and tobacco co-use



Marijuana and tobacco co-use

Marijuana and cigar co-use becoming increasingly prevalent

- 26% of marijuana users currently use cigars; 42% use blunts
- Correlates of marijuana and cigar co-use:
 - Male
 - African-American
 - Aged 18-35
 - Cigarette, alcohol, illicit drug use

More than half of US states have legalized, decriminalized, or medicalized marijuana

- 45% increase in past 30-day marijuana use 2007 - 2014



SOURCES: Schauer, G.L., Berg, C.J., Kegler, M.C., Donovan, D.M., Windle, M., 2015b. Differences in Tobacco Product Use Among Past Month Adult Marijuana Users and Nonusers: Findings From the 2003–2012 National Survey on Drug Use and Health. *Nicotine & Tobacco Research*, ntv093. The health effects of cannabis and cannabinoids. Released January 2017

Marijuana and tobacco co-use

Cigar use has more than doubled in past 10 years

- Coupled with declines in cigarette use
- Could be explained by lower cost and inclusion of flavors in cigars relative to cigarettes

Some important public health questions:

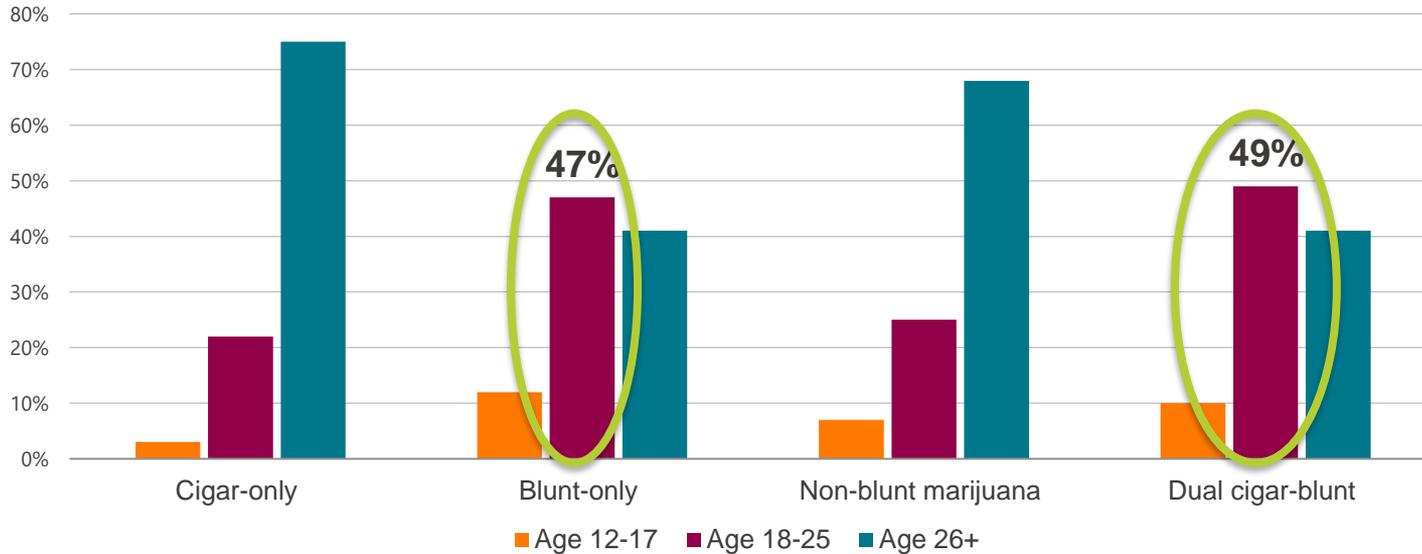
- What are correlates and consequences of marijuana and cigar use?
- Is marijuana use driving increased cigar use?



