

Preventing and Treating Marijuana Use

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Overview

- Why does marijuana matter?
- Community-based prevention strategies
- Interventions and treatment

Pregnancy

Latency

Adolescence

Adulthood

In utero MJ exposure:

- ↓IQ by 5 points at age 6 years Goldschmidt et al. (2008), *J Am Acad Child Adolesc Psychiatry* 47:254-263
- ↑depression at age 10 (35% v 17%, $p < 0.01$) Gray et al. (2005), *Neurotoxicol Teratol* 27:439-448
- ↑hyperactivity, impulsivity, inattention at age 10 Goldschmidt et al. (2000), *Neurotoxicol Teratol* 22:325-336
- ↑ odds of MJ use by age 14 and heavier MJ use Day et al. (2006), *Addiction* 101:1313-1322
- ↓achievement at age 14 (Composite WIAT 83.9 v 89.9, $p = 0.003$) Goldschmidt et al. (2012), *Neurotoxicol Teratol* 34:161-167



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Second-hand exposure:

- (CO) 14 marijuana exposures in children < 12 yrs evaluated since 2010
- 8 patients admitted, 2 to ICU
- case report of 13-month old admitted to hosp. with lethargy, ↓appetite, T=38C after 2nd hand exposure to MJ smoke

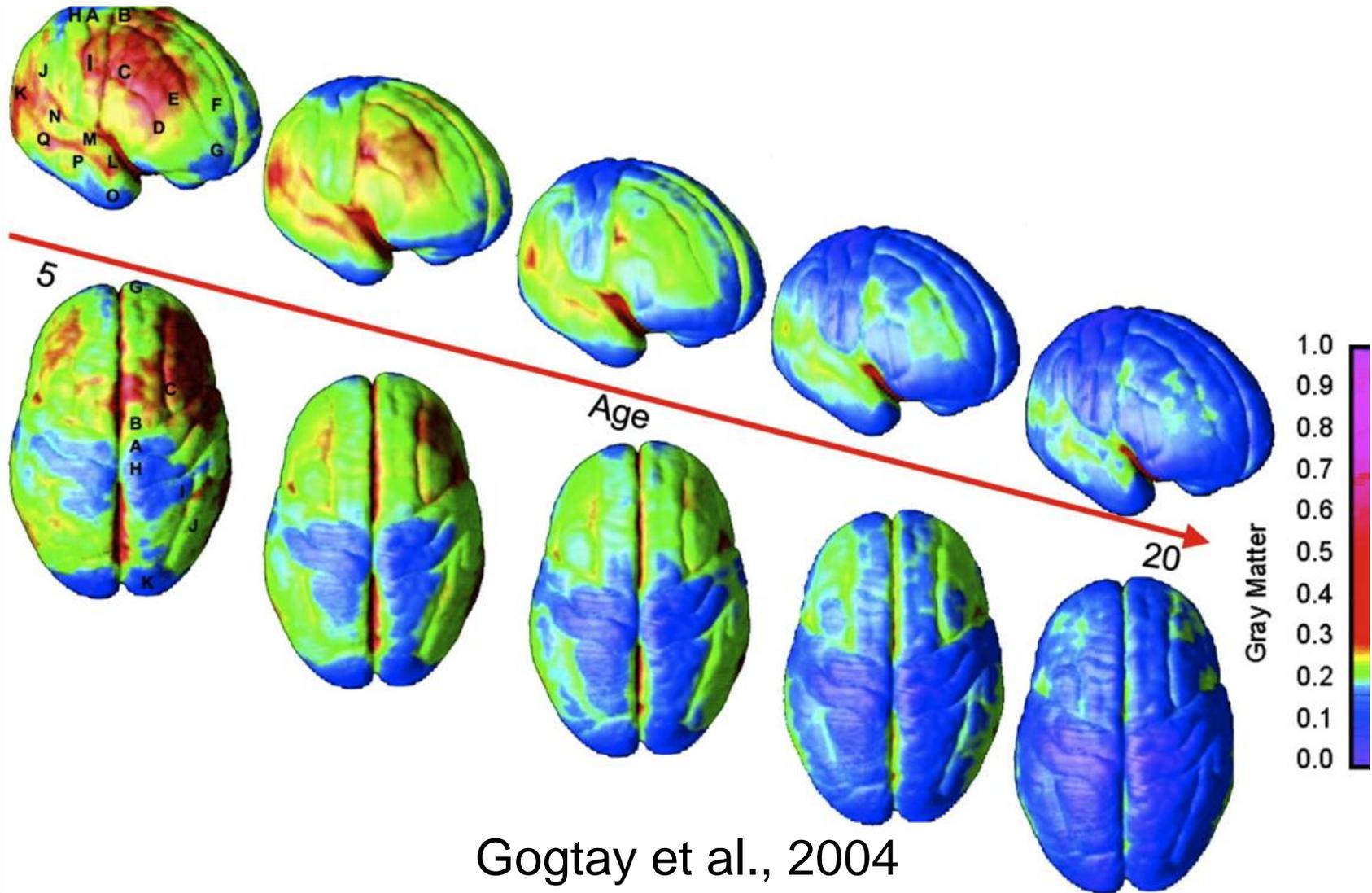
Sources: Wang et al. (2013), *JAMA* 140:epub; Zarfin et al. (2012), *Child Abuse Negl* 36:81-83

