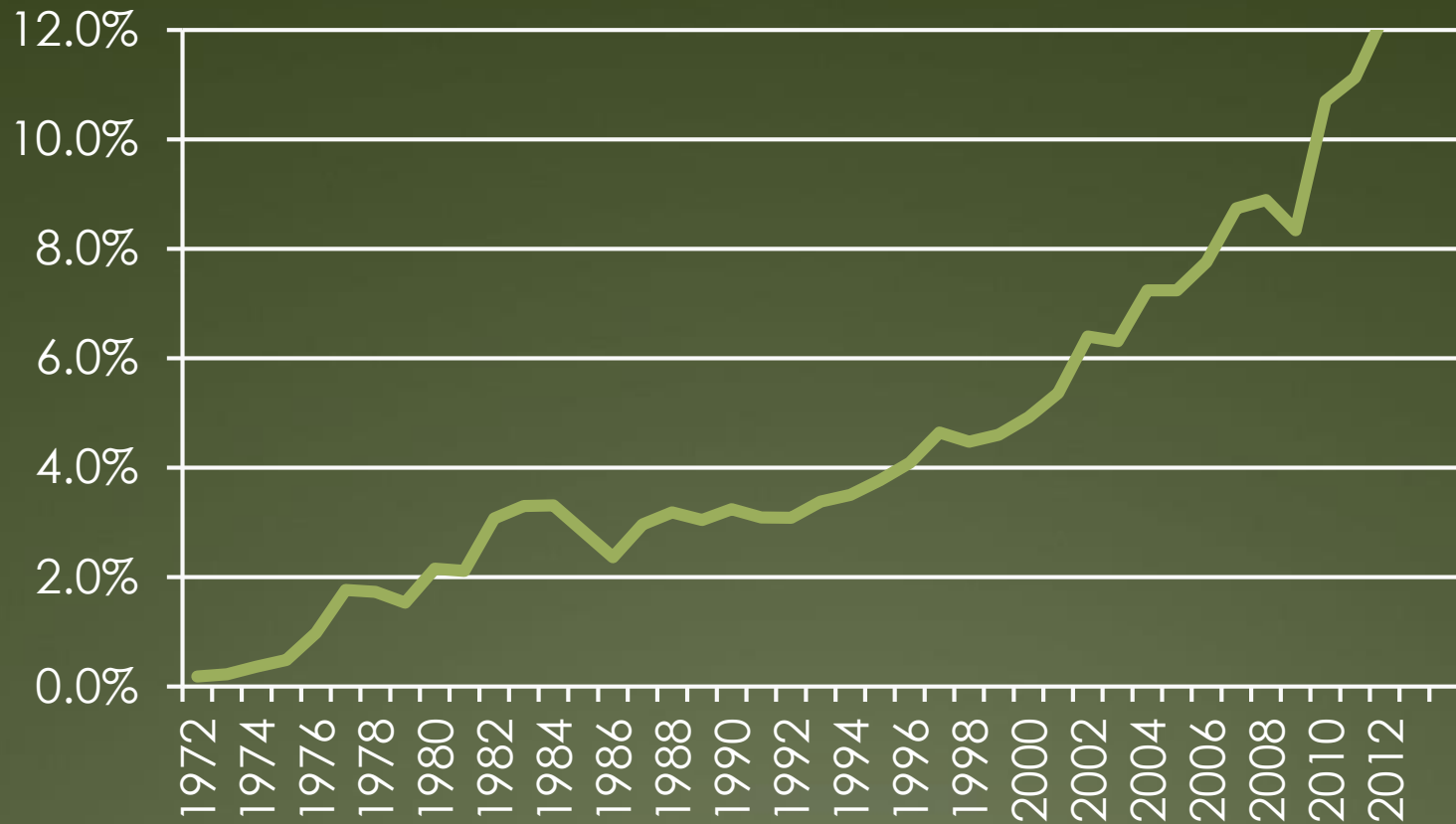


# MARIJUANA LEGALIZATION

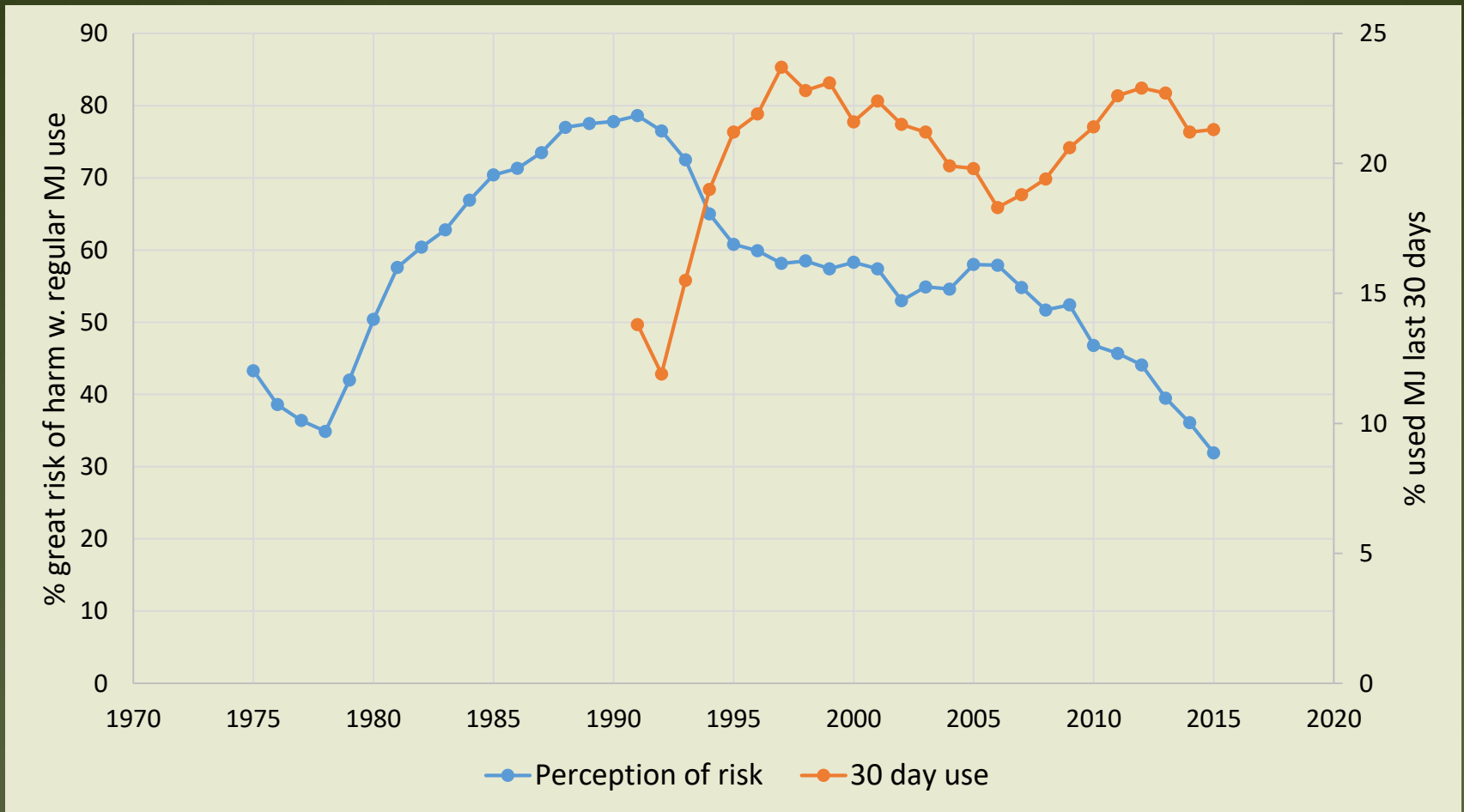
# KEY MARIJUANA FACTS

- \* Today's marijuana is more potent than the marijuana of the 1970s
- \* Health impacts and social costs of legalization are largely unknown
- \* Perception of marijuana as harmful has decreased
- \* Marijuana is most harmful to adolescents, whose brains are still developing

# THC content has increased significantly



# Perception of harm from regular MJ smoking vs. actual MJ use



Source : Monitoring the Future 2014; 12<sup>th</sup> graders (National Data)

# MJ Preparations in Legal States

## \* Marijuana

- \* 18.7% avg. THC content; top shelf strains to 30%
- \* Dried flowering tops and leaves of the plant



## \* Hashish

- \* THC content 2%-20%
- \* Dried and compressed resin secreted from plant



## \* Hash oil

- \* THC content 15%-50%
- \* Oil-based extract of hashish
- \* Now often used in vaping



# MJ Preparations in Legal States

## \* Hash Oil Extracts

- \* THC content 50-75%+
- \* THC extracted from MJ plant matter by butane, CO<sub>2</sub>

## \* Include Wax (or Earwax)

- \* Like hash oil but with a waxy consistency

## \* Include Shatter

- \* THC content up to 90%
- \* Semi-transparent, yellow or amber, thin substance that “shatters” when a piece is broken off



# MJ Consumption in Legal States

## \* Smoking

- \* Joints, bowls, bong

## \* Vaping

- \* I.e., e-cigarettes filled with hash oil, not liquid nicotine



## \* Dabbing

- \* A dab of wax or shatter is placed on a heated surface, vaporizing the concentrate which is then inhaled



# MJ Consumption in Legal States

- \* Edibles, “infused” products

- \* Baked goods, candies, drinks, etc.



- \* Tinctures

- \* Liquid concentrate that can be dropped on or under the tongue, or in food or drink





# Edibles are Different!

Users expect effects experienced with inhaled THC, BUT . . .