SOURCES: Delnevo, C. D., Giovenco, D. P., Ambrose, B. K., Corey, C. G., & Conway, K. P. (2014). Preference for flavoured cigar brands among youth, young adults and adults in the USA. *Tobacco Control*. doi: 10.1136/tobaccocontrol-2013-051408

Marijuana and tobacco co-use

PREVALENCE OF PAST 30-DAY CIGAR-ONLY, BLUNT-ONLY, MARIJUANA-ONLY, AND DUAL USE BY AGE, NATIONAL SURVEY OF DRUG USE AND HEALTH



SOURCE: Cohn AM, Johnson AL, Ehlke SJ & Villanti A. Characterizing substance use and mental health profiles of cigar, blunt, and non-blunt marijuana users from the National Survey of Drug Use and Health. *Drug and Alcohol Dependence*. 2016; 160(1): 105-111.

Marijuana and tobacco co-use

ADJUSTED ODDS RATIOS OF SUBSTANCE USE AND MENTAL HEALTH CORRELATES OF CIGAR, BLUNT, MARIJUANA, AND DUAL USE (ADJUSTING FOR DEMOGRAPHICS).

Past 30-day use	Cigar-only	Blunt-only	Non-blunt marijuana	Dual cigar-blunt
Tobacco use	3.55 _a **	3.58 _a **	2.64 _b **	5.85 _c **
Alcohol use	2.86 _a **	5.51 _b **	2.61 _a **	11.77 _c **
Drug use	1.49	7.67 _a **	4.15 _b **	6.59 _a **
Marijuana risk perceptions	1.29 _a **	3.75 _b **	3.33 _c **	3.38 _{b,c,v}

Lifetime depression	1.56	0.85	1.57*	1.34
Past year depression	1.20	1.13	1.49*	1.00
# marijuana use disorder symptoms	2.55 _a **	9.80 _b **	7.61 _c **	9.76 _b **
# alcohol use disorder symptoms	1.29 _a **	1.33 _a **	1.31 _a **	1.46 _b **

Note. Non-use is reference group;. AORs with different subscripts in the same row significantly differ at $p < 0.05$. ** $p < .001$

Cohn AM, Johnson A, Ehlike SJ, Villanti AC (2016). Characterizing mental health and subprofiles of users of cigars, blunts, and marijuana from the National Survey of Drug Use and Health. *Drug and Alcohol Dependence*, 160, 105-111.

Marijuana and tobacco co-use

ADJUSTED RISK RATIOS OF EVER MARIJUANA USE PREDICTING TIME-TO-FIRST PAST 30-DAY LCC USE

Reference

Ever marijuana use (baseline)