Pregnancy

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Gogtay et al., 2004

- 1 in 6 develop addiction
- Heavy marijuana exposure starting in adolescence predicts and 8-point drop in IQ from age 13 to 38 years
- 2-fold increased risk of psychosis in adulthood
- Daily adolescent use of cannabis predicts doubling in odds of having anxiety d/o at 29 yrs

Sources: Hall and Degenhardt (2009), *Lancet* 374:1383-1391; Degenhardt et al. (2012), *Addiction* 108:124-133; Meier et al., (2012), *Proc Natl Acad Sci USA* 109:E2657-E2664

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Adolescence

Adulthood

- MJ use by 15 yrs \Rightarrow **3.6 X** less likely to graduate from HS, **2.3 X** less likely to enroll in college, **3.7 X** less likely to get a college degree
- Teens using MJ before sex were **1/2** as likely to use a condom
- Adolescent MJ use predicts **2X** \uparrow risk of other drug use, though vast majority of MJ users do not go onto other drugs (various theories on *mechanism*)

Sources: Fergusson et al. (2006), *Addiction* 101:556-569; Hendershot et al. (2010), *Psychol Addict Behav* 24:404-414; Horwood et al. (2010), *Drug Alcohol Dep* 110:247-253; Smith et al. (2013), *Drug Alcohol Depend* 132:63-68

Marijuana marketing targets youth

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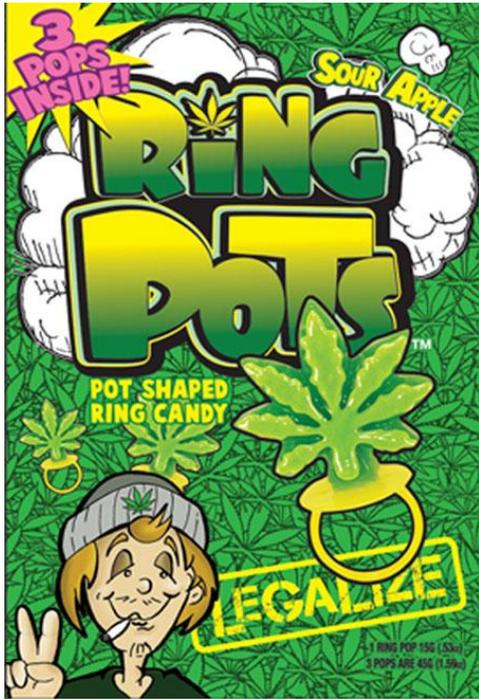
3.5 grams of
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DISCLAIMER: Intensity used during the day, 100MG dominant strains provide effects described by a sense of energy, confidence and well-being. These strains stimulate serotonin, a neurotransmitter, which acts in the central nervous system and is responsible for appetite, mood, and sexual function.
DISCLAIMER: Best used during non-active times during the day or evening, 100MG dominant strains provide effects described by a sense of calm or serenity. These strains are used to relax and to induce sleep. They can also help reduce tension, stimulate appetite and reduce intracranial pressure.

