

# “COMBATING 21<sup>ST</sup> CENTURY DRUGS WITH SUCCESSFUL OUTCOMES”

William L. Parker

CEO

American Court & Drug Testing Services

[William.Parker@acdts.com](mailto:William.Parker@acdts.com)

# THE SUPREME COURT OF OHIO SPECIALIZED DOCKETS CONFERENCE

Thursday, October 11, 2018

11:45 a.m. – 1:00 p.m.

Friday, October 12, 2018

1:15 p.m. – 2:30 p.m.

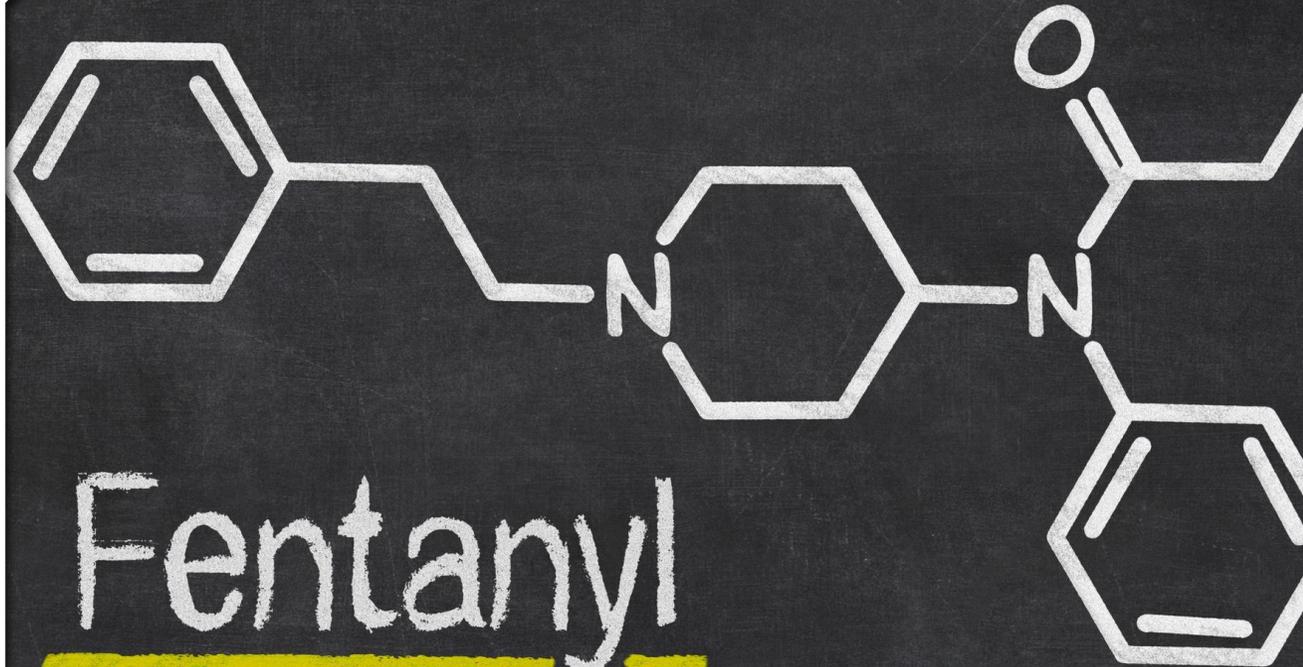
Fentanyl and its correlation to fatal overdoses in Ohio, a relatively new threat called Flakka, CBD oils and how to incorporate these drugs into an effective drug testing program.

# FENTANYL

► **Fentanyl** is an **opioid** which is used as a pain medication and together with other medications for **anesthesia** or to relieve pain in terminally ill **cancer patients**.