Older adult (25-34) vs. 18-24 yo

Black, non-Hispanic v. White

Other, non-Hispanic v. White

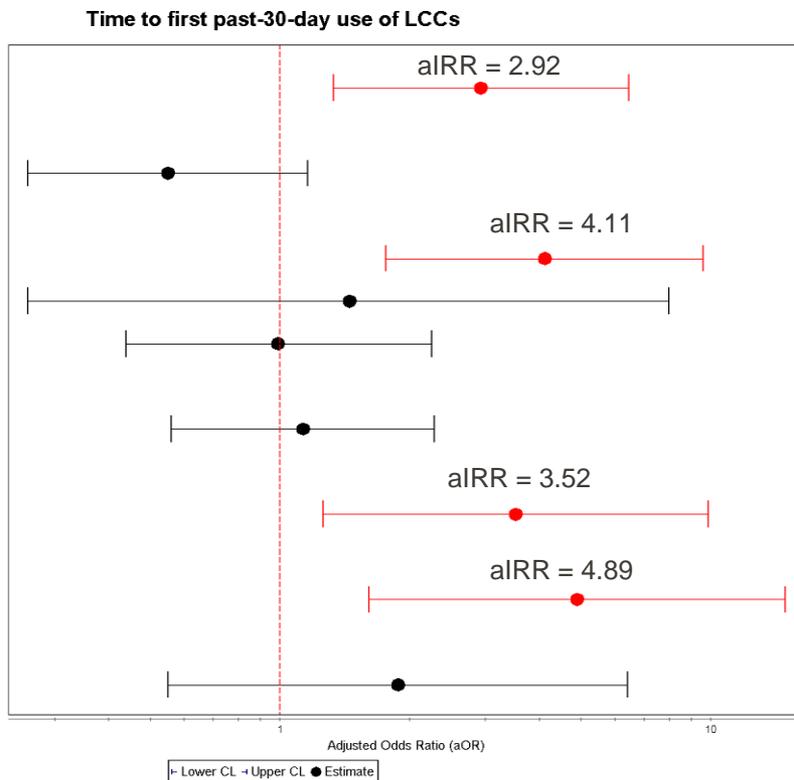
Hispanic v. White

Female v. Male

Past 30-day alcohol use

Past 30-day cigarette use

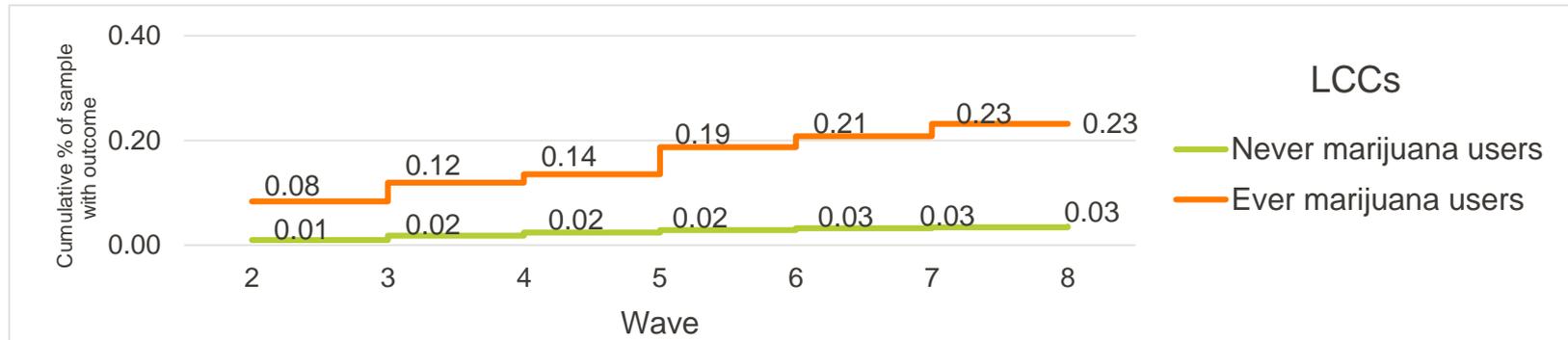
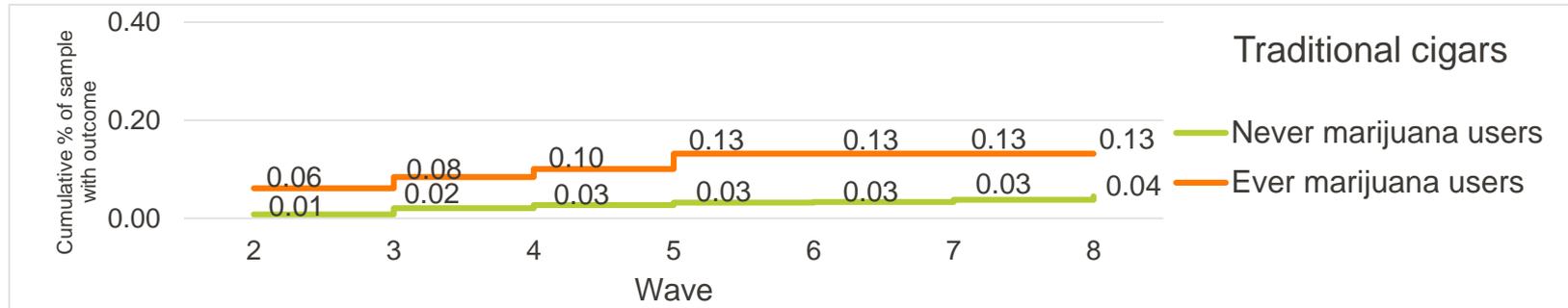
Past 30-day menthol tobacco use



Note. Models control for Wave. Data represent hazard ratios, interpreted as incident rate ratios.

Marijuana and tobacco co-use

CUMULATIVE RISK OF PAST 30-DAY CIGAR AND LITTLE CIGAR/CIGARILLO (LCC) USE BY BASELINE EVER MARIJUANA USE



Quiz time???

What is the difference between joints, blunts, and spliffs?