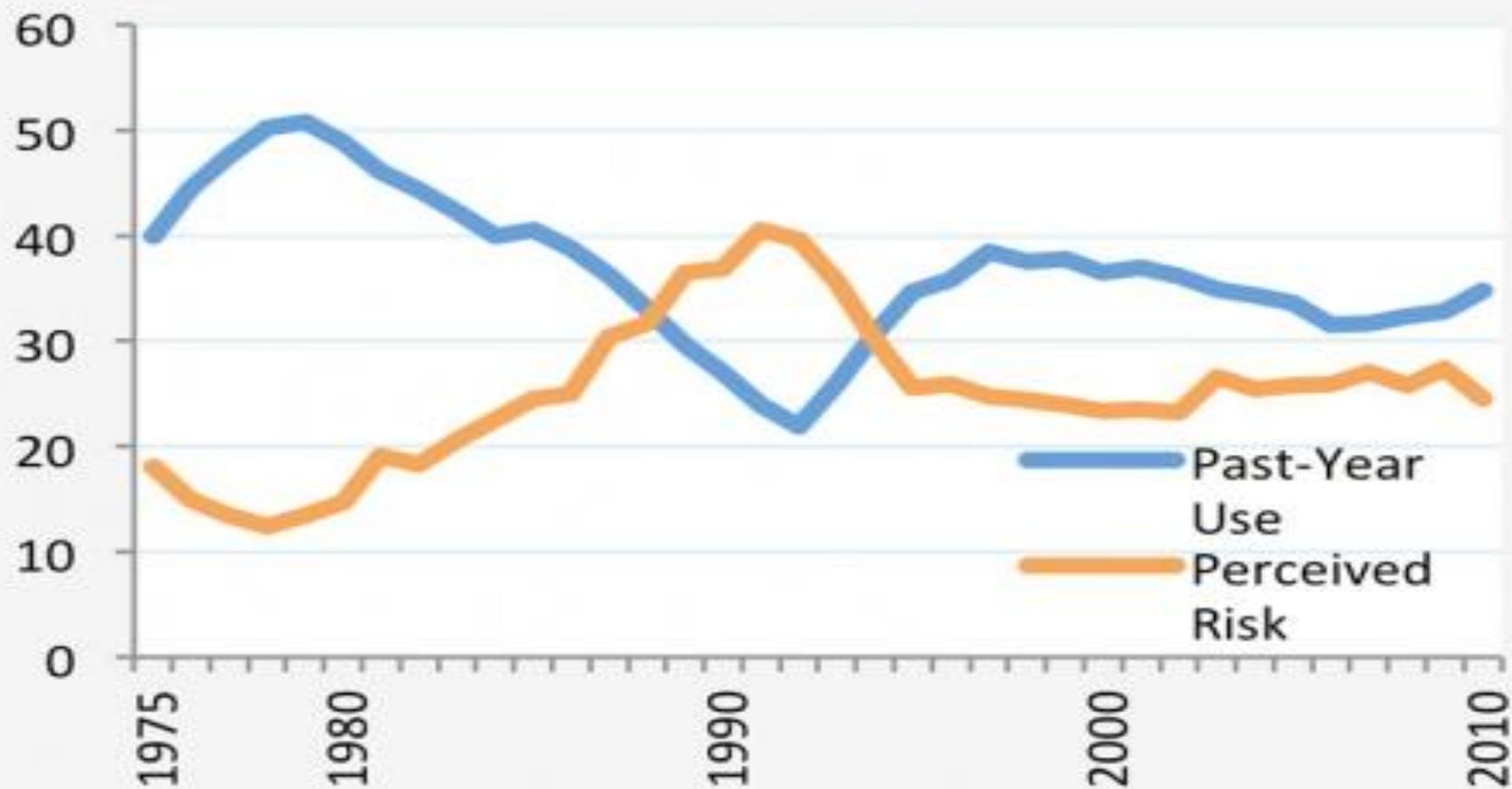



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Marijuana marketing targets youth



