Cannabis in California: What to Expect Now That It's Legal

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Training Collaborators

- Pacific AIDS Education and Training Center
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  - University of California, Los Angeles
- Pacific Southwest Addiction Technology Transfer Center (HHS Region 9)
- UCLA Integrated Substance Abuse Programs

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Training Roadmap

- **Part 1:** The epidemiology of marijuana use and impacted populations; Mechanism of action and acute and chronic effects

- **Part 2:** Policy changes relating to recreational and medical marijuana

- **Part 3:** Marijuana and HIV

- **Part 4:** Talking with patients about marijuana use

Part I:
What is Marijuana and Who is Using it?

"Marijuana"
What Do You Think?

- When you think of marijuana, what comes to mind?

- When you think of people who use marijuana, what kind of people come to mind?

- When you think of marijuana and the people who use marijuana, are your thoughts positive, negative, or mixed?

Who Uses Marijuana?

- Joe (23 years old)
  - First used at a party when he was 15, continued using through college
  - Now uses when he goes out or is playing video games with friends
  - Also uses when he's stressed out
  - On average, uses about four-five times/week

Who Uses Marijuana?

- Elise (78 years old)
  - Never used marijuana until she turned 63
  - First used to improve her appetite during chemotherapy for breast cancer
  - Cancer has returned and metastasized to her spine.
  - Conventional painkillers don't work; now uses several times a day for pain relief

Is smoking marijuana less dangerous than smoking cigarettes?

- No.
- Smoking five marijuana joints a day can be as harmful as smoking 20 cigarettes a day

Can people become addicted to marijuana?

- Yes.

- Research confirms that you can become addicted to marijuana.

- Stay tuned for more…

Can Marijuana be Used as a Medicine?

- In some states, yes.

- Chemicals in the marijuana plant are used to treat some illnesses or medical symptoms.

- The unprocessed marijuana plant is **<u>not</u>** recognized by the federal government or approved as a medicine by the FDA.
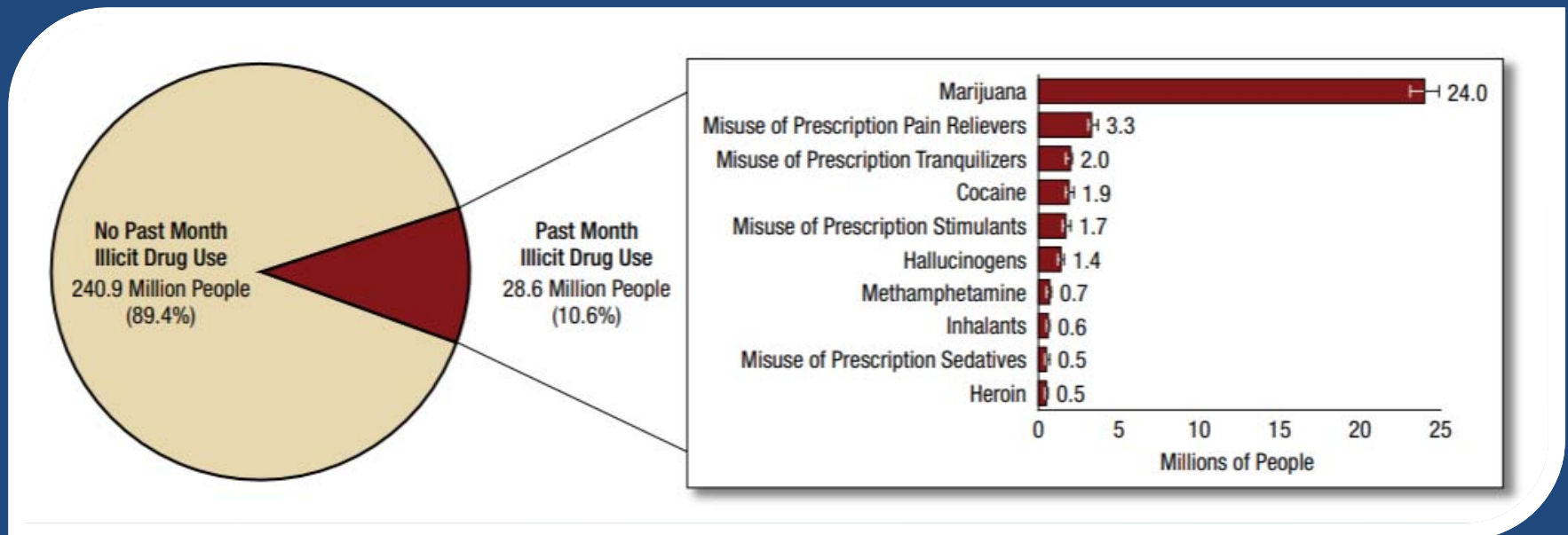
Patterns and Trends in Marijuana Use

Impacted Populations

Marijuana Use is Common

- Marijuana is the most commonly used illicit drug in the U.S. (and the world)
- Any use among general population age 12+ in past month:
  - 2016: 9%
  - 2008: 5.8%
- Use is most common among people age 18-25 (19% of population)
- 48% of adults in the US report having used marijuana at some time in their life

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SOURCES: SAMHSA 2017; Pew Charitable Trust, 2013.

Marijuana is the #1 Illicit Drug Used in the U.S. among People 12 and Older

No Past Month Illicit Drug Use 240.9 Million People (89.4%)

Past Month Illicit Drug Use 28.6 Million People (10.6%)

	Millions of People
Marijuana	24.0
Misuse of Prescription Pain Relievers	3.3
Misuse of Prescription Tranquilizers	2.0
Cocaine	1.9
Misuse of Prescription Stimulants	1.7
Hallucinogens	1.4
Methamphetamine	0.7
Inhalants	0.6
Misuse of Prescription Sedatives	0.5
Heroin	0.5

The number of past month marijuana users corresponds to 8.9% of the US population aged 12 and older

SOURCE: SAMHSA, NSDUH, 2016 findings.

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Age Breakdown of Current Marijuana Users among People 12 and Older, 2016
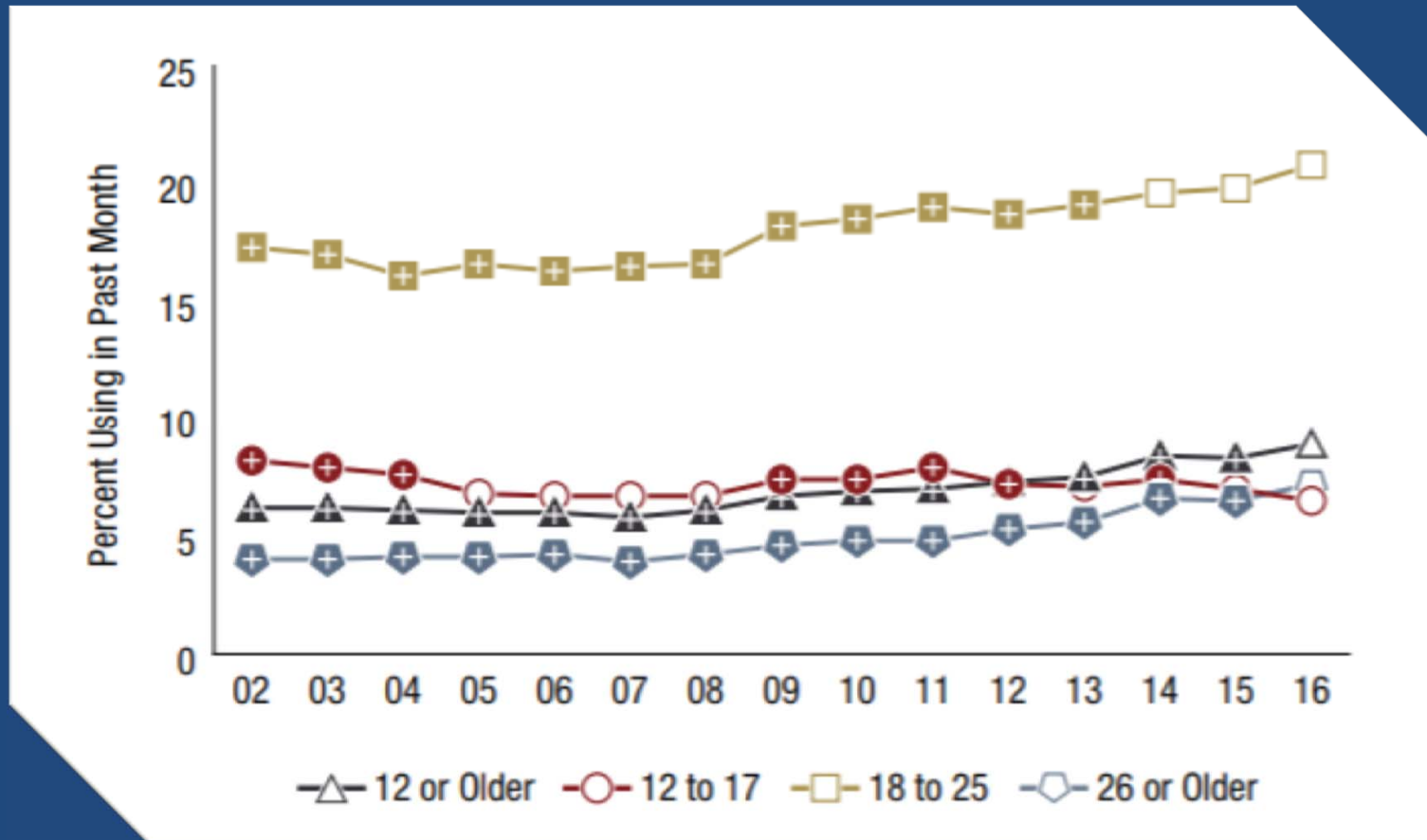
SOURCE: SAMHSA, NSDUH, 2016 findings.

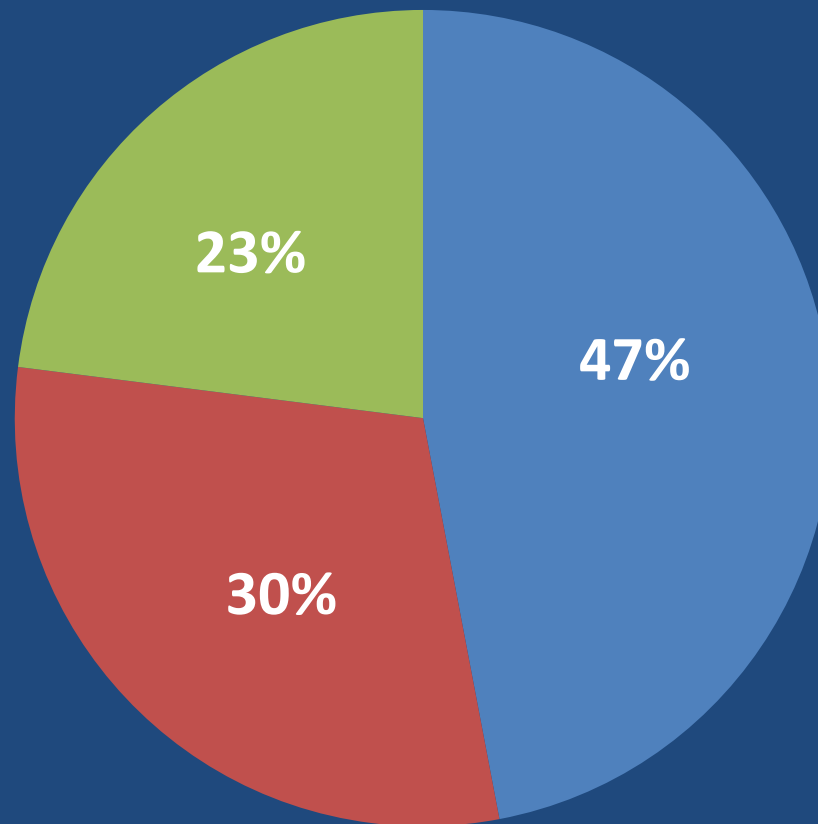# Primary Substance of Abuse at Admission: 2004-2014