JOINT – only contains cannabis/marijuana



Quiz time???

BLUNT –

- Cannabis rolled in tobacco paper- all or some of the tobacco is removed
- High prevalence among young adults and African-Americans



But there is more...



Vape pen



Vaporizer



Dabbing



Tinctures

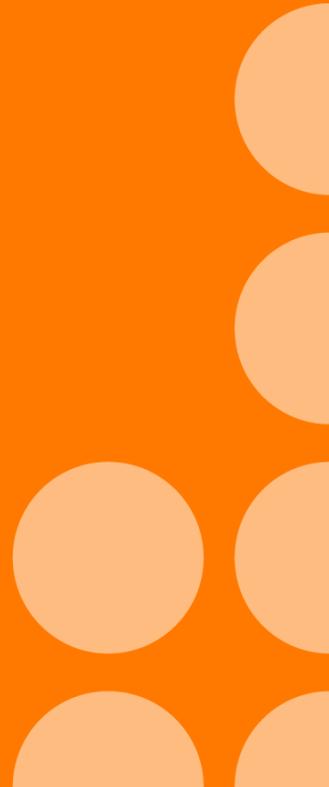


Hookah



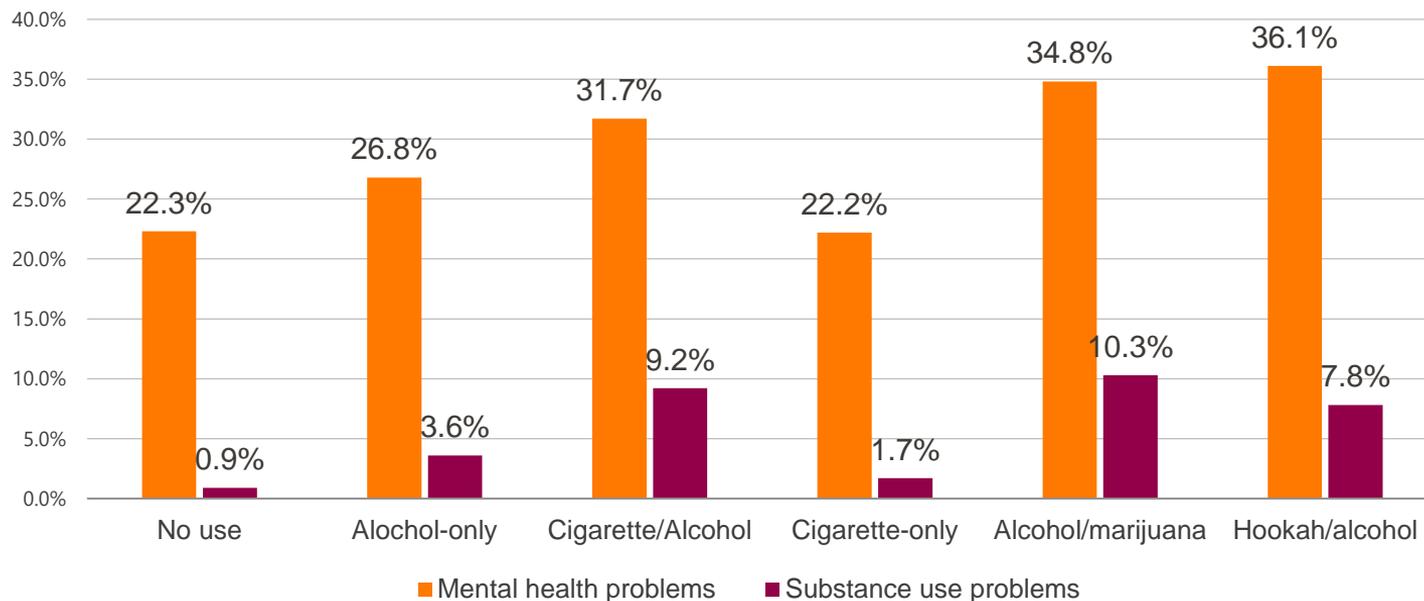
Shatter

Tobacco use, mental health, substance use problems in young adults



Tobacco use, mental health, substance use problems in young adults

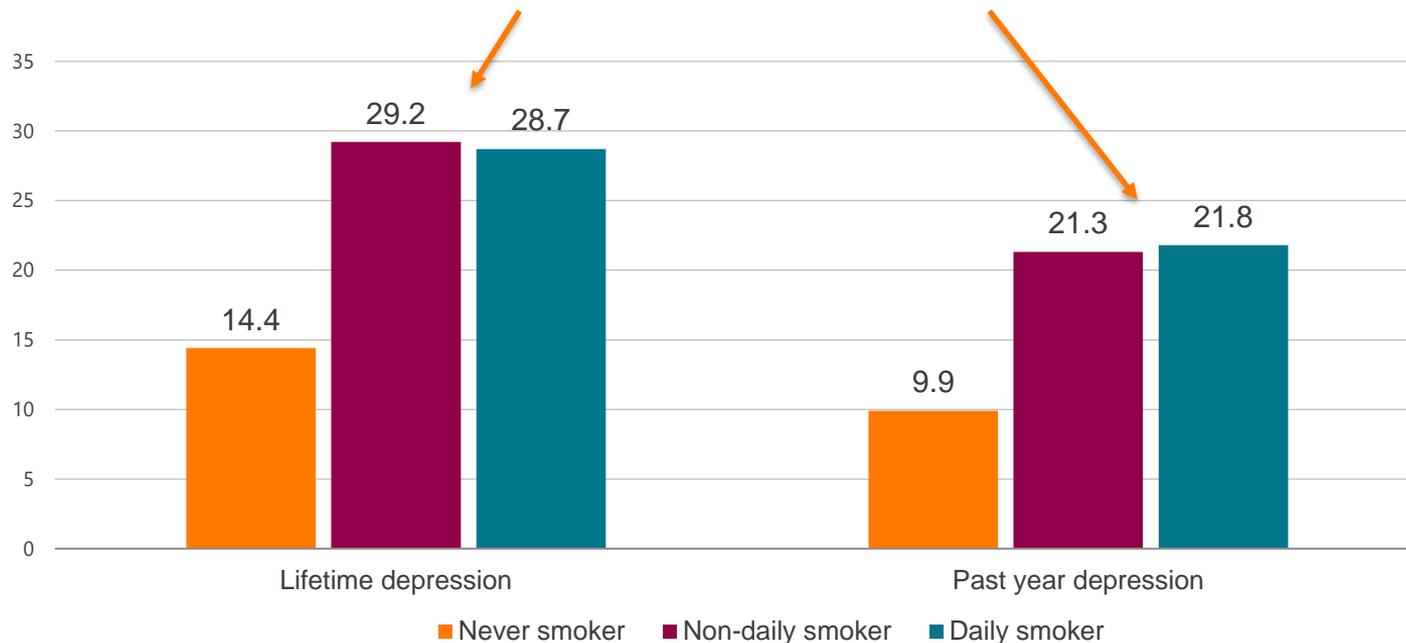
WEIGHTED PERCENTAGE OF MENTAL HEALTH AND SUBSTANCE USE PROBLEMS IN YOUNG ADULTS AGED 18-24.