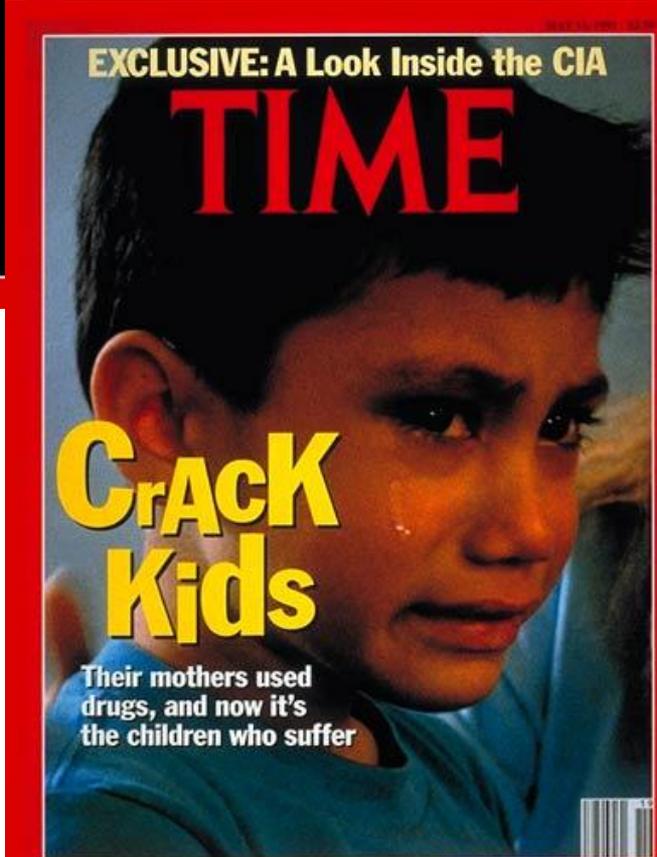
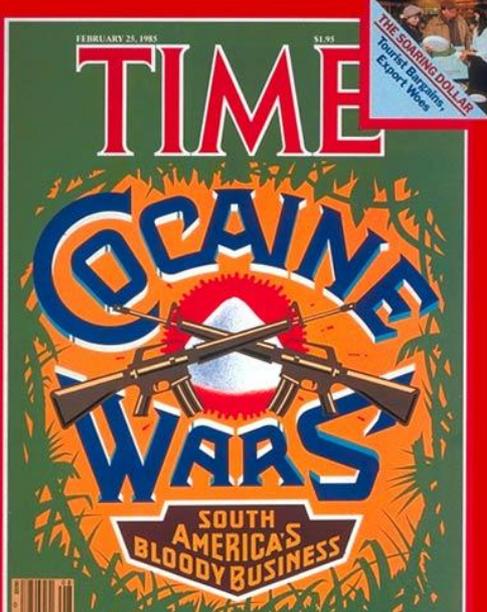
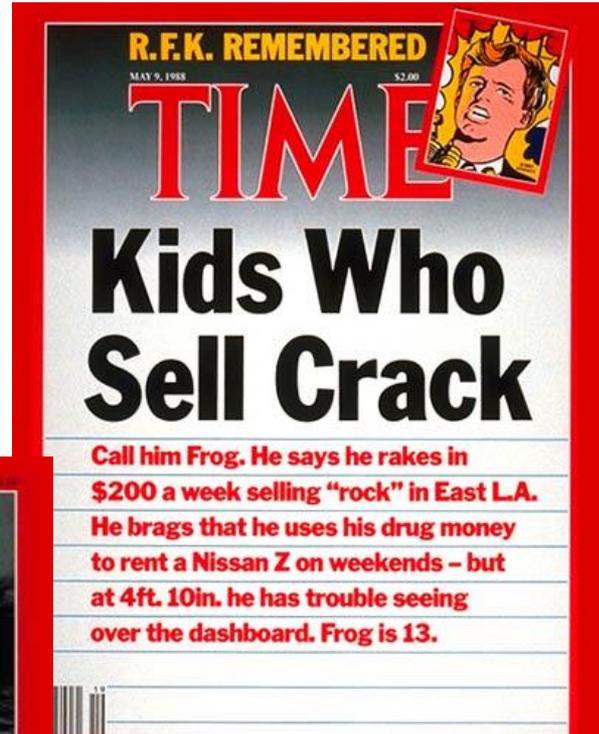
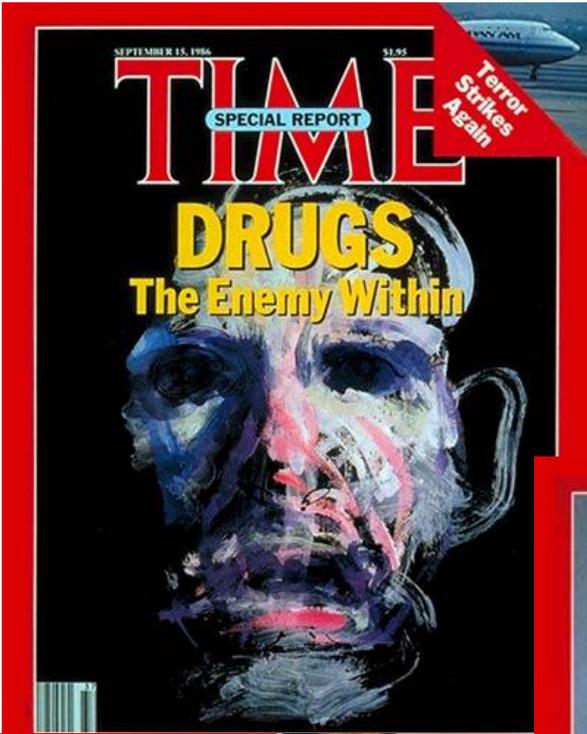
Marijuana Perceived Risk vs. Past-Year Use by 12th Graders (Percent)



