Adolescent Substance Use: Current Advances in Science & Effective Interventions

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SAPC Lecture Series

July 29, 2016

Objectives: Topics to be Covered

- ***Who*** *are we talking about?*
  - Developmental period and SUD Risk

- ***What*** *are risk factors for adolescent SUDs?*
  - Brain development and socialization patterns

- ***Why*** *should Tx folks worry?*
  - Implications for SUD risk issues - Motivation

- ***Where*** *are we headed?*
  - Effective approaches to address adolescent SUD risk issues– MI

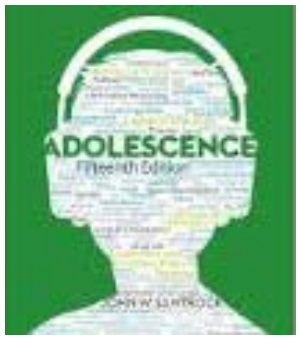
    (Dr. Elizabeth D'Amico, RAND)

Who are we talking about?

Adolescents

- Minors
- Youth
- Young People

Age range:
12-17



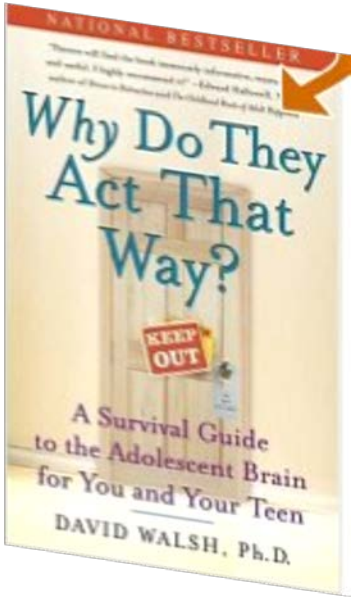
Developmental period characterized as transitional phases associated with "growing or maturing."

What's involved with this process?

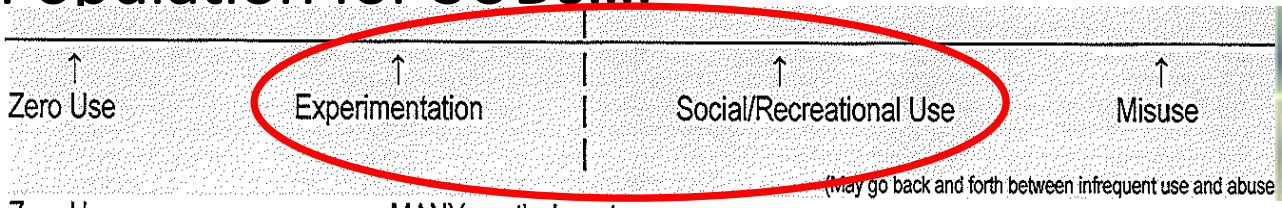
Research supports that this period is a time of:

- Emotional maturation
- Identify formation
- Life skills development
- Risk-taking behavior: 5's…

Adolescent 5 S's	Caregiver/Provider 5 S's
Social Media	Safety
Speeding	Spirituality (seeking purpose & meaning)
Sex (Sexting)	Success
Spending	Saving
Substance Use Experimentation	Security



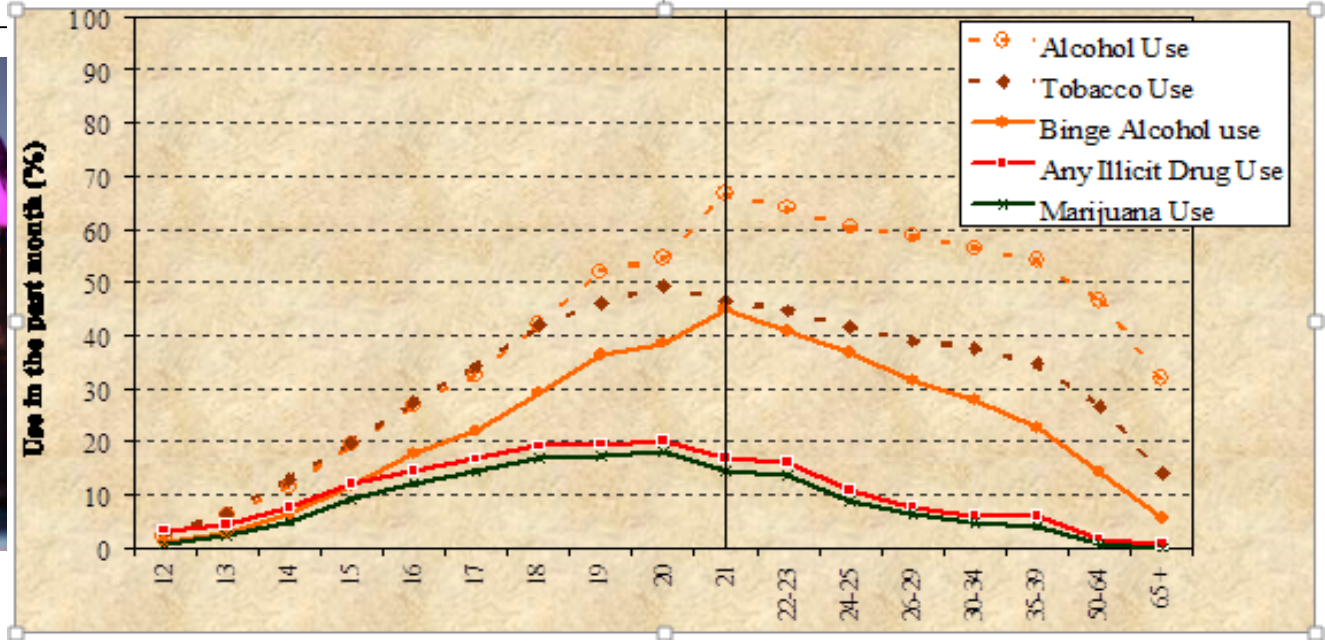
Developmental Research Supports: Adolescents are an At-Risk Population for SUDs….