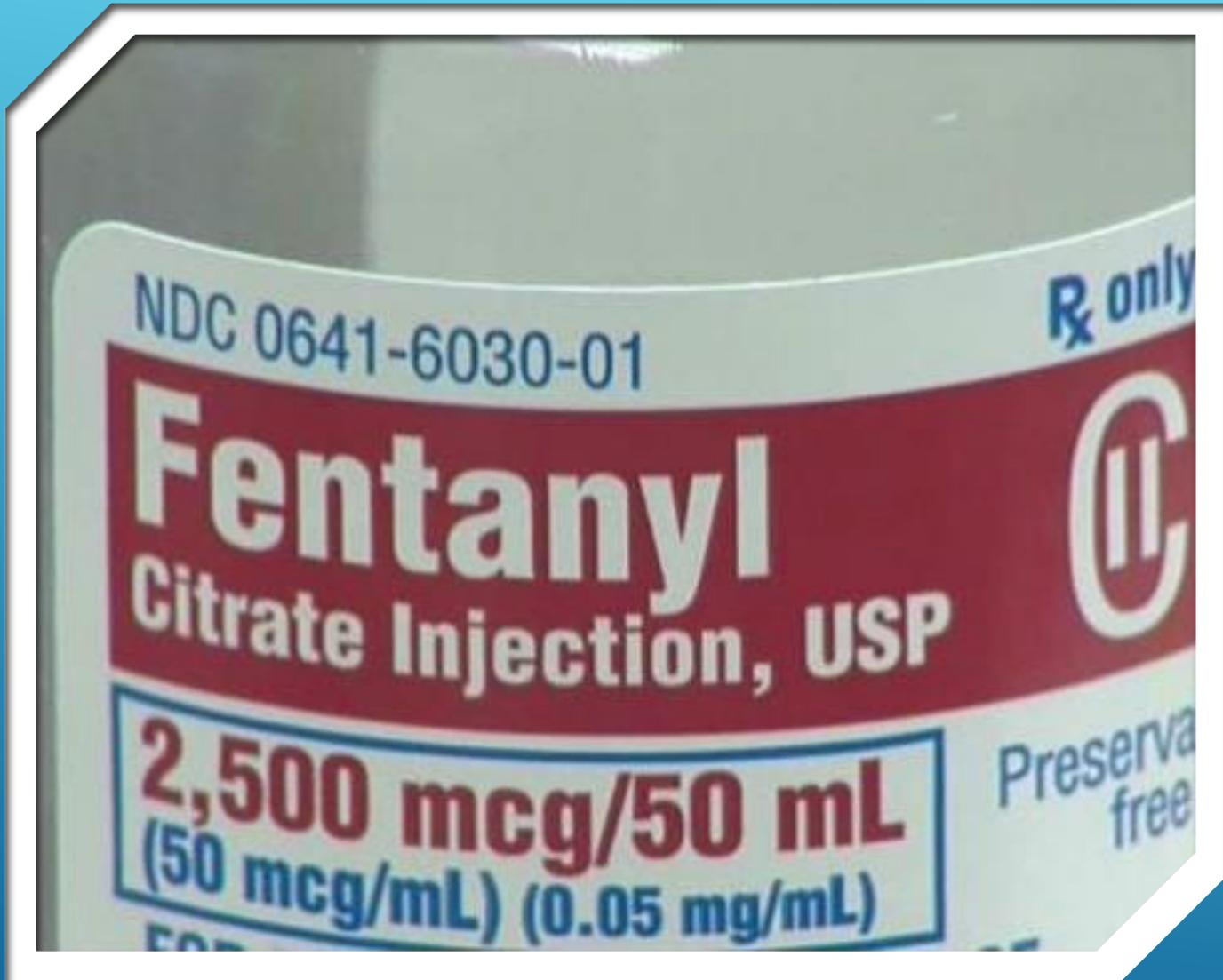
► **Fentanyl** is available in a number of forms including by **injection**, as a **skin patch**, and to be absorbed through the **tissues** inside the mouth.

► **Fentanyl** about **75 times stronger than morphine** for a given amount. Some fentanyl analogues may be as much as **10,000 times stronger than morphine**.



Fentanyl

$C_{22}H_{28}N_2O$



## FENTANYL

- ▶ **Fentanyl** was created in **1959** by Paul Janssen, founder of **Janssen Pharmaceutical** and first used medically as anesthetic in 1968.
- ▶ **Fentanyl patches** were first introduced in the **mid 1990's** as a pain management treatment for Opiate-tolerate patients.
- ▶ **Fentanyl** was first used for pain management in **cancer patients** in 2009.

# FENTANYL

▶ **Recreational** use of Fentanyl started in the mid **1970's** among **medical** professionals.

▶ The use of Fentanyl – especially from the illegal manufacturing of the drug has increased **exponentially** over the past three years.

▶ Since **2012** Fentanyl related overdoses and deaths have produced staggering statistics in almost every state in the U.S.



How Dangerous is Fentanyl?



THERE WERE 4,050  
OVERDOSE DEATHS  
IN OHIO IN 2016.

58 % OF THOSE  
DEATHS REVEALED  
FENTANYL IN THE  
TOXICOLOGY  
REPORTS.



# DRUG TESTING CLIENTS FOR FENTANYL: THE CHALLENGES

# FENTANYL'S MAJOR PHARMACOLOGICAL ANALOGUES

- |  |   |
|--|---|
| <ul style="list-style-type: none"><li>➤ <b>4-ANPP</b></li><li>➤ <b>4-Methoxybutyryl Fentanyl</b></li><li>➤ <b>4-Methylphenethyl Acetyl Fentanyl</b></li><li>➤ <b>AH-7921; Acryl Fentanyl</b></li><li>➤ <b>Beta-hydroxythiofentanyl</b></li><li>➤ <b>Butyryl Fentanyl/Isobutyryl Fentanyl</b></li></ul> | <ul style="list-style-type: none"><li>➤ <b>Carfentanil</b></li><li>➤ <b>Furanyl Fentanyl</b></li><li>➤ <b>MT-45</b></li><li>➤ <b>Valeryl Fentanyl</b></li><li>➤ <b>alpha-Methyl Fentanyl</b></li><li>➤ <b>ortho-Fluorofentanyl</b></li><li>➤ <b>para-Fluorobutyryl Fentanyl/FIBF</b></li><li>➤ <b>para-Fluorofentanyl</b></li></ul> |
|--|---|

Each Fentanyl pharmacological analogue has its own molecular structure which requires laboratories and “instant” tests manufacturers to develop a chemical re-agent to accurately identify the specific analogues.