Source: University of Michigan, 2011 Monitoring the Future Study

**Prevention programs are
cost-effective, mainly
because they are cheap.**

**But is there something
better?**



“As the field of prevention has matured, it has been recognized that any single strategy is unlikely to succeed and a reinforcing set of strategies has the greatest potential to reduce use.”

- Johnson et al., 2007

What are coalitions?

A coalition is a formal arrangement for cooperation and collaboration between groups or sectors of the community, in which each group retains its identity but all agree to work together towards a common goal of building a safe, healthy and drug-free community.

Key Sectors

Coalitions convene and combine talent and resources to address local substance abuse issues:

- Law enforcement
- Youth
- Parents
- Businesses
- Media
- Schools
- Youth serving organizations
- Faith based community
- Civic and volunteer groups
- Health care professionals
- State, local or tribal agencies
- Other organizations involved in reducing substance abuse

Basic Concept

Coalitions bring together community sectors to develop and carry out strategies to achieve *population-level* reductions in substance abuse rates



Coalitions and Comprehensive Drug Prevention

- **Scale**
 - Population-level outcomes
- **Multiple Causes**
 - Identify and address all salient personal and environmental risk factors
 - Multi-level solutions targeting entirety of the social-ecological model
- **Actors**
 - Coalition is neutral convener/coordinator
 - Action taken by all members of the coalition

Coalition Work Targets All Levels of the Social-Ecological Model: Seven Behavior Change Strategies

1. Provide information

2. Build skills

3. Provide social support

4. Reduce barriers / enhance access

5. Change consequences / incentives

6. Alter the physical design of the environment

7. Change policy and rules

Individually-
focused

The diagram consists of seven numbered strategies on the left. Two yellow arrows originate from the right side of the first three strategies (1, 2, and 3) and converge to point at a rectangular box labeled 'Individually-focused'. Another two yellow arrows originate from the right side of the last four strategies (4, 5, 6, and 7) and converge to point at a second rectangular box labeled 'Environmentally-focused'.

Environmentally-
focused

Environmental Strategies

- **Environmental strategies are used to change the context (environment) in which substance use and abuse occur.**
- **Environmental strategies incorporate efforts aimed at changing or influencing community conditions, standards, institutions, structures, systems and policies.**