Zero Use:	MANY youth do not use.
Experimentation:	Some youth experiment with drugs and alcohol, which is common among adolescent. They try it *but don't continue*.
Social/Recreational Use:	Youth who use at a party, on occasion, not in excess, *no pattern* or misuse, responsible (not drinking /driving, not "wasted").
Misuse:	Beginning to use to manage negative thoughts and/or feelings, using to replace boredom, stress, fears, trying to fit in...

Risky Use Patterns

Longitudinal Research shows adults with SUDs started using during adolescence.



What Substance Use Patterns Should we be Concerned about?

SAMHSA, 2014; MTF 2014

Research has identified important Developmental Risk Factors linked to the onset of SUDs

Risk Factors associated with Onset of Adolescent SUDs

Neighborhood Advertising

Access/ Availability; Norms

Indiv Factors

- Positive Social Norms
  - Acceptance
  - Normal
  - Legal – Safe

Family

Low Parental Monitoring
Low Affection
High Conflict

Peer

Youth Culture

School

Low School Involvement
Poor Academic Performance

How are adolescents interpreting environmental situation with MJ policies/advertising?

Adolescent Behavior is Complex

Key factors of influence

Peer Approval

Sibling use

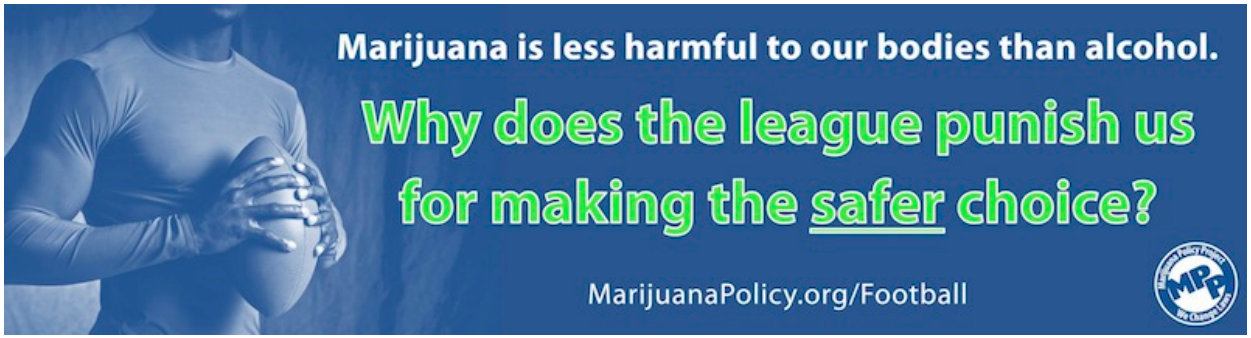
Best Friend Use

Adult Use

Advertising

How is advertising affecting use?

- Rand conducted a survey among 16 middle schools in southern California (n= 8214; 50% male; 52% Hispanic; mean age = 13).
- Assessed exposure to advertising for medical marijuana and effects on marijuana intentions → "use"