- \* Onset of effects is delayed for edibles
- \* Effect of edibles is stronger than people realize
- \* Edibles create a longer high than expected
- \* THC with no CBD can cause extreme paranoia
- \* Edibles are attractive to naive users, tourists

CREATING HEALTHY  
NORMS AROUND  
MARIJUANA

# Creating a Healthy Normative Environment: Policy Choices Matter

- \* The more MJ is seen like tobacco or alcohol, as a substance that has health consequences, the better the chance of mitigating harmful impacts to individuals.
- \* Likewise, enforcement of criminal laws, such as underage use and driving while impaired, mitigates community impacts.

# MJ Codes Promoting a Healthy Normative Environment



THE FARM,  
BOULDER, CO  
MON-FRI 8:00-6:45  
SAT 9:00-6:45  
SUN 11:00-6:45

- \* Legislate hours of operation, transportation
- \* Ensure that you will have responsible operators by requiring business insurance, operating plans, neighborhood responsibility plans, character & background checks for owners and employees
- \* Consider restrictions/prohibitions on business signage, advertising, promotional materials

# Limits on Personal Possession, Use of MJ Promote a Healthy Normative Environment

- \* Restrictions on amounts one person/house can possess or cultivate (1 oz, 6 plants)
- \* Restrictions on public use, including general restrictions on smoking/vaping of all substances
- \* CO's DUID law: 5 ng THC = presumed impaired

# MJ Laws re: Packaging Promote Safe Use

- \* RMJ must be labeled: “Contains MJ,” potency, health risks
- \* RMJ must be packaged in a sealed container; in some cases opaque child-resistant containers
- \* Edibles may not look like candy that is designed for consumption by children, e.g., gummy bears



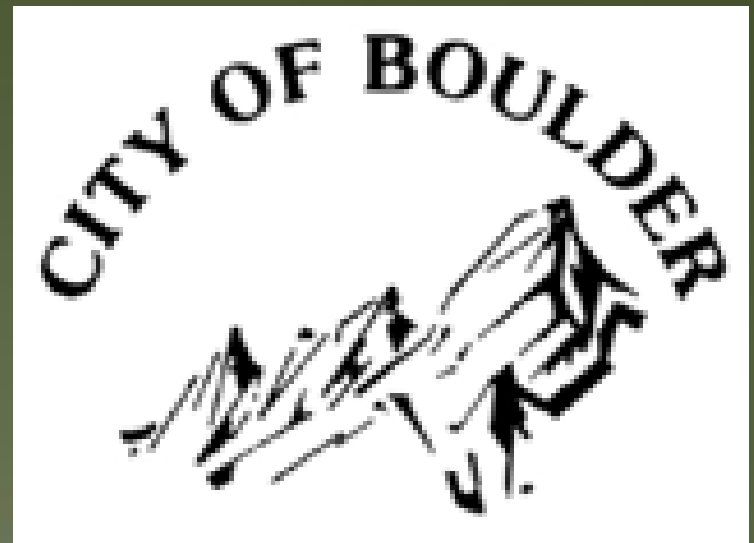
For edibles, each unit/serving can include no more than 10 mg THC

# Establish Safe Product Standards

- \* Require testing for pesticides, molds, bacteria
- \* Require testing for THC & CBD levels
- \* Consider limiting the potency of hash oil, shatter, wax, dab



- \* Local legislation can supplement state regulations that are not sufficiently robust

