

# Reefer Sanity in the Marijuana Debate

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[www.learnaboutsam.org](http://www.learnaboutsam.org)

[www.kevinsabet.com](http://www.kevinsabet.com)

*The most thoughtful, rigorous, and accessible discussion of marijuana to date. Sabet eschews silver bullets for smart, evidence-based solutions rooted in public health.” - Dr. Robert L. DuPont founding Director, National Institute on Drug Abuse, National Institutes of Health*

# REEFER SANITY

SEVEN GREAT MYTHS  
ABOUT MARIJUANA



KEVIN A. SABET, Ph.D.

FOREWORD BY PATRICK J. KENNEDY, FORMER CONGRESSMAN

## “Reefer Sanity”: Exploding myths about marijuana

- As seen on Amazon.com and Barnes & Noble

# The false dichotomy: “Legalization OR incarceration?”

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**VS**



# What is SAM?



- **A 501(c)(3) non-profit, educational organization** funded by volunteers & private organizations
- Our mission:
  - **Educate citizens** on the science of marijuana
  - Promote **health-first, smart policies and attitudes** that decrease marijuana use and its consequences
- We envision a society where **marijuana policies align with science, and commercialization and normalization of marijuana are no more**

# SAM's board members and supporters

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- **American Society of Addiction Medicine**
- **American Academy of Pediatrics**
- **American Academy of Child and Adolescent Psychiatry**
- **Other leading public health authorities**
- **Over 30 state affiliates, including:**
  - Treatment centers
  - Recovery groups
  - Prevention organizations
  - Law enforcement
  - Leading medical authorities
  - Volunteer citizens



# Legalization = Big Marijuana

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Legalization  
measures will  
inevitably lead to  
mass  
commercialization

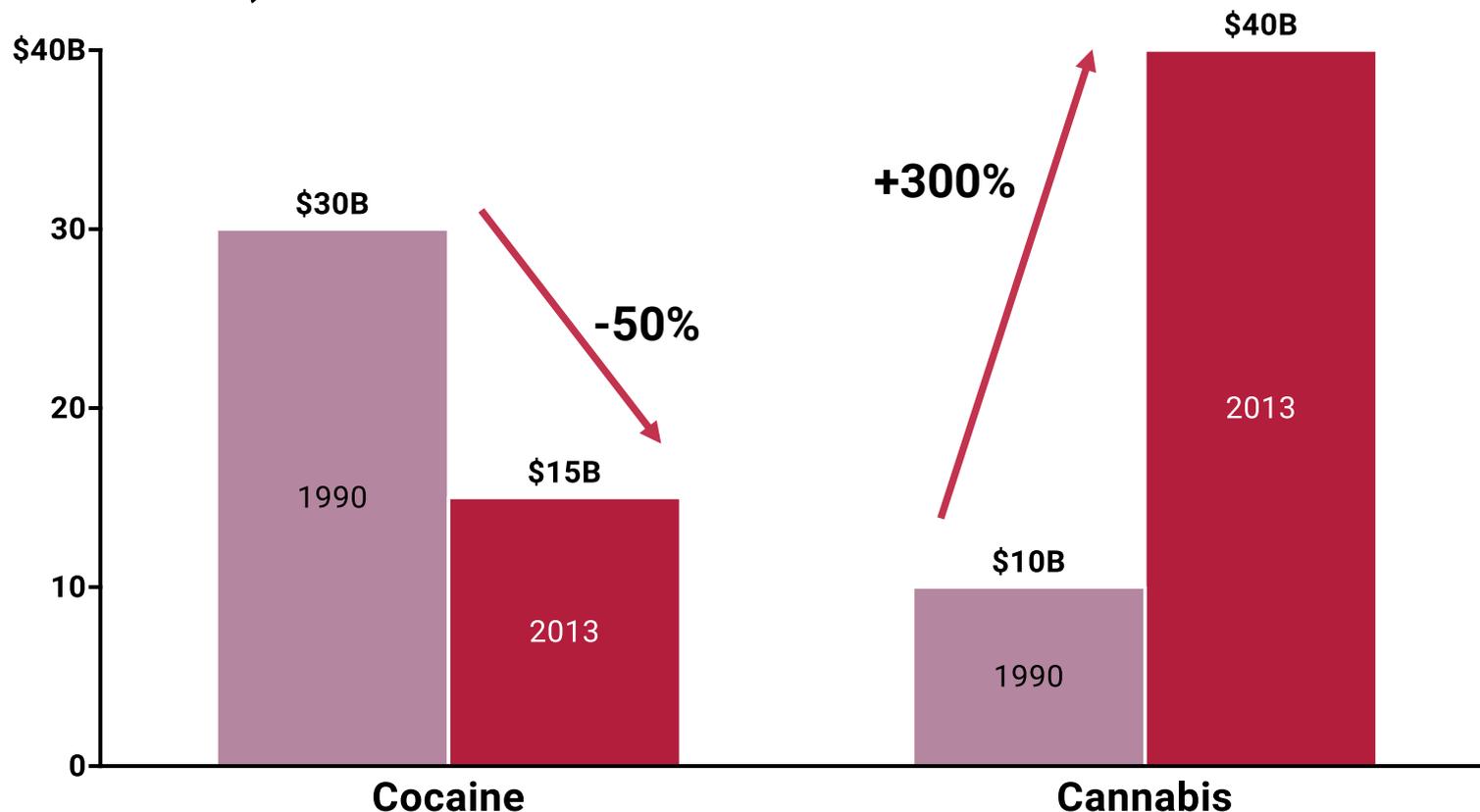
# Important truths about marijuana use today

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- Number of people who use 21+ days has **increased by a factor of 7** since 1992
- Since 2007, the use of marijuana measured by days of use **has increased 57%**
- **One arrest for every 5,800 days of use**
  - That means someone who smokes marijuana 2x week for their whole life has a **chance of being arrested once every 50 years**
- **Potency has grown 10-20 fold**
- Marijuana is now **the second leading cause of impaired driving**
- Most young people now **use marijuana more than tobacco**

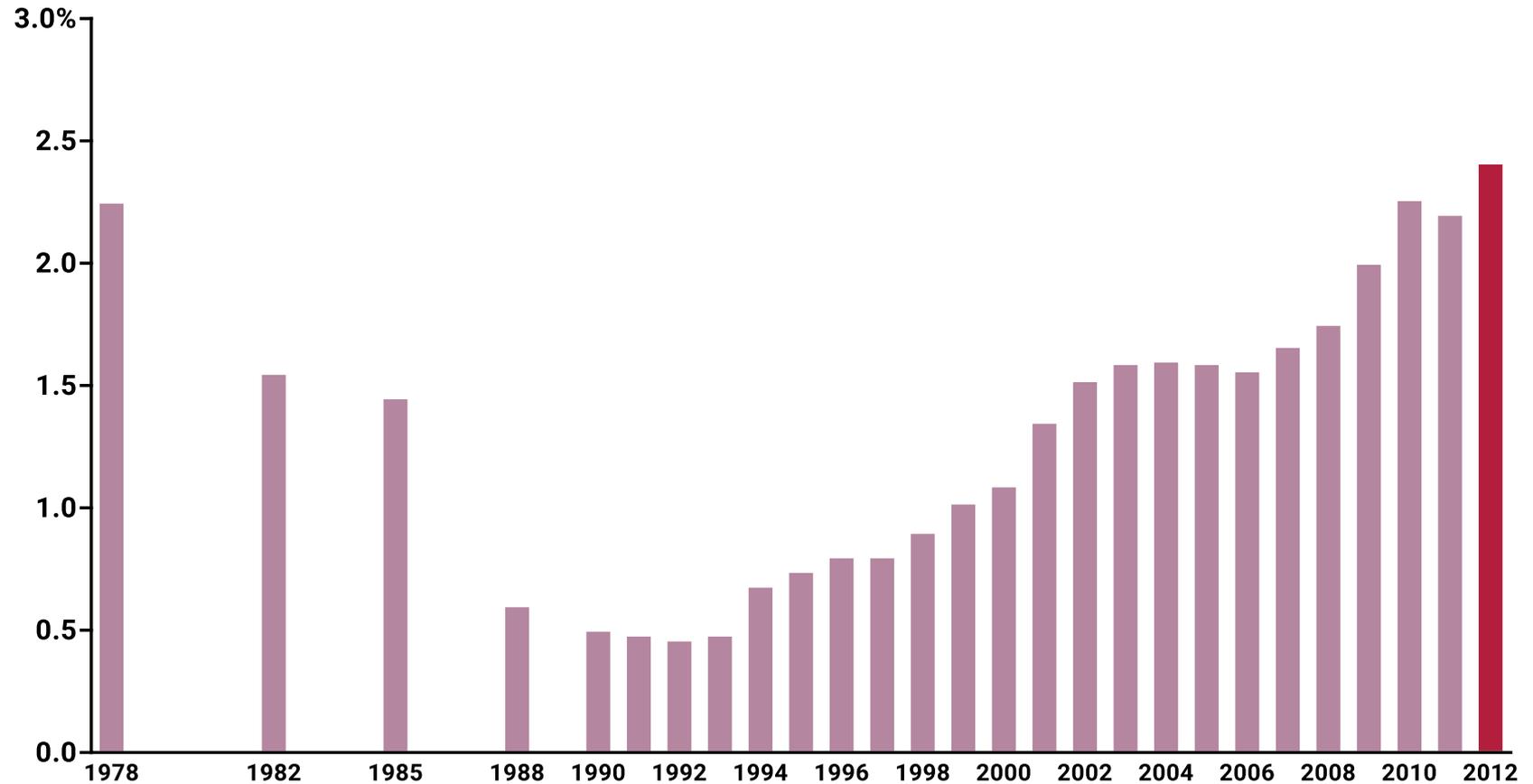
# Americans now spend more money on marijuana, and less on other drugs such as cocaine

Spending by Americans  
(in billions of dollars)

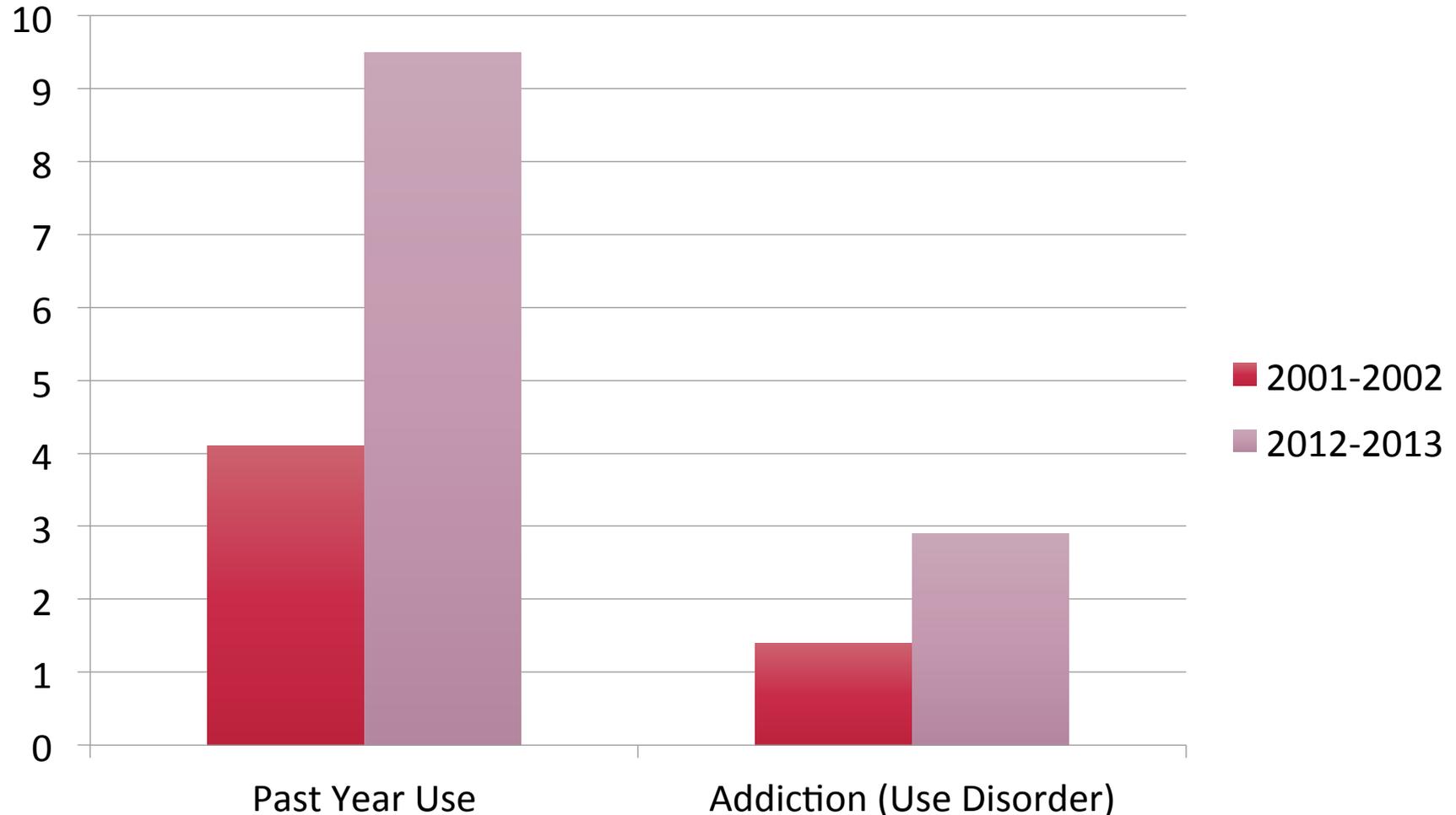


# Daily marijuana use has risen to historic highs

Percentage of people in the United State using marijuana daily



# JAMA Psychiatry journal: Marijuana use and addiction has skyrocketed since 2001



Source: JAMA Psychiatry, Oct 2015, Prevalence of Marijuana Use Disorders in the United States, Between 2001-2002 and 2012-2013, Deborah S. Hasin, PhD; Tulshi D. Saha, PhD; Bradley T. Kerridge, PhD; Ris. B. Goldstein, PhD, MPH; S. Patricia Chou, PhD; Haitao Zhang, PhD; Jeusun Jung, PhD; Roger P. Pickering, MSW; June Ruan, MA; Sharon M. Smith, PhD; Boji Huang, MD, PhD; Bridget F. Grant, PhD, PhD

**Why should we  
care about  
marijuana?**



# Seven myths about marijuana that legalizers want you to believe

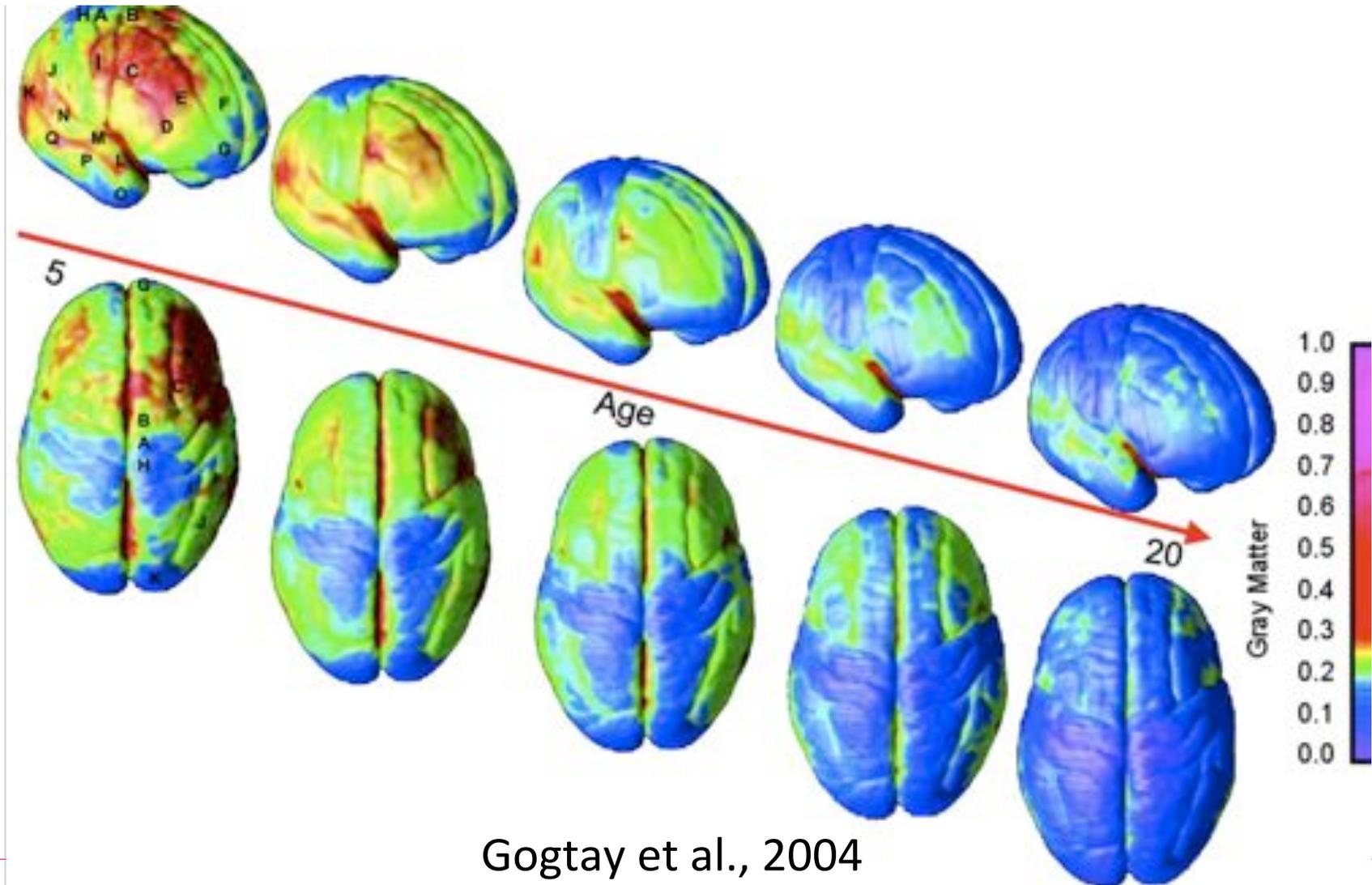
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- 1 Marijuana Is Harmless and Non-addictive
- 2 Smoked Marijuana is Medicine
- 3 Countless People Are Behind Bars for Smoking Marijuana
- 4 The Legality of Alcohol and Tobacco Strengthen the Case for Marijuana Legalization
- 5 Legal Marijuana Will Solve the Government's Budgetary Problems
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# Myth 1: Marijuana is Harmless and Non-addictive

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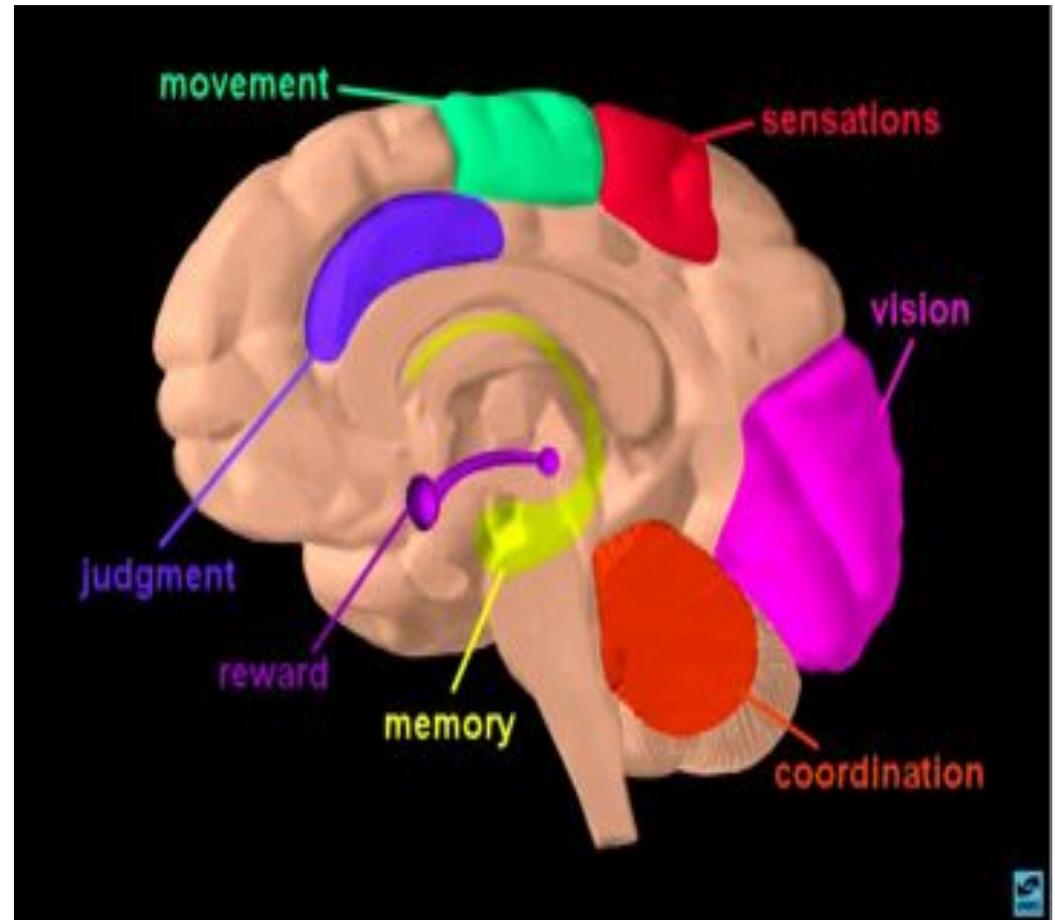
# Brain development, Ages 0-20



Gogtay et al., 2004

# Cannabinoid Receptors Are Located Throughout the Brain and Regulate a Host of Brain Activity

- Brain Development
- Memory & Cognition
- Motivational Systems & Reward
- Appetite
- Immunological Function
- Reproduction
- Movement Coordination
- Pain Regulation & Analgesia