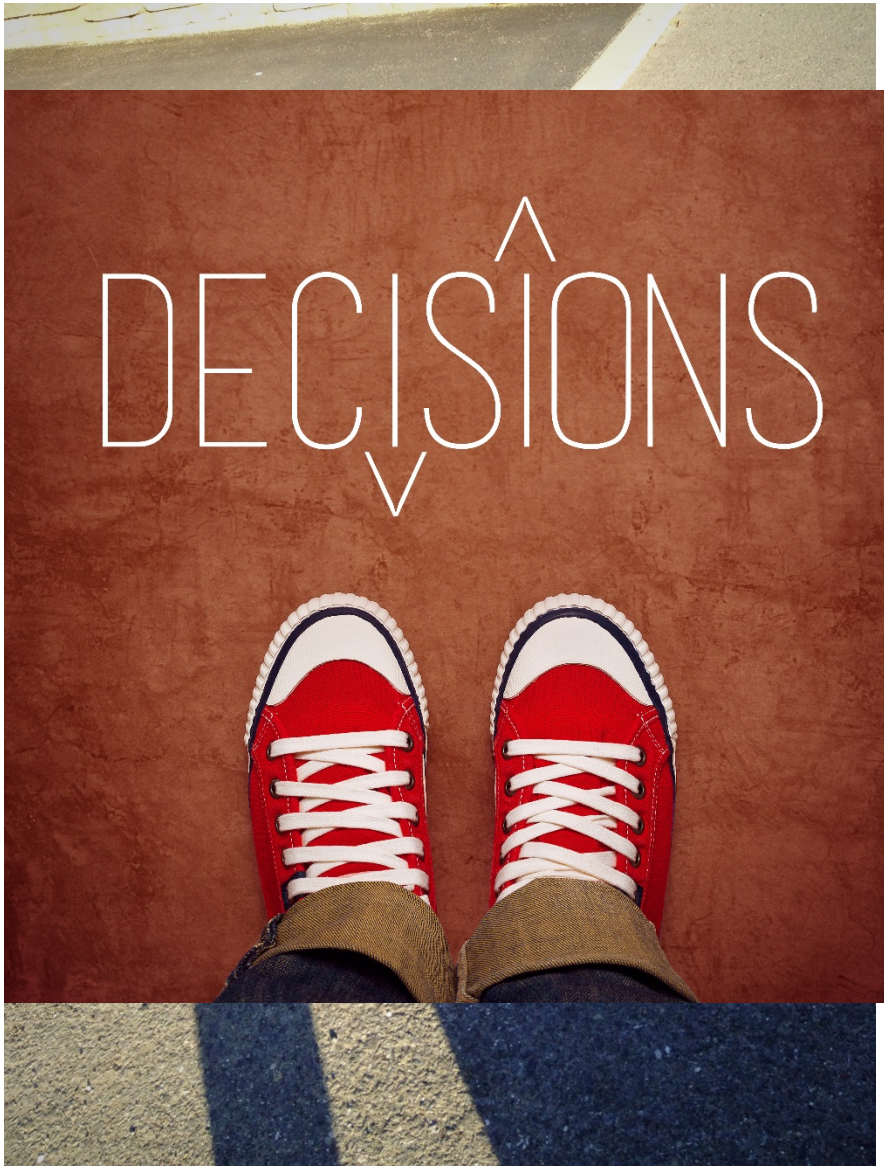


Findings?

- Greater medical marijuana advertising exposure associated with:
  - Stronger intentions to use one year later

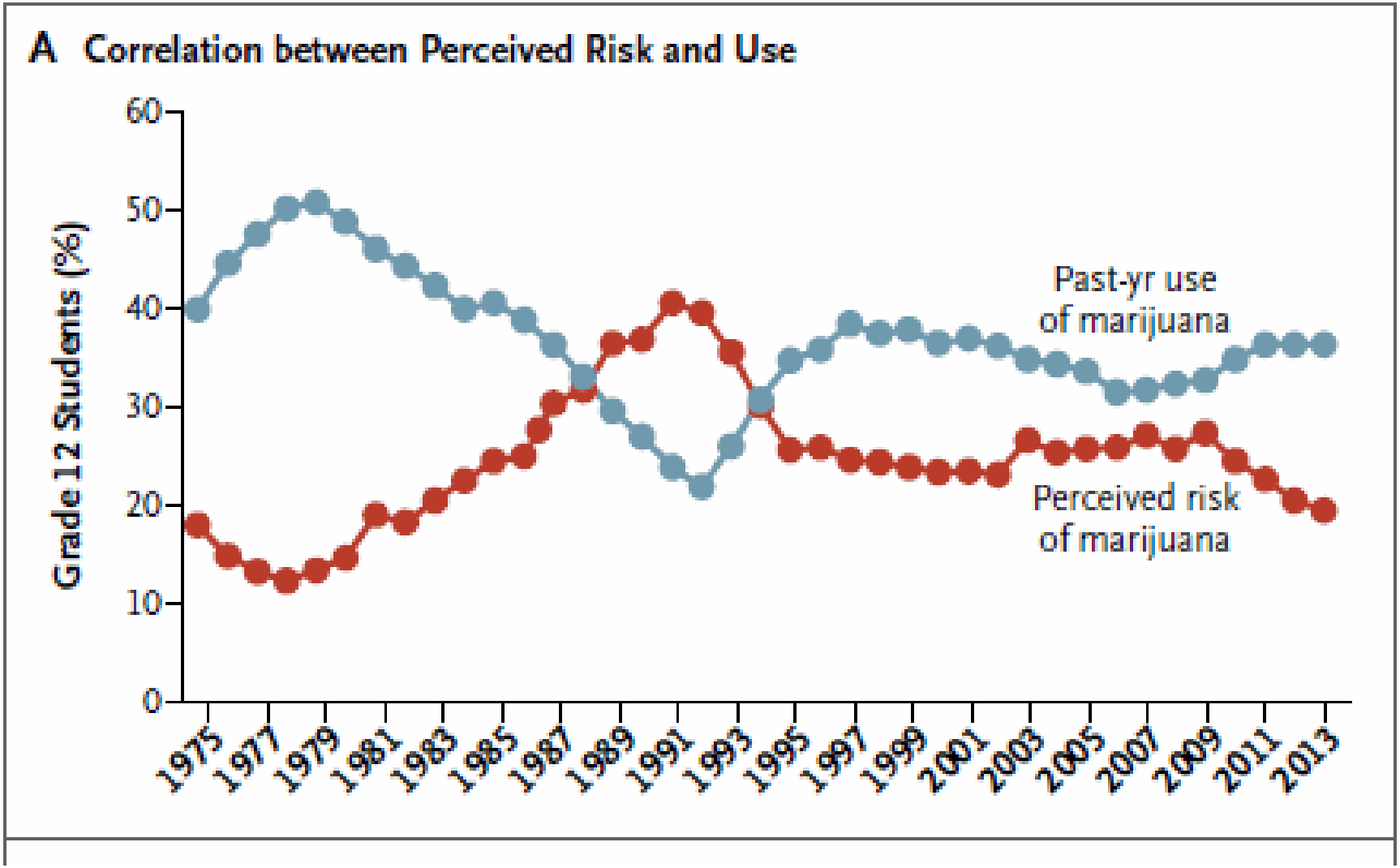
- Higher probability of marijuana use

What are *intentions* influenced by?