Cost of Reagents

Many analogues have a metabolic relationship with each other

Window of Detection Vs. Cost of Development



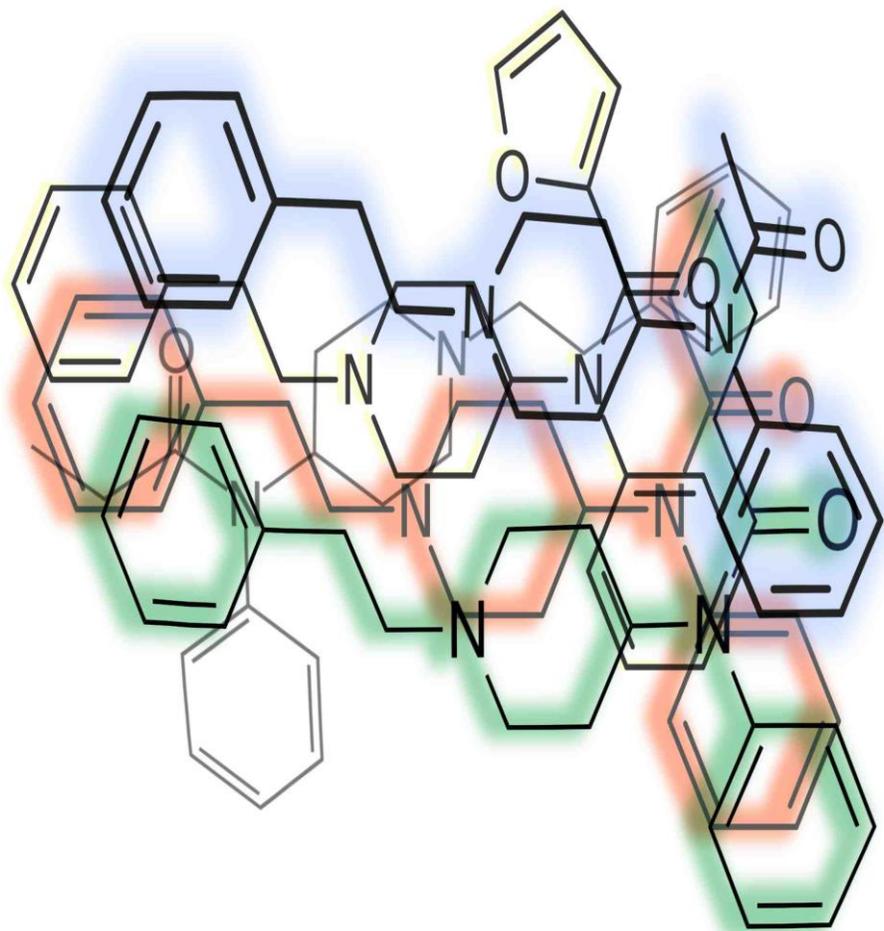
“STREET” CHEMIST  
AND THE DRUG  
CARTELS HAVE  
PRODUCED **520**  
CHEMICALLY UNIQUE  
VARIATIONS OF  
FENTANYL \*

\* Dr. Mike McCormick, Science Officer, US Customs & Border  
Protection Laboratories



FORENSIC  
LABORATORIES  
TYPICALLY TEST FOR  
FEWER THAN A  
DOZEN  
(12) COMMERCIAL  
FENTANYL  
ANALOGUES \*

\* Dr. Bert Toivola, Scientific Director, Cordant Health Services



THE WINDOW OF  
DETECTION FOR  
SOME FENTANYL  
ANALOGUES IS  
LESS THAN 12  
HOURS \*

\* Dr. Bert Toivola, Scientific Director, Cordant Health Services

## Instant Tests for Fentanyl



Instant testing devices typically tests only for Fentanyl and Norfentanyl. \*

\* Abbott Laboratories

The limitation of Instant testing devices is limited number of analogues and the changing molecular structure created by the “bad guys.”