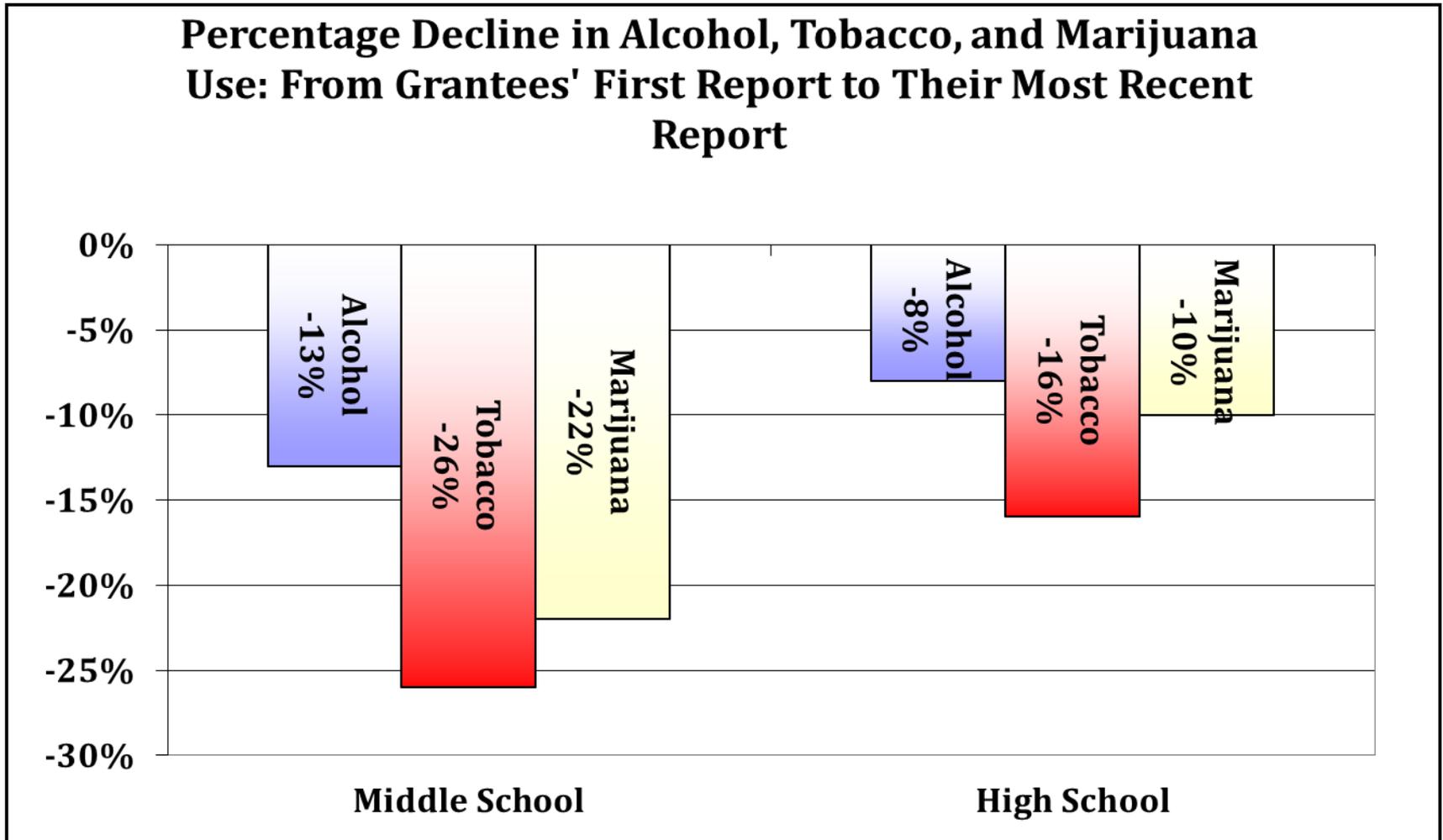
Keys To Pushing Back Against Drug Use



- Taking a comprehensive, data driven approach that appropriately mobilizes those who have a role in:
 - 1) Changing social norms about the harms of drug use; and
 - 2) reducing access to and availability of drugs

Coalitions	Programs
<p><u>Scale</u> Coalitions measure success by examining community-level indicators. This applies to all coalition outcomes (short & long- term).</p>	<p>Programs measure change in individuals who have been directly affected by the intervention(s).</p>
<p><u>Addresses multiple causes</u> Coalitions seek to ensure that all causes of identified problems are addressed</p>	<p>Programs are more focused on single strategies, e.g., parenting classes or peer mentoring.</p>
<p><u>Actors</u> Coalition activities are diffused and taken by all members with staff playing a coordinating or supporting role.</p>	<p>Program staff lead the process and are responsible for implementing interventions.</p>

Percentage Decline in *Use*: First Report to Most Recent Report



DFC Coalitions Have Lower Substance Abuse Rates than Non-DFC Coalitions

- Prevalence of 30-day use of alcohol, tobacco, and marijuana was lower for high school students in DFC-funded communities than among a nationally representative sample of high school students taking the Youth Risk Behavior Survey (YRBS).