Perceptions of RISK

Research Supports an Inverse Relationship between Perceived Risk and Marijuana Use



Volkow, Baler, Compton, & Weiss, NEJD, 2014

Percent favoring legalization, by generation

65% Millennial
born 1981-now

54% Gen X
born 1965-1980

50% Boomer
born 1946-1964

32% Silent
born 1928-1945

14% Greatest
born before 1928

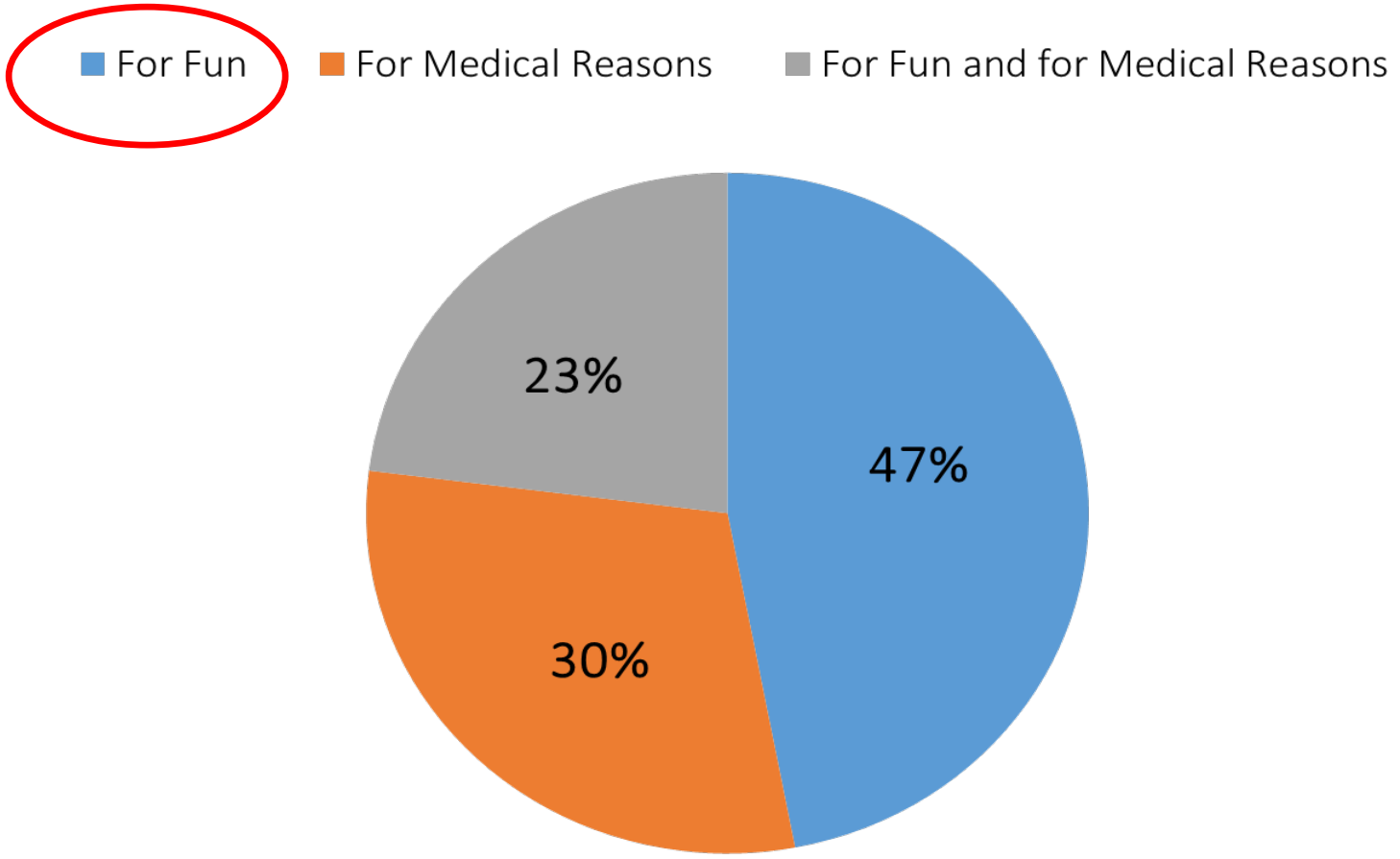
58
43
47
38
21
34
15
7

1969 1980 1990 2000 2010 2013

Generational lines shown when significant sample is available.

What's the Motive?

Among people who used marijuana in the past year:



SOURCE: Pew Charitable Trust, 2013 (reference list).

