



Cannabis Update 2019

Jodie Escobedo, MD FAAFP FASAM
Southern California Permanente Medicine
Addiction Medicine Department
South Bay Area

WEED
It's A Lungful Of Fun!

Cannabis Update 2019

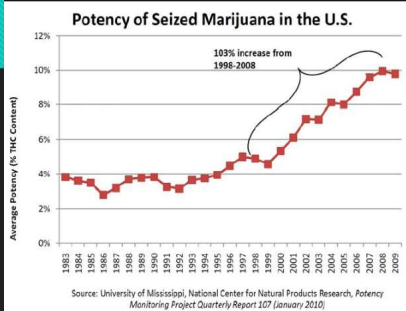
- Pharmacology
- Use Trends
- Adverse Effects
- Has Legalization Been a Good Thing?
- Drug Testing
- What Do We Still Need To Know?

Pharmacology

Its more potent!

- Selective breeding
- Higher percentage of flowers
- Less CBD
- Concentrated forms
- Fresher

Potency of Seized Marijuana in the U.S.



Source: University of Mississippi, National Center for Natural Products Research, Potency Monitoring Project Quarterly Report 107 (January 2010).

Pharmacology

- THC % is going up but CBD (Cannabidiol) is stable or falling. The ratio is changing.

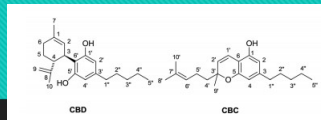
Pharmacology

Cannabinoid receptors

- CB1 – brain, psychoactive
- CB2 – immune system, gut, spleen etc. Not involved directly in intoxication

Cannabinoids

- Phytocannabinoids – from plants; THC, CBD, Cannabichromene (CBC)
- Endocannabinoids – made in our body; Anandamide
- Synthetic Cannabinoids – made in a lab; Spice etc. too many compounds to list



I USED TO SMOKE WEED.

I STILL DO. BUT I USED TO, TOO.

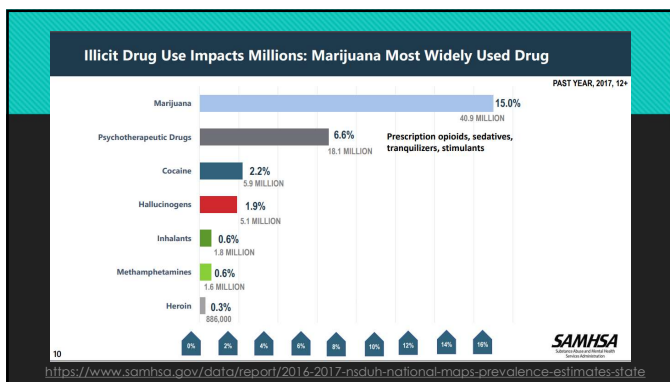
Pharmacology

- Adulterants?
- Pesticides?
- Fentanyl?
- Spice/synthethetic cannabinoids?
- VAPING!
- God knows what!

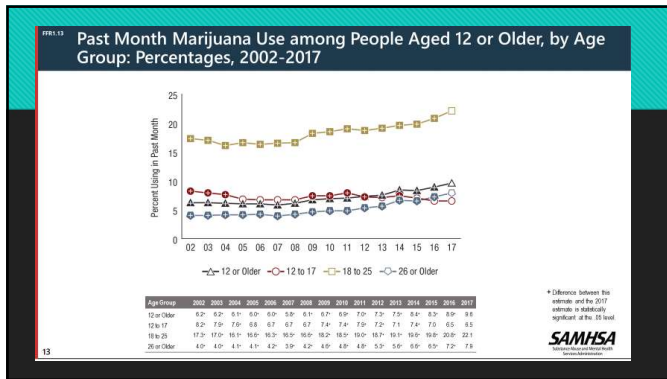
Seriously!
Take a bite! Its just
a sandwich. It's
good. Trust me!



