

To Do that...

- ▶ We need patrol officer's to buy in.
- ▶ We also need prosecutors to buy in.
- ▶ De-bunk some myths about Marijuana (THC)
- ▶ Show the dangers of driving impaired.

National Survey Drug Use and Health (NSDUH)

- 17.4 million consider themselves current marijuana users
- 77% use marijuana in combination with other illicit drugs

Percent of high school seniors reporting lifetime use



70% alcohol (51% drunk)

45% marijuana

22% any Rx drug

13% narcotics other than heroin

5% cocaine 2% meth 1.5%
heroin

SOURCE: Monitoring the Future Survey, University of Michigan. N= 50,000 students at 420 U.S. public and private high schools and middle schools.

Columbia University Mailman School of Public Health

- ▶ Marijuana in combination with alcohol is especially dangerous
- ▶ Significantly more likely for causing fatal two-vehicle crashes compared to drivers who used neither of the substances.

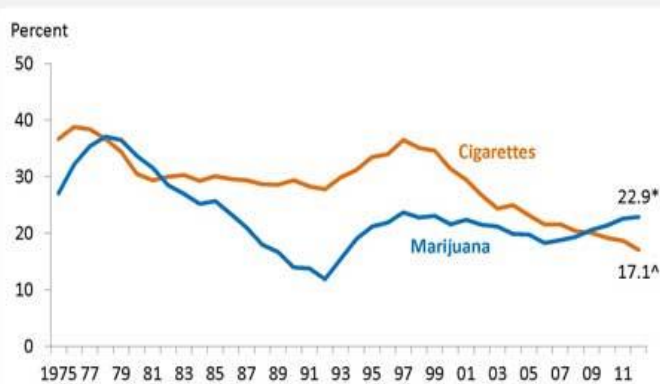
Annals of Epidemiology

Columbia University Mailman School of Public Health

- ▶ THC levels in blood were higher when cannabis was consumed with alcohol than when cannabis was consumed alone
- ▶ Regular cannabis users had higher levels of THC in their blood than did non-regular users

More kids smoke marijuana than cigarettes

Past Month Cigarette and Marijuana Use
among 12th Graders, 1975 to 2012



22.9%

17.1%

Significant * increase or ^ decrease from 2007

Source: University of Michigan, 2012 Monitoring the Future Study

Minnesota Student Survey

11th graders in 2016

How old were you when you tried marijuana (pot, weed) or hashish (hash, hash oil) for the first time? (Do NOT count medical marijuana prescribed for you by a doctor.)

	Count	%
I have never tried marijuana or hashish	23,736	70.4
10 years old or younger	318	.9
11 years old	204	.6
12 years old	588	1.7
13 years old	1,118	3.3
14 years old	1,849	5.5
15 years old	2,734	8.1
16 years old	2,622	7.8
17 years old or older	551	1.6

NIDA

People who used marijuana heavily* through their teens and into adulthood showed a significant drop in I.Q. (an average of 8 points) between the ages of 13 and 38

Those who never used showed no drop in IQ

* 4+ times per week





Marijuana



Over 29 million Americans use marijuana



Cannabis

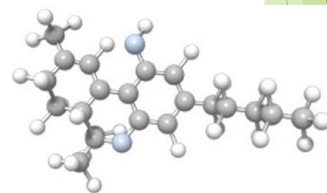


- ▶ Marijuana (Plant)
- ▶ Resinous form - Oil/Wax
- ▶ Edibles
- ▶ Marinol
- ▶ Synthetic Cannabinoids



Cannabis

- Derived primarily from various species of Cannabis plants
- Primary psychoactive ingredient is Delta-9 Tetrahydrocannabinol (THC)