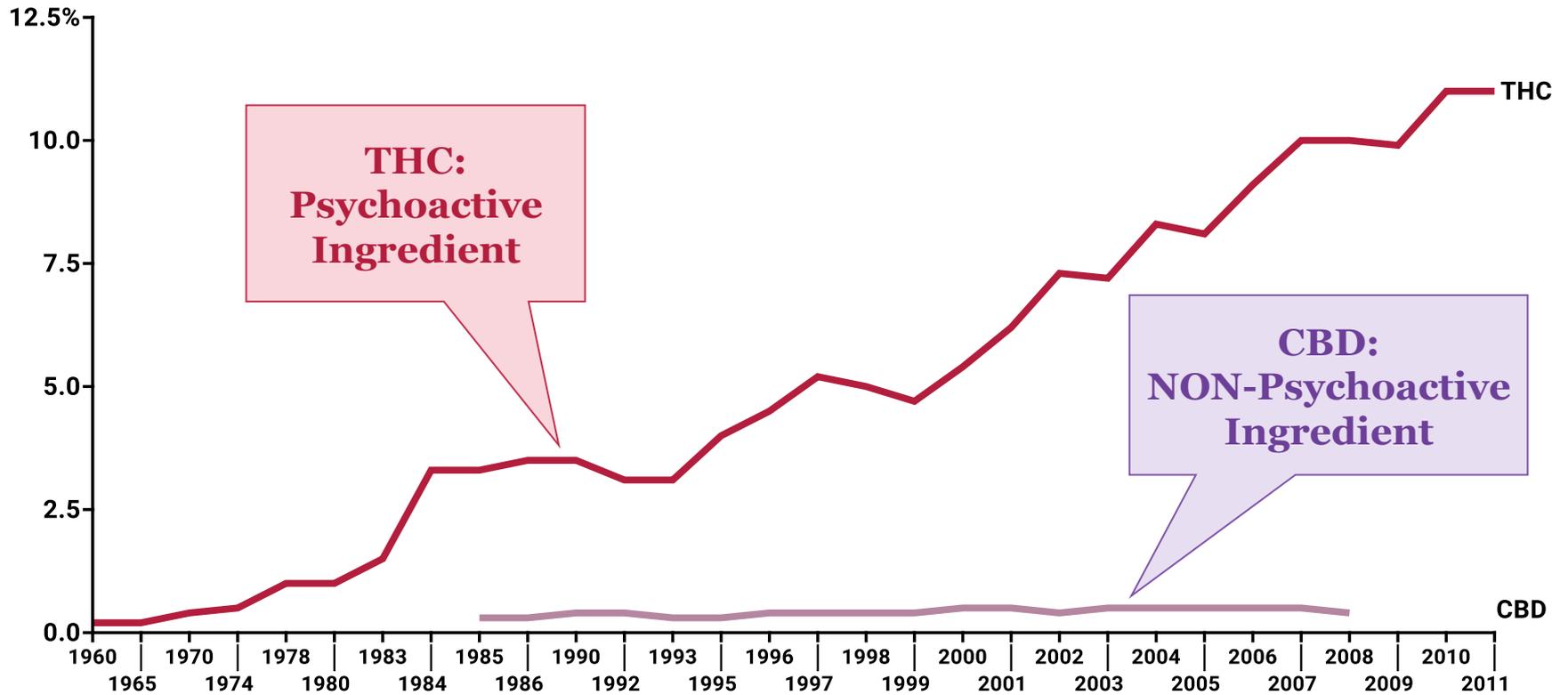
# 1 in 6 teens become addicted to marijuana



- 1 in 11 adults and 1 in 6 adolescents who try marijuana will become addicted to it
- The adolescent brain is especially susceptible to marijuana use
- When kids use, they have a greater chance of addiction since their brains are being primed

# Marijuana has become significantly more potent since the 1960s

Average THC and CBD levels in the United States



CBD							0.3	0.3	0.4	0.4	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.5	0.5	0.4	0.5	0.5	0.5	0.5	0.5	0.4				
THC	0.2	0.2	0.4	0.5	1.0	1.0	1.5	3.3	3.3	3.5	3.5	3.1	3.1	4.0	4.5	5.2	5.0	4.7	5.4	6.2	7.3	7.2	8.3	8.1	9.1	10.0	10.0	9.9	11.0	11.0

# Marijuana is not “just a plant” anymore – derivatives contain up to 98% THC



*“Green Crack”*  
wax



*“Ear Wax”*



Butane Hash Oil  
(BHO)



Hash Oil Capsules



*“Budder”*

Copyright © 2014, The Cannabis Business Network, Inc.

*“Shatter”*





## “Dabs”: the new frontier of marijuana

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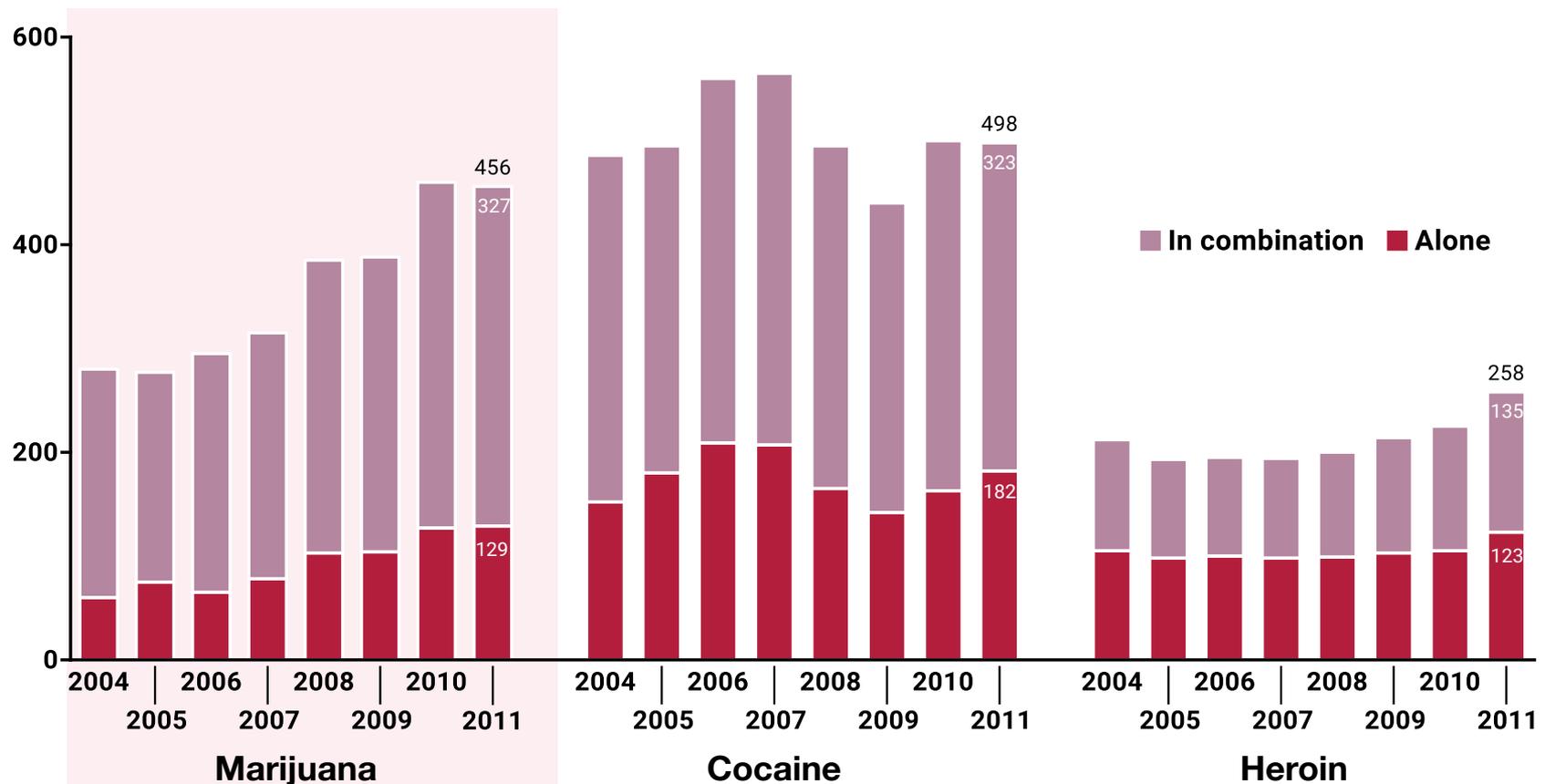
“With dabs your local action news team gets to do a marijuana story that shows **crack pipe torches used on sticky heroin-looking goo made from a process that blows up like meth labs.**”

- *High Times* magazine  
7 May 2014

# Marijuana-related emergency room visits have risen sharply, both in relative and absolute terms

## Number of Emergency Department Visits Involving Marijuana, Cocaine, or Heroin

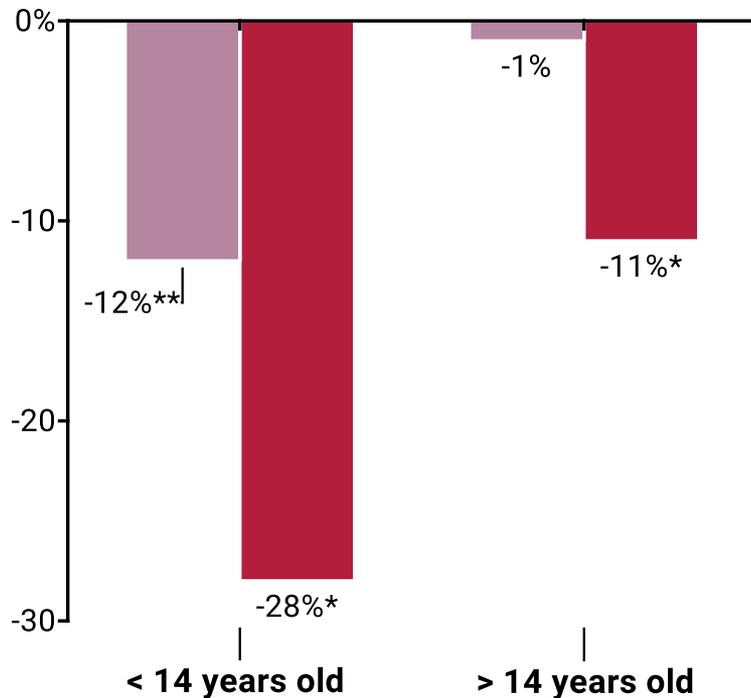
# of emergency-department visits  
(in thousands)



# Early marijuana use and intensity of use are associated with lower educational attainment

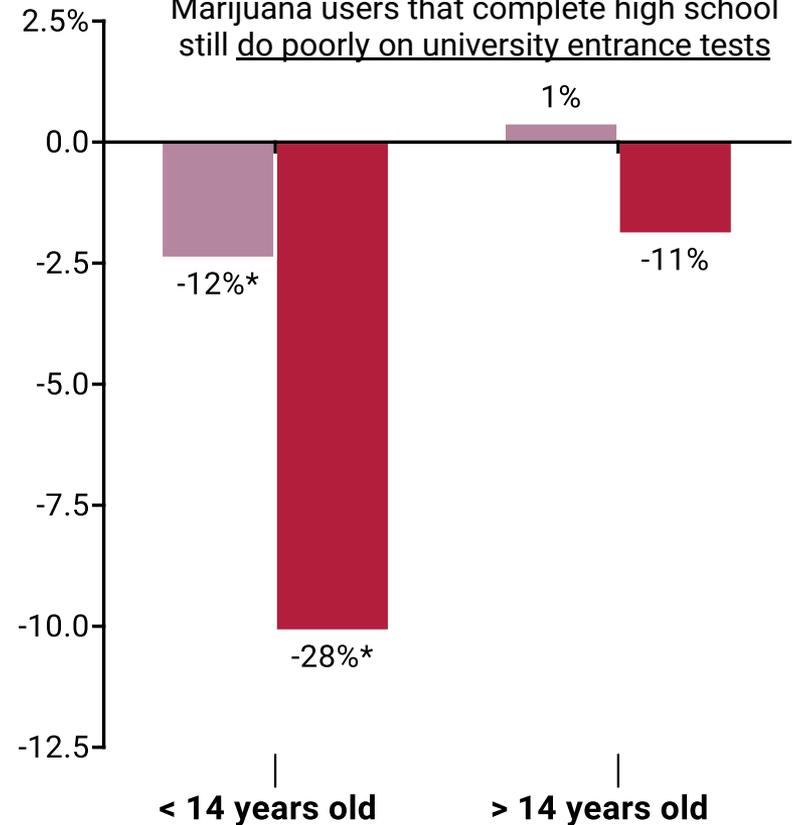
## High School Completion

Marijuana users show much higher high school dropout rates than non-users



## University Entrance Score

Marijuana users that complete high school still do poorly on university entrance tests

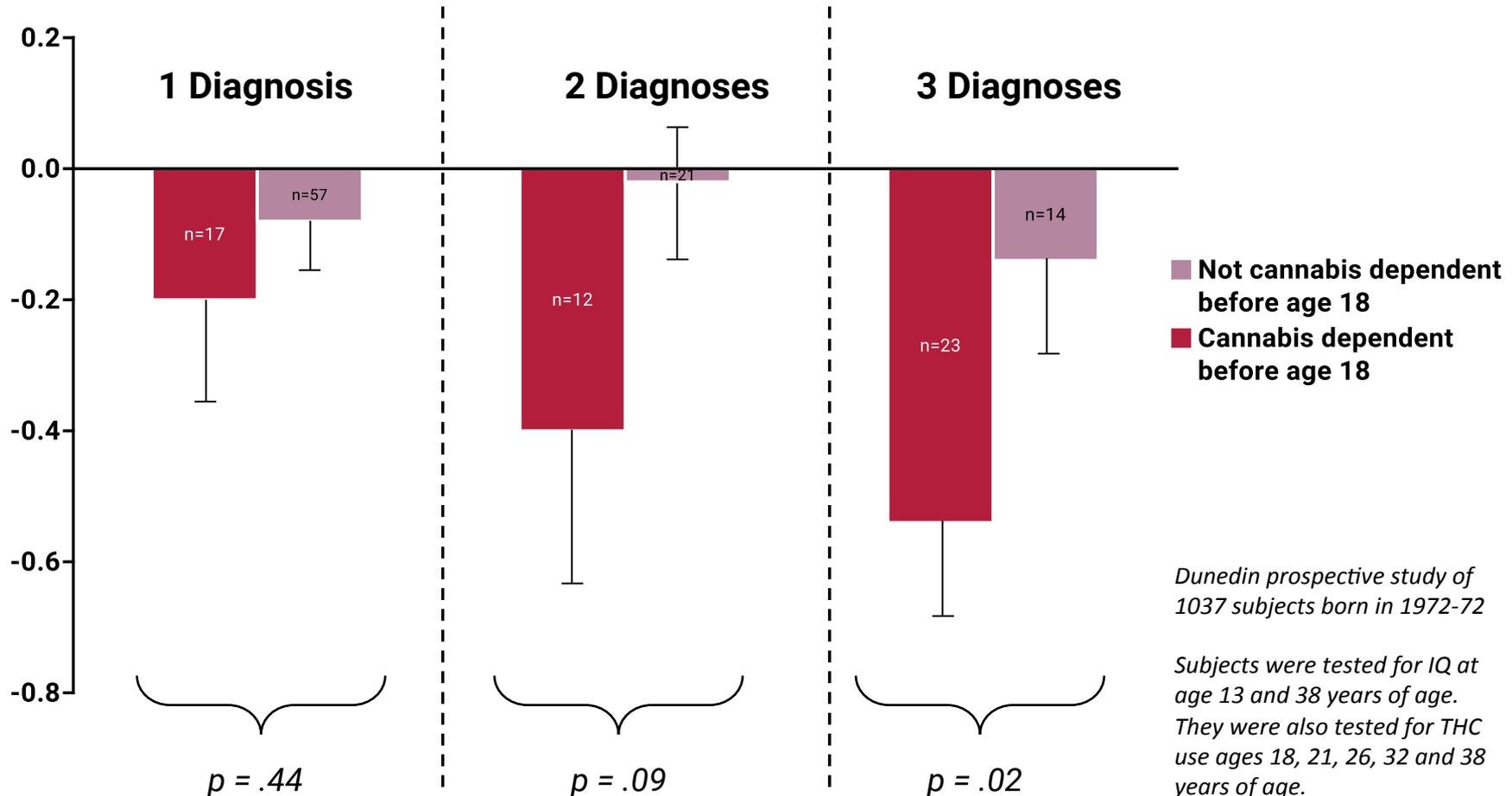


\*  $p < 0.01$ , \*\*  $p < 0.05$

Low intensity use  
Med/high intensity use

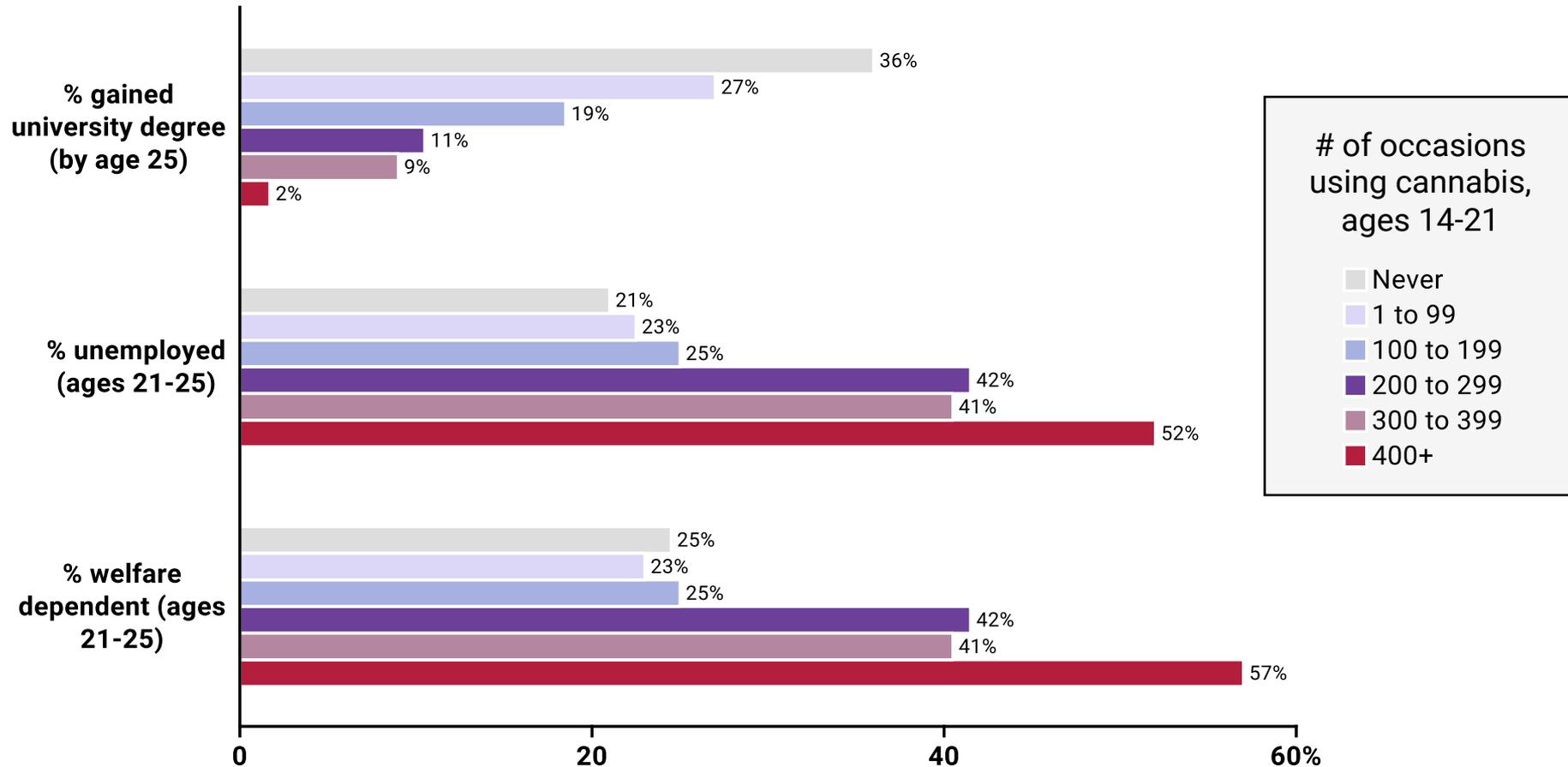
# Marijuana use is also associated with lower IQ among adolescents

Change in full-scale IQ  
(standard deviation units)