SOURCE: SAMHSA, Treatment Episode Data Set, 2014 results.
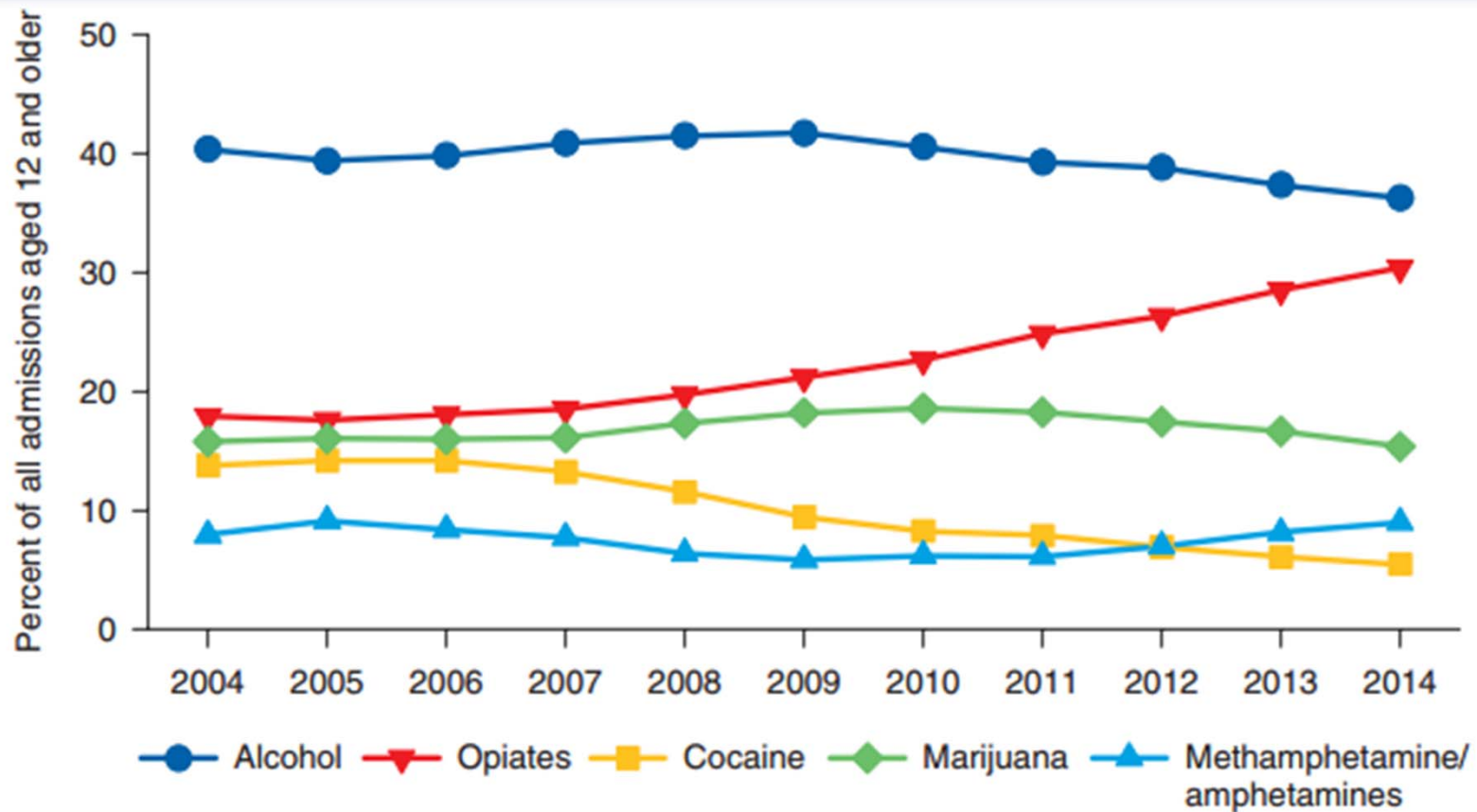
Why Do People Use Marijuana?

Among people who used marijuana in the past year:

■ For Fun   ■ For Medical Reasons   ■ For Fun and for Medical Reasons

23%

47%

30%

19

SOURCE: Pew Charitable Trust, 2013.

Marijuana is Now More Common than Cigarettes among High School Seniors

SOURCE: NIDA, MTF 2017 Results.
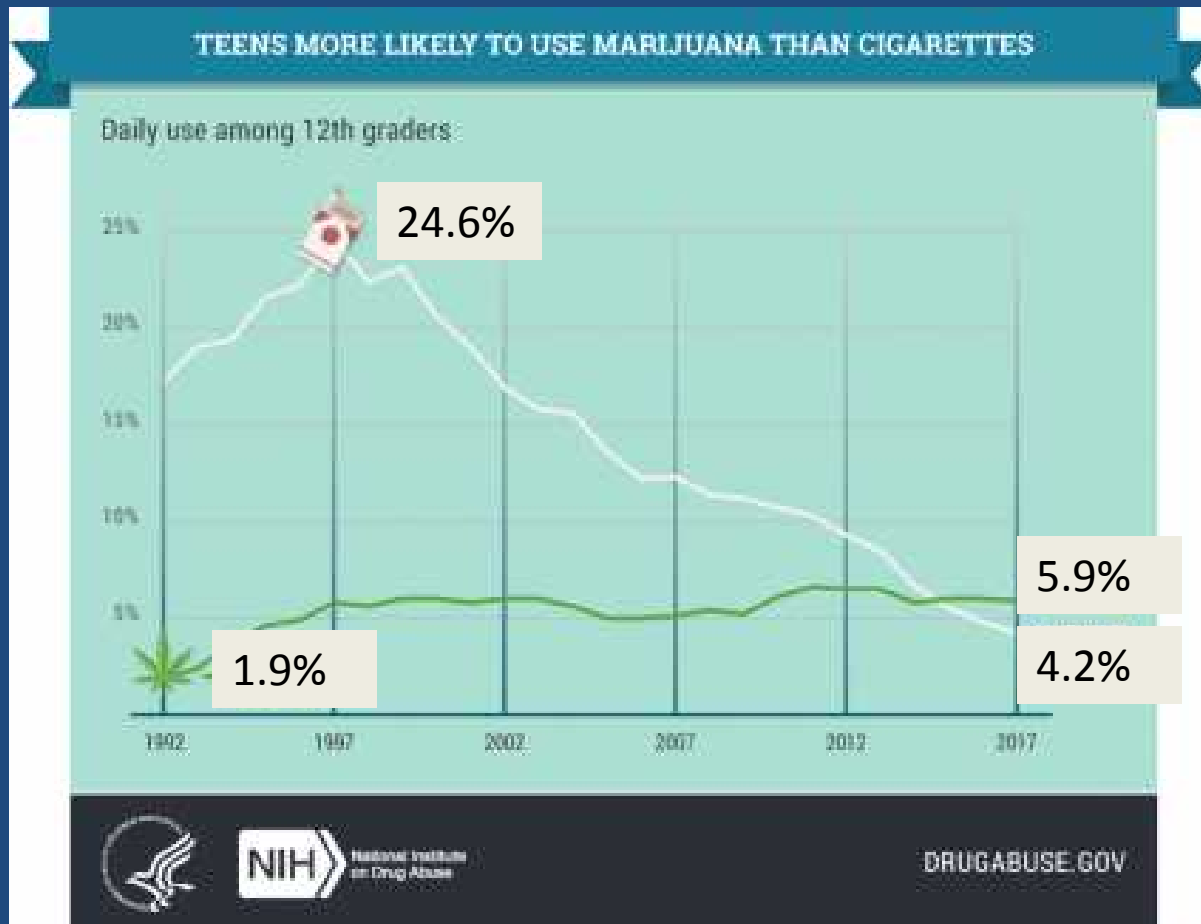
Perceived Cannabis Harm and Use among Middle and High School Students

Using

Perceived Harm

64.5%

41.5%

12.7%

14.7%

2007

2017
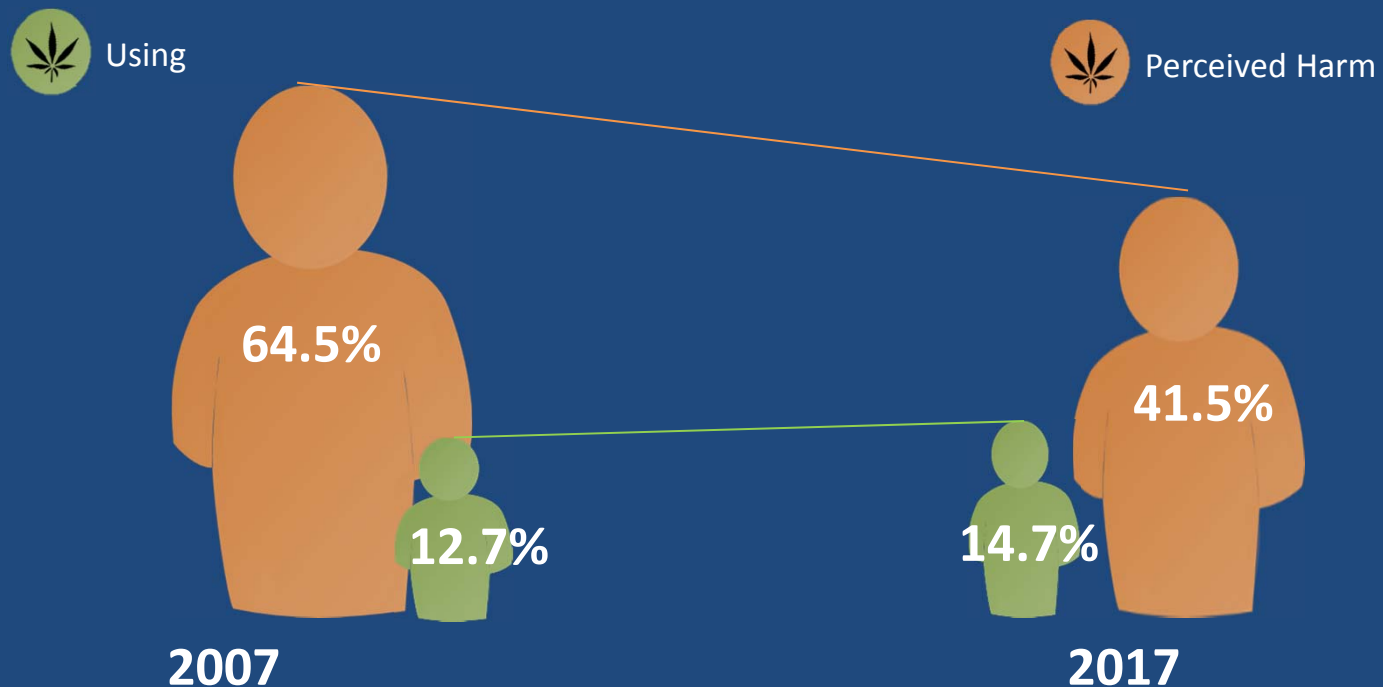
As perceived harm drops, use INCREASES

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Is Marijuana Use Associated with an Increased Risk of Opioid Misuse?

- Based on data from the National Epidemiologic Survey on Alcohol and Related Conditions

- Respondents who reported past-year marijuana use had 2.2 x higher odds than non-users of meeting diagnostic criteria for a prescription opioid use disorder by follow-up
  – Also had 2.6 x greater odds of initiating prescription opioid misuse

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SOURCE: Olfson et al., 2017.

Marijuana: What is it?