## Laboratory Tests for Fentanyl



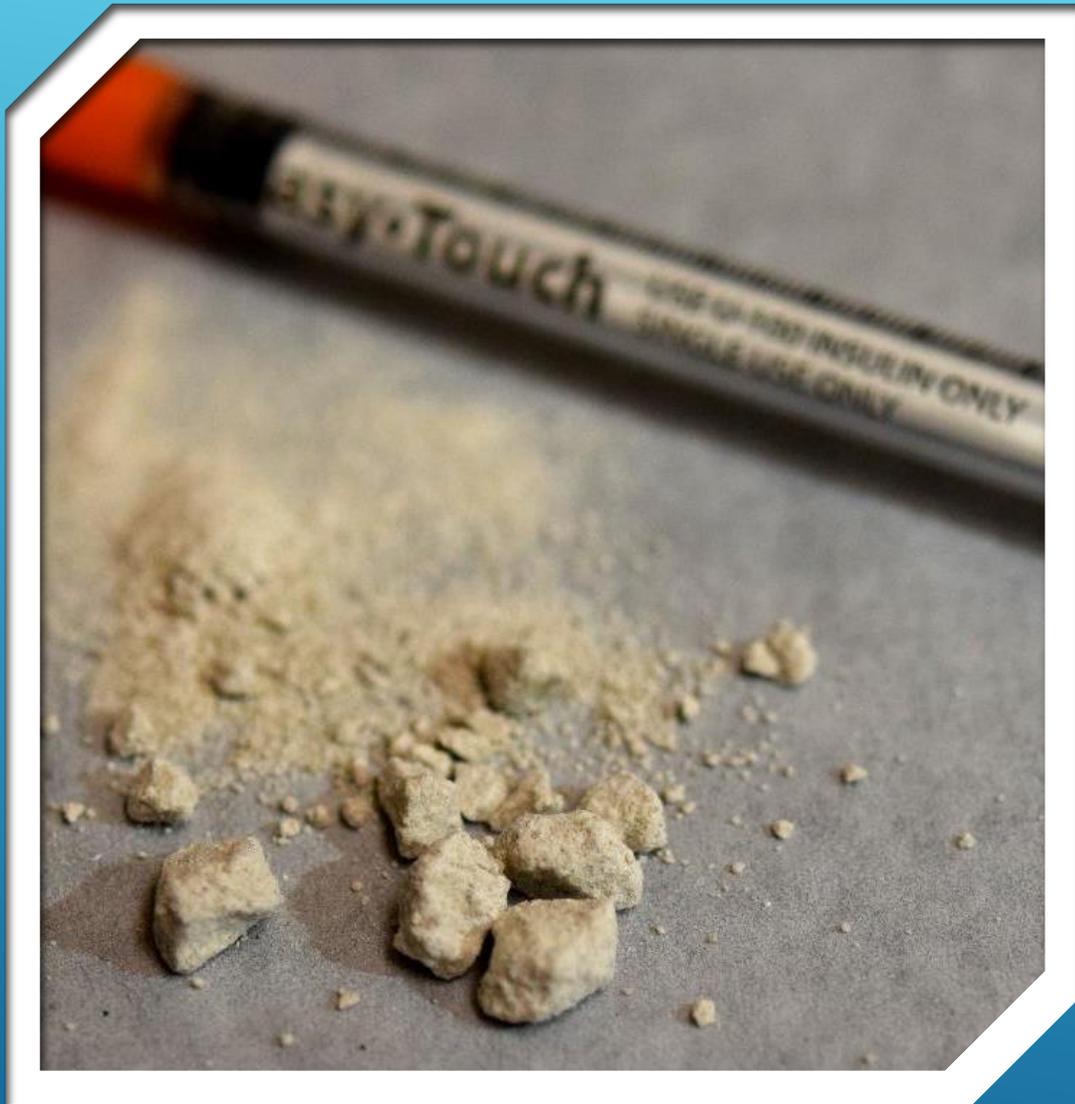
Laboratory testing typically includes Fentanyl and most pharmacological analogues.

WHAT DOES  
FENTANYL  
LOOK LIKE?





FENTANYL  
MAY LOOK  
LIKE THIS ...



OR ... IT MAY  
LOOK LIKE THIS.



FENTANYL IS NOW  
COMMONLY  
“LACED” INTO  
HEROIN  
COCAINE  
METHAMPHETAMINE  
AND MARIJUANA.



FENTANYL IS NOW INFUSED INTO **HYDROCODONE**,  
**OXYCODONE** AND OTHER PRESCRIPTION MEDICATIONS

# Fentanyl Nicknames

Apache

China Girl

China Town

China White

Dance Fever

Friend

Goodfellas



Great Bear

He-Man

Jackpot

King Ivory

Murder 8

TNT

Tango & Cash

## **Fentanyl is not just deadly to users.**



**Several law enforcement and first responders have overdosed during investigations.**

**In 2016, the DEA urged officers to limit drug testing to lab settings because of the possibility of exposure.**

**Touching or accidentally inhaling fentanyl is enough to cause an overdose.**





THIS IS HOW MUCH  
FENTANYL IT TAKES  
TO KILL YOU.