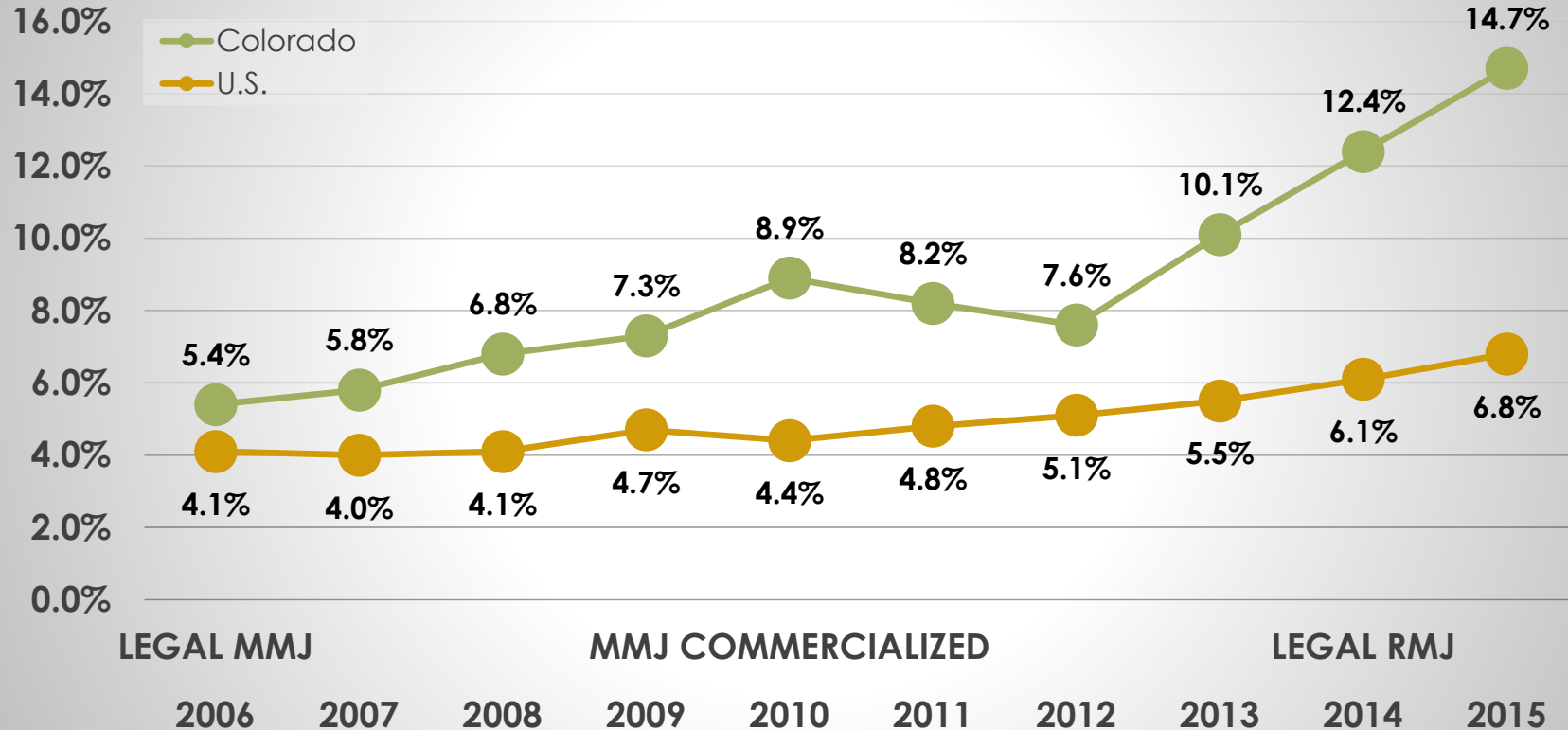




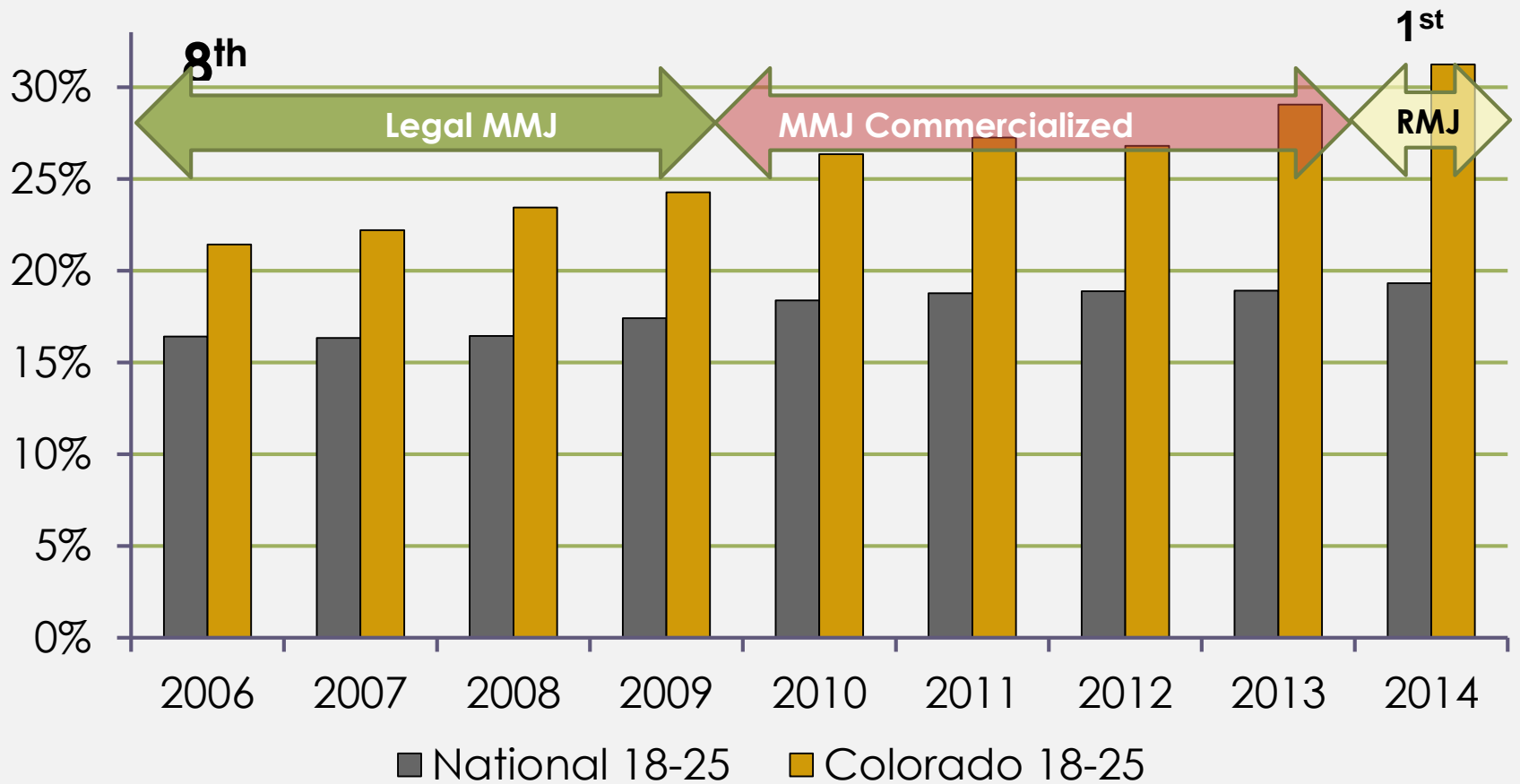
Legal Marijuana

**Impacts in CO**

# Adult (26+) MJ Use (Past 30 days): Colorado vs. National Average



# Average Past Month MJ Use Age 18 to 25

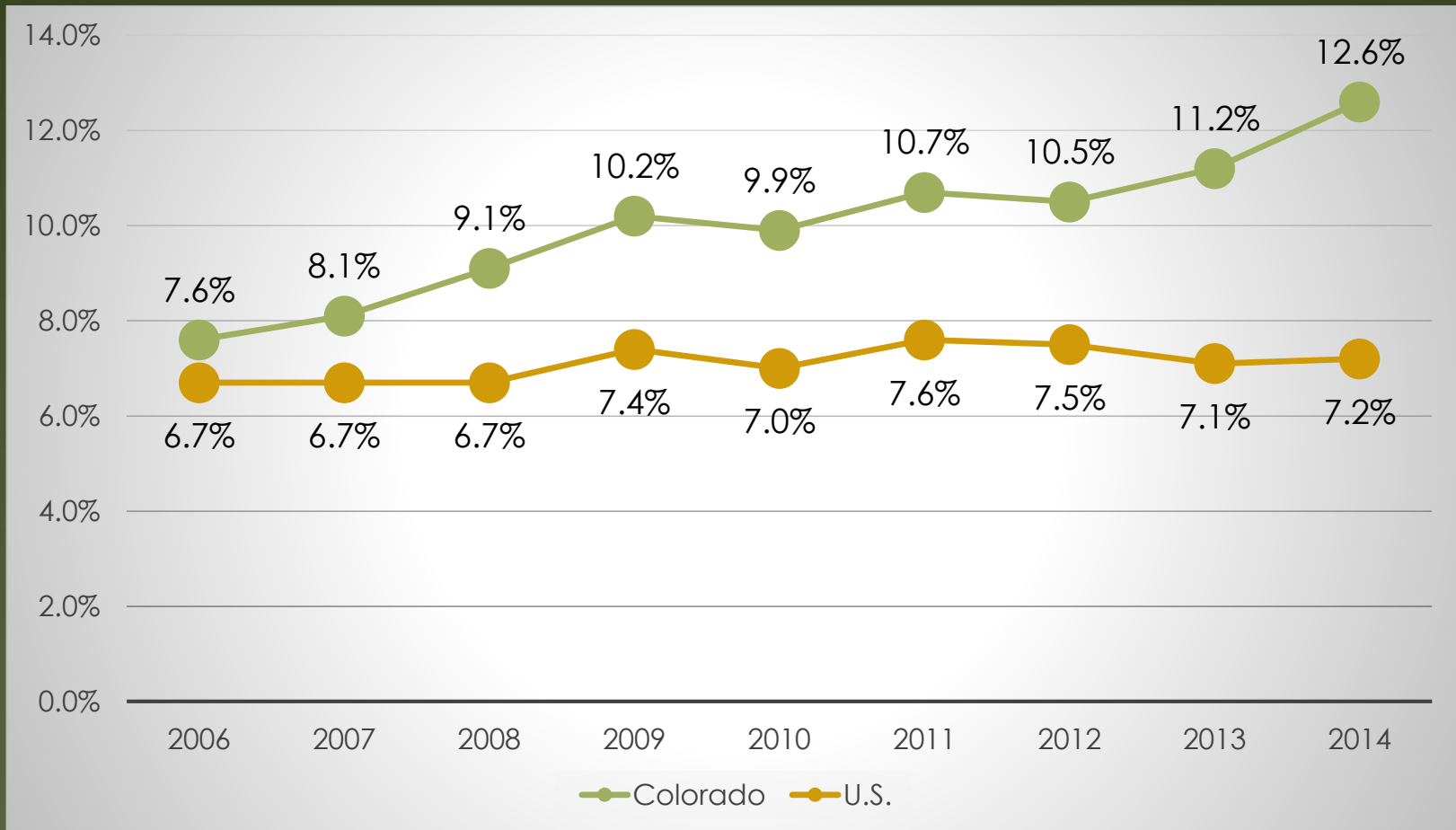


## Reported Number of Times College Students Used Marijuana: National ACHA/NCHA 2015 data

	Total %
Never used	61.0
Used, but not in last 30 days	22.1
Used 1-9 days in last 30 days	10.9
Used 10-29 days in last 30 days	3.8
Used all 30 days	2.2
Any use within last 30 days	16.9
Any use within last 30 days (CO 18-25)	31.8