- Dry, shredded mix of leaves, flowers, stems, and seeds, usually from *Cannabis sativa* or *Cannabis indica* plant

- Both are common subspecies of the hemp plant, which is common throughout the world

- Contains over 400 chemical compounds

SOURCE: SAMHSA, 2012 (reference list).

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Indica vs. Sativa
What's the Difference?


	Sativa	Indica
Shape and Color of Leaves	• Long, thin leaves • Light color	• Wide, broad leaves • Deep color
Growing Pattern	• 12-16 week flowering time • 8-15 feet tall • Airy, tall buds	• 6-8 week flowering time • 2-6 feet tall • Dense, plump buds
Type of High	• Mind/High (day time)	• Body/Stoned (night time)
Effects	• Euphoria • Creative • Alert • Energetic • Cheerful • Sociable	• "Couch-lock" • Carefree • Calm • Relaxed • Sleepy • Mellow

How is Marijuana Used?

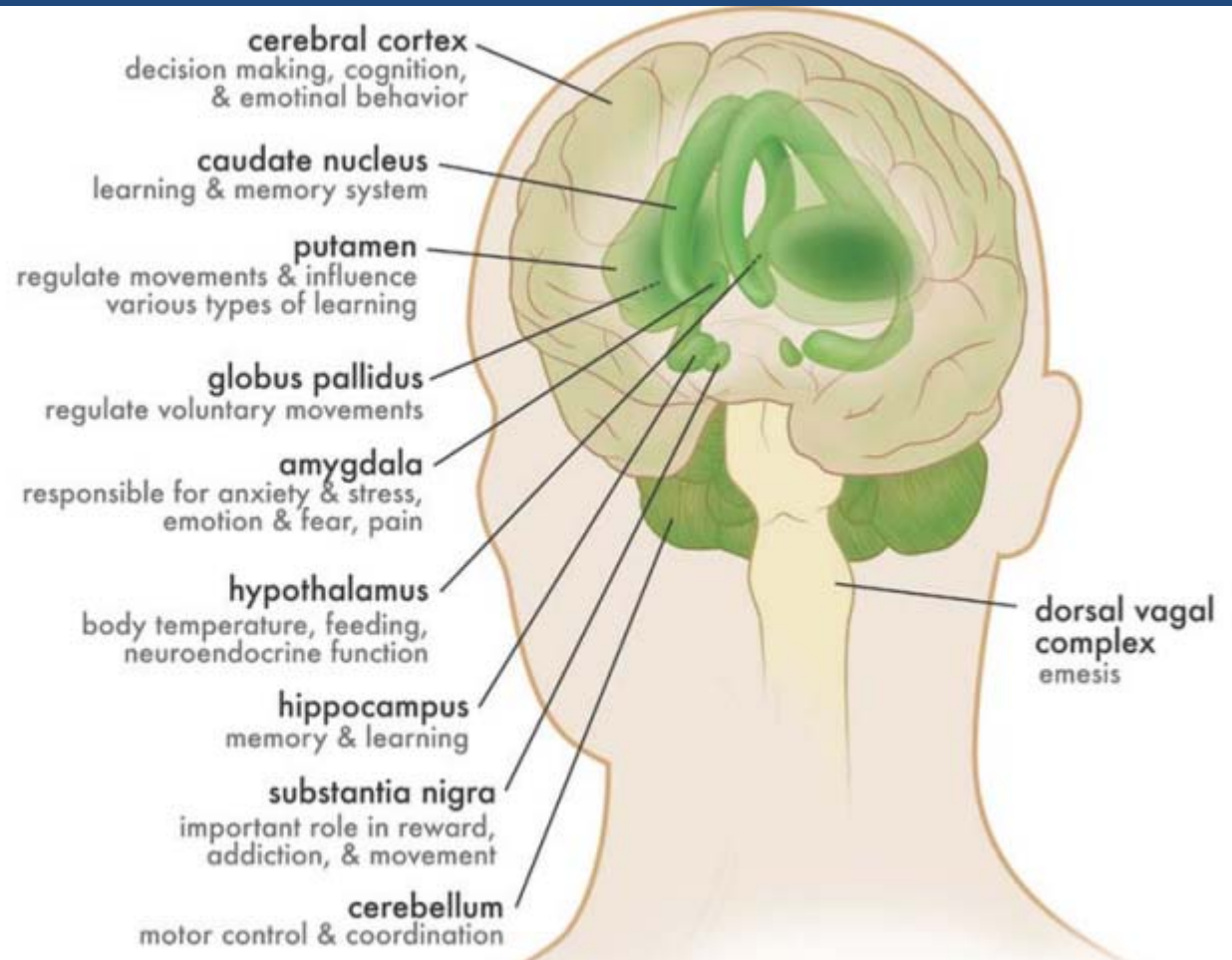| SMOKED	VAPORIZED	EATEN/DRUNK
Smoked in a pipe, bowl, cigarette	Inhaled through machine that converts active compounds into inhalable form	Consumed as ingredient in baked goods, candies, sodas
Rapid effects	Rapid effects	Takes time to reach brain, so effects are delayed
Burning marijuana releases toxins that can cause pulmonary problems	Does not release toxins that cause pulmonary problems	Does not release toxins that cause pulmonary problems

Cannabis and Cannabinoids

- Cannabis contains at least 546 compounds; 104 are cannabinoids

- Δ^9-Tetrahydrocannabinol (Δ^9-THC)
  - Major psychoactive compound
  - Acts on endocannabinoid receptors

- Cannabidiol (CBD)
  - Major nonpsychoactive compound
  - Neuroprotective and anti-inflammatory

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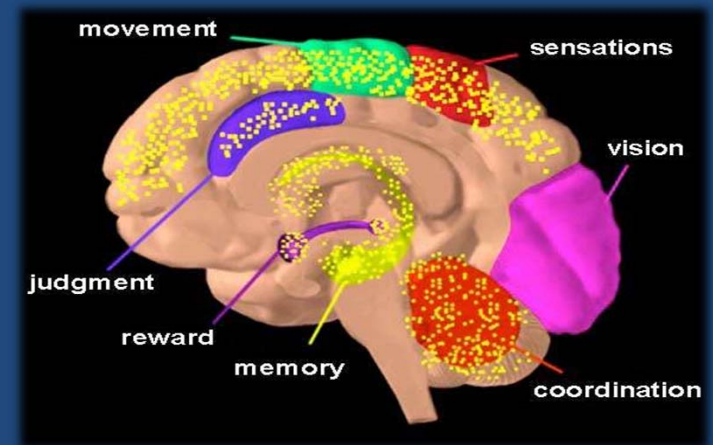
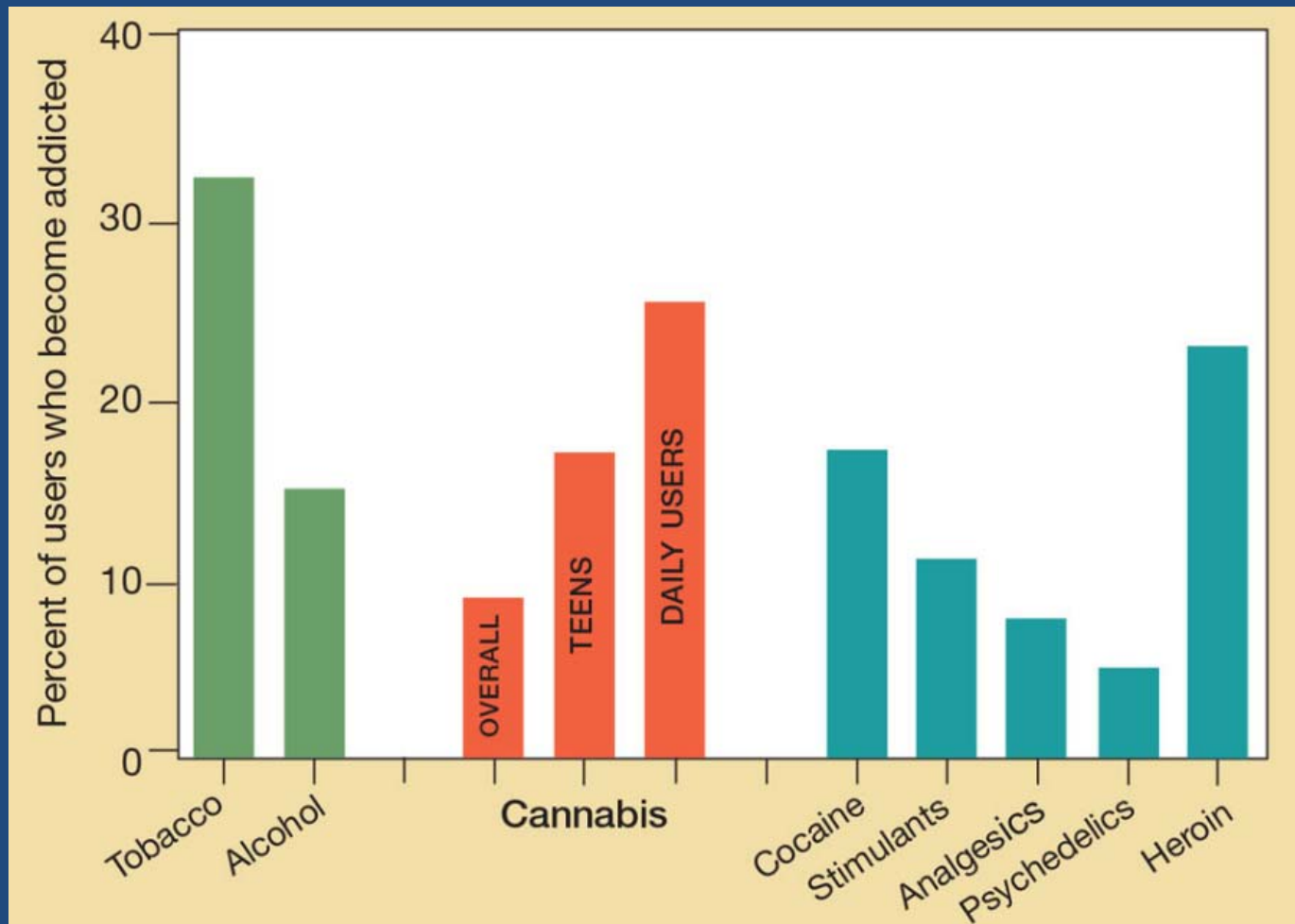# Cannabinoid Receptors are Located throughout the Brain

Regulation of:

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

cerebral cortex
decision making, cognition, & emotinal behavior

caudate nucleus
learning & memory system

putamen
regulate movements & influence various types of learning

globus pallidus
regulate voluntary movements

amygdala
responsible for anxiety & stress, emotion & fear, pain

hypothalamus
body temperature, feeding, neuroendocrine function

hippocampus
memory & learning

substantia nigra
important role in reward, addiction, & movement

cerebellum
motor control & coordination

dorsal vagal complex
emesis

Acute Effects of Cannabis in Intoxication Phase

- Cognition
  - Difficulty with complex tasks
  - Difficulty learning
- Executive Function
  - Impaired decision making
  - Increased risky behavior – STDs, HIV
- Mood
  - Anxiety – panic attacks
  - Psychosis - paranoia

Comparison of Addictive Potential by Drug Type

SOURCE: Gilman, 2015.