# RISK ASSESSMENT

## House Checks, Vehicle Searches and Searches of Persons

Assume ALL Heroin contains Fentanyl or Fentanyl Analogues

Balance Practicality with Risk (Large Quantities – Get Out)

Carry or Keep Handy Personal Protection Equipment (Black Nitrile Gloves)

Constant Risk Assessment

Recognize Opiate Intoxication and How to Treat It (Narcan)

Know the Science (Inhalation or Absorption through Mucus Membranes)

You are 30 times more likely to absorb Fentanyl across Mucus Membranes (Mouth, Eyes and Nose) than through your skin.

# WHAT ABOUT DERMAL (SKIN) EXPOSURE TO FENTANYL?



## Dermal (Skin) Exposure to Fentanyl

Exposure Not Likely to be Significant

Effects of Skin Exposure Might be Delayed

Wash Off Exposed Skin ASAP to Significantly Reduce Exposure & Effects

Alcohol-based Products (Hand Sanitizer) **INCREASES** absorption

Dermal (Skin) Exposure is Effectively Blocked by **Nitrile** Gloves (Black)  
Latex gloves may not protect you.

Exposure is Reduced When Wearing Long Sleeves

STAY AWARE OF YOUR SURROUNDINGS  
(CLIENT'S HOUSE, VEHICLE, CLOTHES AND  
DO NOT HANDLE THE DRUG.

**FLAKKA**





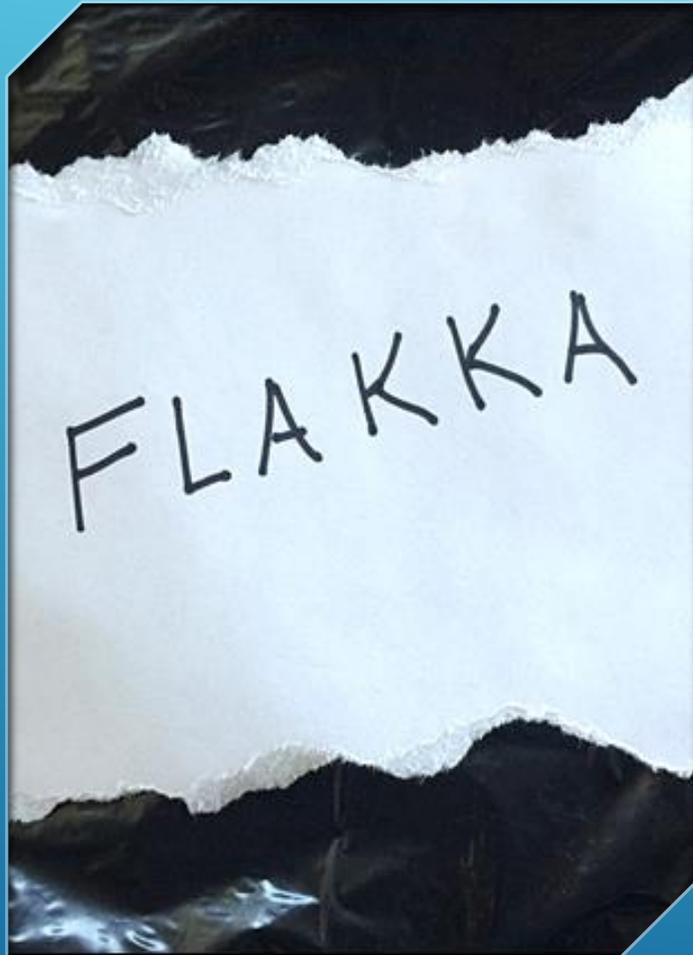
## WHAT IS FLAKKA?

Flakka is made from the chemical **alpha-PVP**, a synthetic version of the stimulant cathinone.

**Cathinones** are derived from the **khat plant**, found in the Middle East and Somalia.

Cathinones also used in **bath salts**.