Risk Factors associated with Onset of Adolescent SUDs

Neighborhood Advertising

Access/ Availability; Norms

Indiv Factors

Personality
Values, Beliefs

Family

Low Parental Monitoring
Low Affection
High Conflict

Peers

Youth Culture

School

Low School Involvement
Poor Academic Performance

SUD Risk Behavior

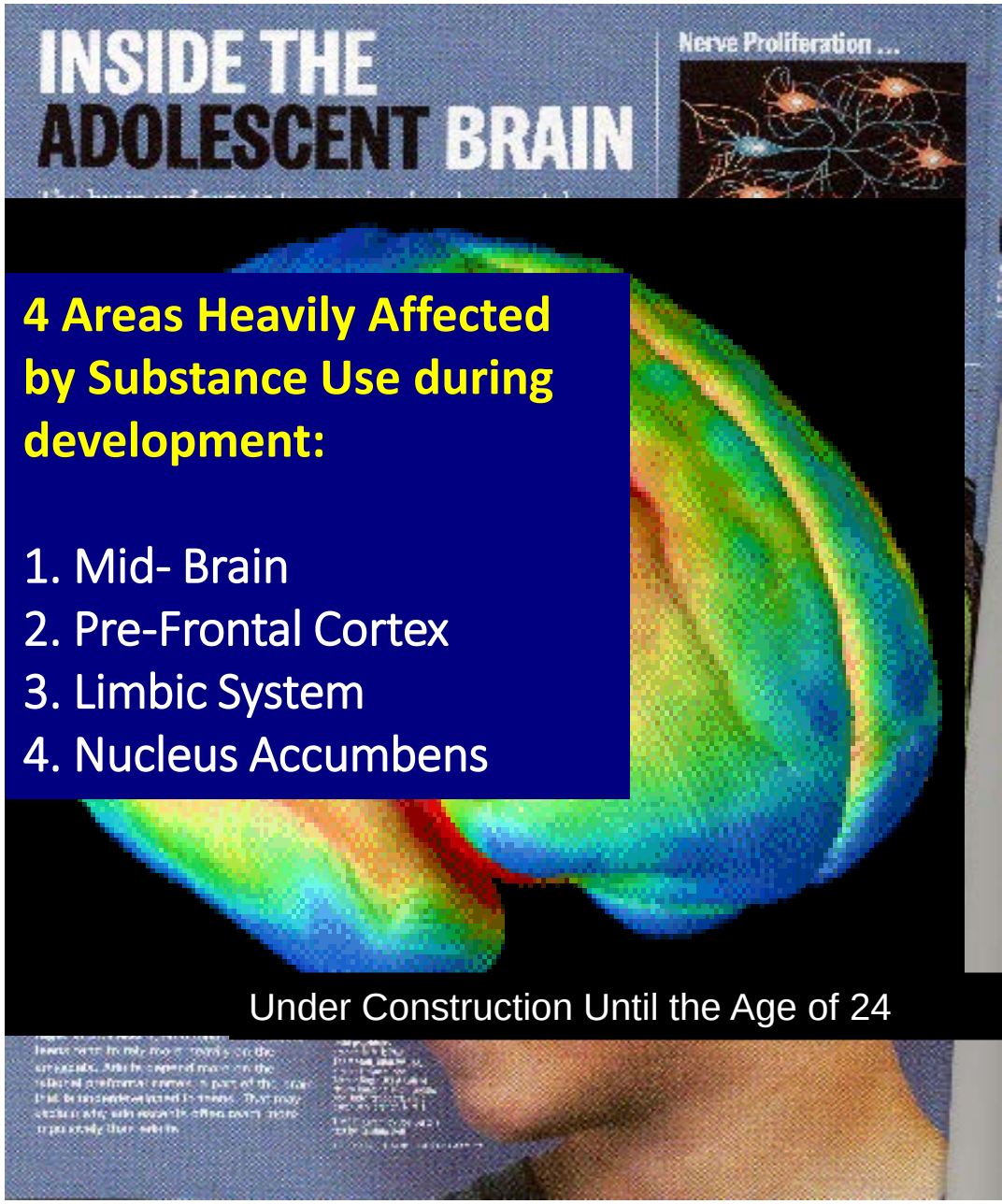
The Developing Brain

What ultimately directs behavior?
What do these factors interact with?

-
-
-
+
+

Research supports that the **adolescent period is a time of profound brain maturation.**

- Maturation process occurs from back to front and is not complete until age 24
- Major processes of the brain that are maturing during adolescence that are interrupted by substance use



Adolescent Brain Development - *Mid-Brain*

- Part of the brain that takes in sensory information associated with survival functions, like vision and hearing.
- Environmental settings are getting processed as safe/comfortable

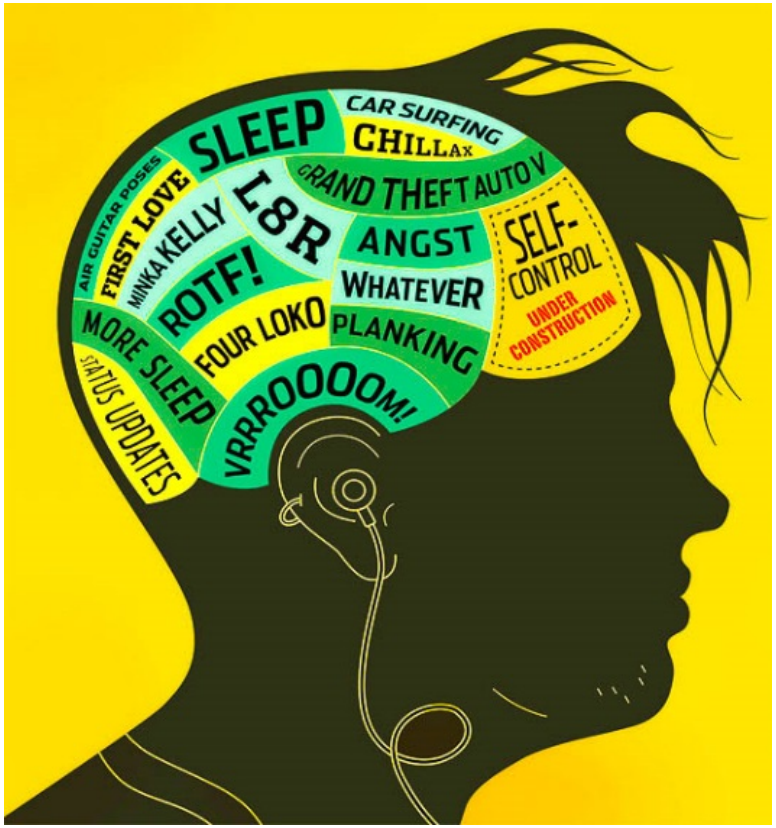
- Substance use early on affects mid-brain – leading youth…