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Symptoms of Cannabis Use Disorder

	Without the drug, experience:
Preoccupation with use	– Anger/aggression
Loss of control over use	– Irritability
Continued use in face of adverse consequences	– Mood and sleep difficulties
	– Decreased appetite
	– Cravings
Cognitive distortions and denial	– Restlessness
	– Physical discomfort
	– Nervousness and anxiety

- Unlike with other substances (alcohol, opioids), withdrawal from cannabis itself cannot be fatal
- Symptoms peak within first week of quitting, last about two weeks
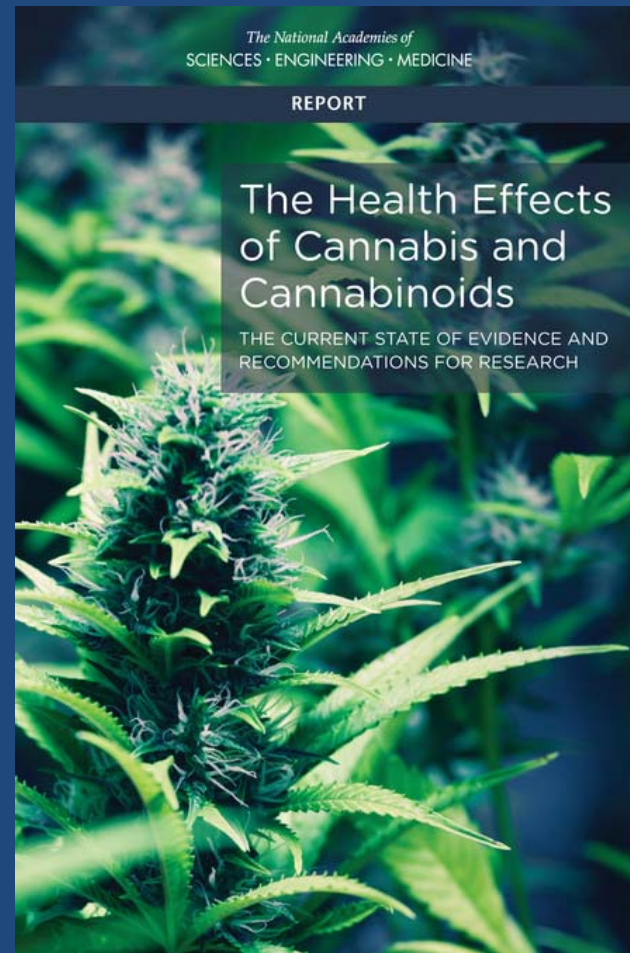
Marijuana:
Negative Effects When Smoked

- Can lead to respiratory illness
  - One marijuana cigarette causes as many pulmonary problems as 4-10 tobacco cigarettes
  - Increased risk for bronchitis, emphysema, lung cancer

- Can cause cardiovascular complications
  - Raises blood pressure & heart rate 20-100%
  - 4.8 times risk of heart attack in hour after use

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SOURCES: Ben Amar, 2006; Bostwick, 2012.
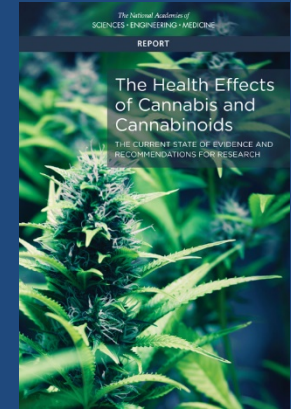
What is the Cardiac Risk of Using Marijuana?

- Tachycardia (rapid heartbeat)

- •Increased blood pressure

- •Atrial fibrillation (arrhythmic heart rate)

- •Myocardial infarction (heart attack)

- •Increased risk of death after heart attack

- •Cardiac arrest

- •Stroke, transient ischemic attack

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State of Evidence

- 2017 Report
- Health and Medicine division of the National Academy of Sciences
- (Formerly the Institute of Medicine)
- Emphasis on review of research since 2011

The National Academies of
SCIENCES · ENGINEERING · MEDICINE

REPORT

The Health Effects
of Cannabis and
Cannabinoids

THE CURRENT STATE OF EVIDENCE AND
RECOMMENDATIONS FOR RESEARCH

Psychosocial Effects

Substantial	Moderate	Limited
	• Impairment in learning, memory, and attention (acute use)	• Impaired academic achievement • Increased rate of unemployment/low income • Impaired social functioning or social role engagement • *Sustained abstinence:* impairments in learning, memory, and attention

Driving under the Influence of Cannabis

- Cannabis is the #1 illicit drug detected in drivers involved in MVAs, often in combination with alcohol

- Cannabis impairs driving performance and increases crash risk

- Impairments are maximal within 1 hour of using cannabis, and decline over 2-4 hours after use

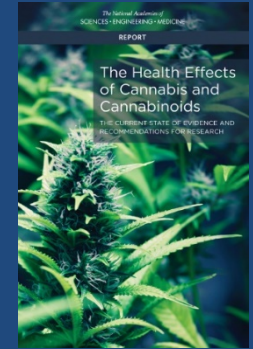- Combined use of alcohol + cannabis is associated with greater crash risk than use of either alone

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SOURCE: Ramaekers, 2018.

Injury and Death
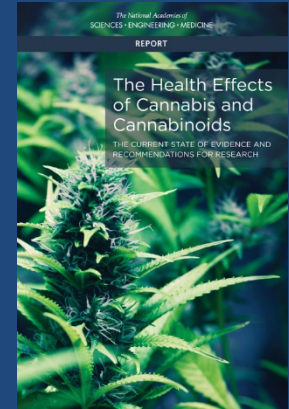
Substantial	Moderate	Limited
• Increased risk of motor vehicle crashes	• Increased risk of overdose injuries, including respiratory distress, among pediatric populations	

(Insufficient evidence to support or refute association with all-cause mortality, occupational accidents or death due to cannabis overdose)
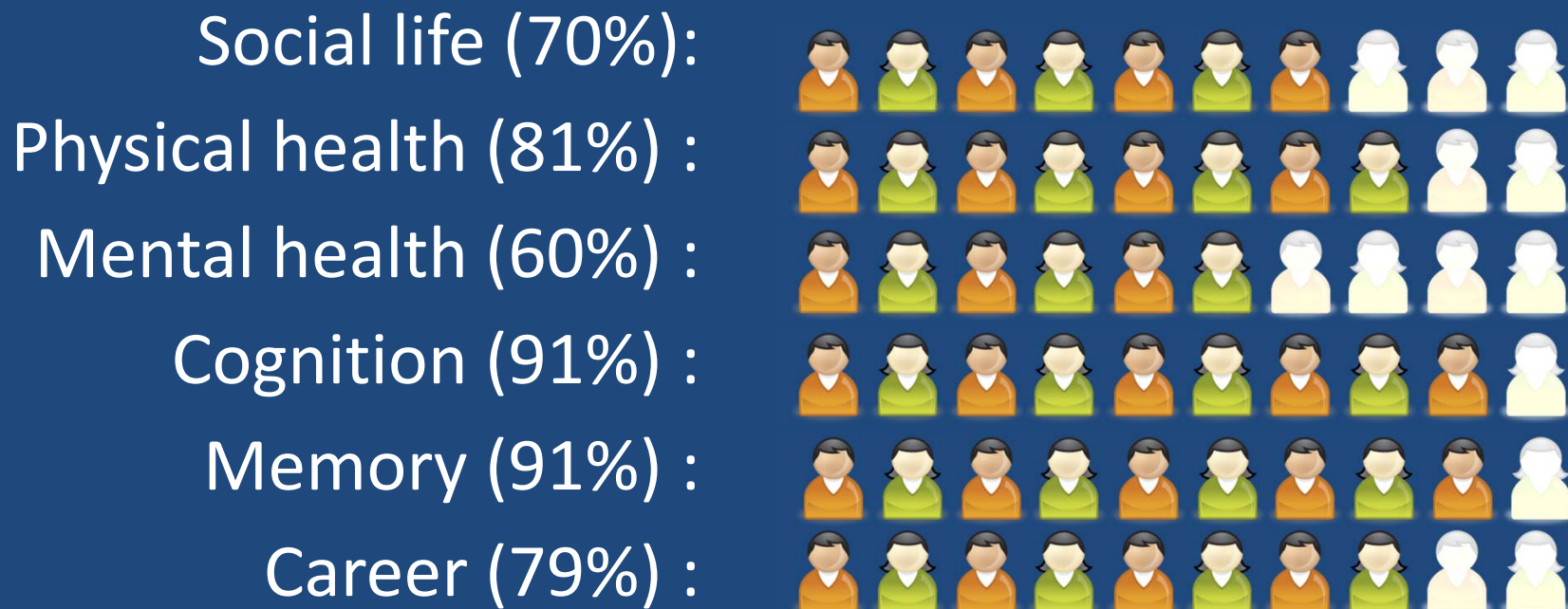
SOURCE: National Academies of Sciences, Engineering, and Medicine (NASEM), 2017.

Impact on Mental Health

Substantial	Moderate	Limited
• Development of schizophrenia or other psychoses (frequent use)	• Increased mania/hypomania in bipolar disorder • Small risk for development of depressive disorder • Increased incidence of SI and attempts (heavier users) • Increased suicide completion • Social anxiety disorder	• Increased positive symptoms in schizophrenia • Development of bipolar disorder (regular use) • Development of any other type of anxiety disorder • Increased anxiety symptoms • Increased severity of PTSD symptoms

NOTE: Association is not causation; unclear if cannabis is a cause or effect

SOURCE: National Academies of Sciences, Engineering, and Medicine (NASEM), 2017.

Neurologic Impact of Marijuana

- When cannabis users were asked to rate the effects of their own cannabis use as positive, neutral, or negative, they gave overwhelmingly negative ratings of the effects that cannabis had had on their...

Social life (70%):

Physical health (81%) :

Mental health (60%) :

Cognition (91%) :

Memory (91%) :

Career (79%) :

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SOURCE: Gruber et al., 2003.

Neuropsychological Performance in Long-Term Cannabis Users

- Administered neuropsychological tests to **63 current heavy cannabis users** who had smoked cannabis at least 5,000 times in their lives and to **72 control subjects** who had smoked no more than 50 times in their lives.

- Differences between the groups after 7 days of supervised abstinence were reported. However, **no deficits were found after 28 days abstinence**, after adjusting for various potentially confounding variables.

- Suggest that cognitive deficits associated with long-term cannabis use are **reversible and related to recent cannabis exposure**.

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Marijuana and the Adolescent Brain

- Human studies suggest early onset of use (prior to 16-18 years of age) is associated with more severe cognitive consequences:
  - Poorer attention (Ehrenriech et al., 1999)
  - Executive functioning (sustained attention, cognitive inhibition, abstract reasoning) (Fontes et al., 2011)

SOURCE: Lisdahl & Price, 2012.