# Cannabis use also corresponds with undesirable social outcomes such as unemployment

New Zealand study showing relationship between cannabis use and social outcomes

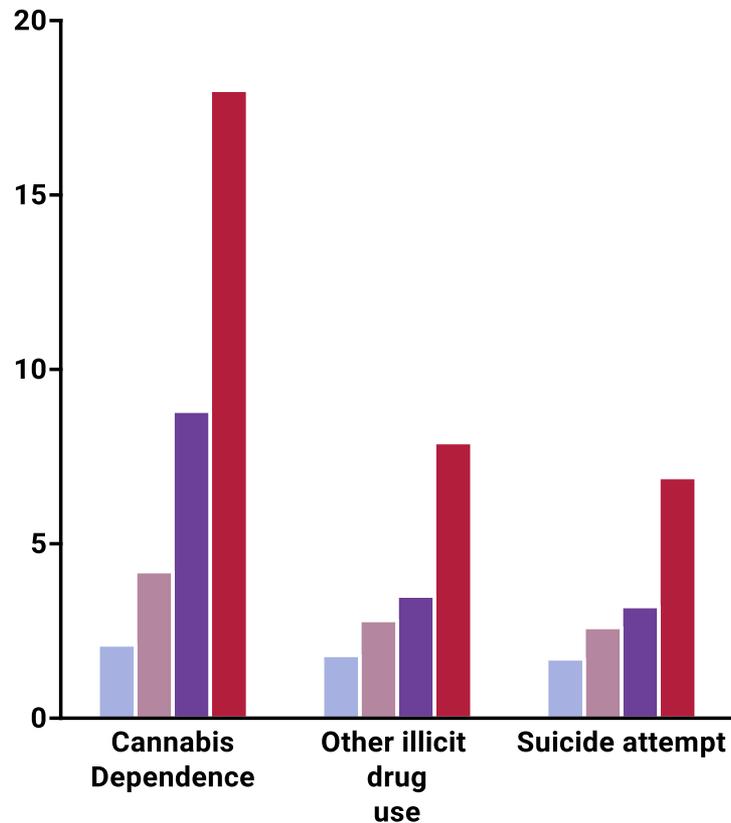


# Frequent cannabis use by youth correlates with a host of undesirable effects

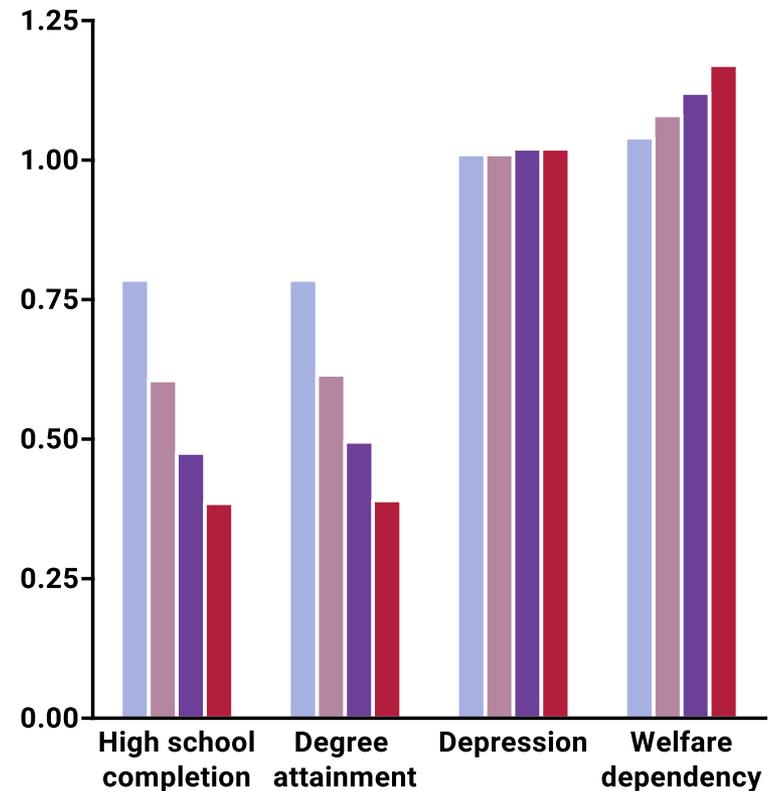
Frequency of cannabis use before age 17:

- Less than monthly
- Weekly or more
- Monthly or more
- Daily

Adjusted odds ratios



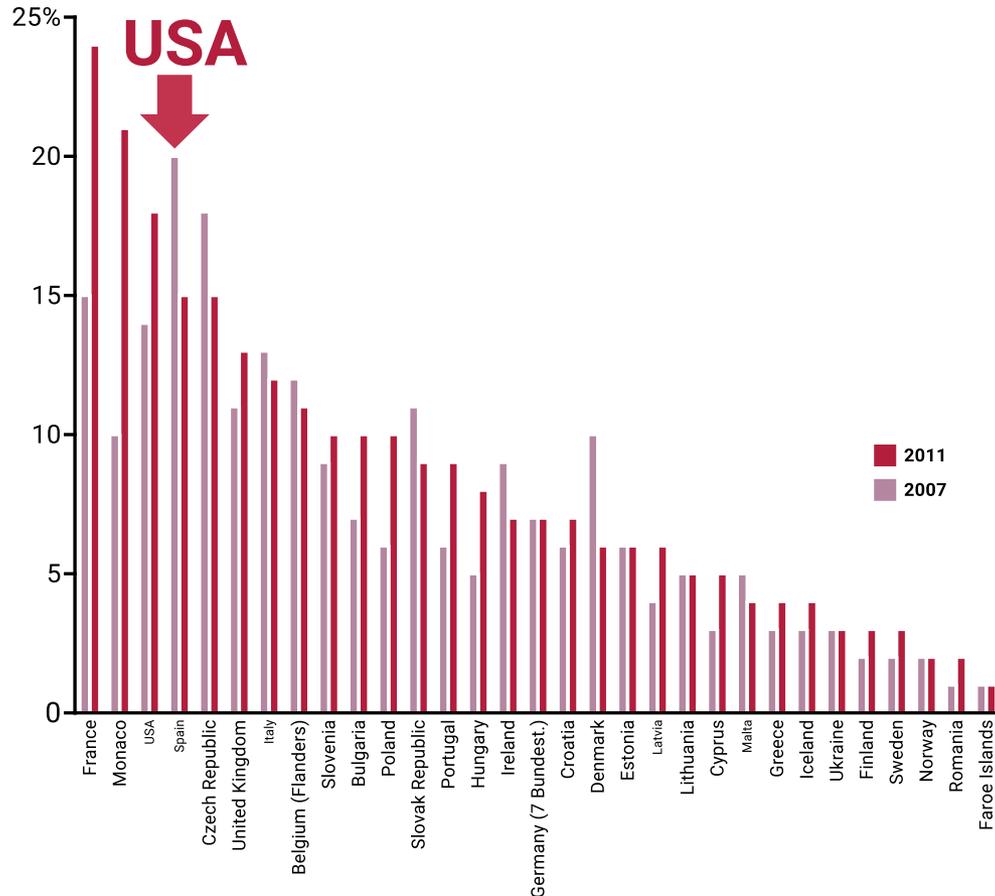
Adjusted odds ratios



# Can the United States afford the risk of further increases in cannabis use?

## The U.S. is 30<sup>th</sup> out of 32 countries in cannabis use w/ 15 & 16-year-old students

Past Month Use, Percentages, 2007 and 2011



## The U.S. has fallen behind in educational achievement

(out of 65 jurisdictions, 2012)

Math:  
**36th**



Science:  
**28th**



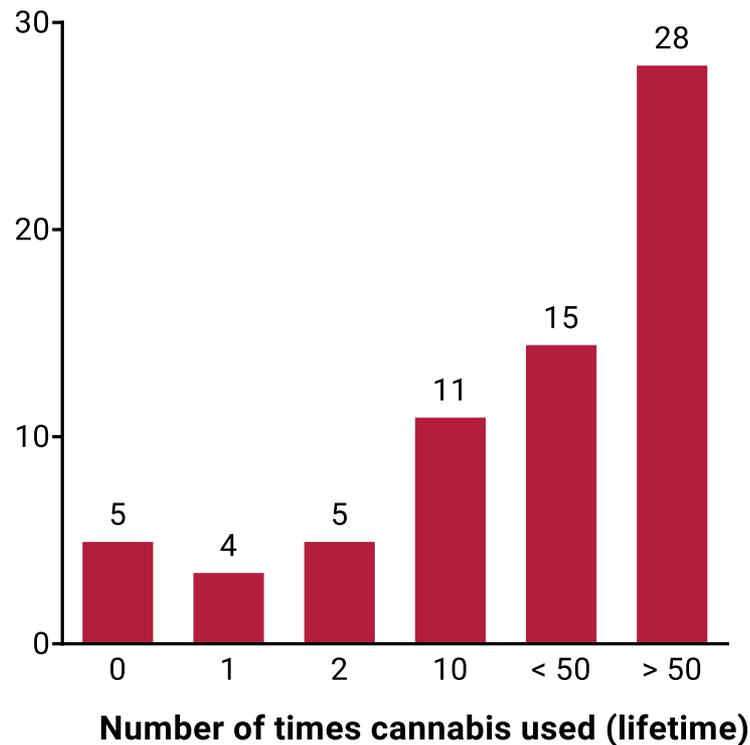
Reading:  
**24th**



# Marijuana use is associated with psychosis

## MORE MARIJUANA USE CORRELATES WITH HIGHER RATES OF SCHIZOPHRENIA

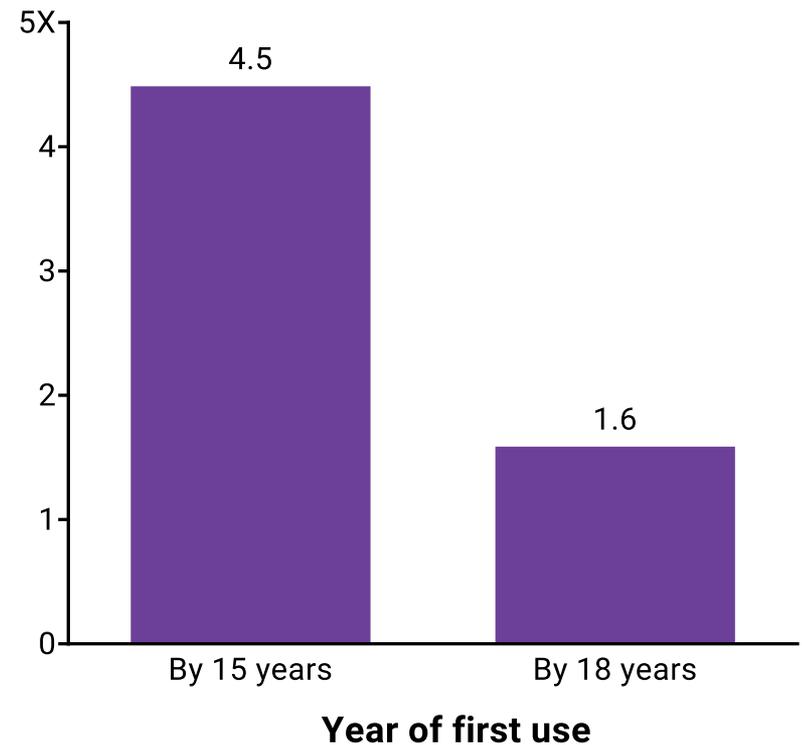
Cases of schizophrenia per 1,000 people



*Study of Swedish Conscripts (n=45570)*

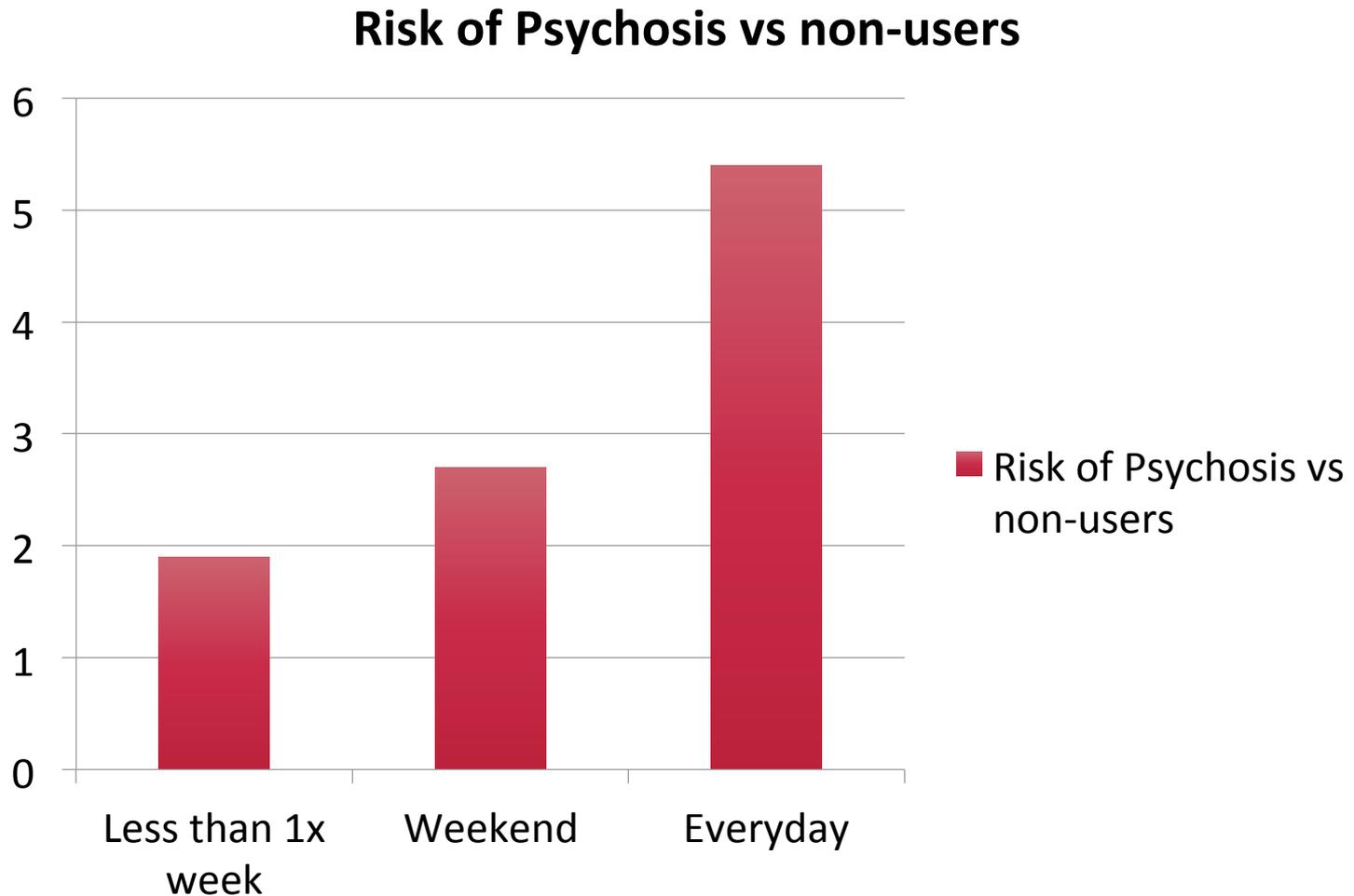
## EARLIER AGE OF USE CORRELATES WITH INCREASED SCHIZOPHRENIA RISK

Risk multiple for schizophrenia-like psychosis at age 26



*Longitudinal prospective Dunedin study (n=1037)*

# Higher Potency = Greater Risk of Mental Illness



Di Forti, M., Marconi, A., Carra, E., Fraiteta, S., Trotta, A., Bonomo, M., & Murray, R. M. (2015). Proportion of patients in south London with first-episode psychosis attributable to use of high potency cannabis: a case-control study. *The Lancet Psychiatry*, 2(3), 233-238.

# Increased use can lead to increased drugged driving

“Drivers who test positive for marijuana or self-report using marijuana are more than **twice as likely** as other drivers to be involved in motor vehicle crashes.”

- Mu-Chen Li, J.E.,  
et al., 2011



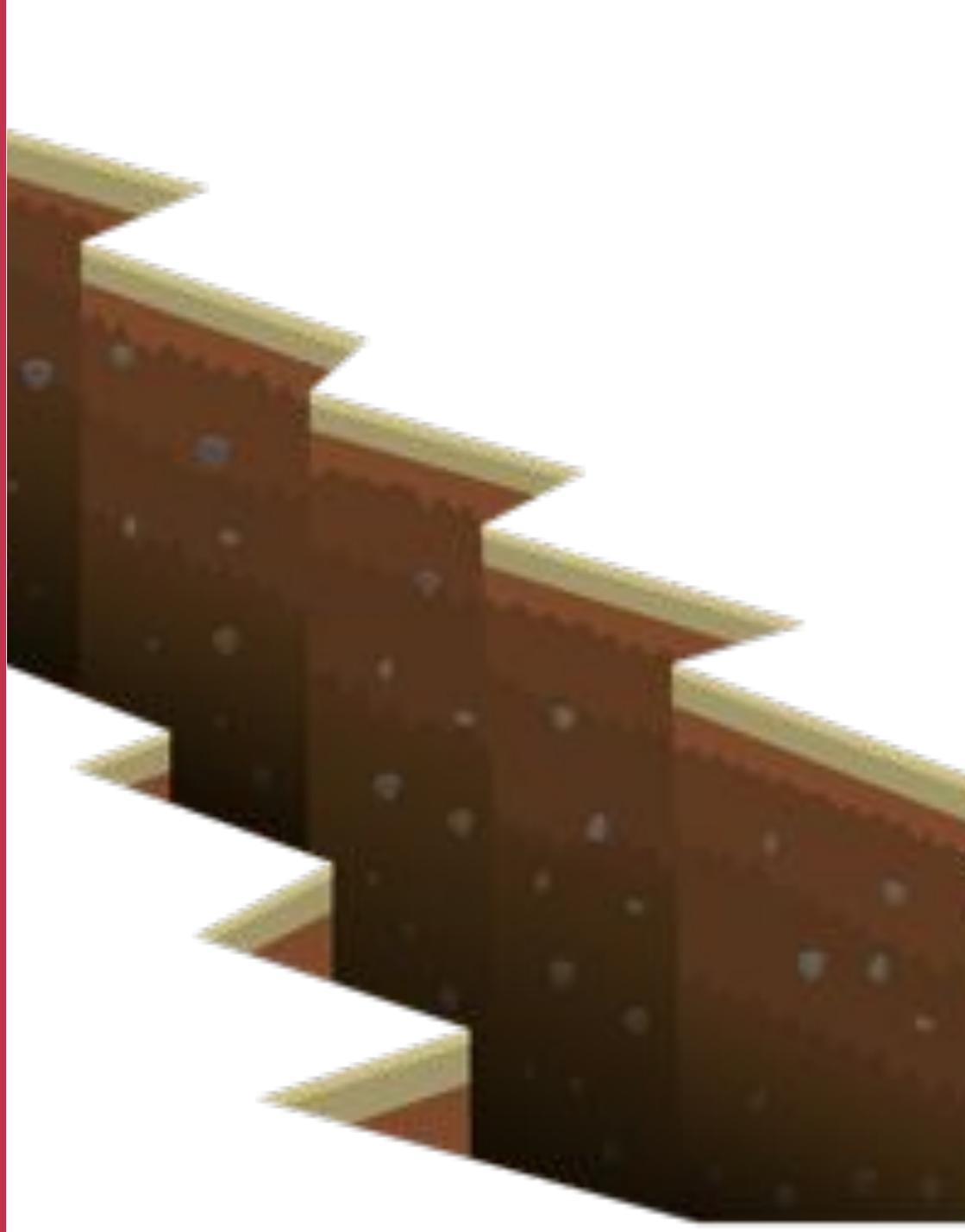
# False opinions about marijuana are common— “being stoned makes me a better driver”

Poll of >1,700 high school juniors and seniors on driving while high:

*Being stoned...*



**The gulf has never  
been greater  
between  
the scientific  
understanding of  
marijuana's harms  
and  
the public's  
misunderstanding**





**How did we get  
here?**

# Myth 2: Smoked Marijuana is Medicine

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## The old stereotype

## The new image



# Legalization advocates have admitted that “medical” marijuana is a pretext for legalization

“We will **use [medical marijuana] as a red-herring** to give marijuana a good name.”

—Keith Stroup, head of NORML,  
to the *Emory Wheel*, 1979



Advocates have pushed their agenda through “**medicine by popular vote**” rather than the rigorous scientific testing system devised by the FDA

# Is marijuana medicine? It depends on how you look at the question



**NO**

Smoked or ingested raw marijuana is **not medicine**



**YES**

There are **marijuana-based pills available to treat illness**, and other such medications coming soon



**MAYBE**

**Additional research is ongoing** into the medical properties of marijuana-derived compounds

# Is the true goal of “medical” marijuana compassionate care or increased access to pot?

## THE “AVERAGE” USER ISN’T SICK

The average “medical” marijuana user **is not whom you’d imagine:**



- White male
- 32 years old
- No history of life-threatening disease
- History of drug and alcohol abuse

## ILLNESSES USED TO JUSTIFY “MEDICAL” MARIJUANA ARE RARE



**Fewer than 5% of “medical” marijuana card holders are cancer, HIV/AIDS, or glaucoma patients**



## The bottom line: smoking/ingesting marijuana is not “medicine”

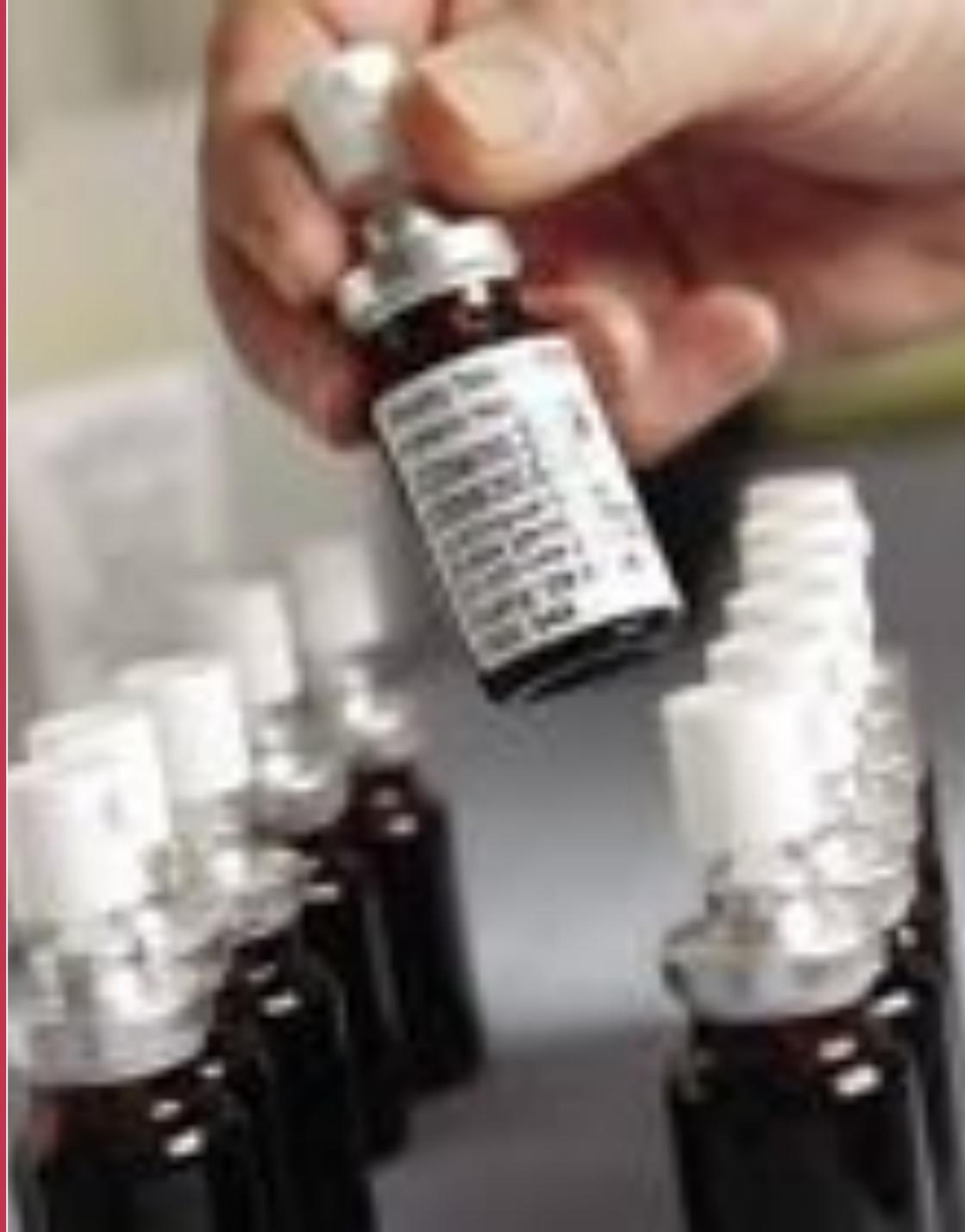
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- We don't smoke opium to get the effects of morphine...
- So why would we smoke marijuana to obtain any potential medical effects?