Note that use by college-aged students in CO is 2X that of college students nationally

# Past Month MJ Use: Aged 12-17



Source: SAMHSA/NSDUH

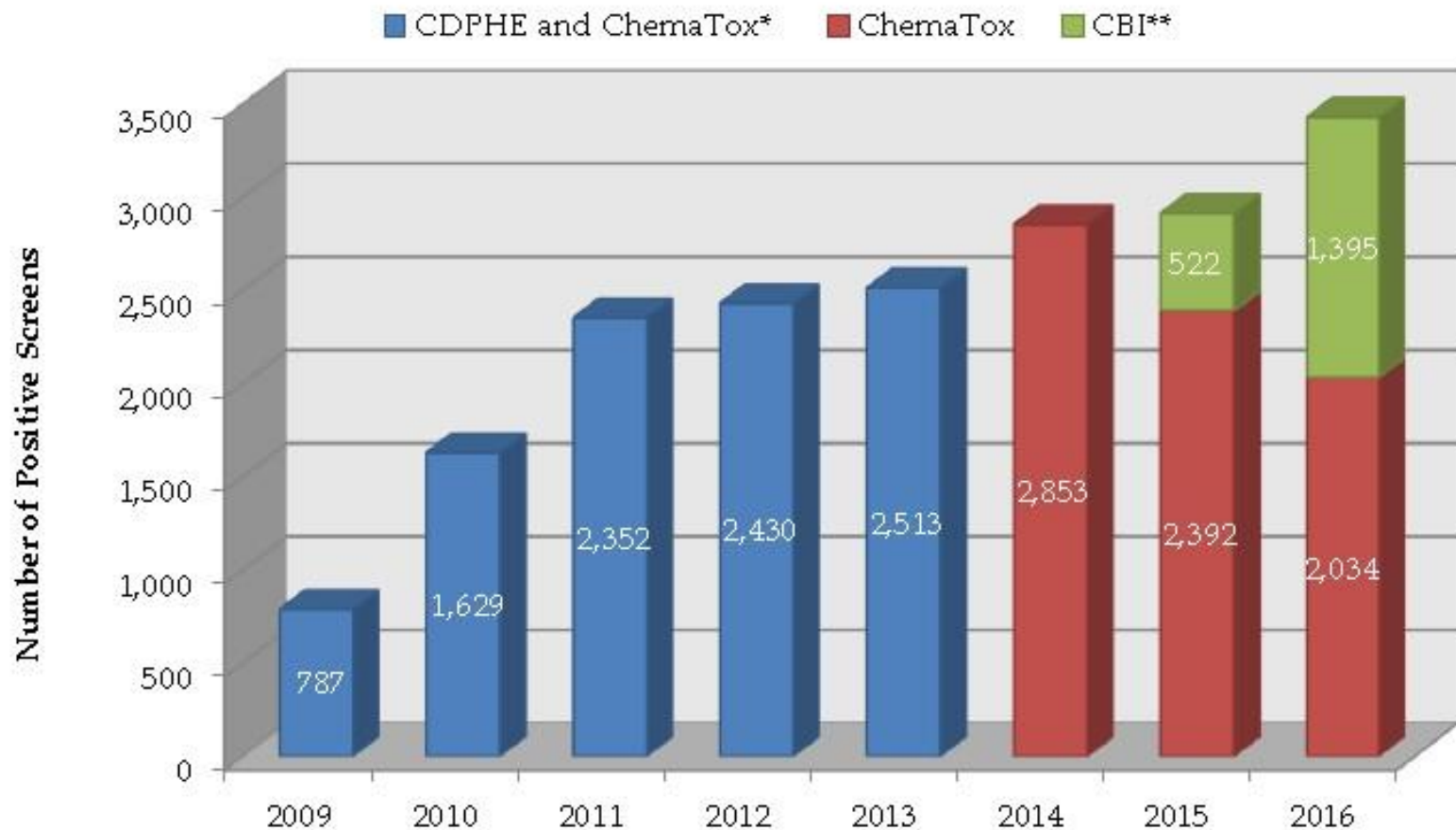
# MJ-Related Traffic Fatalities

**Percent of All Traffic Deaths That Were Marijuana-Related when an Operator Tested Positive for Marijuana**



# Number of + Cannabinoid Screens

## Number of Positive Cannabinoid Screens



# % Drivers with 2 ng or more of THC

Toxicology screening by one of the state's largest labs demonstrates an increase in both the number of screens and the % positive screens (Sara Urfer, Chematox Laboratory):