-To process alcohol & drug use as "survival mechanisms"

Adolescent Brain Development - *Pre-Frontal Cortex*

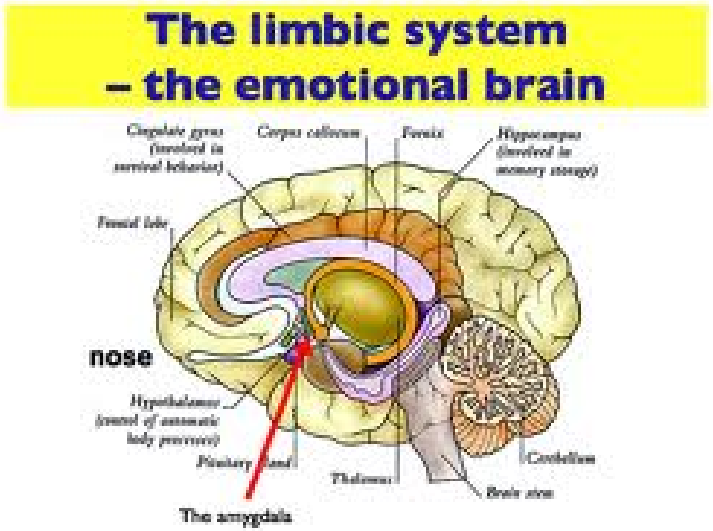
- Part of the brain in charge of executive functions (like decision making and self-control)
- Substance use affects PFC functioning – leading youth…

-*To show poor judgment & difficulty with self-control*



Adolescent Brain Development - *Limbic System*

- Part of the brain that regulates emotions and cognitions: [Amygdala & Hippocampus]
- Cognitive Maturation (*IQ: age 16) vs. Emotional maturity (age 21)* – GAP has been a major player in the addiction process



- Substance use serves to **interrupt** these developing regions– leading youth to:

-have poor mood regulation &

-display problems with cognitive functions (attention, memory)

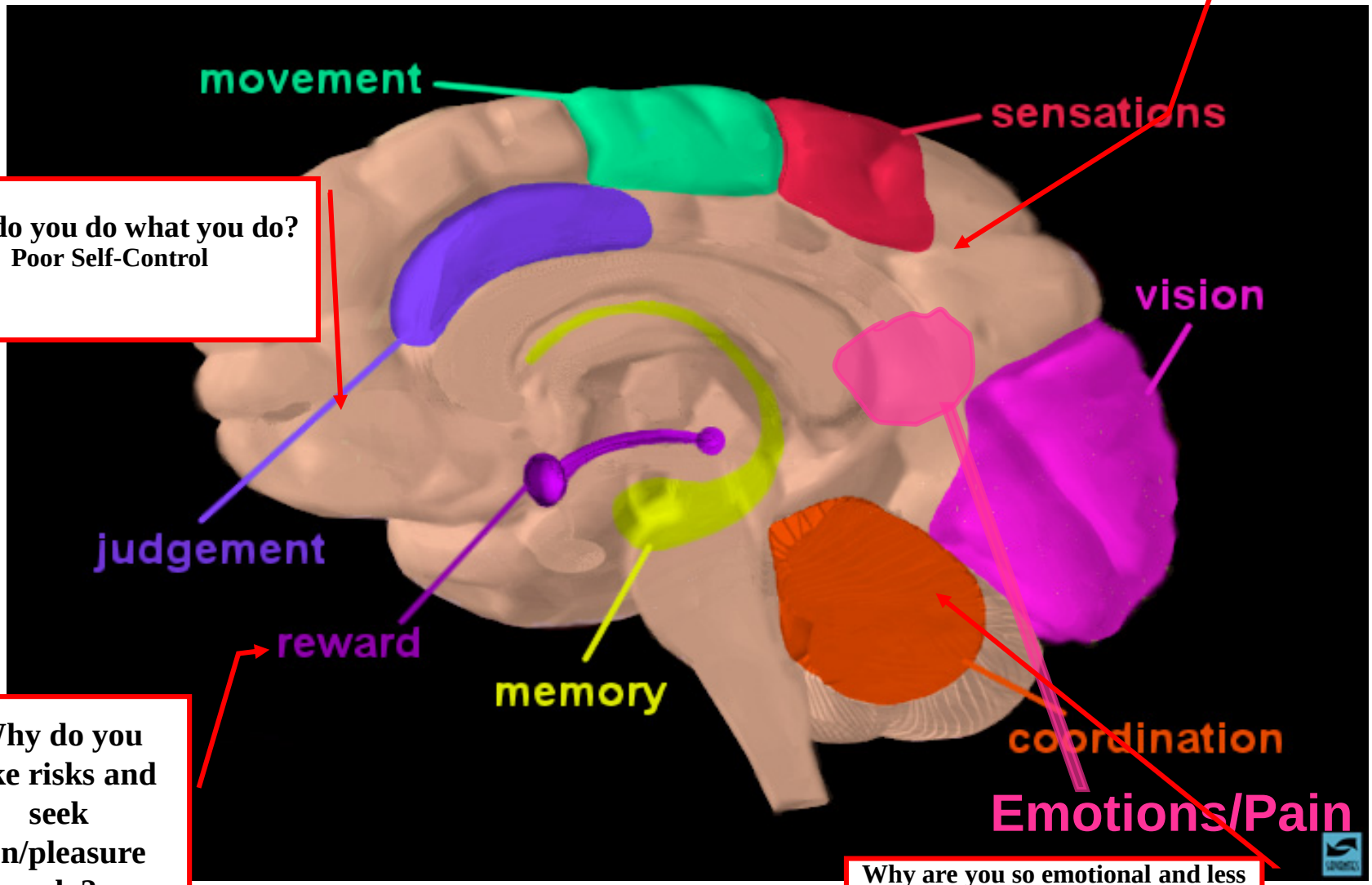
Adol Brain Development: *Nucleus Accumbens*