# Safe, approved cannabis-based medicines already exist

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- Research on the efficacy of cannabinoids is **not focused on raw/crude marijuana, but on individual components** that may have medical use.
- **Sativex is in the process of being studied** (phase III trials)
- **Approved by regulators** in Canada and across Europe
- Administered via an **oral spray**



# Epidiolex™ is one such medication

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- Made from botanically-derived crystalline CBD
- Encouraging effectiveness for treating seizures
- Many versions exist on the market that are not purified or standardized



# A long-term solution to expand authorized medical cannabis research is needed

## CURRENT SITUATION

- Many groups are trying to sell or give away CBD in different states without going through any FDA or NIH process. **However, these products have no such safety assurances.**



## SOLUTION

- To address this problem in the long-term, the United States should **expand and accelerate current research so that every patient who might benefit from CBD can obtain it.**

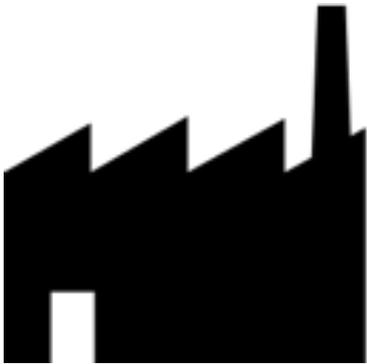
# There is no evidence that THC is needed for young patients, and it may harm them

- **No scientific evidence that THC is necessary** to synergize the effects of CBD.
  - Preclinical research that THC may be **pro-convulsant in sensitive brains**
  - Physicians are beginning to report instances of **THC toxicity in children taking “high CBD” preparations**, e.g., high anxiety, increased seizures, insomnia, etc.



# Only sophisticated manufacturers can produce CBD in a medically appropriate manner

- “High CBD” plant material usually also **contains THC**, sometimes significant amounts.
- Most **simple extraction processes cannot reliably extract CBD**:
  - **Complex and expensive equipment** is required to remove THC
  - Research demonstrates that, in many cases, **large doses of CBD are needed to achieve a specific therapeutic effect**
  - Accordingly, a child taking a therapeutic dose of CBD (100-1000 milligrams per day) would potentially also be **exposed to a large amount of THC**
    - For example, using a 10:1 preparation, a child who ingests 300 mg of CBD/day **would also ingest 30mg of THC**
    - That is the equivalent of **three of the highest dose (10mg) Marinol capsules, which would make most adult patients intoxicated**
    - A 2:1 or 1:1 plant ratio product would contain **even higher levels of THC**



# Medical marijuana laws appear to correlate with increased marijuana use

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 Residents of states with medical marijuana laws have **abuse/dependence rates almost twice as high** as states with no such laws

 Among youths age 12 to 17, **marijuana usage rates were higher in states with medical marijuana laws (8.6%)** compared with those without such laws (6.9%)

# Although debate continues concerning this correlation, significant evidence exists in its favor

## SOME RESEARCH POINTS TO CONNECTION BETWEEN DISPENSARIES AND USE...

- Pacula (RAND) and Sevigny: **Home cultivation and dispensaries are positively associated with marijuana use** and “have important implications for states considering legalization of marijuana.”

## ...WHILE OTHER STUDIES DID NOT NECESSARILY DETECT A CORRELATION

- Rees/Anderson: **Detected no increase in medical marijuana states**, stimulating a vigorous debate (JPAM)
- *Lancet* study of 24 states using *Monitoring the Future* found:
  - Medical marijuana states had **higher 8th, 10th, and 12th grade use**...but those states did not show an **overall increase in use**
  - In Colorado, however, **increase in use was seen among 10th and 12th graders**

# Medical and recreational marijuana laws do not effectively prevent use by minors

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- Restriction of legalized medical or recreational marijuana within state/district borders and to those  $\geq 21$  years old **does not sufficiently safeguard against widespread adverse effects on youth**



- **Youth access to legalized marijuana obtained by adults**, via diversion (*Salomonsen-Sautel et al., 2012*) and accidental ingestion (*Wang et al., 2013*)
- Policy changes and marketing efforts have **effects across ages and across state lines**, with particular impact on youth (*Berg et al., 2015; Richter & Levy, 2014*)

# Myth 3: Countless People Are Behind Bars for Smoking Marijuana

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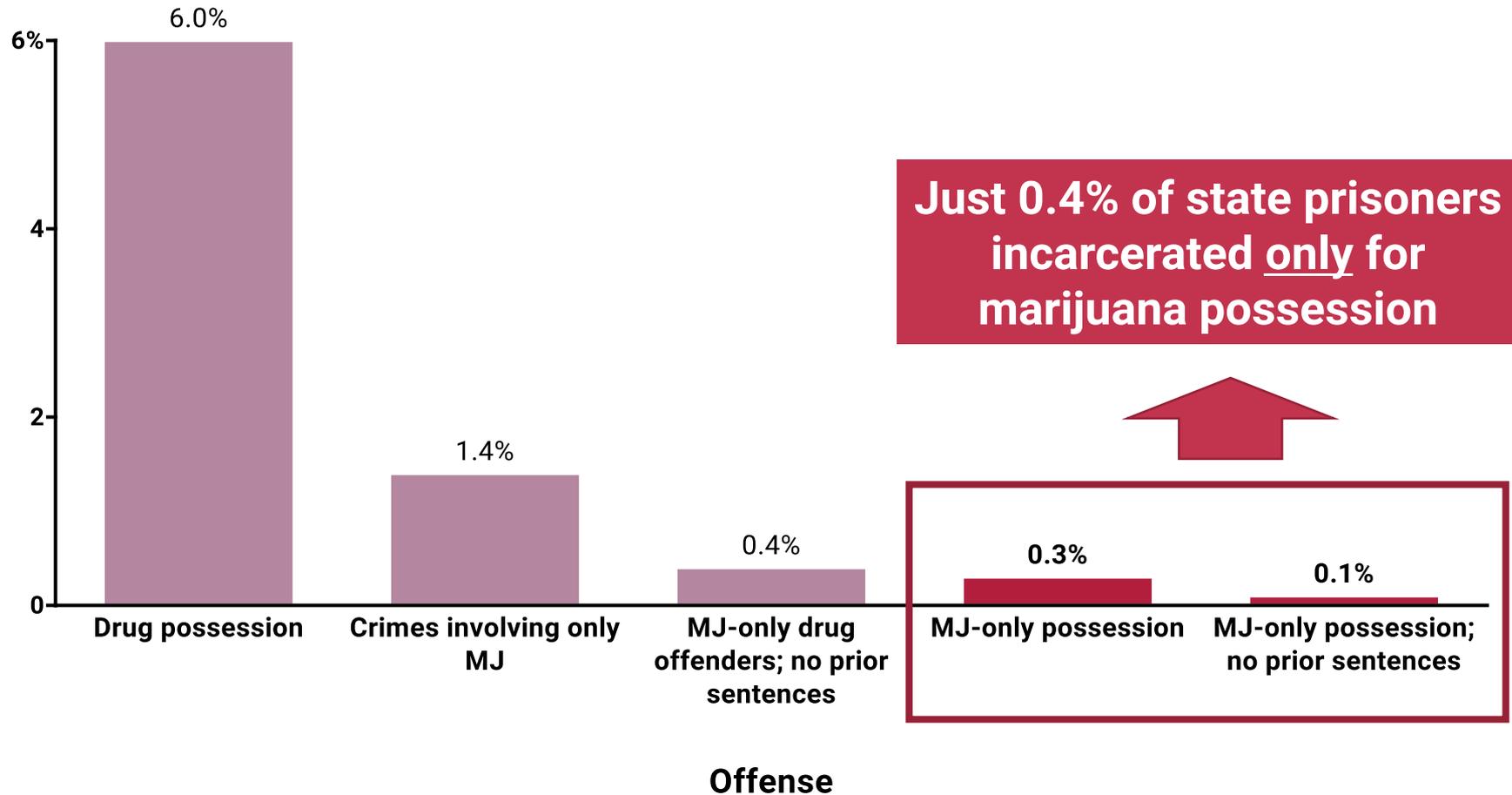
# In reality, very few people are behind bars for marijuana possession

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-  Only **0.4% of state prisoners** are in jail for marijuana possession alone
-  **99.8% of Federal prisoners** sentenced for drug offenses were incarcerated for **drug trafficking**
-  The risk of arrest for each joint smoked is **1 for every 12,000 joints**

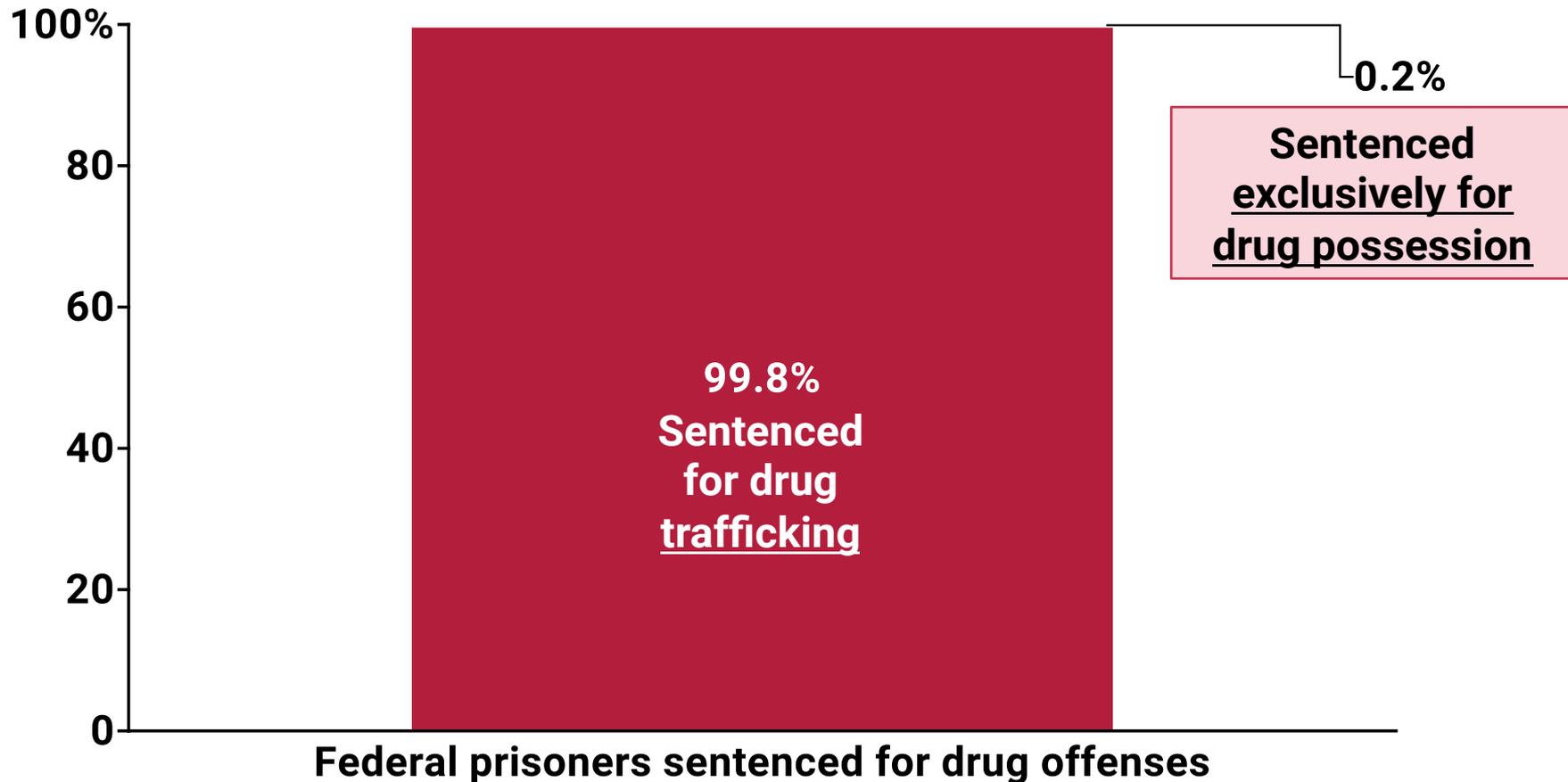
# Very few people are incarcerated only for marijuana possession

% of state prison population (2004)



# Only 0.02% of all federal prisoners in jail for drug offenses are there exclusively for drug possession

Only a tiny %age of prisoners serve time just for drug possession



# Myth 4: The Legality of Alcohol and Tobacco Strengthen the Case for Marijuana Legalization

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# Alcohol and tobacco are not models for a marijuana industry

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- Use levels for alcohol and tobacco are **much higher than that of marijuana**
- Both industries **promote addiction and target kids**

Source: Schiller JS, Lucas JW, Peregoy JA. Summary health statistics for U.S. adults: National Health Interview Survey, 2011. National Center for Health Statistics. Vital Health Stat 10(256). 2012.

Centers for Disease Control and Prevention. Vital Signs: Current Cigarette Smoking Among Adults Aged  $\geq 18$  Years—United States, 2005–2010. Morbidity and Mortality Weekly Report 2011;60(33):1207–12



# Teens have greater access to alcohol and tobacco than to pot, perhaps due to the latter's illegality

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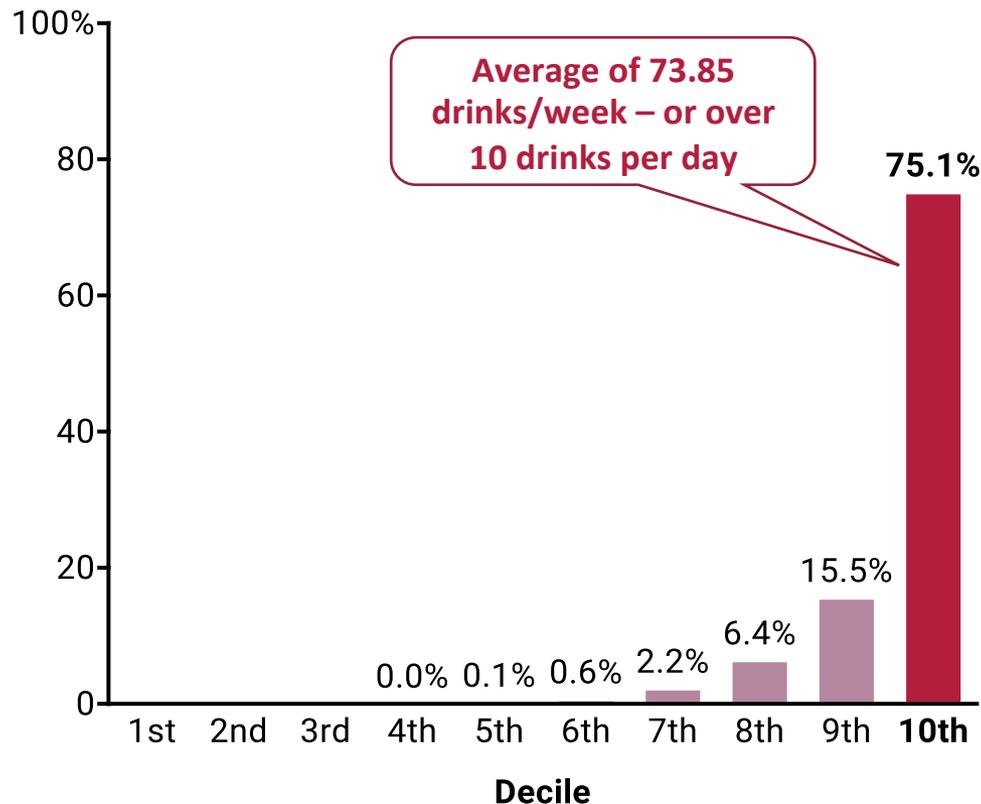
 **50% and 44% of youth** report that they can obtain alcohol and cigarettes, respectively, within a day.

 **Youth are least likely to report that they can get marijuana within a day (31%); 45% report that they would be unable to get marijuana at all**

# Alcohol companies depend on heavy drinkers to make money

The top 10% of the population make up 75% of the alcohol industry's U.S. sales

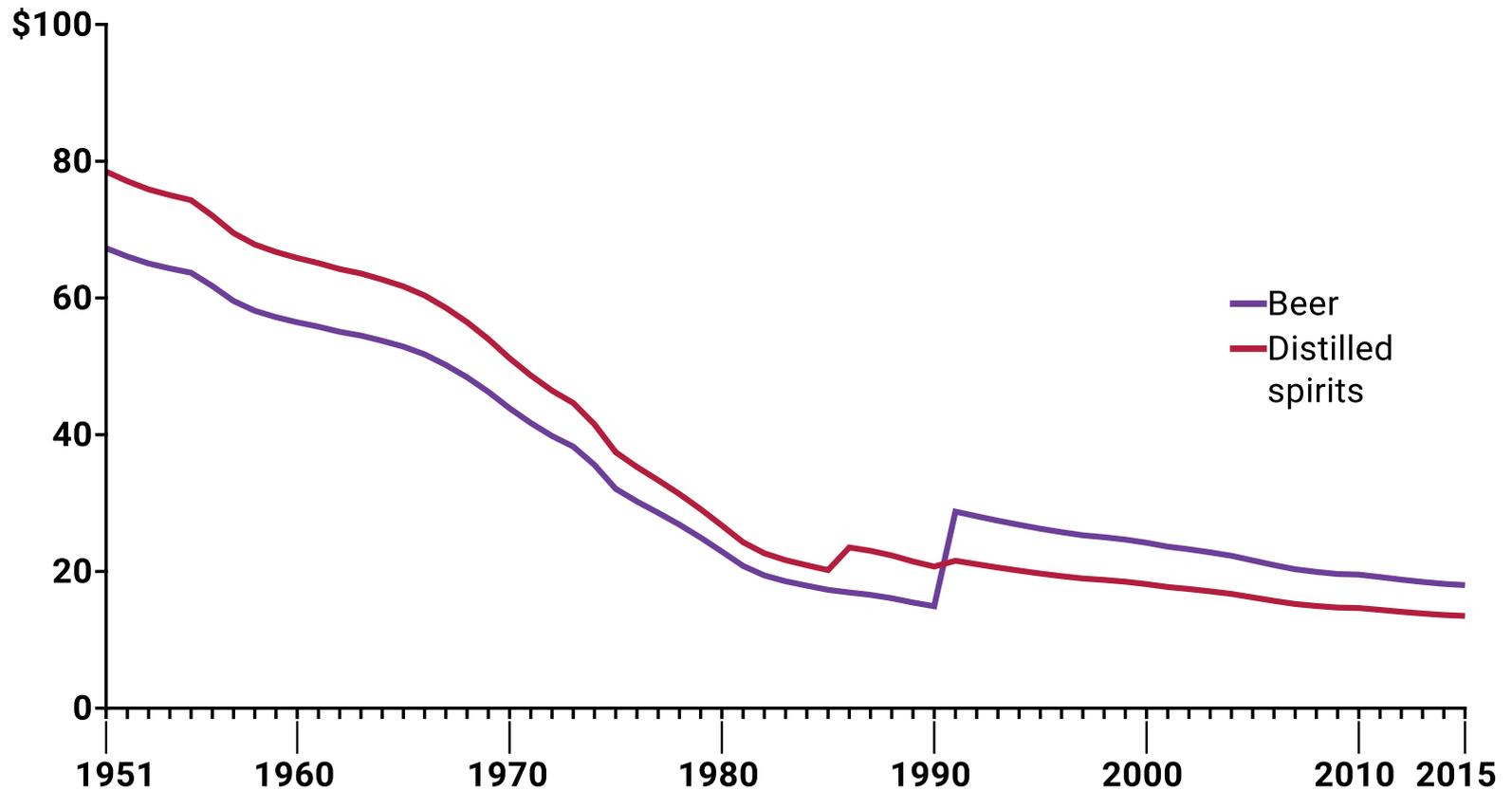
% of total U.S. alcohol consumed



- Belies the slogan “**Enjoy Responsibly**”
- **Would the marijuana industry be any different?**

# Excise taxes on alcohol have plummeted, falling by up to 80% since the Korean War

Federal excise tax per relevant unit volume (real value in 2015 dollars)



Source: U.S. Department of the Treasury, Alcohol and Tobacco Tax and Trade Bureau  
Note: Taxes on wine (up to 14% alcohol per unit volume) are low in absolute terms, but have still fallen over 15% in real terms since 1951

# Legalization is unlikely to diminish the power of drug cartels and the black market (1/2)

## CARTELS ARE, IN REALITY, DIVERSIFIED BUSINESSES

- “Drug cartels” are **diversified enterprises that include mining and pirated goods**
- Marijuana accounts for **only 15-25% of revenues** of drug trafficking groups
- More money is found in **other businesses, including legal ones**, than in selling marijuana
  - Estimates indicate the Zetas earn **up to 50% of revenues from cigarette smuggling**
  - In 2014, **iron mining was the #1 source of revenue** for the Knights Templar cartel

## A HUGE BLACK MARKET EXISTS FOR TOBACCO

- Cigarettes are **the world’s most widely smuggled legal product**
- A **\$657 billion/year business** in 2009
- Provides **funding for organized criminal syndicates and terrorist groups** worldwide
  - In Canada alone, **~105 organized crime groups** are engaged in cigarette smuggling
  - Generates revenue for groups like **the Taliban and Hezbollah**

# Legalization is unlikely to diminish the power of drug cartels and the black market (2/2)

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-  In a legal market, where drugs are taxed and regulated (for instance to keep THC potency below a certain level or to prevent sale to minors), **the black market has every incentive to remain**
-  Legalizing marijuana would likely **not deter traffickers from continuing to operate**
-  In countries with a weak rule of law, legalization will likely only result in **capture of large portions of the legal market by traffickers**, similar to tobacco



## “Big Marijuana”

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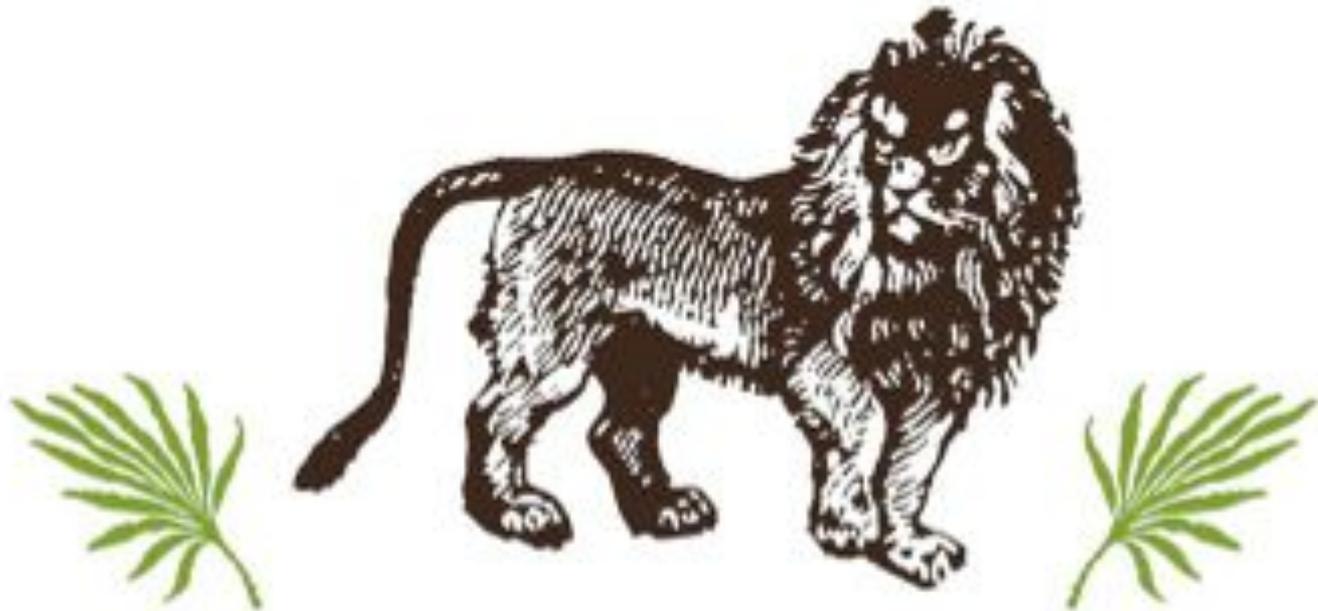
- Can we trust companies and Big Corporations not to target youth and the vulnerable?