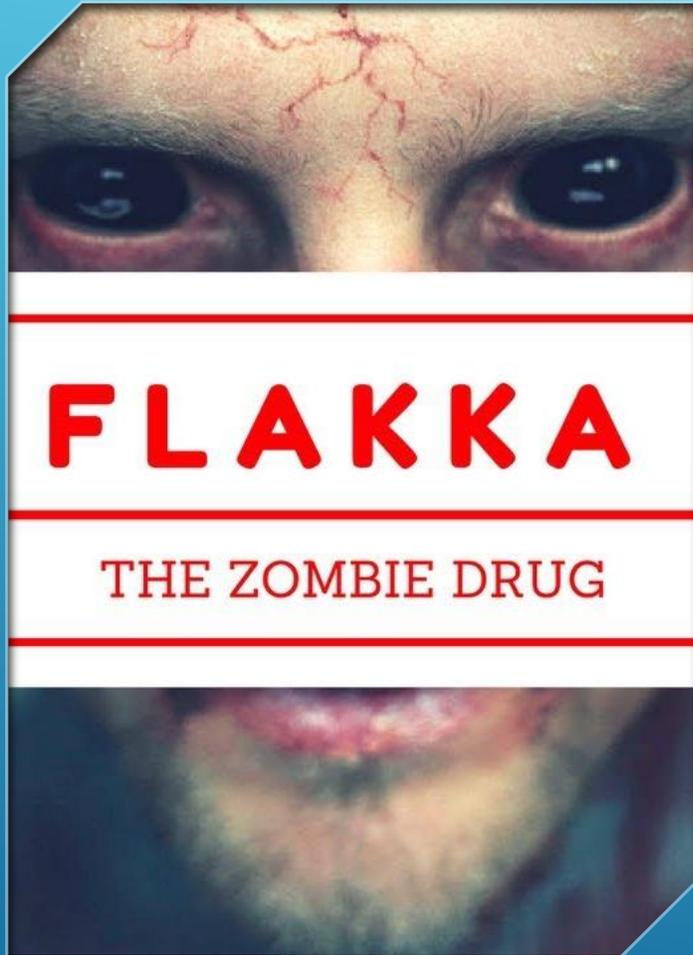
Nickname "\$5 insanity."



FLAKKA IS ALSO KNOWN AS “GRAVEL” BECAUSE OF IT’S CRYSTALIZED FORM.

FLAKKA IS DETECTABLE IN URINE FOR 24 TO 48 HOURS, BUT THE SPECIMEN **MUST BE WRAPPED IN FOIL DUE TO SENSITIVITY TO LIGHT.**

TO TEST FOR FLAKKA, REQUEST **ALPHA PVP.** (TYPICAL COSTS IS \$30 TO \$40)



## FLAKKA:

Flakka is taken via injection, snorting, smoking or swallowing.

As potent as crystal meth, bath salts and cocaine.

Users can become erratic, uncontrollable and dangerous.

Users become psychotic, while the body goes into hyperthermia and can reach up to 105 degrees.



# CBD PRODUCTS: THE MYSTERY AND THE MYSTIQUE



## WHAT DOES “CBD” STAND FOR AND WHAT IS CBD OIL?

- ▶ CBD stands for **cannabidiol**, one of over 100 cannabinoids found in cannabis or hemp.
- ▶ By botanical standards, **marijuana and hemp** are both **cannabis**.
- ▶ In common terms, **marijuana is cannabis with Tetrahydrocannabinol (THC)**. Strains without THC are often classified as hemp.
- ▶ CBD oil is also known as **hemp oil**.

## How is CBD Oil Made?



## Extraction Methods



ALCOHOL EXTRACTION: PLANT IS SOAKED IN SOLVENT. THE LIQUID IS FULL OF CANNABIDIOL (CBD). EVAPORATION PRODUCES CBD OIL.

## How is CBD Oil Made?

## Extraction Methods



CO2 EXTRACTION: CARBON DIOXIDE IS FORCED THROUGH THE PLANT. TEMPERATURE AND PRESSURE FORCE THE SEPARATION OF MATERIALS. CANNABIDIOL (CBD) IS EXTRACTED.

## How do People Use CBD Products?

**Sprays** - New product on the CBD market.

**Vapes** - The most popular and widely used in vaping pens

**Danger: Cuticle Waxes may cause serious respiratory hazards \***

**Tinctures - Liquid**

Tinctures combine CBD hemp oil into a liquid, making it easy to consume using a dropper or pump bottle

**Concentrates - Most potent form of CBD**

Extracted from the cannabis plant and filtered down to the highest concentrations of cannabidiol (CBD).

**Capsules - The least popular method to use CBD**

Easy to use and digest. Typically mixed with coconut oil

**Topicals - Oils and Cremes**

\* Cuticle waxes are basically the oily, fatty outer layer of lipids that cover the surface of most flowering cannabis plants, including hemp.



WILL CBD  
PRODUCTS  
RESULT IN A  
POSITIVE  
DRUG TEST?

YES? NO?



CBD INDUSTRY LARGELY UNREGULATED.

SOME CBD PRODUCTS ARE THC FREE. SOME CONTAIN UP TO 0.05% THC.

SCREENS MAY BE POSITIVE.  
CONFIRMATION TESTS MAY BE NEGATIVE OR POSITIVE.