SOURCE: Population Assessment of Tobacco and Health Study, Wave 1

Tobacco use, mental health, substance use problems in young adults

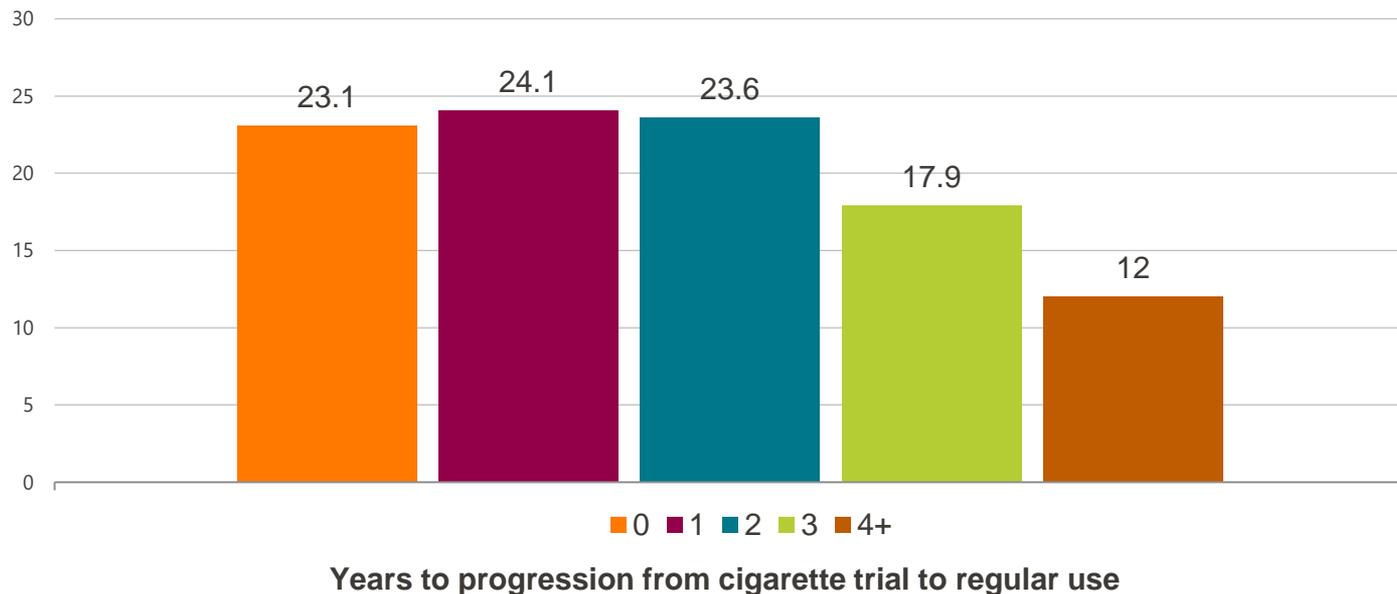
PREVALENCE OF LIFETIME AND PAST-YEAR DEPRESSION AMONG NEVER, NON-DAILY, AND DAILY SMOKING YOUTH (AGED 12-17), 2013-2015.



SOURCE: National Survey of Drug Use and Health

Tobacco use, mental health, substance use problems in young adults

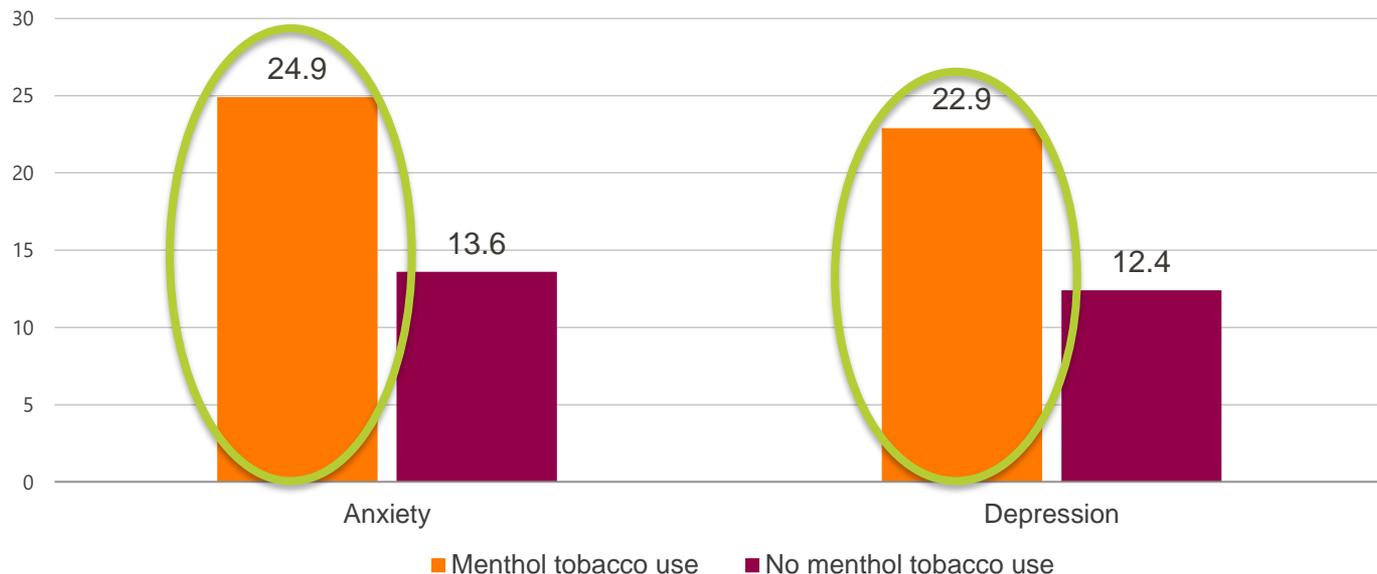
PREVALENCE OF PAST-YEAR DEPRESSION BY YEARS BETWEEN CIGARETTE TRIAL TO REGULAR SMOKING AMONG YOUTH (AGED 12-17)