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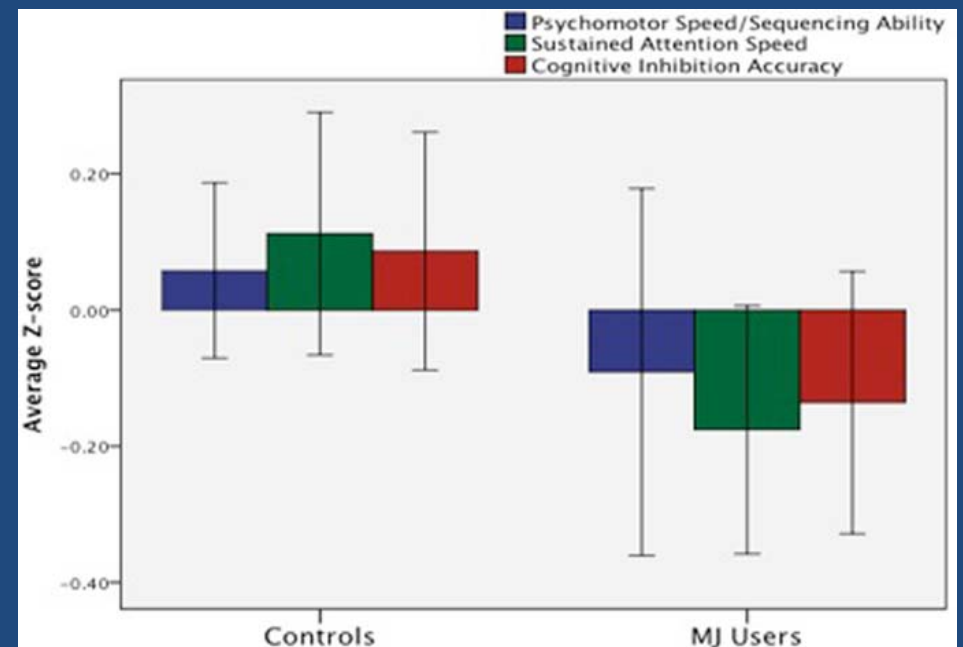
Impact on Cognition – Significant IQ Drop between Childhood and Mid-Life
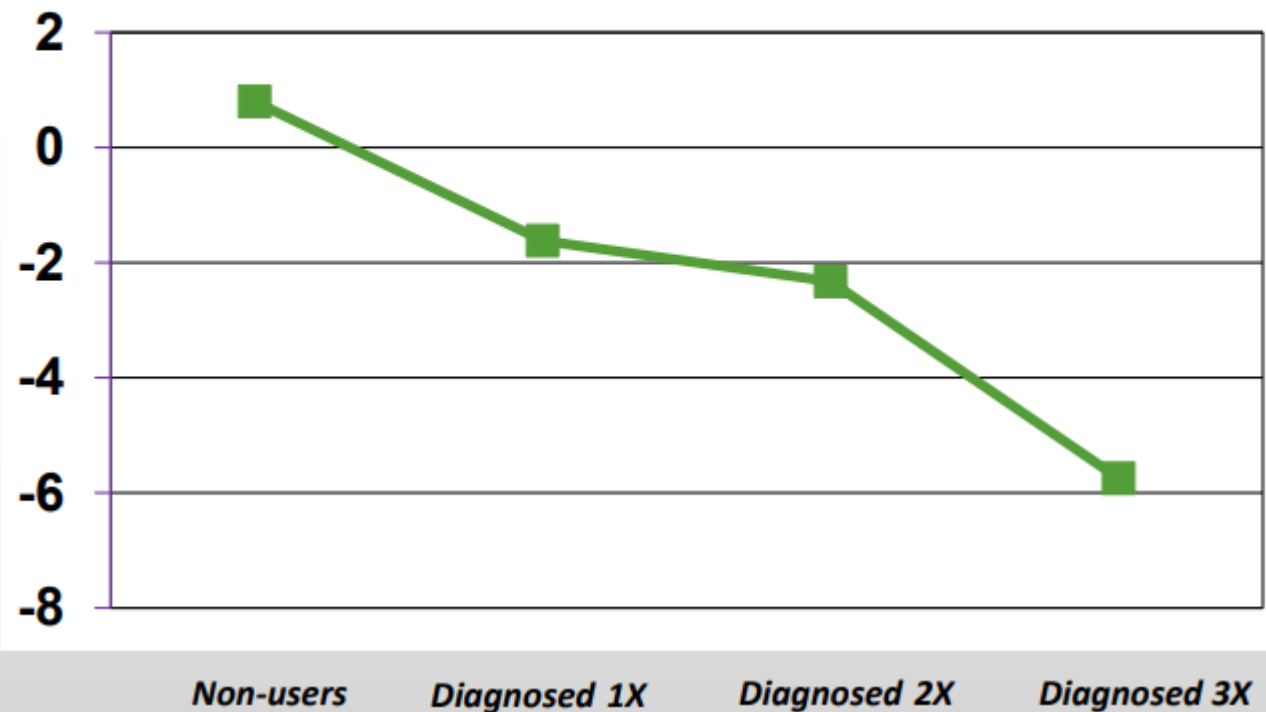
Frequency of Use during Teen Years and Adverse Outcomes

Consistent and dose-response association were found between frequency of adolescent cannabis use and adverse outcomes
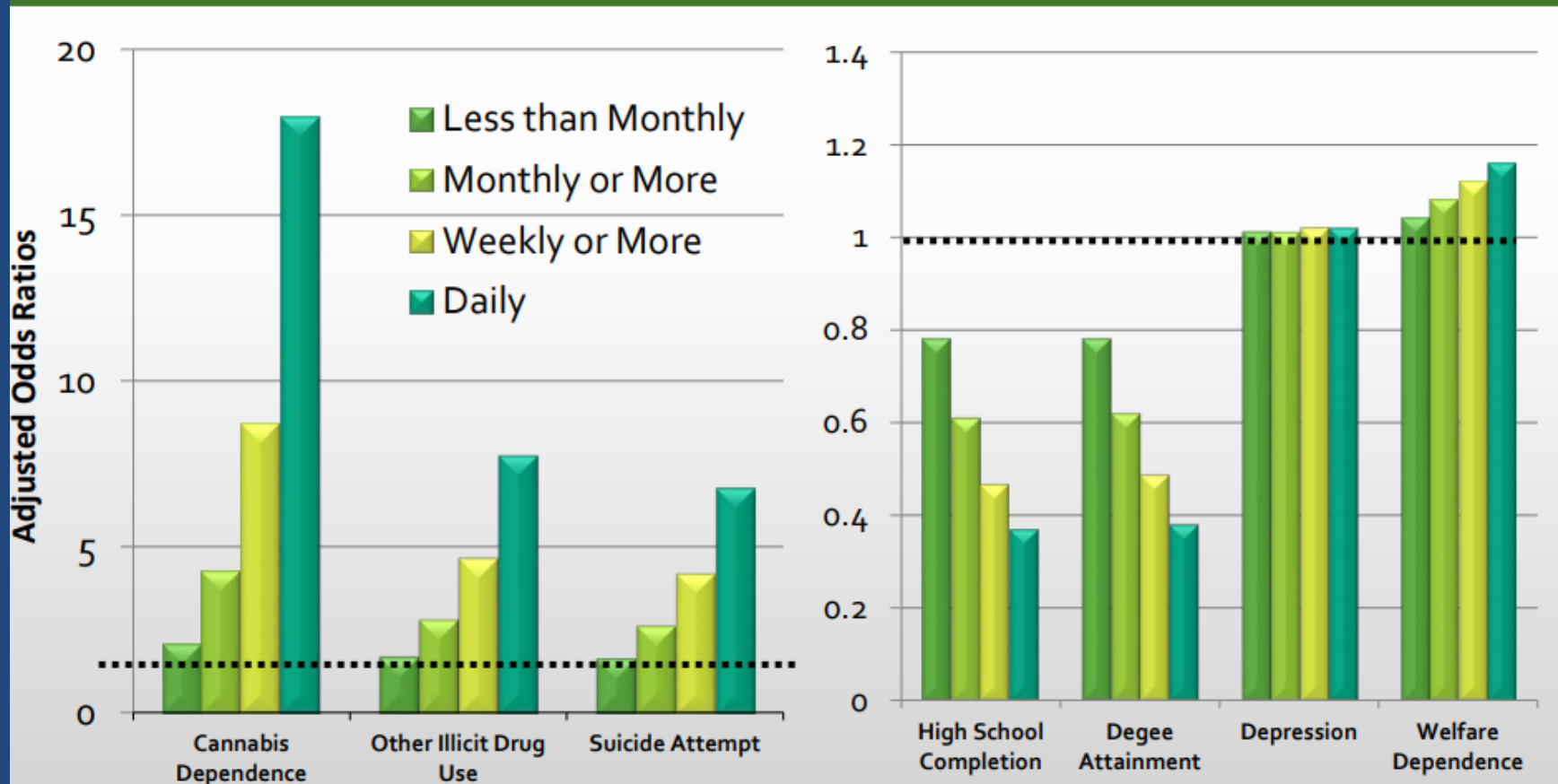
A Brand New Systematic Review and Meta-Analysis – Does this Change our Thinking?

- Adolescence is a critical time for neurological and behavioral development

- Concerns exist that cannabis use may have detrimental effects during this period
  - possible endocannabinoid involvement

- No previous meta-analysis has been done with this population

- Pulled data from 69 studies of 2,152 cannabis users
  - standardized mean effect size difference *(d)* across a variety of neurocognitive test domains

Takeaways

- Small, significant cognitive deficits in frequent and heavy users
  - d=-0.25, p<.001
- Deficits **no longer significant** when 72h abstinence period introduced (d=-0.08, p=.01)
- Previous results may be misleading
  - small populations
  - deficit as acute withdrawal artifact
- Need more data
  - longitudinal
    - data do not account for possible long term cognitive deficits
  - individual differences
  - other psychological and behavioral outcomes

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Marijuana:
Negative Effects in Pregnancy

- Increasing evidence suggests that prenatal exposure may result in:

  – Increased risk of motor, social, and cognitive disturbances.

  – Higher rate of low birth weight infants, and childhood leukemia

- Marijuana has been found in breast milk although levels are generally considered subclinical.

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Prenatal, Perinatal, and Neonatal Exposure
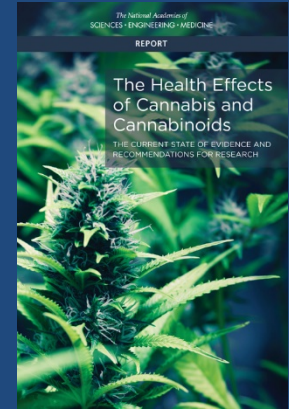
Substantial	Moderate	Limited
• Lower birth weight		• Complicated pregnancy • NICU admission

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Perception of Harm during Pregnancy

PERCEPTION OF HARM DURING PREGNANCY

21% of Americans think it's OK for a pregnant woman to use pot for nausea or pain
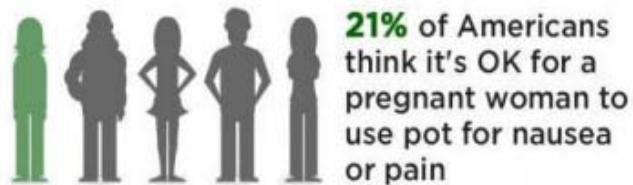
Among Americans who use marijuana regularly, **40%** think it's OK for a pregnant woman to use pot for nausea or pain

Marijuana Use By Maternal Characteristics: Hawai'i PRAMS, 2009–2011

Compared to those who did not report severe nausea during pregnancy, women who did experience severe nausea were **more likely to report marijuana use** during pregnancy (3.7% vs 2.3%; *P* = .034).