# Privateer Holdings

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- The first private equity company dedicated to the marijuana industry





**MARLEY**  
*Natural*

Perception:

Reality:

THE LEGALIZATION OF MARIJUANA means ushering in an entirely new group of corporations whose primary source of revenue is a highly habit-forming product. Sounds a lot like another industry we just put in its place. Many facts are being ignored by this and other news organizations. Go to [GrassIsNotGreener.com](http://GrassIsNotGreener.com) to see why so many major medical associations oppose marijuana legalization.

GrassIsNotGreener.com



# “Big Marijuana”: a \$10 billion/year dream for the tobacco industry since the 1970s

“The use of marijuana ... has important implications for the tobacco industry in terms of an alternative product line. [We] have the land to grow it, the machines to roll it and package it, the distribution to market it. In fact, some firms have registered trademarks, which are taken directly from marijuana street jargon. These trade names are used currently on little-known legal products, but could be switched if and when marijuana is legalized. **Estimates indicate that the market in legalized marijuana might be as high as \$10 billion annually.**”

- 1970s report commissioned by cigarette manufacturer Brown and Williamson (now merged with R.J. Reynolds)



DRAFT

I. THE IMPORTANCE OF YOUNGER ADULTS

Within five years, younger adults (18-24) will drop from 18% to 15% of the total adult population (18+). They will continue to decline in numbers until at least 1995, as the crest of the Baby Bubble pushes farther past age 25.

This shift in the population will cause smokers aged 18-24 to fall from 16% to 14% of all smokers by 1988. Even 15% would not be surprising, since smoking incidence has been declining more rapidly among younger adults than any other age group in recent years (see Appendix A).

Why, then, are younger adult smokers important to RJR?

Why, then, are younger adult smokers important to RJR?

I. VOLUME

Younger adults are the only source of replacement smokers. Repeated government studies (Appendix B) have shown that:

- Less than one-third of smokers (31%) start after age 18.
- Only 5% of smokers start after age 24.

introduction, with no cannibalization and no development/introductory costs.

As a company, Philip Morris held more than 40% of these 18-year-olds in 1983 versus RJR's 15-20%, yielding PM a .5 point in-going RDM advantage due only to "new" smokers.

\* This assumes 18-year-olds are 10% of the 18-24 group rather than a "fair share" of 14% because of population decline and the fact that some smokers start after age 18.

STATEMENT OF DAVID GOERLITZ  
Former Model for Winston Cigarettes

BEFORE THE  
SUBCOMMITTEE ON TRANSPORTATION AND HAZARDOUS MATERIALS  
OF THE  
HOUSE COMMITTEE ON ENERGY AND COMMERCE

of the models who appeared in the  
even smokers. One of them, in fact,

Of course, children aren't the only targets of the tobacco industry. Once, when I asked an R.J. Reynolds executive why he and his colleagues didn't smoke, he responded point-blank that "We don't smoke the sh--, we just sell it . . . We reserve that 'right' for the young, the poor, the black and the stupid."

PROJECT:

Youth Cigarette - New concepts

PROJECT:

Youth Cigarette - New concepts

SMOKING INNOVATIONS' SUGGESTIONS:

APPLE FLAVOR

Apples connote goodness and freshness and we see many possibilities for our youth-oriented cigarette with this flavor. Apple cider is also a possibility.

SWEET FLAVOR CIGARETTE

We believe that there are pipe tobaccos that have a sweet aromatic taste. It's a well known fact that teenagers like sweet products. Honey might be considered.

SWEET FLAVOR CIGARETTE

We believe that there are pipe tobaccos that have a sweet aromatic taste. It's a well known fact that teenagers like sweet products. Honey might be considered.

# Pot is now funding presidential politics

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[Home](#) > [Briefs](#) > [Rand Paul Brings in ...](#)

June 30, 2015

## Rand Paul Brings in Six Figures at MJ Industry Fundraiser

Tags: [rand paul](#)



Republican presidential candidate Rand Paul made a splash in Denver on Tuesday, raising an estimated minimum of \$120,000 in a closed-door private fundraising event at the National Cannabis Industry Association's Cannabis Business Summit.

The total amount raised puts him firmly in the top tier of public officials who have raised campaign funds from the cannabis industry.

There was no immediate word from the Paul campaign on how much was actually raised at the event, and the total could easily top Marijuana Business Daily's estimate. Attendees reported about 40 individuals took part in the event, paying a minimum of \$2,700 apiece. In addition, the Marijuana Policy Project provided a \$15,000 donation.

### Briefs

#### Rand Paul Brings in Six Figures at MJ Industry Fundraiser



Republican presidential candidate Rand Paul made a splash in Denver on Tuesday, raising an estimated [\[click to](#)

[continue...](#)

#### Hawaii Bill Establishing Dispensaries Likely to Become Law

Dispensaries could be open in Hawaii in just over a year, as a bill establishing [\[click to continue...](#)

#### Second MMJ Bill Introduced in Pennsylvania Legislature

In an attempt to get around obstructionists in the state House of

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# Myth 5: Legal Marijuana Will Solve the Government's Budgetary Problems

- 1 Marijuana Is Harmless and Non-addictive
- 2 Smoked Marijuana is Medicine
- 3 Countless People Are Behind Bars for Smoking Marijuana
- 4 The Legality of Alcohol and Tobacco Strengthen the Case for Marijuana Legalization
- 5 Legal Marijuana Will Solve the Government's Budgetary Problems**
- 6 Portugal and Holland Provide Successful Examples of Legalization
- 7 Prevention, Intervention, and Treatment are Doomed to Fail – So Why Try?

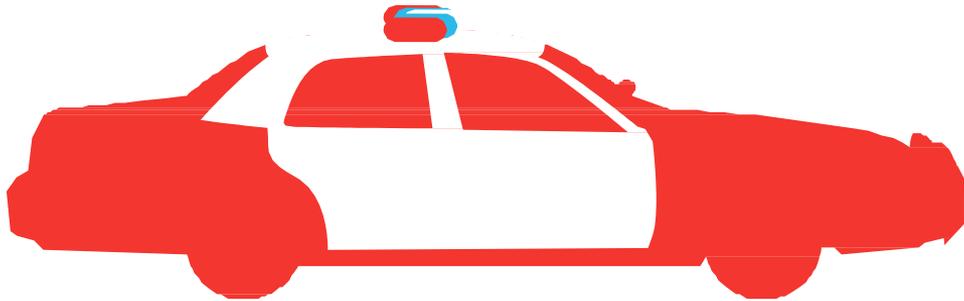


## Will legalization solve budgetary problems?

---

- Few people are currently in jail for smoking marijuana
- What are the costs from regulation and arrests?

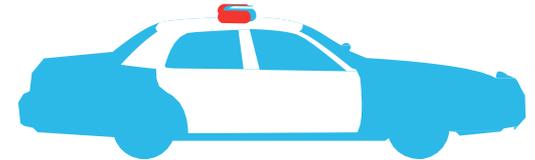
“If only we treated it like alcohol..”



**2.7 million**

Arrests for alcohol-related crimes in 2008, including violations of liquor laws and DUI – **but does NOT include arrests for alcohol-related violence**

vs.



**847,000**

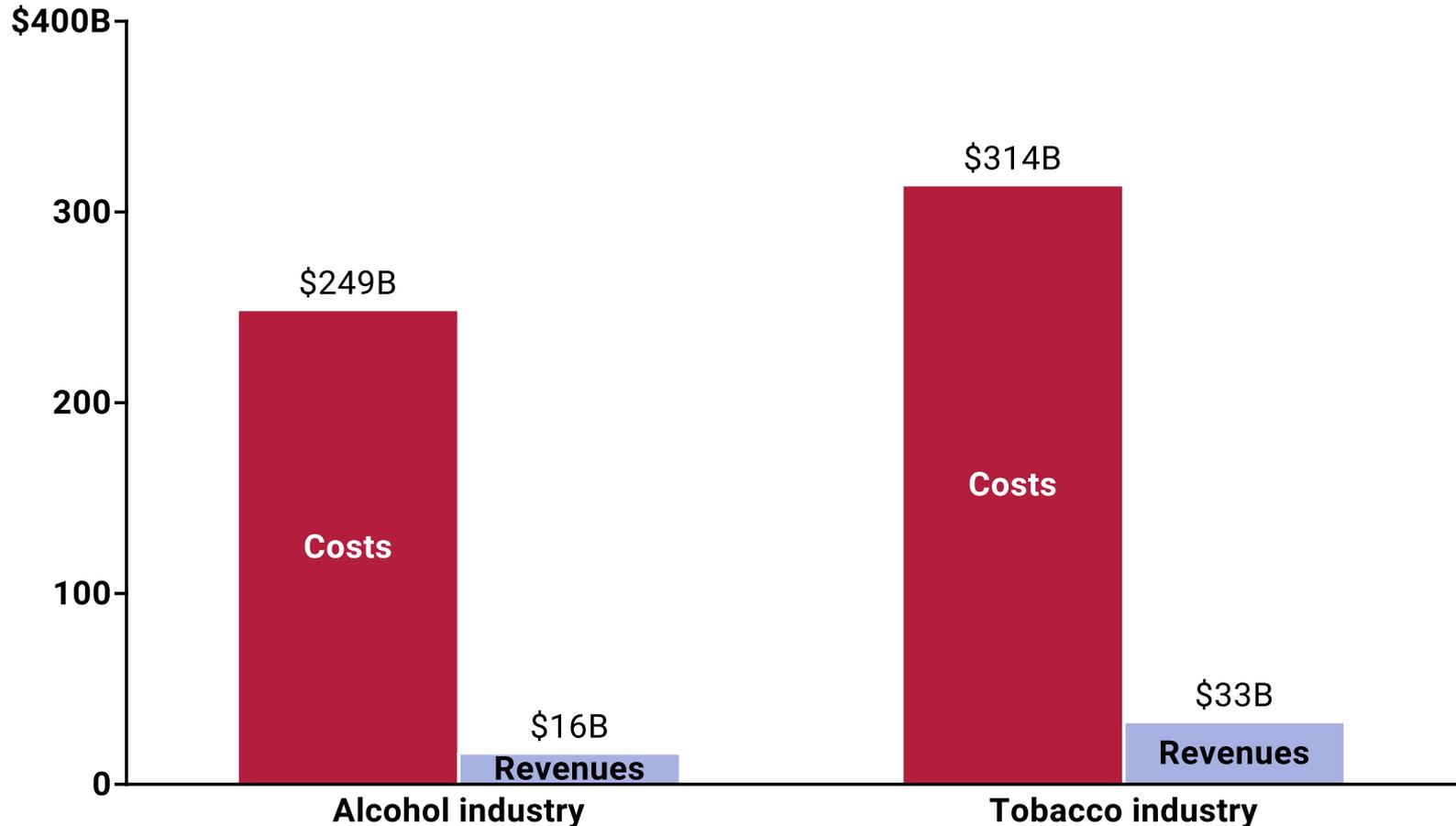
Marijuana-related arrests in 2008

# Revenue streams already disappoint

The screenshot shows the top portion of a New York Times article. At the top right is the logo for 'The New York Times'. On the left, there are navigation links for 'SECTIONS', 'HOME', and 'SEARCH'. Below this is the 'TheUpshot' logo. The article is categorized under 'REVENUE DISAPPOINTMENT'. The main headline is 'Marijuana Taxes Won't Save State Budgets', dated 'APRIL 9, 2015'. On the left side of the article, there are social sharing options: 'Email', 'Share' (Facebook), 'Tweet' (Twitter), 'Save', and 'More'. The main text of the article begins with the sentence: 'Colorado's marijuana tax collections are not as high as expected.' The following paragraph states: 'In February 2014, Gov. John Hickenlooper's office projected Colorado would take in \$118 million in taxes on recreational marijuana in its first full year after legalization. With seven months of revenue data in, his office has cut that projection and believes it will collect just \$69 million through the end of the fiscal year in June, a miss of 42 percent.' The final paragraph reads: 'That figure is consequential in two ways. First, it's a wide miss. Second, compared with Colorado's all-funds budget of \$27 billion, neither \$69 million nor \$118 million is a large number.'

# Alcohol and tobacco are money-drainers, not money-makers

Billions of U.S. dollars (indexed to 2012 values)



# Myth 6: Portugal and Holland Provide Successful Examples of Legalization

- 1 Marijuana Is Harmless and Non-addictive
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- 5 Legal Marijuana Will Solve the Government's Budgetary Problems
- 6 Portugal and Holland Provide Successful Examples of Legalization
- 7 Prevention, Intervention, and Treatment are Doomed to Fail – So Why Try?

# Reality: Neither Holland nor Portugal have legalized ANY drug

---



# Moreover, the track record of modern drug policy in Europe is mixed at best

---

-  The Dutch experienced a **three-fold increase in marijuana use among young adults** after pot commercialization expanded
-  Use rates in the Netherlands, Portugal, and Italy in the last 10 years are **lower for some drugs and higher for others**

# Portuguese policy: similar to drug courts

---

- In 2001, Portugal changed policy to send users with small amounts of drugs to “dissuasion panels” – social worker panels who refer individuals to treatment, administer fine, etc.
- Portugal also implemented robust treatment plan



# Portuguese results are mixed

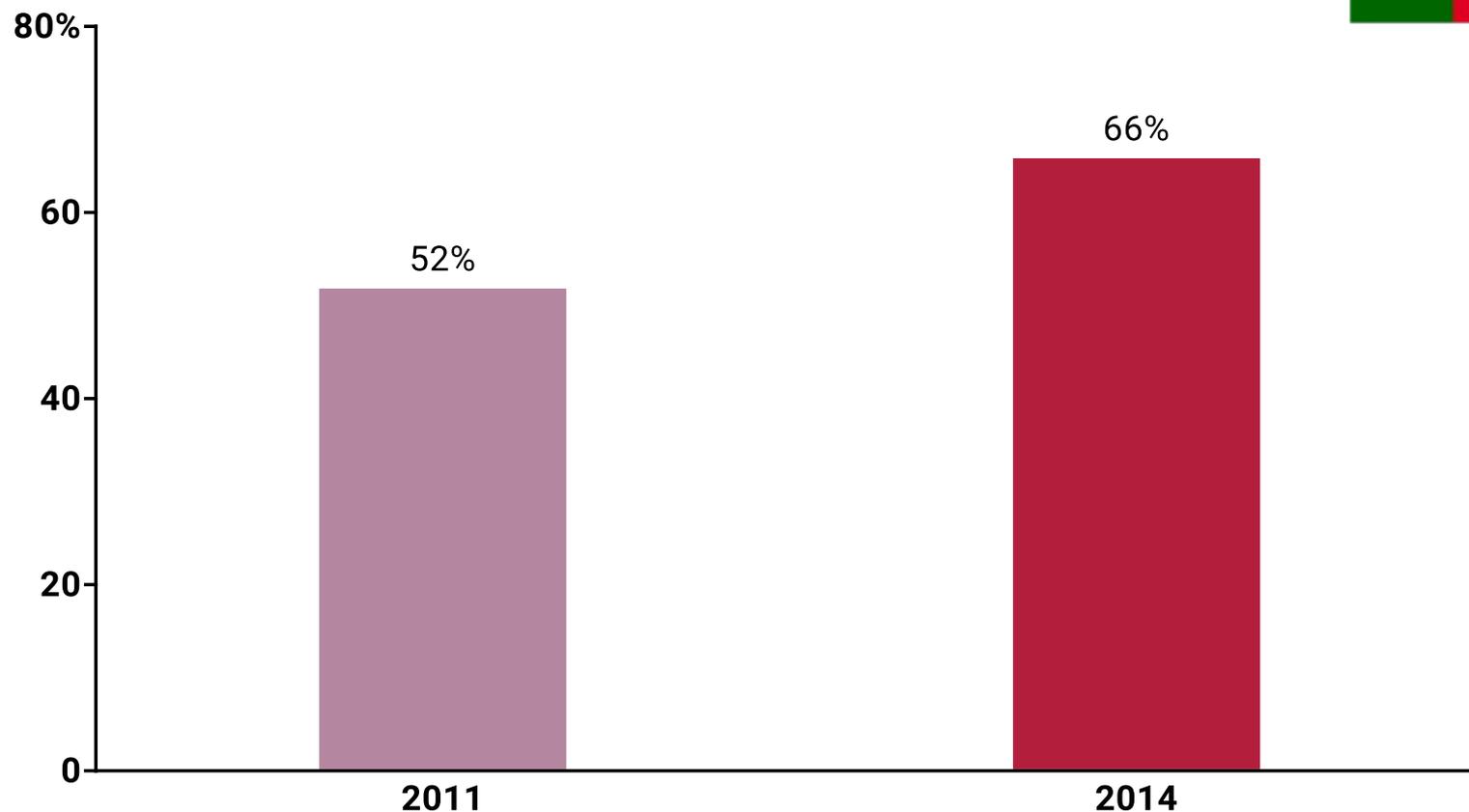
---

- Youth drug use has increased since 2001
- Deaths from drug use have gone down
- The impact of the policy unclear, despite extreme rhetoric



# Opposition to legalization among Portuguese youth has grown significantly since 2011

% of Portuguese youth (15-24 years old) opposed to marijuana legalization





## Dutch policy: non-enforcement

---

- The Dutch established the Non-enforcement Policy in 1976 and saw the birth of “Coffee Shops”



## Dutch results are also mixed

---

- Experienced a **three-fold increase in marijuana use** among young adults
- Before non-enforcement, **the Dutch had lower rates of drug use than the U.S.**
  - Now, it is the **#1 country in Europe with need for marijuana treatment**
- Now **scaling back policy**
  - Coffee shops closing
  - Cannot sell to non-residents

# What about decriminalization?

---

- Too broad a term - it could mean anything from a simple fine to a more rigorous policy.
- It is important to understand that removing all sanctions for drug use and any accountability is not in the spirit of a pro-health drug policy.
- Indeed, drug treatment courts show that employing sanctions is an important element to motivate users to enter and complete treatment.
- How law is structured makes a difference.