Δ -9-TETRAHYDROCANNABINOL

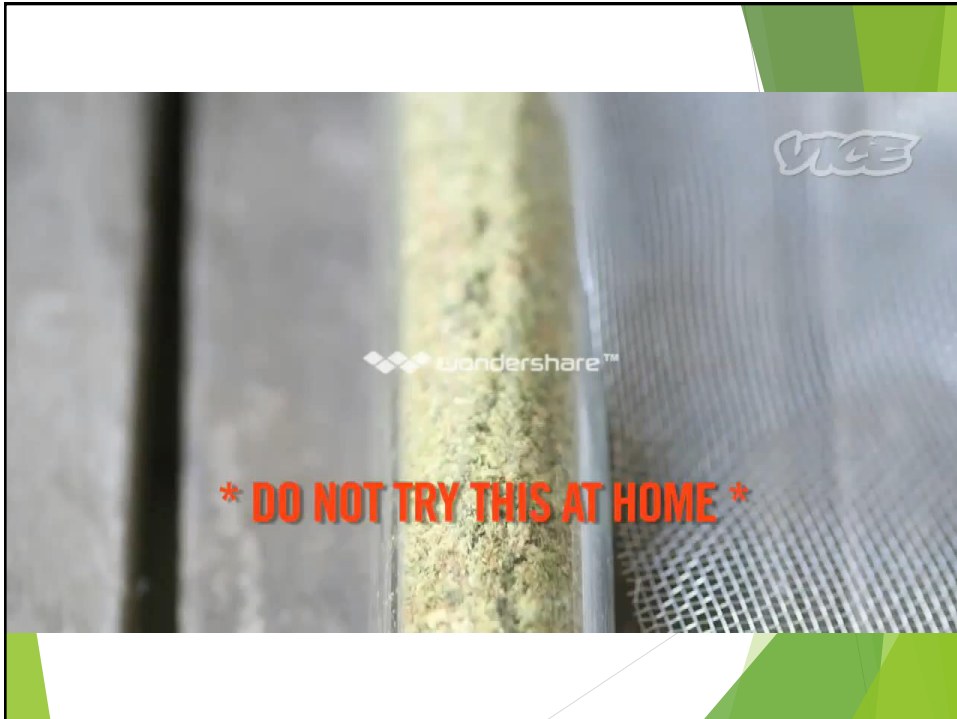
Cannabis Overview



Cannabis

Effects of cannabis depend on the strength of the THC, time of ingestion, and individual's metabolism.

- Decades ago, THC concentrations for smokable marijuana, peaked at relatively low levels (3-6 %)
- Current levels are being reported at 30+%
- THC levels in 'Wax', 'Shatter', 'BHO' reported at 90%+



THC

corrupts neurochemical endocannabinoids that play key roles in **memory formation, learning, decision-making...**

...and is Addictive.



SOURCE Ruben Baler, a neuroscientist with the National Institute on Drug Abuse (NIDA)

Marijuana Edibles



Marijuana Edibles

- ▶ A cannabis-infused product containing cannabinoids (THC and CBD)
- ▶ Any food, ranging from cookies and brownies to chocolates, hard candies, and hot or cold drinks



Marijuana Edibles

- ▶ More discreet and often preferred over smoking because they avoid the negative health effects associated with inhaling marijuana into your lungs
- ▶ Eating delay effects versus smoking marijuana
- ▶ High is more intense and psychoactive effects that last much longer

Marijuana Edibles

- ▶ Smoking effects: within seconds and lasts 3-4 hours
- ▶ Ingesting effects: usually felt 30-90 minutes after being consumed and last 4-12 hours

Marijuana Edibles

- ▶ Dose is challenging – everyone reacts differently (body type, gender, age, tolerance)
- ▶ Some contain 100 mg of THC (multiple servings)
- ▶ Other have smaller amounts (5 or 10 mg)
- ▶ Colorado defines one serving as 10 mg



Synthetic Cannabinoid Products



Synthetic Cannabinoids

- Similar to cannabis but considerably more potent
- Users experience far more intense effects
- Causes profound changes in CB1 receptor, causing desensitization to its effects more rapidly than cannabinoids





LOCAL

At least 60 overdosed on synthetic marijuana last week in Minneapolis

It's the biggest toll since 2015, said one official, and left users with hallucinations, violent behavior, or nearly comatose.