Graphic: Yahoo News/Getty Images

Source: Yahoo News/Marist Poll April 2017

Cannabis Use during Pregnancy is Increasing

Trends in Prevalence of Cannabis Use in Pregnant Women, 2002-2014-NSDUH
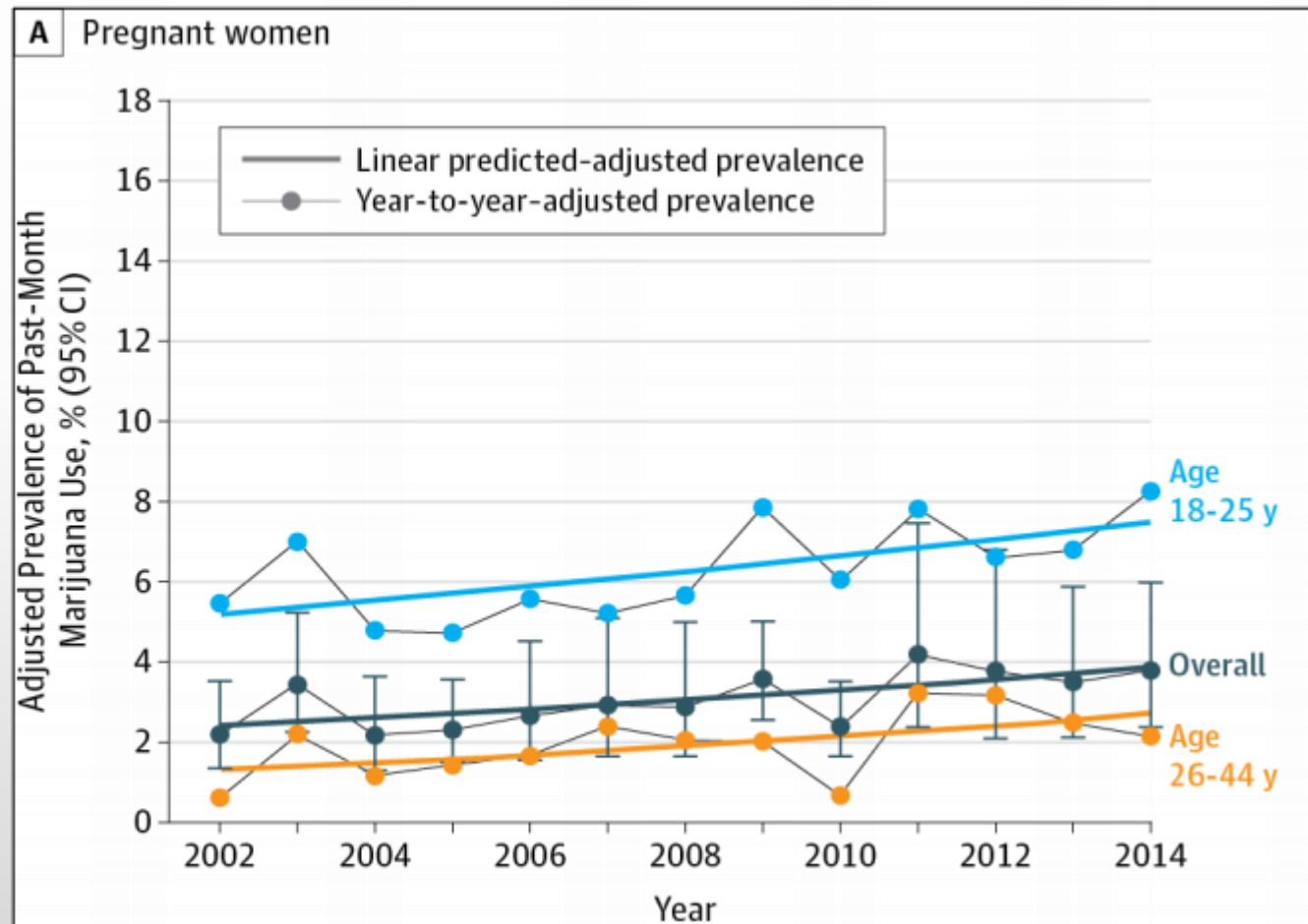
"It's not your dad's 'pot' anymore"

Average THC content increased **200%** from 1995 to 2014
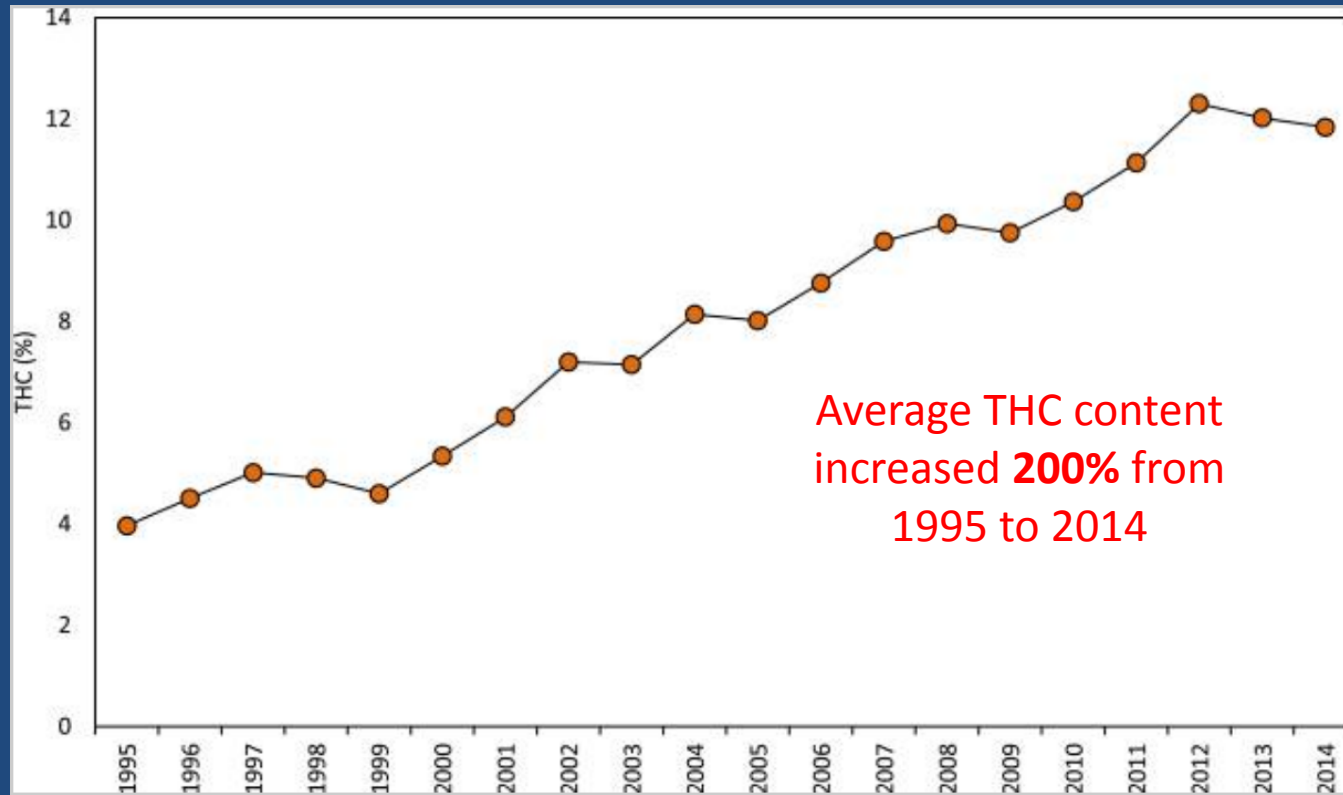
- Marijuana growers have worked to make the drug as potent as possible.
- In 1960s-70s average THC concentrations were 1-2%. Today, they can be as high as 20%

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SOURCES: ElSohly et al., 2016.

Part II:
Policy Changes Relating to Legalization of Recreational and Medical Marijuana

Public Opinion on Legalizing Marijuana 1969-2017

Do you think the use of marijuana should be made legal, or not? (%)

Illegal: 84, 66, 81, 63, 60, 61
Legal: 12, 30, 16, 31, 32, 37

1969 1980 1990 2000 2010 2017
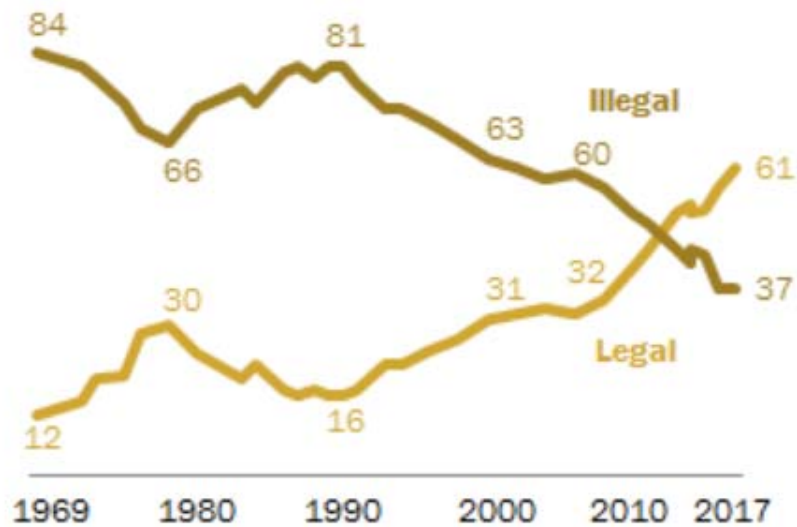
% who say marijuana should be made legal

Millennial (1981-97) 70
Gen X (1965-80) 66
Boomer (1946-64) 56
Silent (1928-45) 35

43, 15, 21, 34

1969 1980 1990 2000 2010 2017
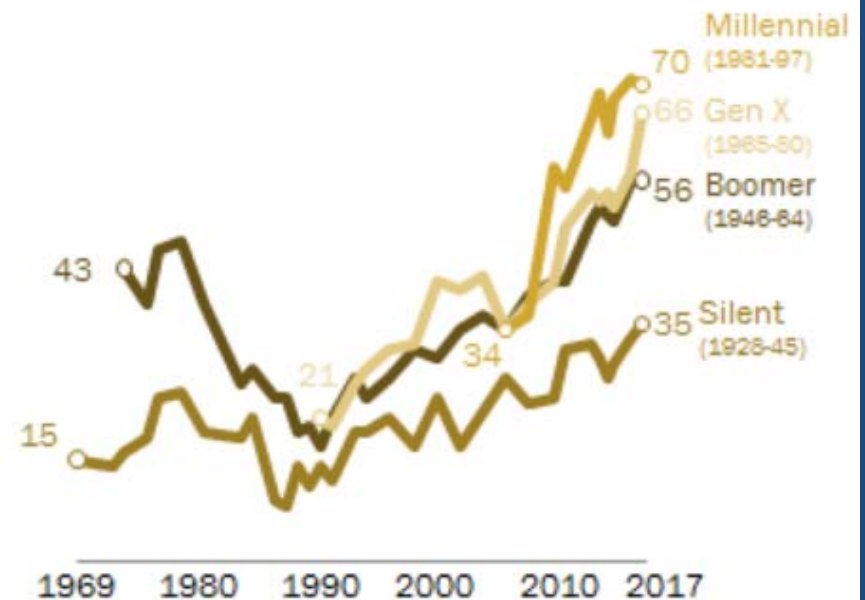
In 2017, about **six in ten** Americans said the use of marijuana should be legalized

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Recreational and Medical Use of Cannabis in the U.S.