SOURCE: National Survey of Drug Use and Health

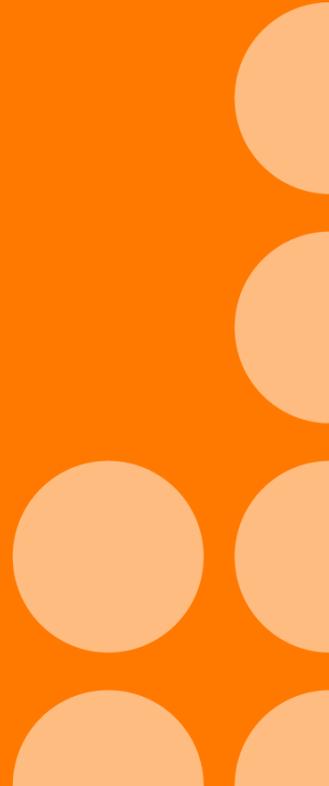
Tobacco use, mental health, substance use problems in young adults

WEIGHTED PERCENTAGE OF CURRENT ANXIETY AND DEPRESSION BY PAST 30-DAY MENTHOL TOBACCO USE IN YOUNG ADULTS AGED 18-24.



SOURCE: Truth Initiative Young Adult Cohort

Young adult's myths about tobacco use and co-use with other substances



Myth 1

“Marijuana helps me perform better on a test or a quiz.”

Answer 1

In the short-term (after ingestion) and among chronic users, marijuana can impair memory and attention, cognitive processing, fine motor-movement, and reading comprehension and recall.

Pearl, JH, Domino EF, Rennick P. (1973). Short-term effects of marijuana smoking on cognitive behavior in experienced male users. *Psychopharmacologia*, (31), 13-24.

Myth 2

“Smoking only a few cigarettes a day, or on occasion when I’m at parties, is OK.”

Answer 2

We call this “social smoking” or “occasional smoking” and it is a problem.

Compared to non-social smokers, social smoking young adults are more likely to:

- Use alcohol and marijuana
- Use cigarettes and alcohol together on the same day
- Less likely to be motivated to quit smoking

Lisha NE, DeLucchi KL, Ling PM, & Ramo DE (2015). Prevalence and correlates of social smoking in young adults: Comparisons of behavioral and self-identified definitions. *Nicotine & Tobacco Research*; doi: 10.1093/ntr/ntu242

Myth 3

“Smoking a blunt is not harmful or addictive because I remove the tobacco from the cigar.”

Answer 3

The wrapper of a blunt is made out of the tobacco leaf, and combusting it (lighting it up) is related to similar, if not worse health problems as smoking a cigarette.

Cigar wrappers contain nicotine, which is addictive.

Myth 4

“Using hookah is not bad for me because I am not “lighting” up tobacco, the shisha is vaporized with water so it’s natural.”



Answer 4

- Smoking hookah/shisha through water does not filter out the harmful cancer-causing chemicals
- In some cases, hookah users are exposed to higher levels of carcinogens than cigarettes because hookah users take longer drags and smoke for hours
- Hookah smoking contains more arsenic, tar, and carbon monoxide than cigarettes
- Not to mention, sharing saliva and germs with others using the same hookah hose

This is what we are up against



Peer pressure



Exposure



Poly-use



Cigarettes



Flavors

**Thank
you**

acohn@truthinitiative.org