By Libor Jany Star Tribune | OCTOBER 9, 2017 — 11:38PM



Engaging the Patrol Officers

- ▶ Creating a culture where Cannabis DWI enforcement is embraced.
- ▶ Understanding the impairing effects of THC
- ▶ Starts with our department leaders taking initiative

Effects of Cannabis

The Blunt Truth:

How Marijuana Affects Driving Abilities

- Harder to judge distances
- Slower decision-making
- Reduced peripheral/side vision
- Difficulty maintaining attention
- Slow reaction times
- Harder to stay in traffic lane
- Reduced coordination

Research clearly shows that THC in marijuana negatively affects driving abilities.

Vehicle in Motion

- Particularly important in marijuana DWI cases
- Moving violations help the jury visualize the impairment
- How did the vehicle react to the traffic stop?
 - Colorado State Patrol
 - ▶ Speed and weaving most common indicators
 - IACP DRE Cannabis Correlation Study
 - ▶ Speed and Weaving most common indicators
 - ▶ Crash a likely indicator
 - ▶ 72% of subjects had >1 moving violation



Personal Contact

- ▶ Good Interview with driver
- ▶ Odor of Burnt or Fresh MJ?
- ▶ My Favorite Question: Scale of 1 - 10 with 1 being sober, 10 being the highest you've ever been where do you see yourself right now?
- ▶ Let the driver confess!

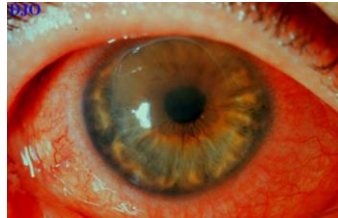


Personal Contact

- ▶ Brown Green Coating on Tongue?
- ▶ Eyelid Tremors while seated in car?
- ▶ Any Admissions to consumption?

Indicators of Impairment

- ▶ Odor of marijuana
- ▶ Impaired perception of time and distance
- ▶ **Bloodshot eyes**
- ▶ Body/eyelid tremors
- ▶ Impairs attention
- ▶ Relaxed inhibitions
- ▶ Slowed internal clock



Indicators of Impairment

- Marijuana debris in the mouth
- Disorientation
- Sedation
- Possible paranoia
- Increased appetite
- Dilated pupils



Pre-Arrest Screening

SFSTs were validated for physical impairment
NOT for alcohol impairment

Look for more indicators (observations) of
impairment

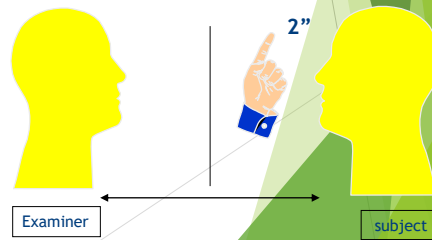
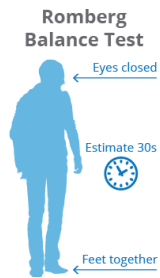
Eyelid tremors, body tremors, trouble counting,
ridged movements

Walk and Turn and One Leg Stand

- ▶ Takes 9 steps then stops. Asks what to do next (short term memory affected)
- ▶ Ridged movements, jerky while walking
- ▶ Leg and other body tremors
- ▶ Forgets to count / Miss-counts numbers

Additional Field Sobriety Tests

- ▶ **Modified Romberg**
 - ▶ Internal clock
 - ▶ Sways
 - ▶ Body tremors
 - ▶ Eye lid flutters
- ▶ **Lack of Convergence**
 - ▶ Present with DID-C
 - ▶ Good indicator of Cannabis impairment



For Training Only. Do NOT share outside the DRE world.