SOURCE: National Conference of State Legislatures website, 2018.
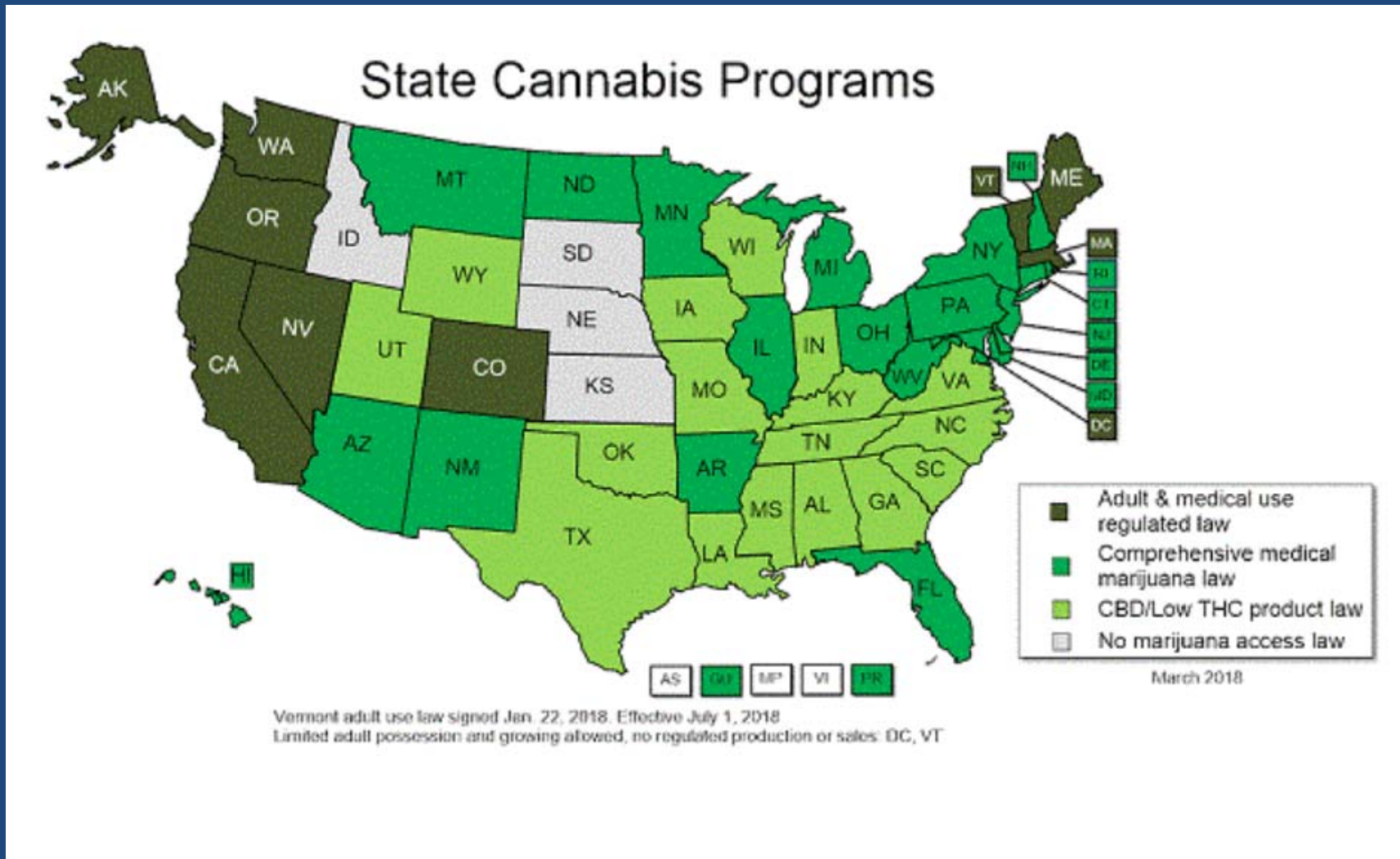
California's Proposition 64 – Adult Use of Marijuana Act

- Approved in November 2016
- Effective January 1, 2018, allowed for the sale and taxation of recreational marijuana
- Allows adults 21+ years of age to possess and use marijuana
- Two taxes – one levied on cultivation and the other on retail price
- Revenue from taxes will be spent on drug research, treatment, and enforcement, health and safety grants addressing marijuana, youth programs, and preventing environment damage resulting from illegal marijuana production

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Dispensing Limits in States with Legalized Recreational Cannabis Use

State	Flower/Bud	Concen-trate	Edibles	Per Dose/Serving THC Limits	Liquid (Beverage)
Alaska	1oz (28gm)	7 gm		5 mg THC; 50 mg per package of 10 servings	
Colorado	1oz (28gm)	8 gm	80 servings @ 10 mg each	10 mg THC	800 mg total (80 servings)
Washington	1oz (28.5gm)	7 gm	16 oz total weight	10 mg THC; 100 mg per package (10 servings)	72 oz total weight
Oregon	1 oz	5 gm	16 oz total weight	5 mg THC (50 mg per package)	72 oz total weight
California	1 oz (28.5gm)	8 gm	80 servings @ 10mg per serving	10mg THC per dose/serving	

State Regulations Related to Cannabis Advertising

- Oregon
  - No advertising with strain names such as Luke Skywalker or Girl Scout Cookie

- Washington
  - No advertising within 1,000 ft. of sensitive use (defacto ban on TV and radio advertising)
  - No billboards

- Colorado
  - No billboards or outdoor signs

- Alaska
  - Strong warning language; no promotions

- California
  - Weak rules to date; allow most advertising; some limits on locations, audiences, and vague language on attractiveness to youth

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SOURCE: Dr. Lynn Silver, Getting it Right from the Start, 2017 National Cannabis Summit Workshop, Denver, CO.

Policy Issues as it Relates to Cannabis Legalization

- Cannabis remains illegal under federal law, even though many states are legalizing cannabis for medical/recreational use

- Science lags behind policy; lack of data to guide policy decisions

- Health messaging must be nuanced and accurate

- Hard to control messaging, even if product marketing is restricted

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More Policy Issues as it Relates to Cannabis Legalization

- Perception of harm is decreasing among all age groups

- Societal norms influence use (tobacco use is dropping)

- With no federal oversight or guidance, states are implementing diverse policies

- Big money influences state legalization efforts; lobbying will increase if efforts succeed

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Potential Effects of Cannabis Reforms

- Marijuana use is more common in states that have medical marijuana laws
  - It is unclear if higher rates of use are cause or effect of medical marijuana laws

- Rates of marijuana abuse and dependence are higher in states that have medical marijuana laws
  - Higher rates of abuse/dependence due to increased rates of use
  - No increase in rate of dependence among users

- Colorado: After full legalization, number of users and frequency of use didn't change 2014-2016
  - Concern about acute exposures/overdose among youth and tourists, mostly related to edibles

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SOURCE: Cerda et al., 2012.

Potential Trend Under Legalization: More Strong Stuff (Washington State)
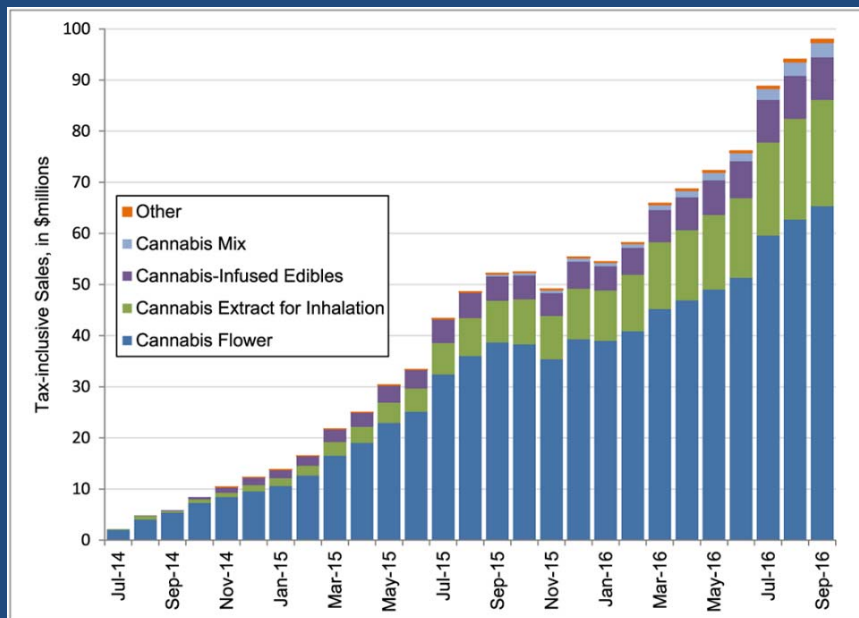
- Sales grew dramatically
- Plant still accounts for 2/3 of expenditure, but market share declined 22.4%
- Extracts' market share grew dramatically (145.8%)
- Market share of edibles grew, but not statistically significant
- Products sold on legal market are highly potent
  - Cannabis plant: THC 20.6%
  - Extracts: THC 68.7%

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Implications of Increased Potency on Health?

Most of our research is on this

Edibles
Cannabis plant as ingredient in food/drinks
About 10 mg THC per "serving"
Takes time to digest and feel high
Risk of overconsumption

Extracts and resins (hash oil, wax, shatter)
Consumed via smoking, vaporizing "Dabbing"
50-80% THC

The Cannabis Plant
1990s approx. 2-4% THC
Today approx. 12-15% THC
Today about 5 mg THC/puff
Feel effects almost instantly

But we may start seeing a lot more of this

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SOURCE: Slide courtesy of Howard Padwa, UCLA ISAP, 2018.

How Can Marijuana be a Medicine?

- Marijuana affects:
  - Pleasure/relaxation
  - Memory/thinking
  - Coordination
  - Pain Control
  - Appetite
  - Vomiting Reflex

- What medical problems do you think this would this be helpful for?

How Can Cannabis be a Medicine?
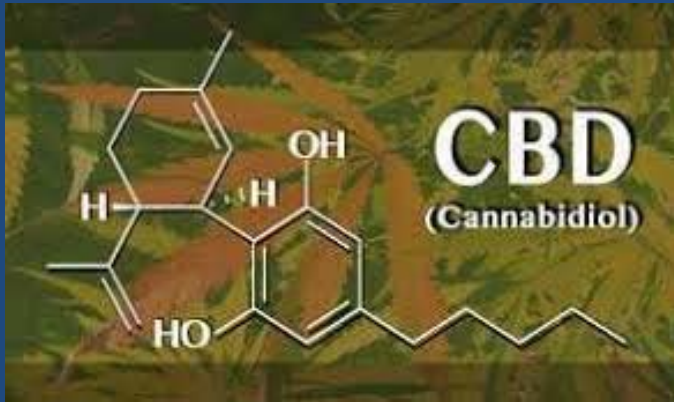
- CBD is a non-psychoactive compound in cannabis that does not interfere with psychomotor function

- In plant, may moderate intoxicating effects of THC

- Shown promise in reduction of nausea, vomiting, seizure activity, inflammation, neurogenerative disorders, others

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51 Medical Conditions For Which Marijuana Is Approved by a State

1. Alzheimer's Disease
2. Anorexia
3. Arnold-Chiari malformation
4. Arthritis
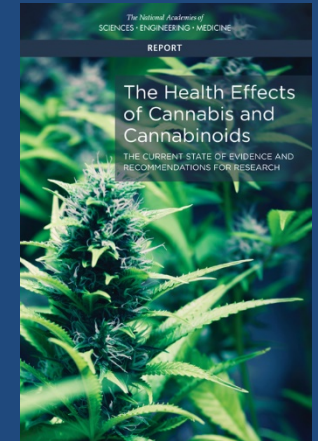5. Ataxia
6. Cachexia
7. Cancer
8. Cardiopulmonary respiratory syndrome
9. Causalgia
10. Cervical dystonia
11. Crohn's disease
12. Decompensated cirrhosis
13. Dystonia
14. Epilepsy
15. Fibromyalgia
16. Glaucoma
17. Hepatitis C
18. HIV/AIDS
19. Huntington's disease
20. Hydrocephalus
21. Inflammatory autoimmune-mediated arthritis
22. Inflammatory bowel disease (IBS)
23. Inflammatory demyelinating polyneuropathy
24. Interstitial cystitis
25. Lou Gehrig's disease (amyotrophic lateral sclerosis, ALS)
26. Lupus

26. Migraines
27. Multiple Sclerosis
28. Muscle spasms
29. Muscular dystrophy
30. Myasthenia gravis
31. Myoclonus
32. Nail-patella syndrome
33. Nausea or vomiting
34. Neurofibromatosis
35. Neuropathy
36. Pain
37. Pancreatitis
38. Parkinson's disease
39. Peripheral neuropathy
40. Post-traumatic stress disorder (PTSD)
41. Reflex sympathetic dystrophy
42. Residual limb pain from amputation
43. Seizure disorders
44. Sjogren's syndrome
45. Spasticity
46. Spinal cord damage with intractable spasticity
47. Syringomyelia
48. Terminal illness
49. Tourette's syndrome
50. Traumatic brain injury

State of Evidence

- 2017 Report

- Health and Medicine division of the National Academy of Sciences (formerly the Institute of Medicine)