Year	Total Screens	% positive for THC metabolites	% active THC 2ng/ml <sup>+</sup>
2009	1514	52%	28%
2010	2809	58%	38%
2011	3987	59%	49%
2012	4263	57%	52%
2013	4333	58%	63%
2014	4371	65%	67%

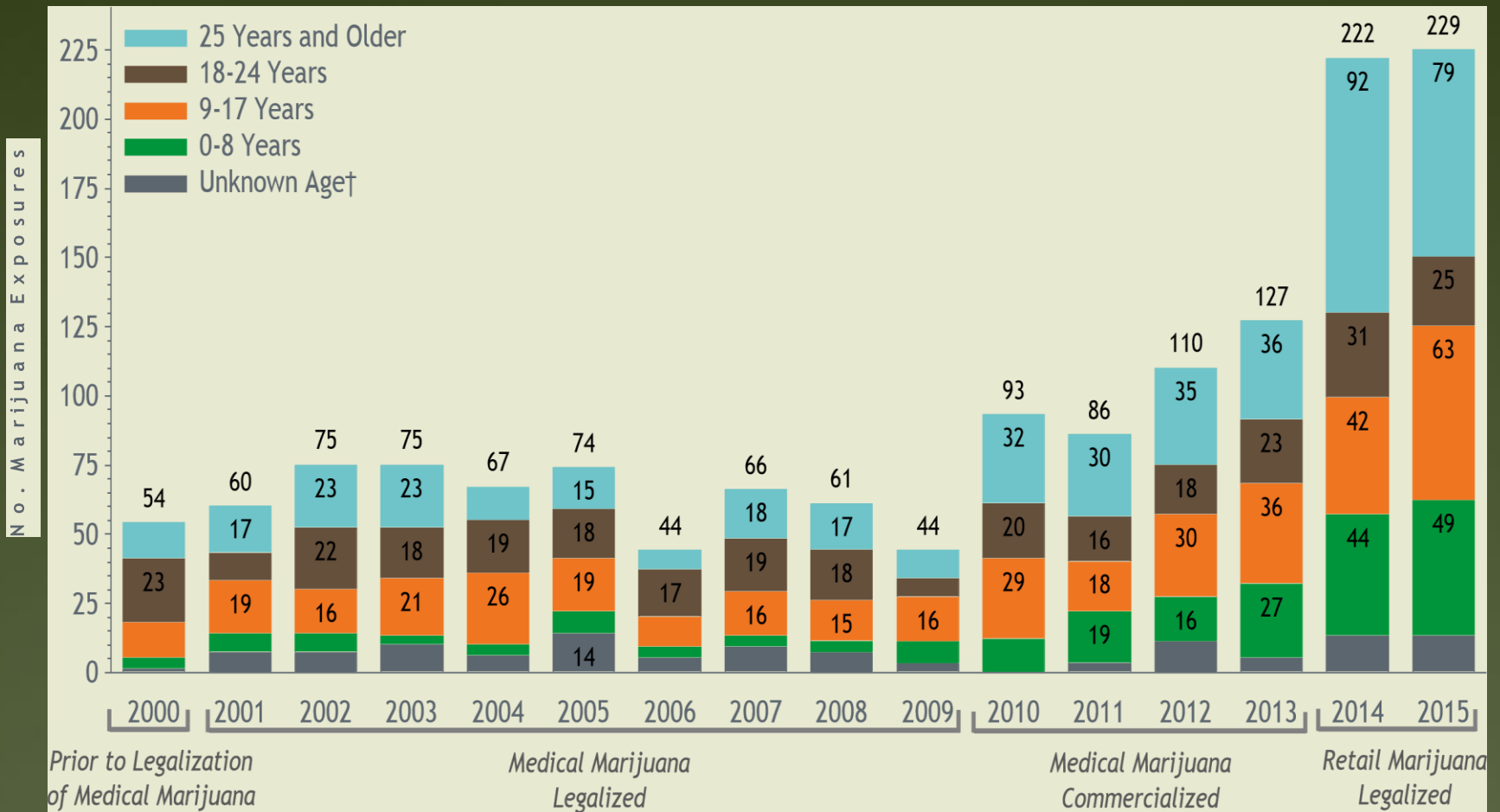
<sup>+</sup>2 ng/ml THC represents probable recent use but not necessarily impairment