# Evidence on decriminalization

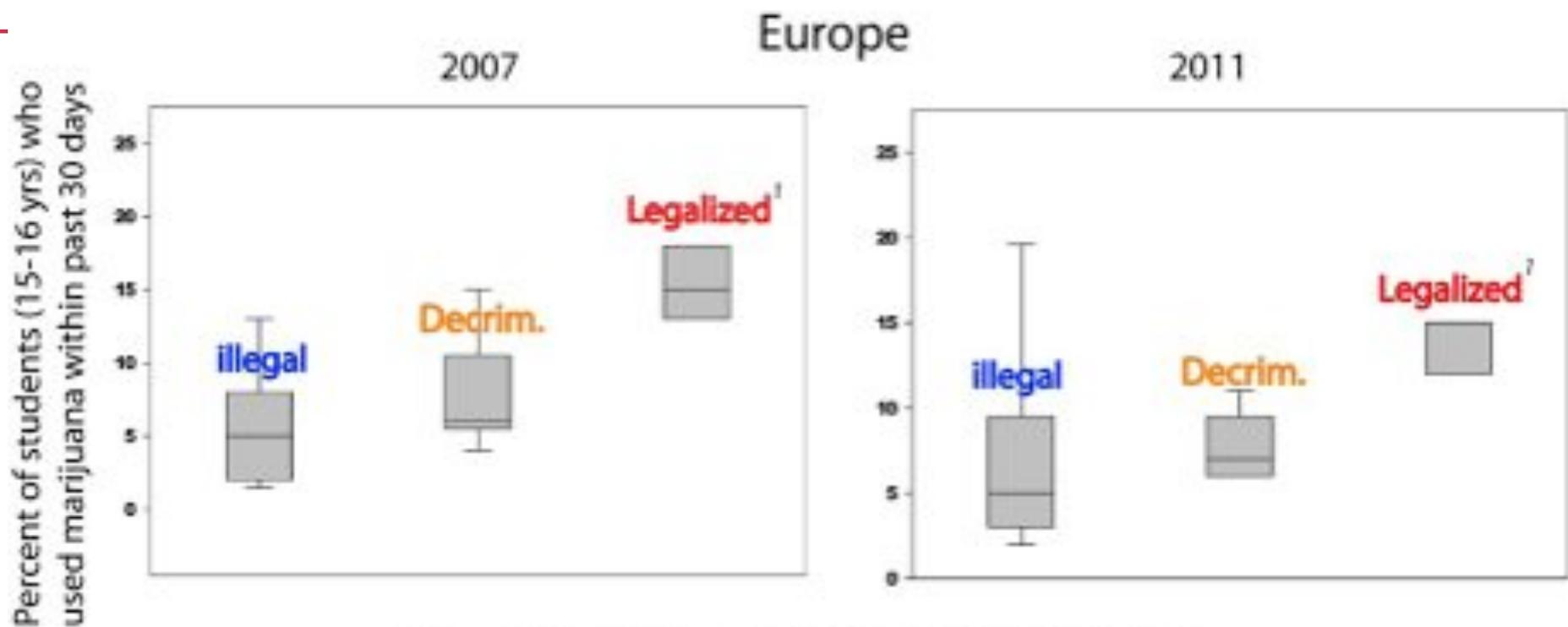
---

Countries with decriminalization lie midway between countries where it remains illegal and those with *defacto* legalization (The Netherlands, Czechoslovakia, Italy and Spain - note that of those countries, only The Netherlands allows storefront sales).

But even the nuances of how decriminalization laws are structured appear to have an impact on youth use.

US has varied laws

Countries that legalized marijuana have very high median rates of youth use, among the highest in Europe (*significant,  $p = 0.002$  in 2007; trend,  $p = 0.075$  in 2011*)

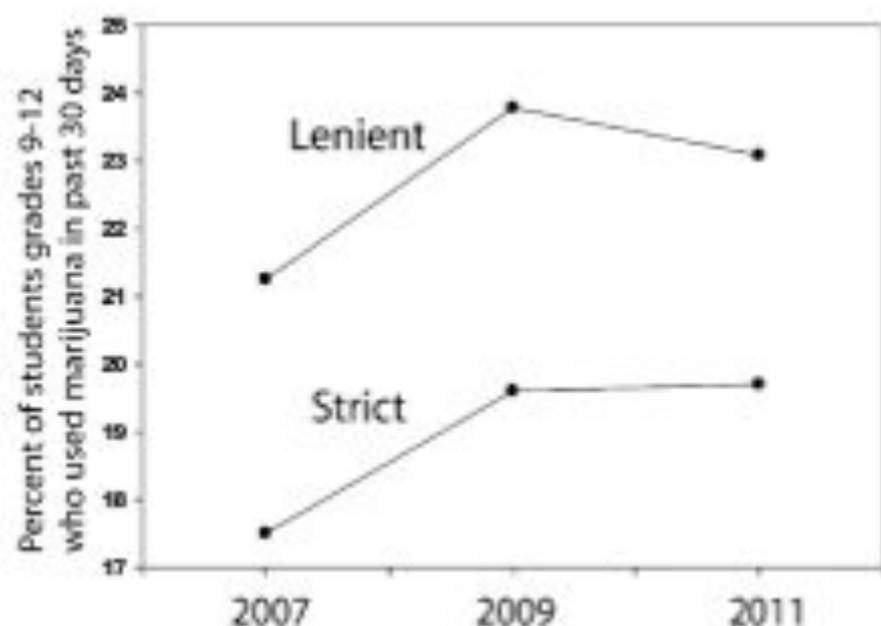


Consumption data from: The 2007 and 2011 ESPAD Report Substance Use Among Students in 36 European Countries; not all countries available for both years

<sup>1</sup> These countries have either legalized for possession, legalized growth for personal use/consumption in the home or have defacto-legalization (e.g. Netherlands) where police and prosecutors are instructed not to apprehend/prosecute in certain venues. (EMCDDA-<http://www.emcdda.europa.eu>)

## How Decriminalization is Structured Makes a Difference

States with lenient decriminalization laws have higher rates of youth use\* than states where decriminalization is structured to discourage use ( $p=0.004$ )



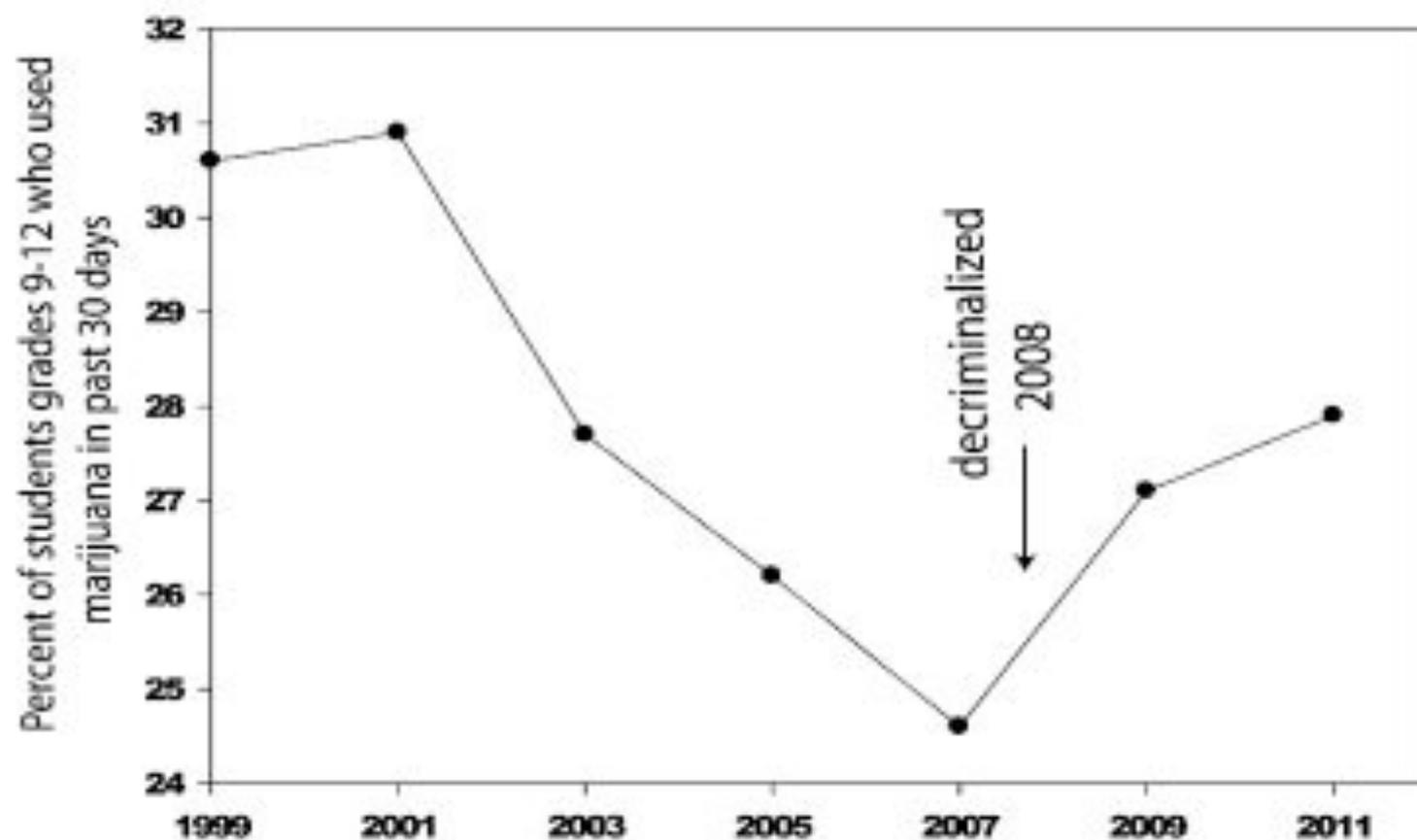
Lenient = no graduated penalties for repeat offenders, no drug education requirement, no community service.

Strict = no jail time for 1st offense but may be a misdemeanor that can be removed from record; or graduated penalties for repeat offenders that may eventually involve jail time and criminal charges; or may have a clause that makes 1st offense more serious: in public view (NY) or in auto passenger compartment (MS).

\*Data on youth use derived from:  
 CDC Morbidity and Mortality Weekly Report,  
 Youth Risk Behavior Surveillance - United States,  
 2007, 2009, 2011. Data for 2013 due out in June,  
 2014. CA and OR (lenient decrim) did not submit  
 data to the CDC.

	2007	2009	2011
Lenient decrim laws	AK, CO, ME	AK, CO, ME, MA	AK, CO, ME, MA
Strict decrim laws	NC, OH, NE NY, MS, NV	NC, OH, NE NY, MS, NV	NC, OH, NE NY, MS, NV

# Massachusetts



**Massachusetts decriminalization code:** 1 oz (~30 g) or less is a civil fine of \$100. *No increase in penalty for repeat offenses, no requirement for drug education or treatment, no stipulation about carrying in passenger compartment of auto.*

# Myth 7: Prevention, Intervention, and Treatment are Doomed to Fail – So Why Try?

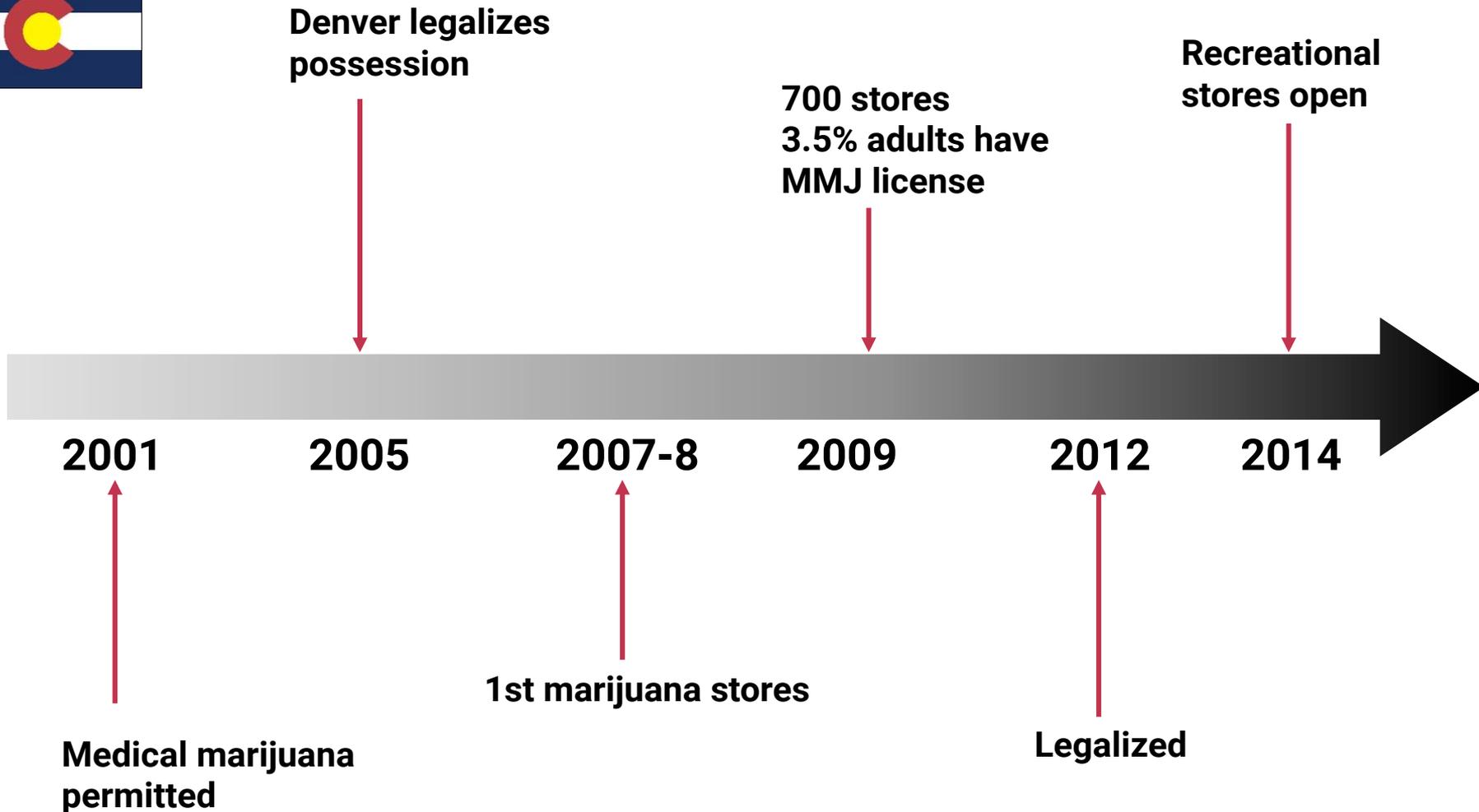
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- 7 Prevention, Intervention, and Treatment are Doomed to Fail – So Why Try?**



# Colorado and Washington

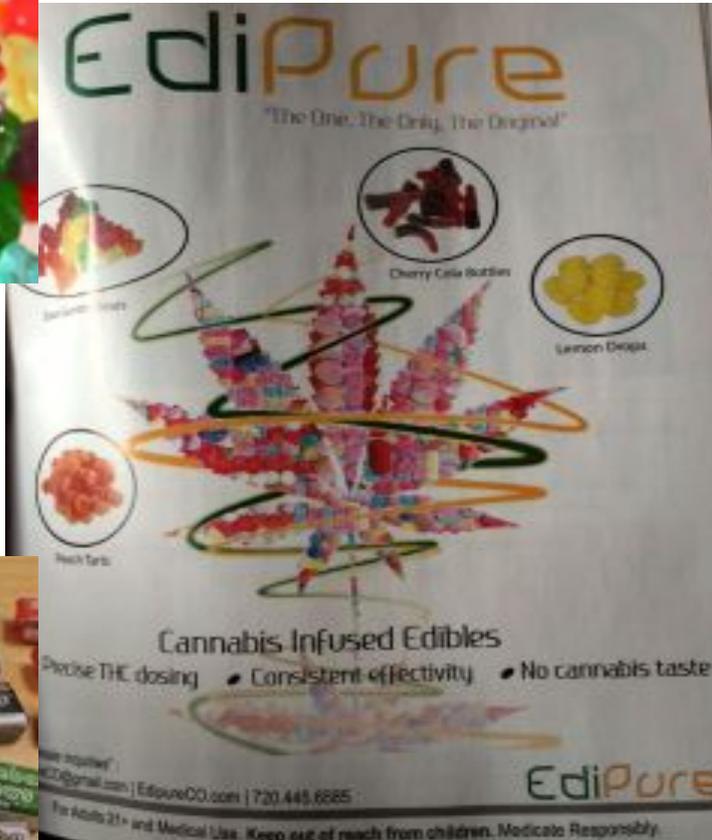
# Colorado didn't legalize pot overnight



# Marijuana edible displays



# Edibles: a clear and present danger to Colorado's children



Doctors at the UCH and Children's Hospital Colorado emergency departments **identified edible marijuana as the culprit behind the most troubling cases** there, including severe burns and cycling vomiting syndrome.



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# Vaporizing industries: Nicotine and Marijuana



## Pax by Ploom:

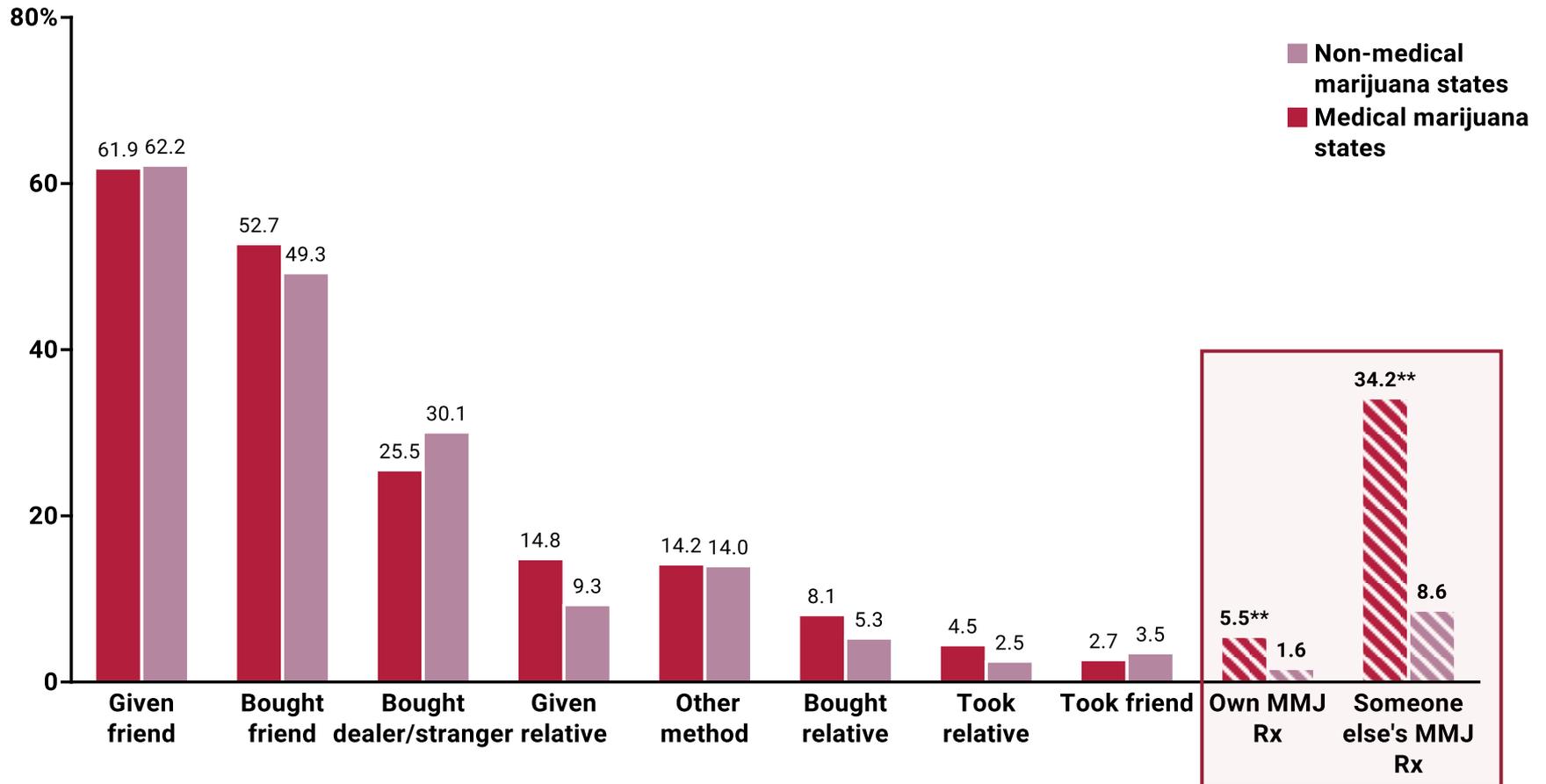
- Japan Tobacco International (JTI) is the **third largest international tobacco company**, behind Philip Morris International.
- In 2011, JTI bought a portion of Ploom – a Silicon Valley-based startup that produces a loose-leaf vaporizer that **can be used to inhale heated vapor from marijuana as well as tobacco**, called the Pax.



# Medical marijuana programs expand minor's access to the drug

Source of Marijuana\* among 12<sup>th</sup> Graders in 2012 and 2013, by State Policy

\*Sources are not mutually exclusive



\*\* Statistically significant difference



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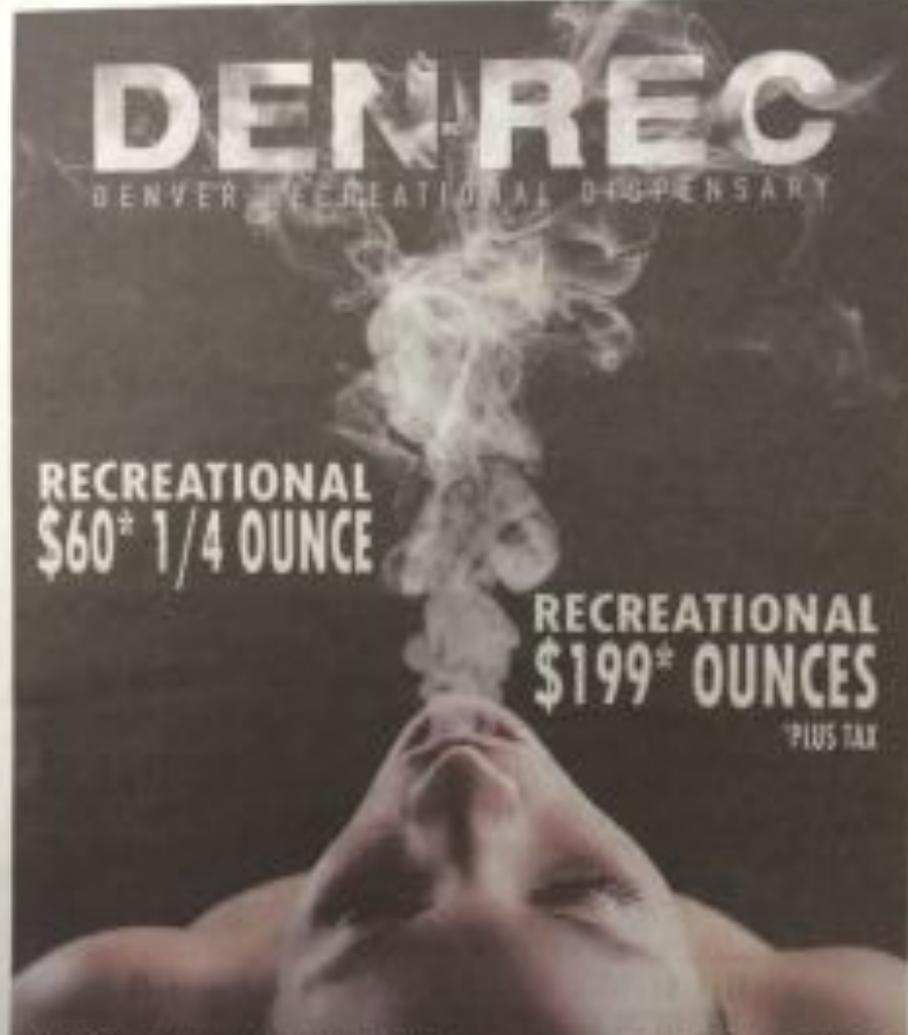
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The original slide has the word "Edibles" written above the image. Not sure you need it – sort of breaks the flow here.