Use Trends

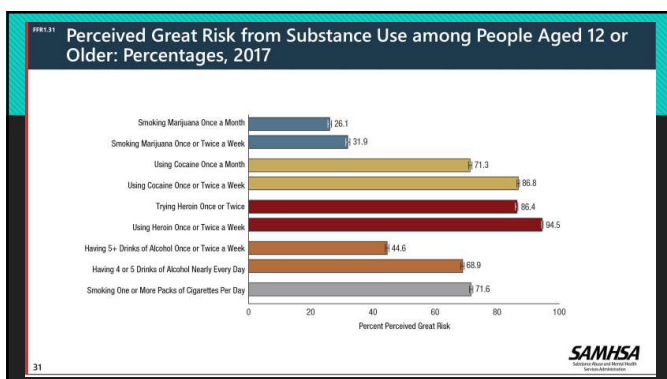


Use Trends



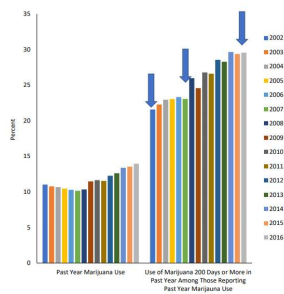
Use Trends

It's perceived by the public as not harmful.



Use Trends

Marijuana Use Is Increasing in the U.S.



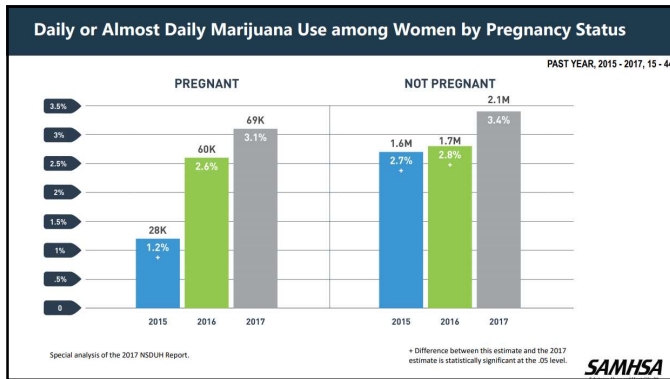
- Since 2007, past year marijuana use has increased 37%
- Frequent marijuana use (using ≥ 200 days in the past year) increased 37% since 2002
- Nearly 1 in 3 people using marijuana in 2016 reported using ≥ 200 days in the past year

SAMHSA
Substance Abuse and Mental Health Services Administration

Source: Jones CM Analysis of the NSDUH 2002-2016 Public Use Files

Use Trends

Pregnant?
What the heck! Its legal now!

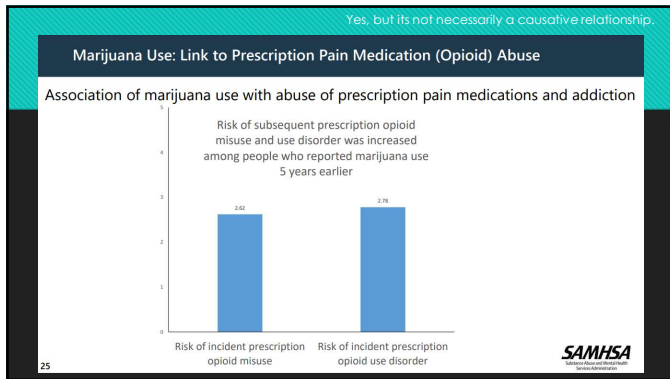


Adverse Effects

- Addiction
- Co-Occurring Disorders
- Under 25 Issues
 - Brain Development
 - Intelligence
 - Underachievement
- Pregnancy Use
- Vaping Injuries
- Edibles
- Cannabis Hyperemesis Syndrome