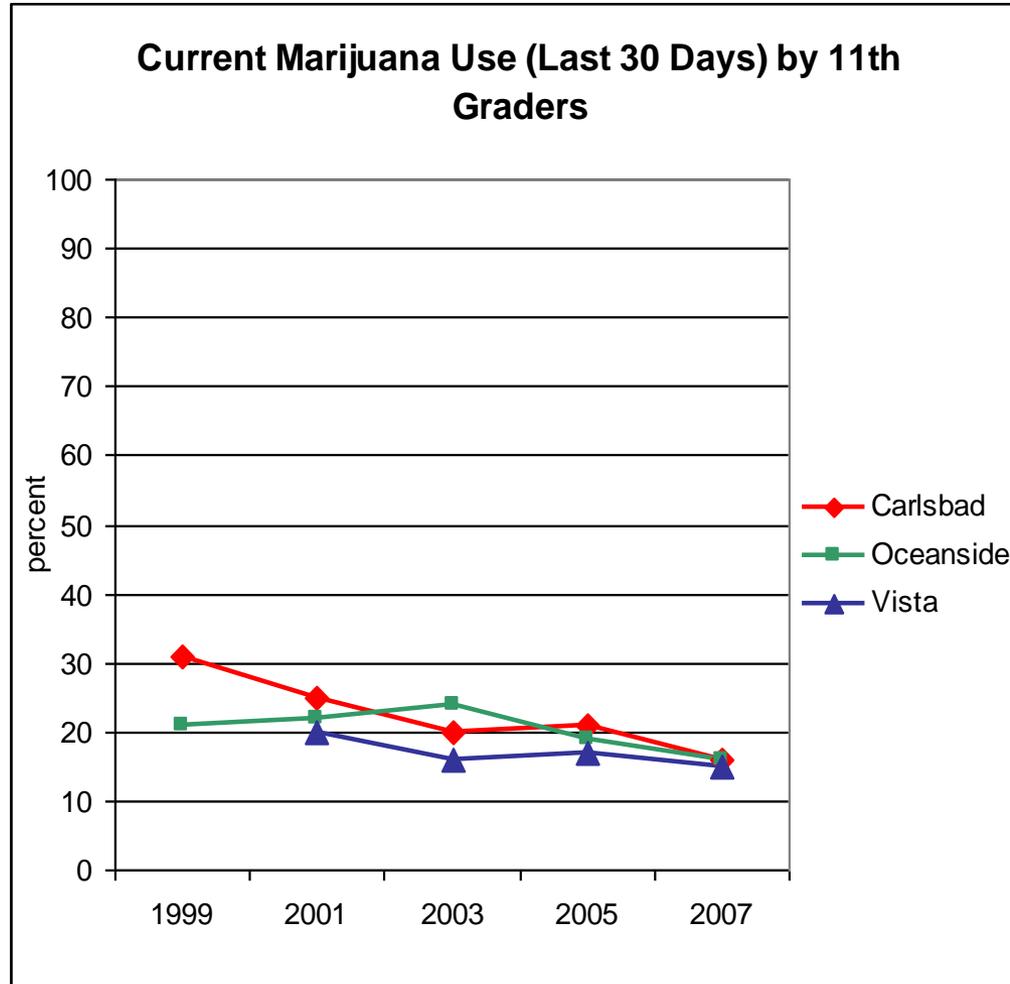
**These results are also being
achieved at the local level in DFC
funded communities**

Local Coalition Success Story: North Coastal Prevention Coalition (California)

- **Strong focus on preventing youth marijuana use**
- **Comprehensive approach to drug prevention:**
 - Increase public awareness of harm of marijuana use by youth
 - Increase youth leadership in marijuana prevention efforts
 - Counter pro-marijuana marketing
 - Reduce the sale of pro-drug merchandise
 - Reduce availability of drug paraphernalia