	Cannabis
Horizontal Gaze Nystagmus (HGN)	None
Vertical Nystagmus (VGN)	None
Lack of Convergence (LOC)	Present
Pupil Size	Dilated (Possibly normal)
Reaction to Light	Normal
Pulse	Up
Blood Pressure (BP)	Up
Body Temperature (BT)	Normal
Muscle Tone (MT)	Normal
General Indicators	Marked reddening of the conjunctiva Odor of marijuana Marijuana debris in mouth Body/eyelid tremors Relaxed inhibitions
Usual Methods of Administration	Smoked, oral <small>IAACP Conference, Denver 2016</small>

Duration of Effects

Cannabis (smoked)

- Peak 10-30 minutes
- Duration 2-3 hours
- Dissipates 3-5 hours
- Residual Effects Up to 24 hours

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Don't Waste Any Time.....

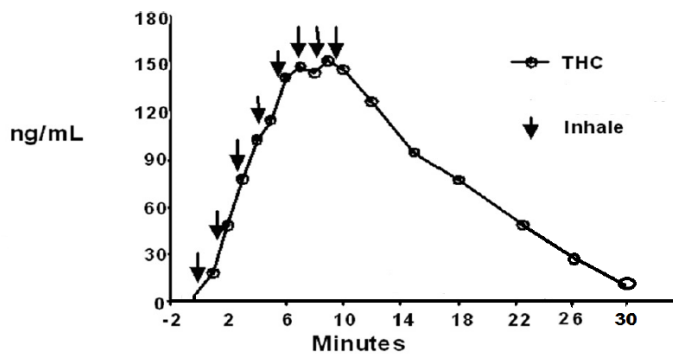
THC levels in blood drop rapidly after dosing.

The first 60 minutes is key.

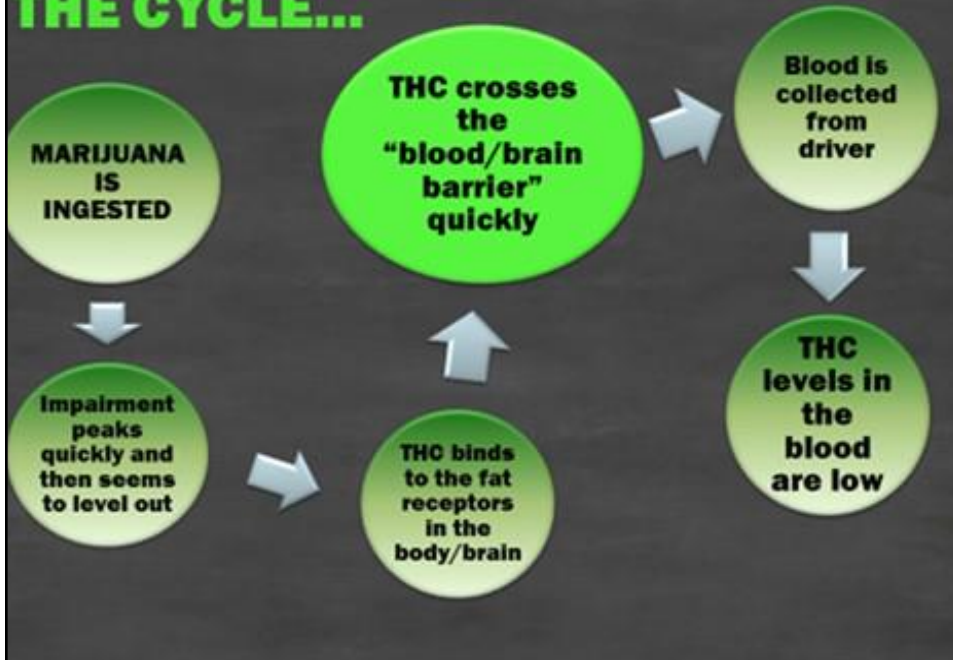
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Time! - NHTSA Study

Figure 2
Absorption of THC in Plasma after Smoking



THE CYCLE...



Don't Waste Any Time.....