- Emphasis on review of research since 2011

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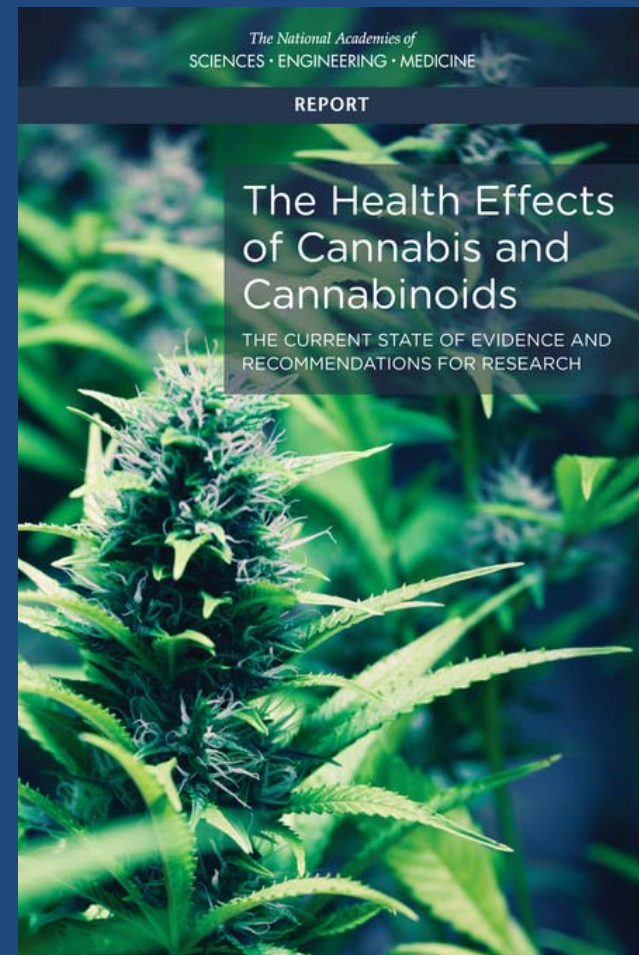
Cannabis as Medicine: Therapeutic Effects of Cannabis/Cannabinoids

Strongest Evidence	Modest Evidence	Weakest Evidence
• Nausea (cancer chemo) • Spasticity and Pain (MS) • Appetite Stimulant (AIDS-associated wasting) • Pain (esp. neuropathic) • Glaucoma	• Anticonvulsant (CBD) • Anti-inflammatory (CBD) • Antitumor (THC/CBD)	• PTSD • ADHD • Alzheimer's • Depression

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Cannabis as Medicine: Therapeutic Effects of Cannabis/Cannabinoids

Insufficient Evidence to Support or Refute
Cancers, including glioma
Cancer-associated anorexia cachexia
Anorexia nervosa
Irritable bowel syndrome
Epilepsy
Spasticity due to spinal cord injury
Amyotrophic lateral sclerosis
Chorea and certain neuropsychiatric symptoms in Huntington's disease
Motor symptoms in Parkinson's disease or levodopa-induced dyskinesia
Dystonia
Achieving abstinence in the use of addictive substances
Mental health outcomes in individuals with schizophrenia or schizophreniform psychosis

Cannabis as Medicine: Therapeutic Effects of Cannabis/Cannabinoids

- Evidence it is not effective in treating
  - Dementia
  - Intraocular pressure associated with glaucoma
  - Depressive symptoms in individuals with chronic pain or multiple sclerosis

Types of Medical Cannabis

- Botanical cannabis (plant): "Medical Marijuana"

- Synthetic THC medications available in U.S. for nausea/appetite stimulation:
  - Dronabinol (Marinol®) (FDA approved for HIV)
  - Nabilone (Cesamet®) (FDA approved for cancer; HIV off-label)

- Other medications not available in U.S.:
  - Nabiximols (Sativex®) THC/cannabadiol mouth spray for pain relief, muscle spasms; currently being investigated by FDA

Medical Marijuana vs. THC Medications: Is Medical Marijuana Better?

- THC medications still have psychoactive effects (make you high)

- Chemicals that exist in medical marijuana can moderate THC's psychoactive effects
  - These chemicals are not present in medications

- Medical marijuana is cheaper
  - Not made/patented by pharmaceutical industry

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Medical Marijuana vs. THC Medications: Is Medical Marijuana Better?

- Smoked medical marijuana takes effect in minutes; THC medications take over an hour
  - Instant feedback allows users to take more if needed for relief
  - Due to rapid relief, may consume less if smoked

- When swallowed, THC absorption is more erratic, and less concentrated
  - THC effects more unpredictable and variable, possibly less effective

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SOURCE: Bostwick, 2012.

Medical Marijuana vs. THC Medications: Are THC Medications Better?

- Medical Marijuana is **not** FDA approved

  - FDA approval assures that medications are effective, safe, and properly labeled
  - FDA cannot evaluate medical marijuana as a drug since it is a plant, not a standardized medical formulation
  - Medical marijuana is different everywhere, depending on how it is bred, under what conditions it is grown, etc.
  - No way to know if medical marijuana is pure. Can be contaminated by pesticides, mold, fungus.

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SOURCE: Kleber, 2012.

Medical Marijuana vs. THC Medications: Are THC Medications Better?

- Difficult to approve something that is smoked as "medicine"

  – Negative effects of smoking

  – Depending on type of marijuana, can undergo different types of chemical changes when burned

  – No standard measurement of dosage (inhalations vary by the individual, unlike pills)

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SOURCES: Kleber, 2012; TRI, 2012.

Medical Marijuana vs. THC Medications

Advantages of Medical Marijuana	Advantages of THC Medications
Chemicals that moderate THCs psychoactive effects	FDA approved
Less expensive	Standardized medical formulation
More immediate relief	Purity
Instant feedback allows for moderation, possibly less consumption	Not smoked
Less erratic absorption than THC medications	Standardized dosing

Why do People Use Medical Marijuana?

REASON FOR USE	% REPORTING REASON
Pain Relief	82.6%
To Sleep	70.6%
To Relax	55.6%
Muscle Spasms	41.3%
Anxiety	38.1%
To Stimulate Appetite	38.0%
Nausea	27.7%
Depression	26.1%

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SOURCE: Reinarman et al., 2011.

Why do People Use Medical Marijuana?

DISORDER THAT REQUIRES TREATMENT	% CITING AS REASON FOR MJ USE
Chronic Pain	58.2%
Mental Health Disorders	22.9%
Sleep Disorders	21.3%
Neurological Disorders	16.6%
HIV	1.6%
Cancer	1.5%
Glaucoma	1.3%

Part III:
What to Expect with Patients who Use Marijuana and What to Do about It

What To Do With Your Patients: Using But Not Having Problems

- Brief interventions that utilize motivational interviewing techniques can help reduce substance use among mild-moderate users
  - Works well for alcohol, but little evidence for other drugs
  - As perception of harm goes down, use goes up
  - Education about risks (medical, psychological, social, legal) associated with cannabis use may be effective
  - May include raising awareness of negative symptoms clients are experiencing

What To Do With Your Patients: Using But Not Having Problems

- More extended discussions/approaches may be effective
  - Example: Teen Marijuana Check-Up on SAMHSA's National Registry of Evidence-Based Programs and Practices
  - Nonjudgmental, non-confrontational communication
  - Utilizes motivational interviewing approach to strengthen motivation and build plans for change
  - Involves exploration of teen attitudes and motivations to use in two hour-long meetings

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What To Do With Your Patients: Heavy/Regular Use

– Look for signs of cannabis use disorder and refer to specialty treatment if needed

Preoccupation with use	Without the drug, experience:
Loss of control over use	– Anger/aggression
Continued use in face of adverse consequences	– Irritability
	– Mood and sleep difficulties
	– Decreased appetite
	– Cravings
Cognitive distortions and denial	– Restlessness
	– Physical discomfort
	– Nervousness and anxiety

What are Some Specific Clinical Strategies that Can be Utilized?

- Motivational Interviewing

- Referral to specialty SUD services
  - Motivational Enhancement Therapy
  - Cognitive Behavioral Therapy
  - Contingency Management
  - Family-based Treatment

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Cannabis Use Disorder Treatment

– Treatments are behavioral

- Motivational Enhancement Therapy
- Cognitive Behavioral Therapy
- Contingency-Management
- Family-Based Treatment

– Only 10-30% success rate in achieving abstinence after one year

– No approved medications available

– Research on recovery from cannabis use disorders is underway/ongoing, including recovery without formal treatment

If Patients have not been Diagnosed with a CUD: Three Steps

1. Decisional Balance

2. Feedback Sandwich

3. Explore options

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1. Decisional Balance

- Have patient explore what they perceive to be the benefits/costs of using medical marijuana

The good things about marijuana	The not- so-good things about marijuana
The good things about changing	The not-so-good things about changing

2. Feedback Sandwich

- Ask permission to give patient feedback on how marijuana may be affecting his/her health
- Give feedback
  - Acknowledge pros/cons patients mentioned
  - Mention concerns about marijuana's effects as they pertain to the patient (physical/behavioral health issues, regulatory/legal issues)
  - Present information in a non-judgmental manner
- Ask for patient response to feedback

Decisional Balance/Feedback Sandwich: Role Play

1. Decisional Balance

2. Feedback Sandwich

Do this

3. Explore options

Decisional Balance/Feedback Sandwich: Role Play

1. How did it make you feel discussing marijuana use? How did it make you feel being asked?

2. What strategies did you use to get patient permission to give feedback about marijuana use?

3. How did you assure that you weren't being judgmental when you presented your concerns about marijuana use?

4. How can you incorporate this knowledge into the way you talk about these issues with your patients?

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3. Explore Options

- If Steps 1 and 2 show that reducing marijuana use would benefit patient, explore additional strategies to achieve symptom relief

  - Behavioral interventions

  - Pharmacological interventions

  - FDA-approved THC medication (Marinol ®)

How to Talk about Cannabis

- Conflict is counterproductive

- Explore your patient's reason(s) for use

- Data is less important than personal experience

- Immediate concerns (sleep, money) are more important to people than long-term health

How to Talk about Cannabis

- If you must share data, pose it as a question:
    - "You are smart and doing well; you have a lot going for you. What might you be willing to change about your cannabis use to keep that edge?"
    - "Some people I've talked with report feeling sluggish the day after they smoke. What kind of things do you do instead of getting high the night before you have a big day or something important to do?"
    - "We know that it can be very hard to control cannabis use when people use it more than occasionally. What can you tell me about how you are able to control your use?"

#Bigger Choices Media Campaign

- Launched by the LA County DPH

- Digital and social media-based public education campaign created by local teenagers (peer-to-peer communication)

- Designed to prevent teens from using marijuana

- Provide teens with facts and resources to make the best decision regarding use of marijuana

- Videos available at: https://www.youtube.com/channel/UCdYH7aANy1cQLRwOfzbW6DQ

Take-Away Points

– Cannabis can have adverse effects on mental health and physical health

– Cannabis is becoming stronger and used in more potent forms than before, so it may have serious consequences we aren't yet aware of

– As perception of harm goes down, use goes up— education may be key in addressing use

– Behavioral interventions (motivational interviewing, motivational enhancement, CBT, contingency management, family-based therapy) can be effective when working with clients who use cannabis

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Take-Away Points

- Providers need to be aware of the signs of abuse/dependence, and know what to do if they identify it

- Providers should weigh pros and cons of marijuana use with their patients, and educate them about potential risks of use

- If the costs of marijuana use outweigh the benefits, providers should work with patients on additional strategies to manage symptoms and discomfort

Resources for Continued Learning

- NIDA – Marijuana
  - https://www.drugabuse.gov/drugs-abuse/marijuana
- Learn about Marijuana, UW ADAI
  - http://learnaboutmarijuanawa.org/
- ATTC Marijuana Lit
  - http://attcnetwork.org/marijuana/index.aspx
- California Bureau of Cannabis Control
  - https://www.bcc.ca.gov/
- Getting it Right from the Start
  - https://www.gettingitrightfromthestart.org/

Questions?

THANK YOU FOR YOUR TIME!

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