- Functions to modulate the reward system of the brain - called *dopaminergic pleasure pathway*
- **Driver of Motivation** - When youth do anything rewarding - eat food, ride a roller-coaster, give a like on Facebook, play video-games, have sex - dopamine is released
  - Substance use affects the release of dopamine to significantly higher levels than normal motivating youth to:
    - Continue to seek such extreme pleasure

Motive? → **Pleasure, Fun, Excitement**

Complex Developmental Framework of Adolescent SUD Risk

Do you feel comfortable?
Survival/Coping



Why do you do what you do?
Poor Self-Control

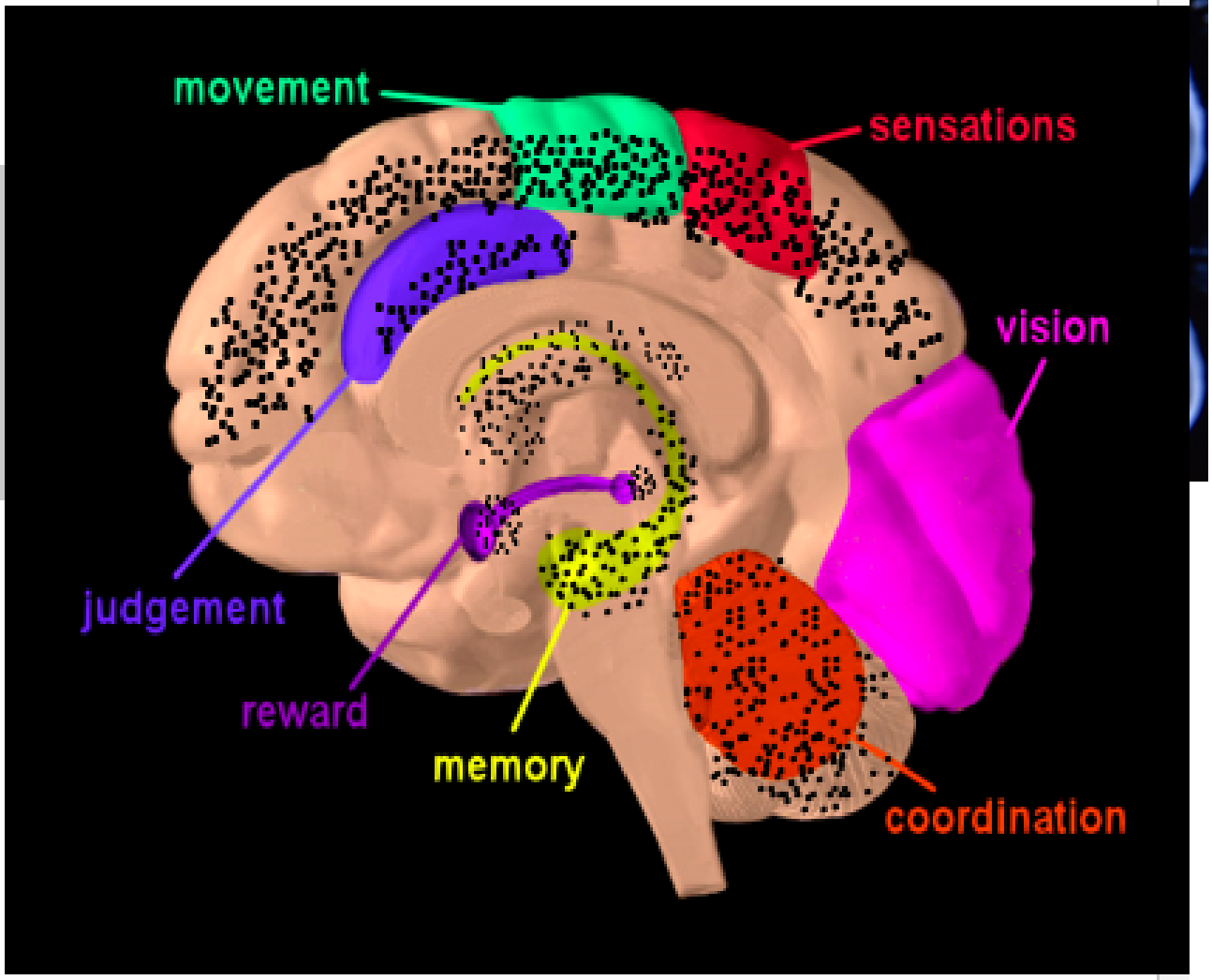
Why do you take risks and seek fun/pleasure only?