# Marijuana's negative impact on Colorado children continued in 2015

---

-  Associated Press:  
[“Two Denver Deaths Linked to Recreational Marijuana Use.”](#)  
One includes the **under-aged college student who jumped to his death after eating a marijuana cookie**
-  The number of parents calling the poison-control hotline to report their kids had consumed marijuana has [risen significantly in Colorado](#)
-  Marijuana edibles and marijuana vaporizers have been **found in middle and high schools**

# WA and CO show statistically significant increases in marijuana use

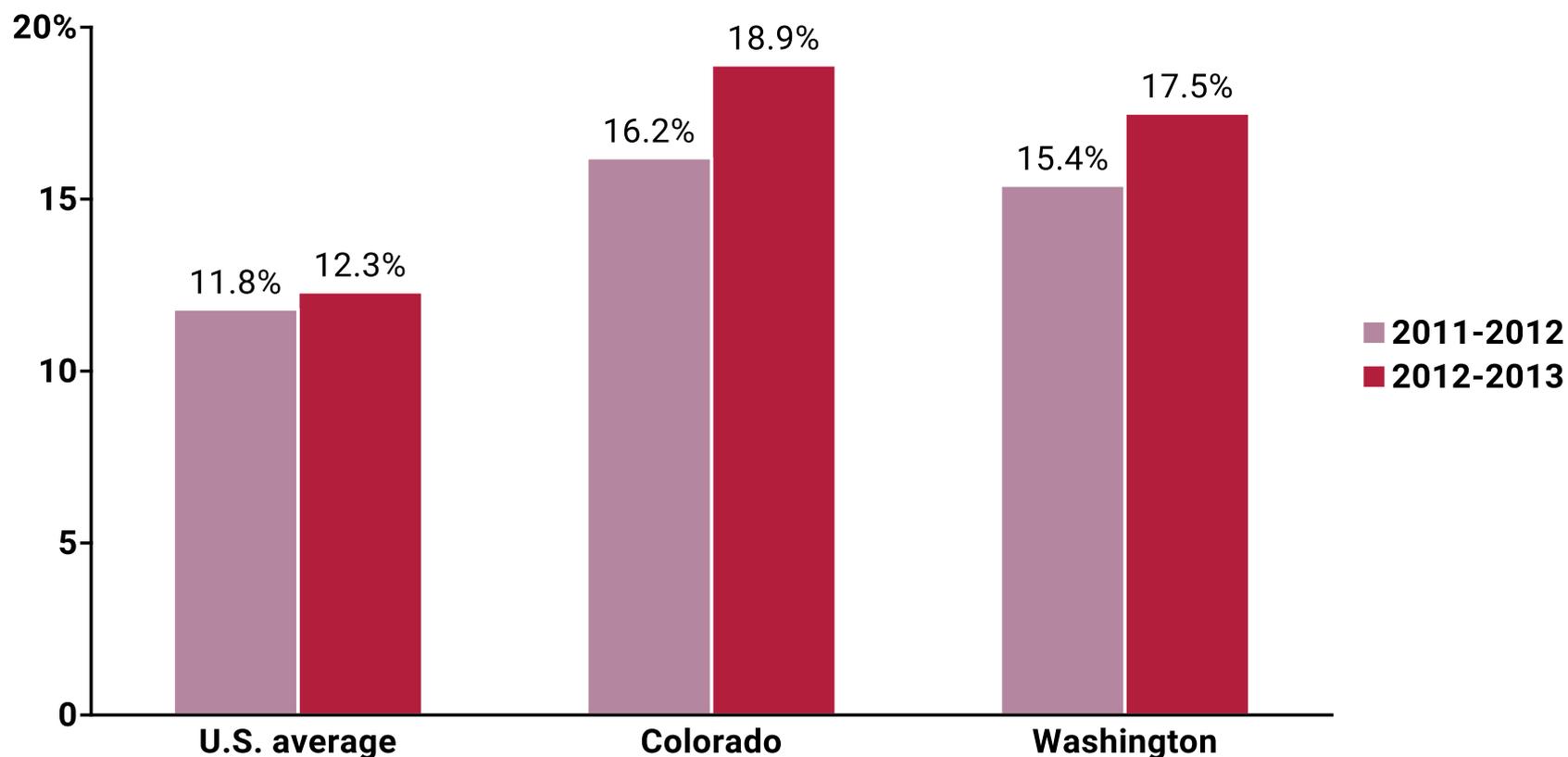
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-  Past-year and past-month marijuana use by all ages **exceeds the national average in both Washington State and Colorado.**
-  Marijuana use in both these states has **risen significantly\* between 2011-2012 and 2012-2013.**

*\*Significant at the 0.05 levels*

# Use in CO and WA are both (A) higher than and (B) rising faster than the national average

Percentage of population ages 12 and up who used marijuana in the past year



# Accidental ingestion by children has risen sharply

---

- Between 2008 and 2011, an **average of 4 children between the ages of 3 and 7 were sent to the ER** for unintentional marijuana ingestion.
- In 2013, **eight children went to the CO children's hospital** for accidental ingestion
- In the first half of 2014, at least 14 children had already been sent to the ER for accidentally ingesting marijuana products -- **more than doubling from the year before**





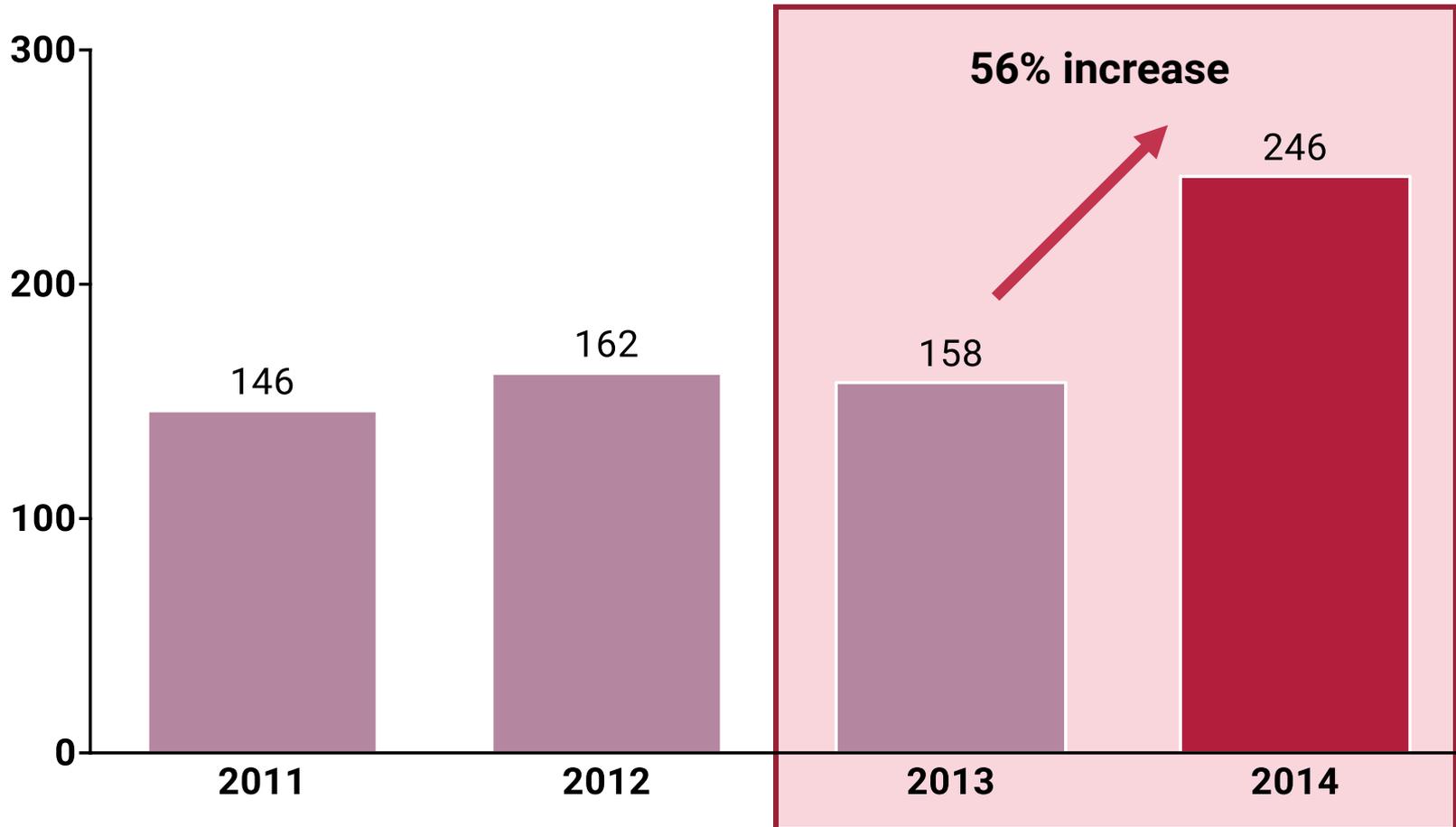
## Marijuana-related poisonings are up in Washington

---

- Since the state legalized recreational use, the Washington Poison Center has seen an **increase in the number of human exposures related to accidental or excessive consumption/inhalation of marijuana and marijuana edibles**, particularly among pediatrics

# Emergency marijuana-related calls to the WA Poison Center have skyrocketed post-legalization

## Exposure calls related to marijuana





## Teen marijuana arrests are up in Denver

- Arrests for marijuana use in Denver public schools **increased by 6% between 2013 and 2014**

# Teen admissions to drug treatment are also up

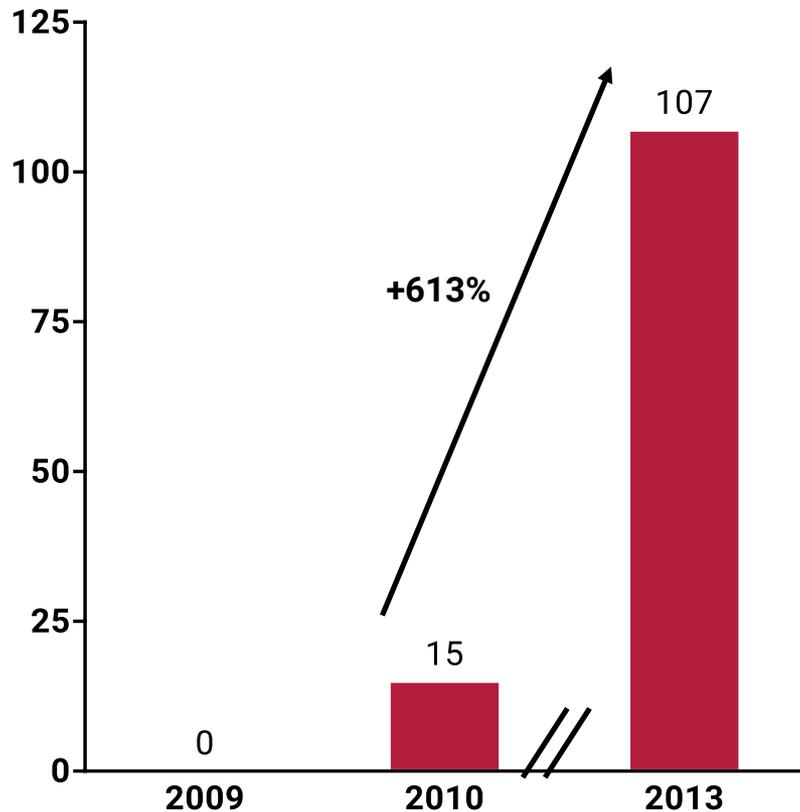
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- Teen admissions to treatment for marijuana use at the Arapahoe House treatment network in CO increased by 66% between 2011 and 2014

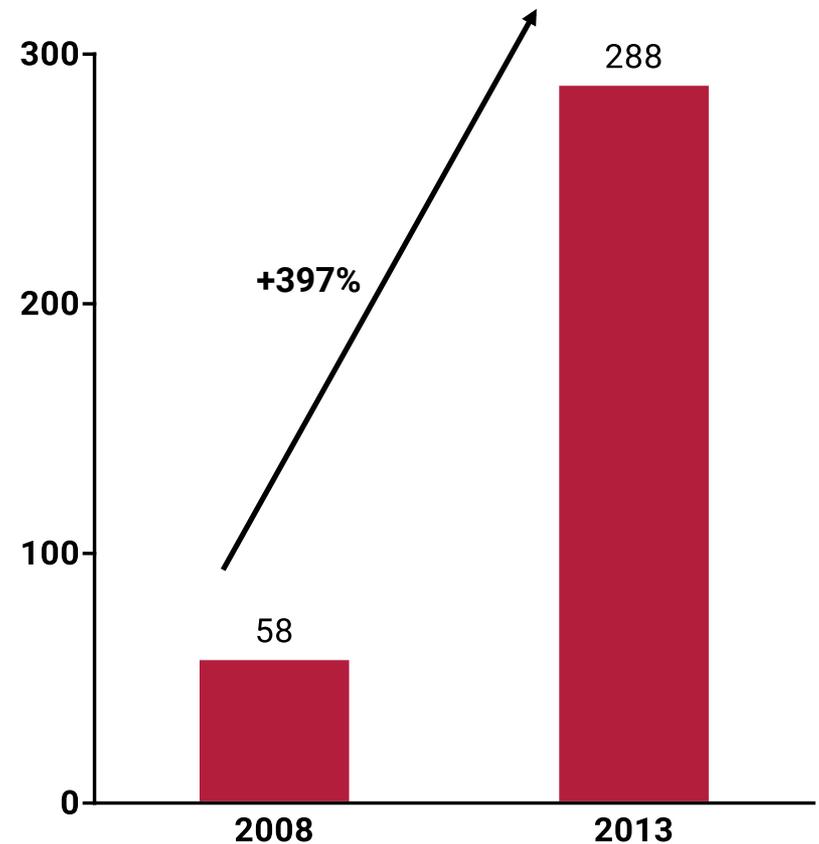


# Colorado marijuana is regularly diverted to other states since its legalization referendum passed

## # of packages from CO containing marijuana intercepted by the U.S Postal Service

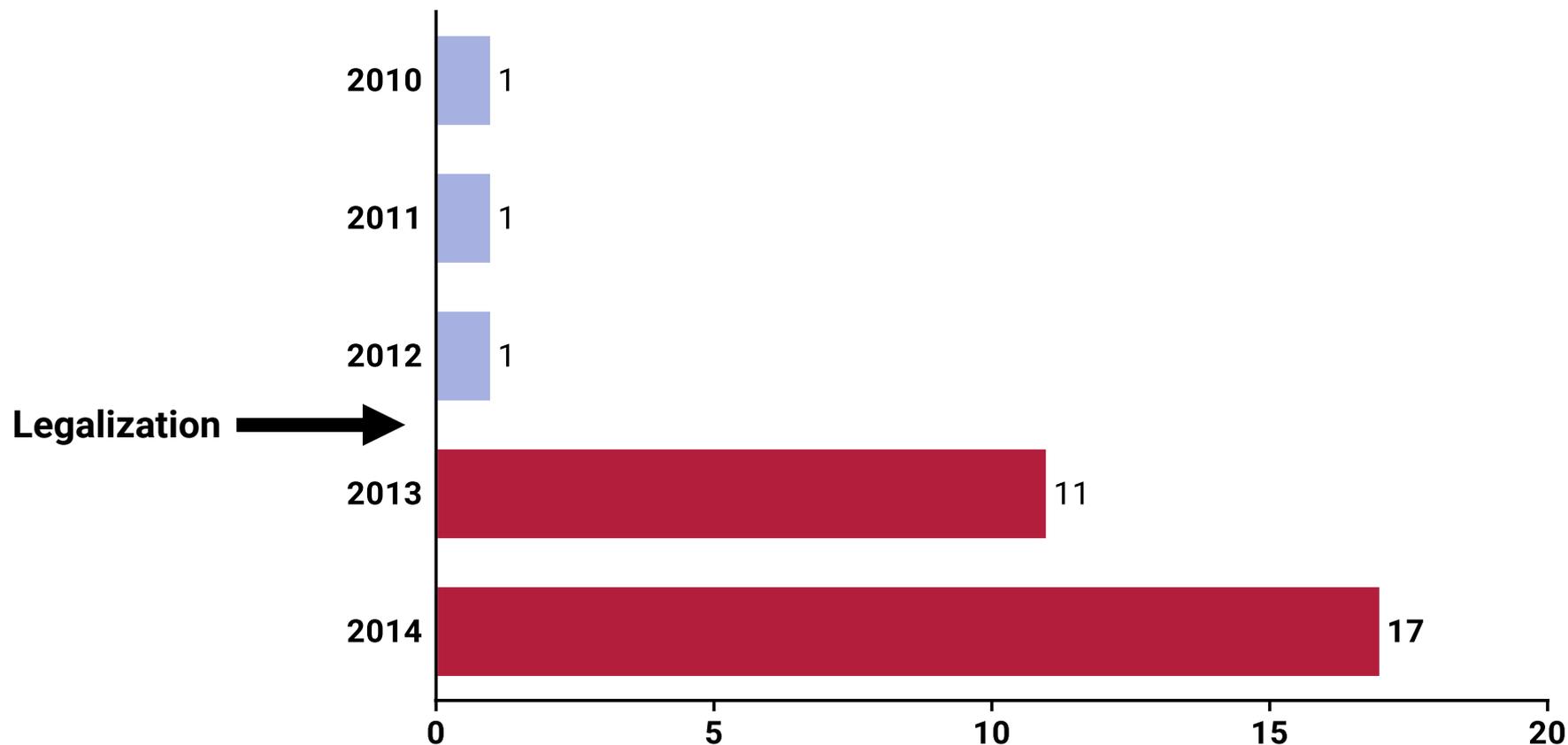


## Highway interdictions resulting in seizures of CO marijuana



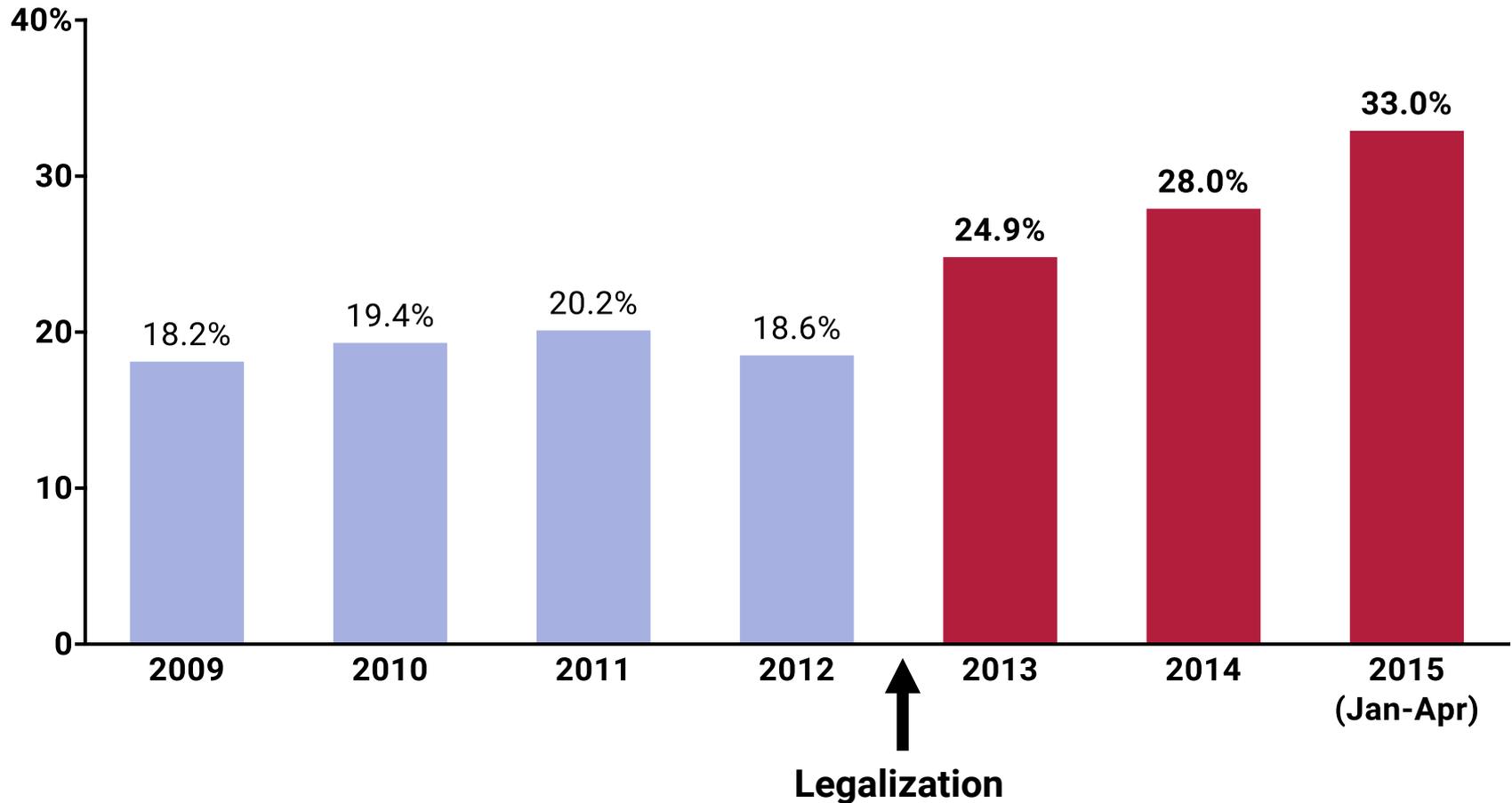
# Burns: An unexpected consequence of increased marijuana use