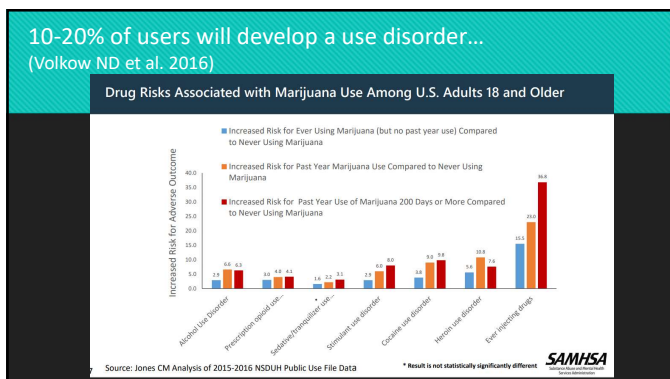
Adverse Effects

Addiction



Adverse Effects

Addiction

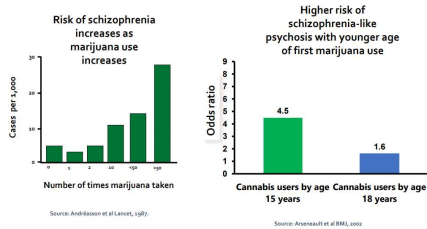


Adverse Effects

Co-Occurring Disorders

Adverse Effects

Marijuana-Associated Psychosis



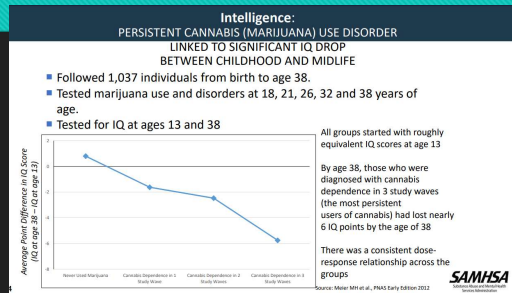
26

SAMHSA

Adverse Effects

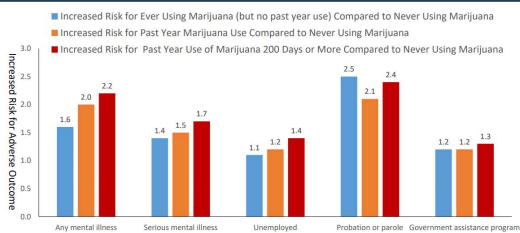
On developing brains...

Pot does make you dull...



Pot holds you back...

Mental Health and Social Risks of Marijuana Use Among U.S. Adults 18 and Older



Pot hurts your unborn child...

Marijuana and Pregnancy

May be associated with:

- Fetal growth restriction
- Stillbirth
- Preterm birth

May cause problems with neurological development:

- Hyperactivity
- Poor cognitive function (Metr TD and Stickrath EH, 2015)

SAMHSA
U.S. DEPARTMENT OF HEALTH & HUMAN SERVICES
SUBSTANCE ABUSE AND MENTAL HEALTH SERVICES ADMINISTRATION

Adverse Effects: The Vaping Crisis...

- Long term consequences?
- Explosions
- Burns
- Acute lipoid pneumonias

Adverse Effects: Edibles...

Adverse Effects: Cannabis Hyperemesis

- Episodic n/v/abd pain
- Hot baths or showers make it better
- Often leads to hospitalization
- Treatment – STOP USING!
- Stopping an episode
 - Capsaicin creme to belly
 - IV haloperidol 5mg IV

Has legalization been a good thing?

A rare complication of a common thing is significant.

~400,000,000 people in the US

25% of people have used cannabis = 100,000,000

A one percent risk is a million people!

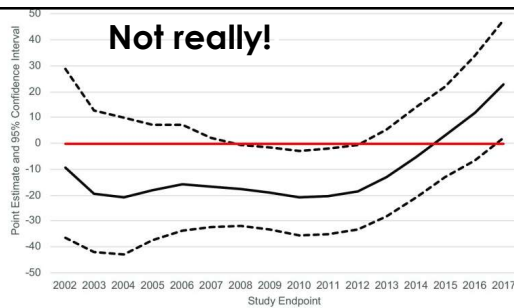
50,000 people die a year from colon cancer

Has legalization been a good thing?