Why are you so emotional and less practical? Emotions vs. Cognitions

Marijuana Activates (binds) to Cannabinoid Receptors Throughout the Brain

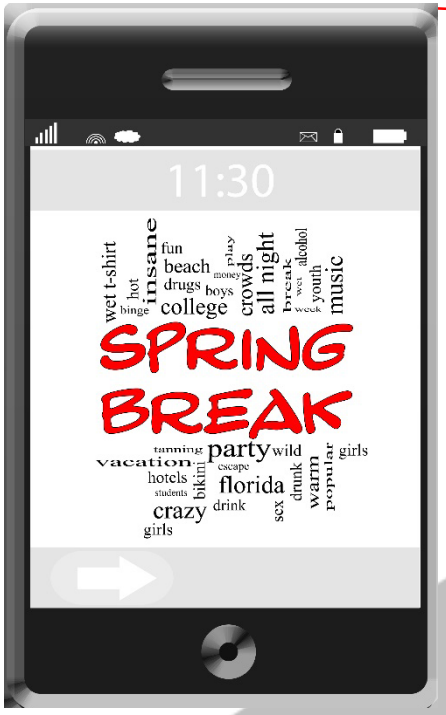
It interferes with brain development/function in a variety of areas:

- Problem solving & decision making
- Self-control
- Working memory
- Emotion regulation
- Coordination



an "altered brain state"

What can we learn from Developmental Implications?



Having Fun

What can we learn from Developmental Implications?

A developmental risk framework is important to consider for addressing adolescent SUD issues.

Mid-brain: Organizations (staff/counselors) should provide a safe and warm environment.

PFC: Strategies should aggressively promote *skills* for self-regulation. Integrating Material on MJ….

Limbic: Material (and messages) should be framed to address emotions more so than cognitions (feelings not thinking)

Nucleus Accumbens: Should incorporate services that are pleasurable/fun (recreation) and incorporate things youth are into (technology) Targeting Motivation is Critical…

Issues with Adolescents

- Substance use viewed as a behavior they have personal control over
- Biased perceptions of SUD Risk/Problem

FIRM COMMITMENT TO CHANGE

*Decreased **motivation** to stop using or need for help

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JOURNAL OF ADOLESCENT HEALTH

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Original article

Perceptions of Chronicity and Recovery Among Youth in Treatment for Substance Use Problems

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Article history: Received March 9, 2011; Accepted November 16, 2011
Keywords: Treatment-involved youth; Substance use; Chronicity; Recovery

ABSTRACT

Purpose: To explore how youth contextualize substance use problems and recovery, in general and for themselves, in relation to the commonly accepted chronicity framework.
Methods: Fourteen focus groups were conducted with 118 youth in substance abuse treatment settings (aged 12–24 years; 78.3% male; 66.1% Latino) located throughout diverse areas of Los Angeles County. Transcribed qualitative focus group data were analyzed for major substance use and recovery themes.
Results: Most (80%) youth do not accept a chronicity framework that conceptualizes substance use problems as recurring and constituting a lifelong illness. Most (65%) view substance use problems as a function of poor behavioral choices or a developmental/social lifestyle phase. Youth perceptions of recovery tend to parallel this view, as most define recovery to mean having an improved or changed lifestyle that is achieved through making better behavioral choices (67%) and exerting personal control over one's behavior (57%) through willpower, confidence, or discipline. Other recovery themes identified by youth were substance use related (47%), wellness or well-being related (43%), and therapeutic or treatment related (14%).
Conclusions: Findings highlight the importance of considering youth perceptions about substance use chronicity and recovery in making improvements and promoting new developments in clinical and recovery support approaches to better meet the needs of youth with substance use problems. Findings are discussed under a theoretical context of behavior change to provide insights for the treatment and recovery communities.

Published by Elsevier Inc. on behalf of Society for Adolescent Health and Medicine.

IMPLICATIONS AND CONTRIBUTION

Substance use relapse among youth is a major concern for the treatment field. It is essential to understand youth perceptions of addiction and recovery for informing appropriate treatment and recovery support models to prevent post-treatment relapse.

Substance use among young people is a long-standing public health concern in the United States. Approximately 10.1% of youth younger than 17 years have used illicit drugs in the past year, among whom 7.3% meet criteria for substance abuse/dependence. Rates increased in older youth aged 18–24 years: 21.5% have used illicit drugs, and 19.8% meet criteria for substance abuse/dependence [1]. Examining the public treatment landscape in California, 30% of past year admissions (210,846) were younger than 25 years (12% aged 12–17 years; 18% aged 18–24 years) [2].

Treatment outcome studies with youth demonstrate that treatment produces positive changes in substance use and other psychosocial outcomes [3]; however, despite "effective" treatment exposure, such benefits tend to diminish over time. Studies show that 60%–70% youth relapse during the first 90 days after treatment [4,5] and two-thirds move in and out of recovery

Where are we headed? Effective Interventions