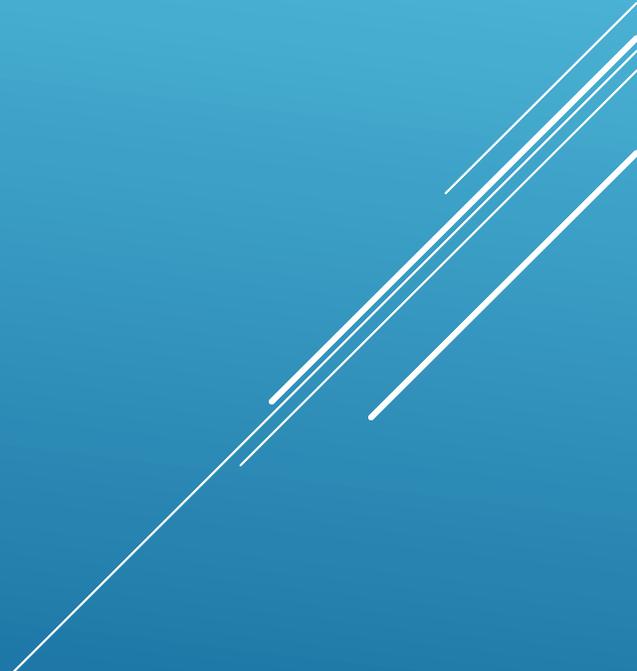


MUCH DEBATE AT STATE  
AND LOCAL LEVELS  
ABOUT CBD PRODUCTS

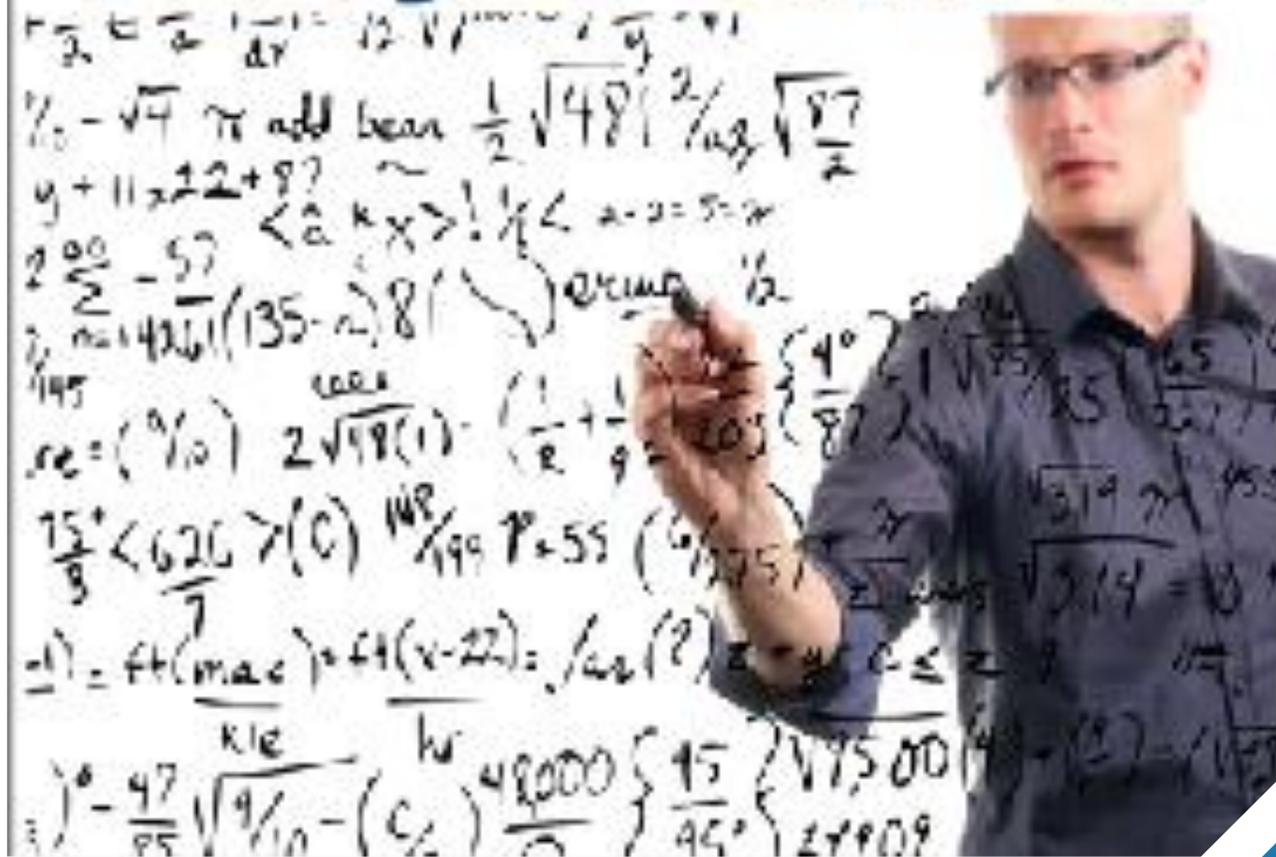
THE 9<sup>TH</sup> U.S. CIRCUIT  
COURT OF APPEALS LAST  
WEEK TURNED DOWN AN  
APPEAL FROM CBD  
MANUFACTURERS THAT LEFT  
CANNABIDIOL ON THE  
DEA'S LIST OF  
CONTROLLED  
SUBSTANCES



WHAT DOES A POT  
FIELD SOBRIETY TEST  
LOOK LIKE



# Magic Formula



## THC NEW OR PREVIOUS USE

My client smokes Marijuana. Several recent tests have been positive for THC.