What about cannabis and pain medications...

Didn't opioid OD's go down when cannabis became legal?

Not really!



Changes in point estimate and 95% CI of association between medical cannabis law and age-adjusted opioid overdose death rate by the last year included in the analysis since 1999. Fixed (year and state) and time-varying effects (prescription drug monitoring program, state unemployment, pain management clinic oversight laws, and prescription drug identification laws) were also adjusted for.

Stuff to think about...

The Surgeon General's Warning on Marijuana

The Surgeon General of the Public Health Service has issued the following warning on marijuana: Marijuana use is a major public health problem in the United States. In the past 20 years, its use has increased 30-fold; it is estimated that more than a quarter of the American population has used it. The age at which persons first use marijuana has decreased gradually to the junior high school years. Until recently, nearly 11% of high school seniors used it, and although that figure has declined to 7%, its daily use still exceeds that of alcohol; more high school seniors use marijuana than smoke cigarettes. In a recent study, 32% of those surveyed had used marijuana during the previous 30 days, while 25% had smoked tobacco.

On March 24, 1982, the Department of Health and Human Services submitted to Congress a report reviewing the consequences of marijuana use. Marijuana and Health, 1982, with a series of reviews, is primarily based on two recently conducted, comprehensive, scientific reviews by the Institute of Medicine of the National Academy of Sciences, the Canadian Addiction Research Foundation, and the World Health Organization (WHO). Both independent reviews corroborate the Public Health Service's findings of health hazards associated with marijuana use: Acute intoxication with marijuana interferes with many aspects of mental functioning and has serious, acute effects on perception and skilled performance, such as driving and other complex tasks involving judgement or fine motor skills.

Among the known or suspected chronic effects of marijuana are:

- short-term memory impairment and slowness of learning;
- impaired lung function similar to that found in cigarette smokers. Indications are that more serious effects, such as cancer and other lung disease, follow extended use;
- decreased sperm count and sperm motility;
- interference with ovulation and pre-natal development;
- impaired immune response;
- possible adverse effects on heart function.

by-products of marijuana remaining in body fat for several weeks, with unknown consequences. The storage of these by-products increases the possibilities for chronic, as well as residual, effects on performance, even after the acute reaction to the drug has worn off. Of special concern are the long-term developmental effects in children and adolescents, who are particularly vulnerable to the drug's behavioral and psychological effects. The "amotivational syndrome," characterized by a pattern of energy loss, diminished school performance, harmed parental relationships, and other behavioral disruptions, has been associated with prolonged marijuana use by young persons. Although more research is required, recent national surveys report that 40% of heavy users experience some or all of those symptoms.

The Public Health Service concludes that marijuana has a broad range of psychological and biological effects, many of which are dangerous and harmful to health, and it supports the major conclusion of the National Academy of Sciences' Institute of Medicine.

SAMHSA
Substance Abuse and Mental Health Services Administration

56

Has legalization been a good thing?

It has slowed the mass incarceration of our youth – especially minority youth

It has set us up to tax, regulate and study Cannabis to a degree never seen before.

Not yet at least... IMO.

Drug Testing

- Visual 'Coma Screen' vs. Drug of Abuse testing
- Quantitative levels – its all in the interpretation and its NOT straightforward
- Should primary care test kids when mom and dad ask for it? HINT: NO

What do we still need to know?

- TAXATION
- EDUCATION
- DEFINE INTOXICATION
- WHAT IS THE 'LEGAL LIMIT'
- DELIVERY SYSTEMS SAFETY
- WHO WILL BE THE WATCHDOG?
- WHAT REGULATIONS DO WE NEED?
- HOW DO WE HANDLE ADVERTISING?
- STANDARDIZATION OF WHAT YOU GET
- HOW CAN WE DO A BETTER JOB THAN WE HAVE DONE WITH ALCOHOL?

Questions?