# THC + ALCOHOL

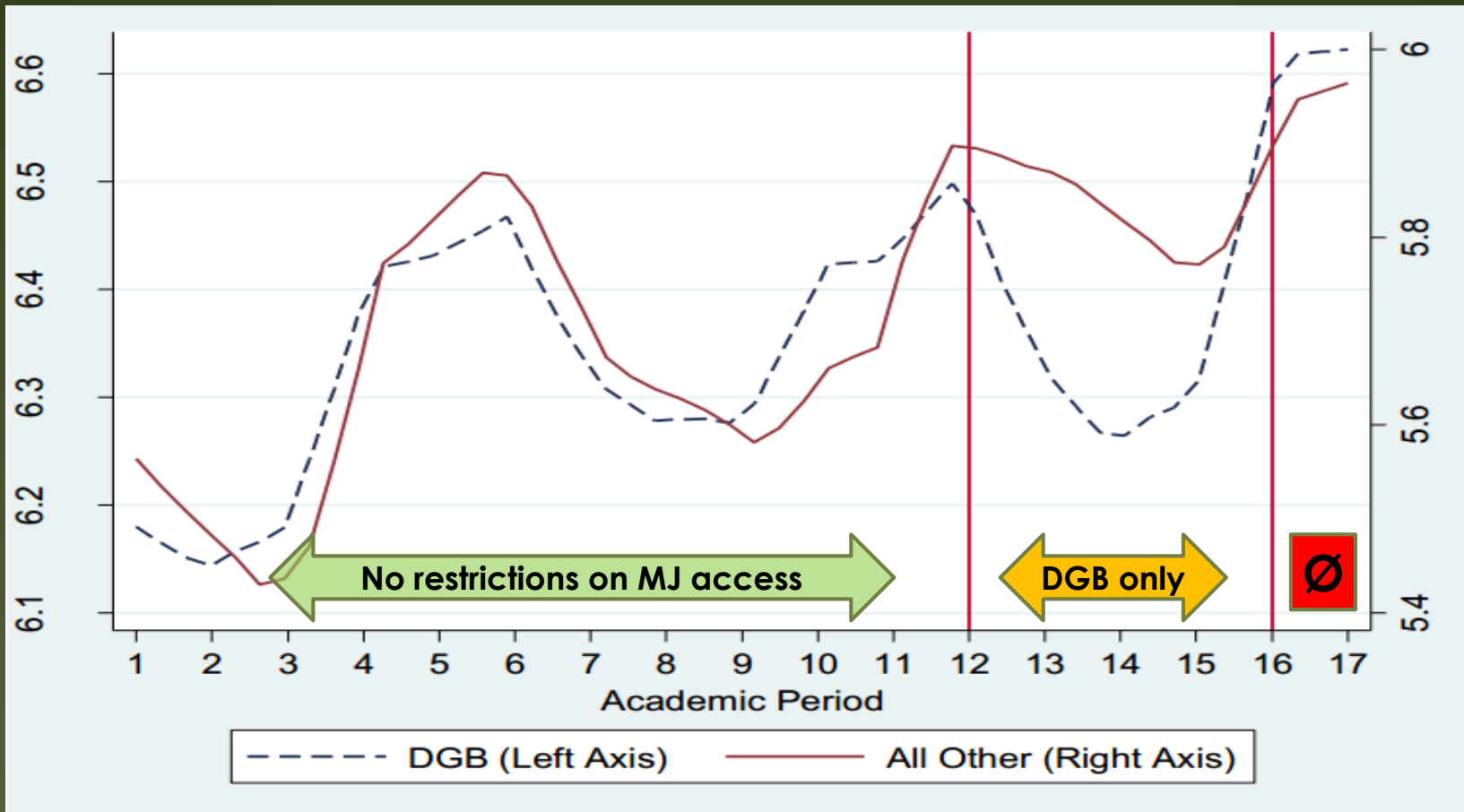
- \* Both CNS Depressants
- \* Additive, possible synergistic effect
  - Additive:  $1 + 1 = 2$
  - Synergistic:  $1 + 1 = 5$
- \* **Very low levels of both can cause major impairment**
  - 0.035 BAC (under the legal limit) + low doses of THC  $\approx$  0.09 – 0.14 BAC level of impairment (above the legal limit)

# Rocky Mtn Poison & Drug Center: MJ-Related Exposures by Age Range



# Learning Outcomes

(DGB = Students from the Netherlands, Germany, and Belgium)



Legal Marijuana

**Final Thoughts**

# Revenue: Taxes & License Fees

- \* Potential for taxing at both state and local level
- \* COB MJ revenues were 1.75% of budget after 2 years (\$6.7 million)
- \* State of CO MJ revenues are 15.56% of general fund beginning FY 2018/19

<b>Total taxes Boulder CO:</b>	<b>49.705%</b>
State MJ excise tax	15.000%
State MJ sales tax (now 15%)	10.000%
State sales tax	2.900%
City MJ excise tax	5.000%
City MJ sales tax	3.500%
City sales tax	3.860%
City use tax	7.360%
County sales tax	0.985%
Other sales tax	1.100%
Initial license/fees	\$7200-\$13,000
Annual license/fees	\$10,455- \$18,755+

# The Bottom Line:



- \* The sky has not fallen
- \* Good regulation goes a long way
- \* Monitor data and anecdotal reports for trends; respond quickly
- \* Dedicate resources to prevention, treatment, and other social costs
- \* Many impacts remain unknown

# Questions?