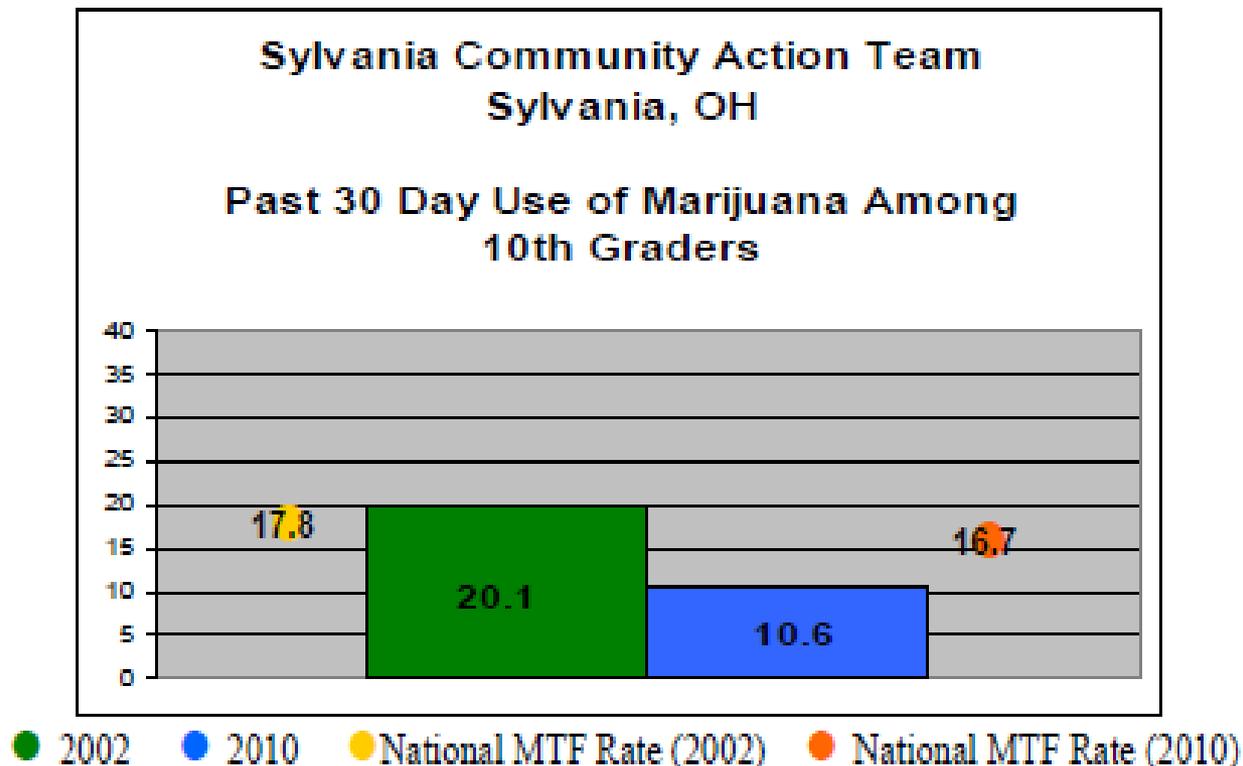
North Coastal Prevention Coalition, California

Declines in Youth Marijuana Use



Local Coalition Success Story: Sylvania Community Action Team (Ohio)

In this DFC community, past 30 day use of marijuana use among 10th graders decreased from 20.1% in 2002 to 10.6% in 2010, **a 47.3% decrease.**



Strategies Implemented To Achieve Reductions

- Partnering with local newspapers to raise awareness about the risks/harms associated with illegal drugs and alcohol
- Increasing law enforcement capacity;
- Providing parent education workshops
- Providing youth leadership training
- Working with local schools to implement zero tolerance policies related to drugs

International Progress



- Coalitions developed in over 20 countries, including in Latin America, Europe, and Central Asia
- Helping community leaders develop anti-drug coalitions through training and technical assistance to local non-governmental organizations
- Over 81 coalitions in these countries



After Prevention

- Marijuana treatment is challenging
 - Denial
 - Lack of immediate, acute consequences in most people mask seriousness of addiction among youth
 - “Hardest drug to kick” ? – CNNs Dr. Drew

Brief Interventions

- Motivational Interviewing Spirit and Principles:
 - 1. Autonomy
 - 2. Collaboration
 - 3. Evocation

- 1. Express empathy
- 2. Develop discrepancy
- 3. Roll with resistance
- 4. Support self-efficacy

Miller and Rollnick (2012), *Motivational Interviewing*