Number of cases with self-admitted burn victims related to marijuana in Colorado, 2010-14



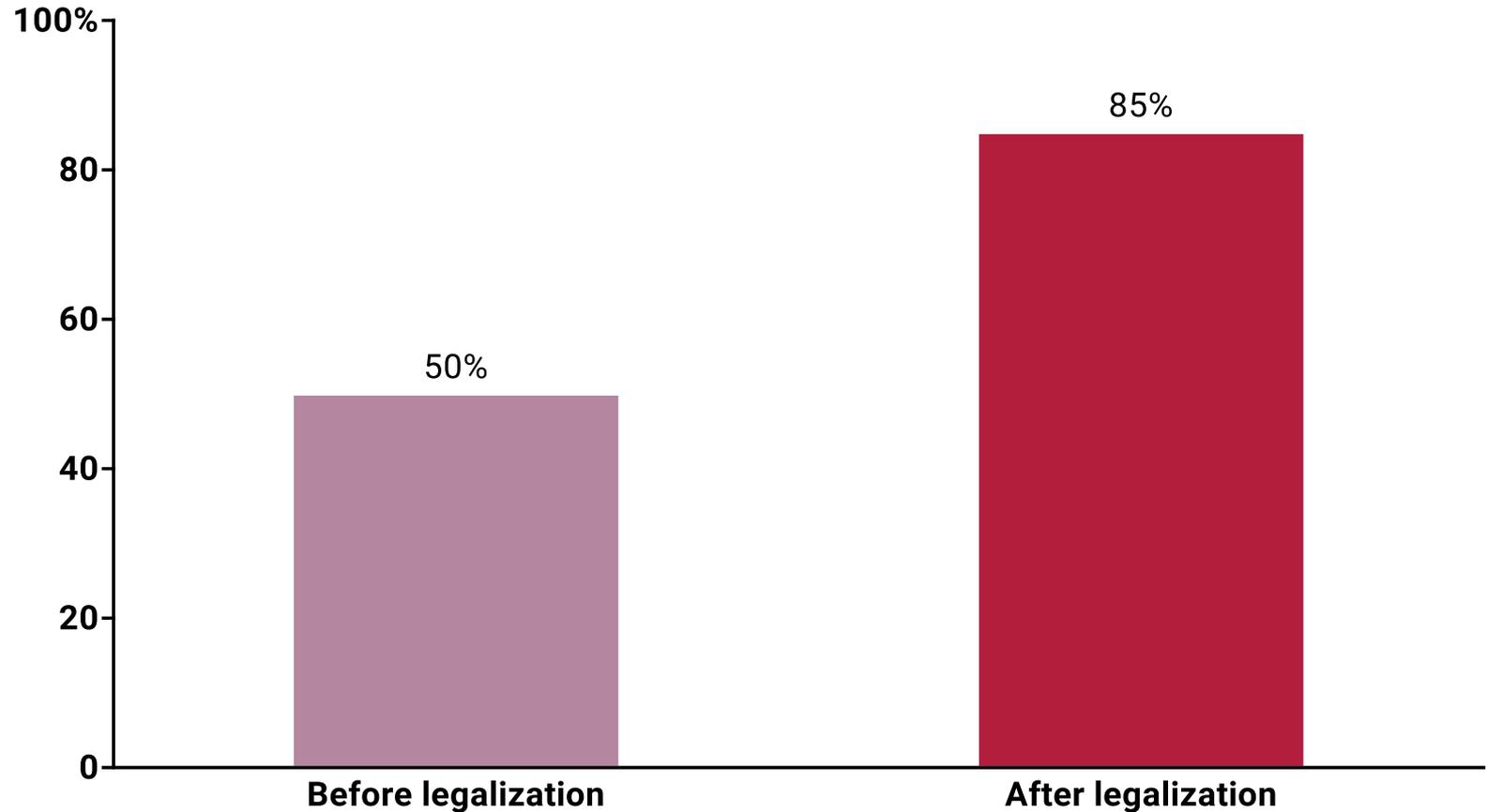
# Pot has had an increasing impact on DWIs in WA post-legalization—1/3 of cases now test positive

Percentage of total DUI/DRE cases testing positive for THC\* in Washington state



# Recent marijuana users now account for 85% of all fatal accidents in Washington state

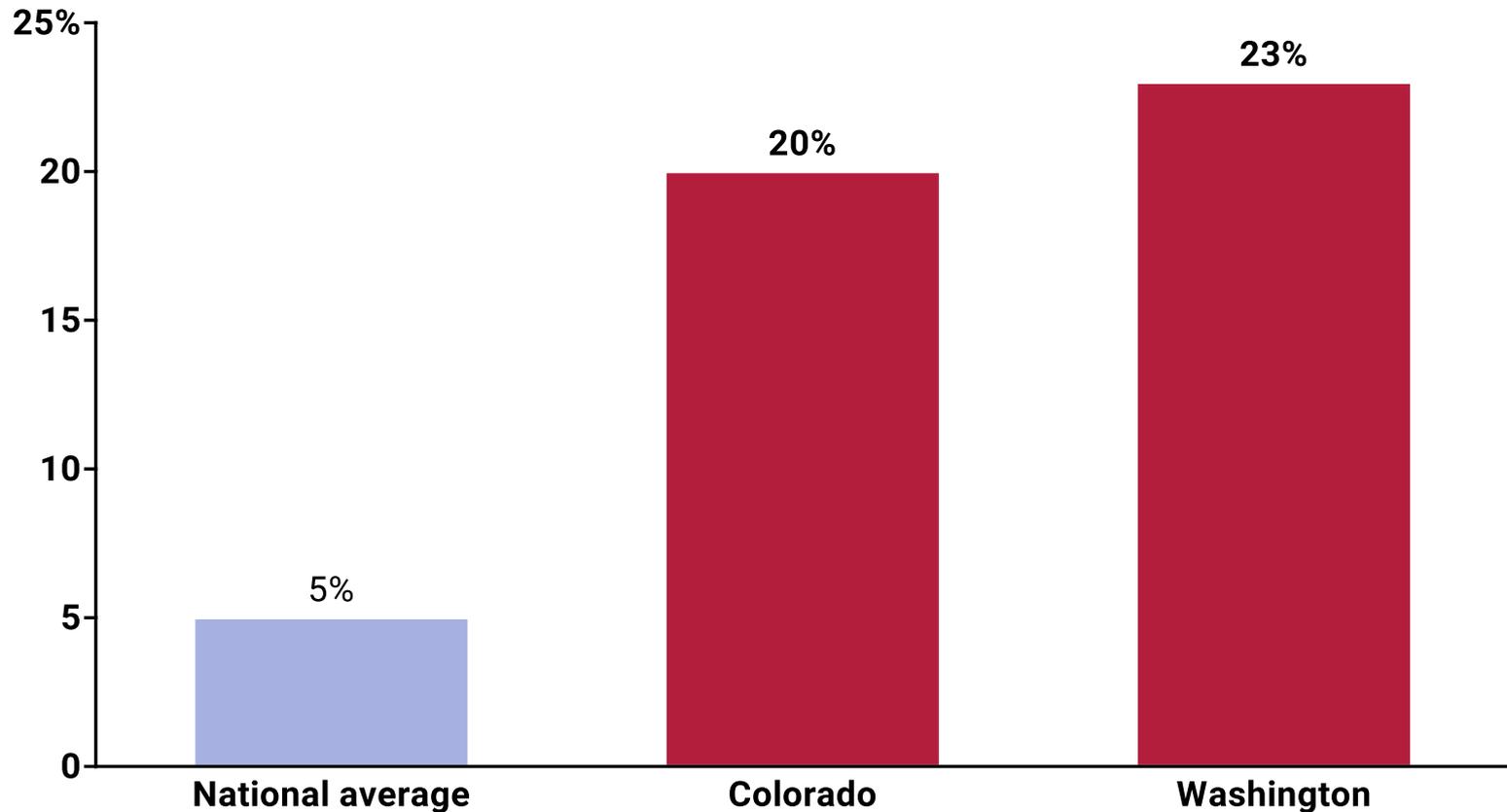
% of drivers involved in fatal crashes whose blood tests indicated recent marijuana use



Note: Recent marijuana use indicated by presence of active THC in blood tests  
Source: Washington Traffic Safety Commission

# WA and CO also show increases in of on-the-job marijuana use well above the U.S. average

Increase in positive on-the-job marijuana test results  
(2012 to 2013)



# Drug use is forcing CO employers to hire out-of-state employees instead of CO citizens



- “Jim Johnson [construction company GE Johnson’s CEO]...said his company has encountered **so many job candidates who have failed pre-employment drug tests** because of their THC use that **it is actively recruiting construction workers from other states.**”

# Colorado job applicants show alarming rates of marijuana use, and attempt to cheat drug tests

- “Leona Wellener, owner of Front Range Staffing in Colorado Springs, said marijuana use has compromised the state’s workforce. In February, Wellener said, **more than half the applicants who came to her company looking for work failed the required drug tests because of THC use.**”





## Colorado Supreme Court – June 2015

---

- Employers can fire employees for off the job marijuana use, even within the context of a state medical marijuana program.
- **Marijuana industry has vowed to fight this and make employee drug use a top priority...**

# Legalization may even have helped CO's black market in marijuana

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- A Colorado drug dealer says that if anything, **legalization has helped his business** because “it’s over priced, it’s being taxed way too high.”

Source: The Cannabist, Feb. 26, 2014 (<http://www.thecannabist.co/2014/02/26/drug-dealer-anything-legalization-helped-business-video/5581/>)



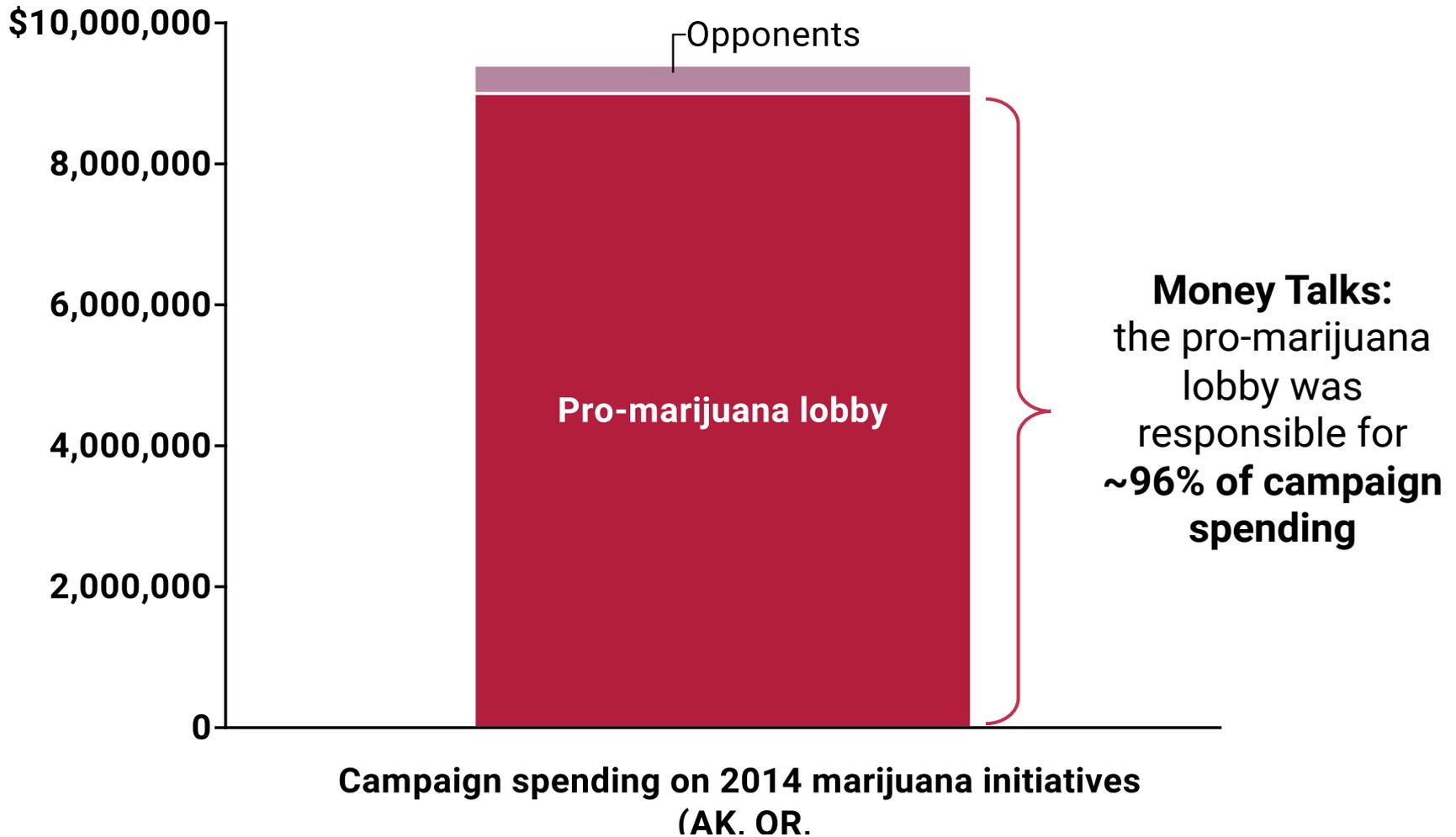


## CO police already see expanded black markets as inevitable

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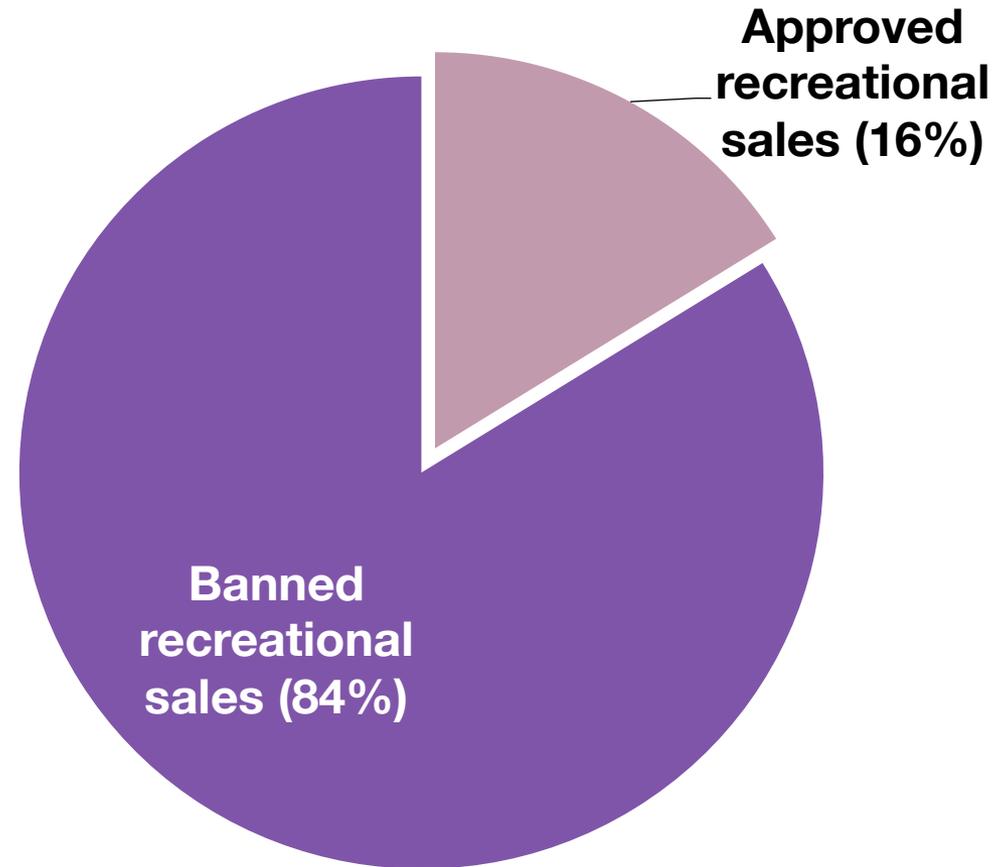
- A Colorado Springs police lieutenant stated that “[Legalization] has done nothing more than enhance the opportunity for the black market. If you can get it tax-free on the corner, you’re going to get it on the corner.”

# Why did marijuana initiatives succeed in Alaska, Oregon, and DC in 2014? Follow the money.



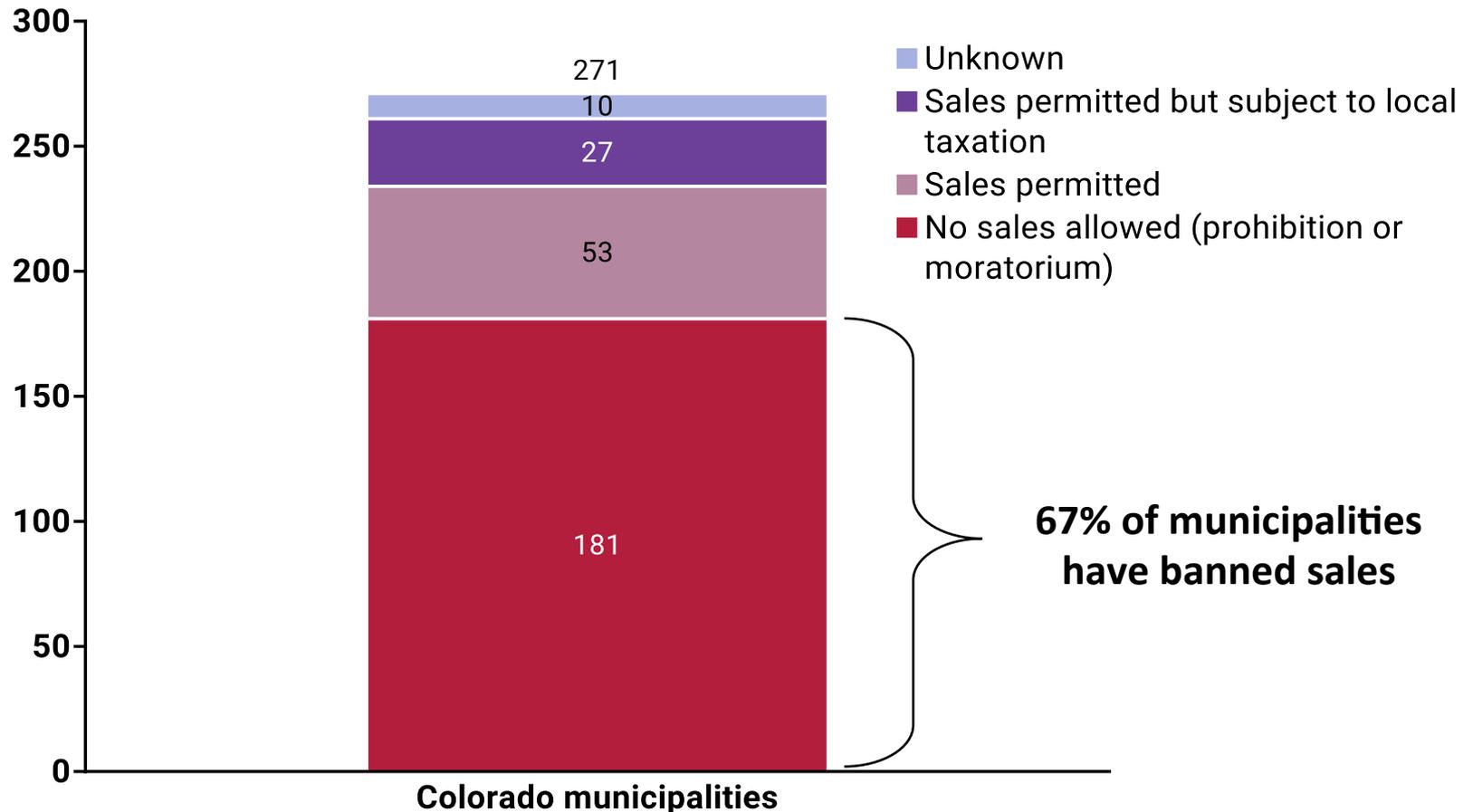
# People are already having second thoughts in Colorado

- In November 2014, **31 Colorado cities** voted on the issue of selling marijuana for recreational use
- Of those 31 cities, **26 – or 84% –** voted to ban such sales



# Well over half of Colorado municipalities have banned marijuana sales since legalization

## Legal status of retail marijuana sales in CO municipalities





# **Concluding thoughts**

# BBQ Questions:

- **Are your relationships better off when people use more marijuana?**
- **Does marijuana make for better neighbors? Parents? Better kids? Better employees? Better drivers?**

# Legal marijuana and marginalized communities

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- **How has alcohol legalization (or gambling or tobacco) affected marginalized communities?**

## **Not just marijuana:** Advocates often supports the legalization of all drugs

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**“We're at a tipping point where it's starting to feel like marijuana legalization is no longer a question of if -- but when. But what about the other drugs?...*Many of the reasons why marijuana legalization makes sense can be applied to drugs more generally.*”**

**-HuffPost, Drug Policy Alliance**



- **Bipartisan Co-Chairs (Kennedy + Frum)**
  - **Launched in 2013**
  - **Over 250,000 press mentions**
- **Public Health Scientific Advisory Board**
- **30 state-wide affiliates, 1 int'l. affiliate**

# What is SAM, and what does it do?

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1. To **inform public policy with the science** of today's marijuana.
2. To have **honest conversations about reducing the unintended consequences of current marijuana policies**, such as lifelong stigma due to arrest.
3. To **prevent the establishment of Big Marijuana that would market marijuana to children** – and to prevent Big Tobacco from taking over Big Marijuana. Those are the very likely results of legalization.
4. To promote **research of marijuana's medical properties** and produce pharmacy-attainable medications.



**Thank you!**

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