Donna B. Zittel, D-ABFT

Donna B. Zittel, D-ABFT-FT
Forensic Scientist

Results of Laboratory Examination

The following are results confirmed by Liquid Chromatography/Mass Spectrometry:

<u>Type of Drug:</u>	<u>Concentration</u>	<u>Associated Expanded Uncertainty</u>	<u>Units</u>
delta-9-tetrahydrocannabinol (THC)	13.9	±2.7	µg/L
11-hydroxy-delta-9-tetrahydrocannabinol (a metabolite of THC)	3.65	±0.96	µg/L
11-nor-9-carboxy-delta-9-tetrahydrocannabinol (a metabolite of THC)	42	±17	µg/L

I hereby certify that the above report is true and accurate and represents my opinions and interpretations.

Joseph L. Yoch

Joseph L. Yoch
Forensic Scientist

A breath test was previously administered on this subject. No blood or urine ethyl alcohol analysis will be performed on this sample.

If a concentration is reported with an associated expanded uncertainty it is expressed to a 95.45% level of confidence.

For drug scheduling information, visit <https://dps.mn.gov/divisions/bca/bca-divisions/forensic-science/Pages/toxicology-alcohol.aspx>

Don't Miss The DWI!

- ▶ Odor of alcohol usually leads to DWI investigation
- ▶ Odor of marijuana rarely leads to DWI investigation
Usually leads to search of vehicle or person

152.01: Definitions

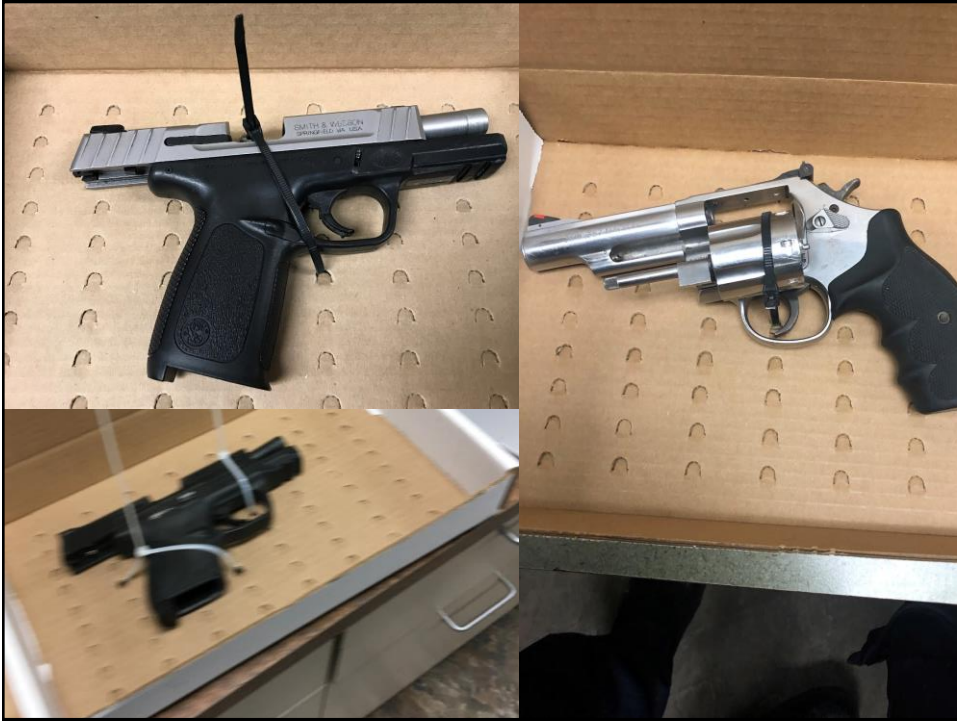
Subdivision 16 Small amount: ...as applied to marijuana means 42.5 grams or less (about 1½ ounces)

This provision shall not apply to the resinous form of marijuana

“Resinous Form” is generally considered hashish

Opinions differ on whether substances like wax, shatter, budder, etc. are the “resinous form of marijuana”

If it is, possession and sale can be charged as a gross misdemeanor or felony



Thank You!

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