HOW DO I KNOW IF A  
POSTIVE RESULT IS  
FROM NEW OR  
PREVIOUS USE?

# THC: NEW OR PREVIOUS USE

▶ Let's compare two positive THC results.

▶ SPECIMEN 1:

THC level = 698 ng/mL

▶ SPECIMEN 2:

THC level = 535 ng/mL

DOES SPECIMEN 2 REFLECT NEW OR PREVIOUS USE?

# THC: NEW OR PREVIOUS USE

- ▶ Determination of New or Previous Use is based upon the “Normalized” level of THC.
- ▶ THC is “Normalized” by dividing the “raw” THC level by the Creatinine level and multiplying the result by 100.
- ▶ RESULTS MUST BE “CONFIRMED.”
- ▶ EXAMPLE: (Specimen # 1)
  - Raw THC level = 698 ng/mL
  - Creatinine level = 114.8 mg/dL
  - Normalized THC =  $698/114.8 \times 100 = 608.01$

▶ Let's compare two positive THC results.

▶ SPECIMEN 1:

Raw THC level = 698 ng/mL

Creatinine level = 114.8 mg/dL

Normalized THC =  $698/114.8 \times 100 = 608.01$  ng/mL

➤ SPECIMEN 2:

Raw THC level = 535 ng/mL

Creatinine level = 48.6 mg/dL

Normalized THC =  $535/48.6 \times 100 = 1,100.82$  ng/mL

- ▶ NOW, what do we do?
- ▶ Divide the later Normalized THC level by the former Normalized THC level
- EXAMPLE 1:
  - Normalized THC level = 608.01 ng/mL
  - Normalized THC level = 1,100.82 ng/mL
  - $1,100.82/608.01 = 1.81$

IS THIS NEW OR PREVIOUS USE OF THC?

▶ New or Previous Use of THC is based upon the “New Use Ratio” established by labs and accepted by NADCP.

➤ NEW USE RATIOS:

Ratio of 0.01 – 0.49 = Previous Use

Ratio of 0.50 – 0.99 = Questionable

Ratio of 1.00 – 1.49 = Indicative of New Use

Ratio of 1.50 and above = Definitively New Use

& Legally Defensible with Reasonable & Scientific Certainty.



kratom

THE DEA  
CALLS  
KRATOM A  
“DRUG OF  
CONCERN”



KRATOM:

A TREE IN THAILAND AND  
SOUTHEAST ASIA

ACTIVE COMPOUNDS  
ARE MITRAGYNINE AND  
7-OH MITRAGYNINE

POPULAR IN THE UNITED  
STATES AS AN HERBAL  
REMEDY

STIMULANT AS WELL AS  
SEDATIVE PROPERTIES





## KRATOM:

LOW DOSES PRODUCES  
STIMULANT EFFECTS

HIGHER DOSES THE  
EFFECT IS SIMILAR TO  
OPIOIDS

LEGAL IN THE U.S., BUT  
BANNED IN TENNESSEE,  
VERMONT, LOUISIANA,  
AND INDIANA

NO LEGITIMATE MEDICAL  
USE.



KRATOM:

WIDELY AVAILABLE ON  
THE INTERNET AND IN  
HERBAL SHOPS

STREET NAMES INCLUDE:

THANG  
KAKUAM  
KETUM  
HERBAL SPEEDBALL  
BIAK.



KRATOM:

DETECTABLE IN URINE

REQUIRES LC/MS/MS  
CONFIRMATION

WINDOW OF DETECTION  
IS UNKNOWN

NAUSEA, ITCHING,  
SWEATING, DRY MOUTH,  
CONSTIPATION,  
INCREASED URINATION,  
AND LOSS OF APPETITE.



THE DEA HAS WARNED THAT KRATOM CAN BE ADDICTIVE.

SYMPTOMS INCLUDE PSYCHOSIS, HALLUCINATIONS, DELUSION AND CONFUSION.

DEA IS TESTING KRATOM AFTER THE U.S. FOOD AND DRUG ADMINISTRATION ISSUED A PUBLIC HEALTH ADVISORY ABOUT DEADLY RISKS ASSOCIATED WITH THE SUBSTANCE.

DEA WILL DECIDE LATER THIS YEAR WHETHER TO CLASSIFY IT AS A SCHEDULE 1 NARCOTIC LIKE HEROIN.



“I KNOW MY RIGHTS!”