

# New Drug Trends 2023

d auge, MA, CNP  
Prevention Specialist



COMMUNITY & FAMILY  
RESOURCES

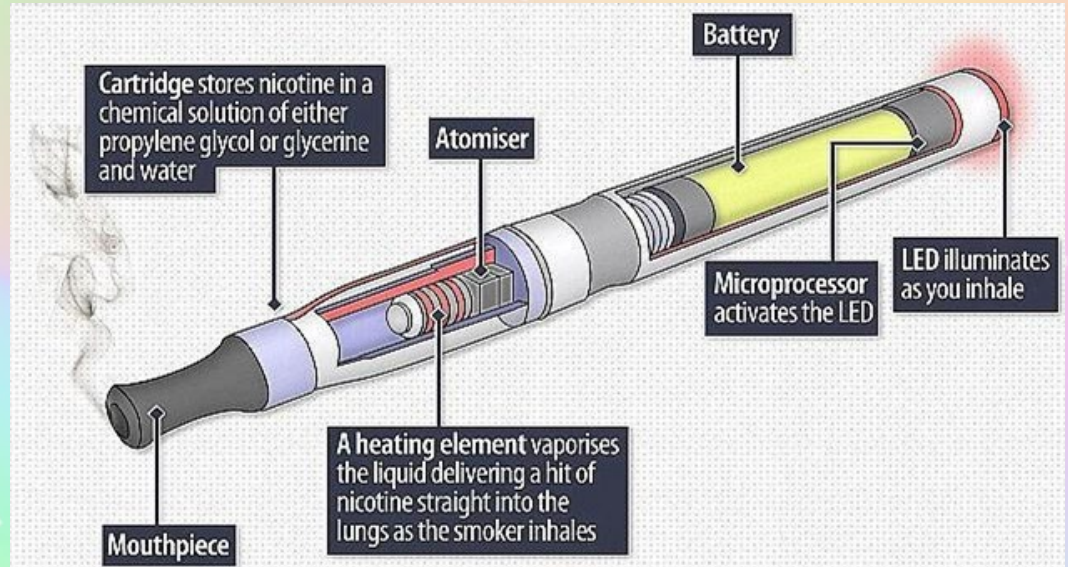
*Inspiring prevention, treatment and recovery*

# Disclaimers & Disclosures

- The content of this presentation is for informational purposes only and does not represent legal or medical advice.
- I have no financial or other conflicts of interest.
- In the following slides, there are graphics that depict drugs and drug paraphernalia. These pictures may be potentially triggering to persons in recovery. Please feel free to step away from the presentation as necessary.

# Vaping & Tobacco

# Anatomy of an e- cigarette



# Different Looks







**Just  
Water  
Vapor?**

# E-cigarette aerosol is NOT just "water vapor"



## Prop 65\* Chemicals in Vapor<sup>2</sup>

Acetaldehyde  
Formaldehyde  
Isoprene  
Toluene  
Lead  
Nickel  
Nicotine  
N-Nitrosornicotine



## Metals in Vapor<sup>2</sup>

Aluminum  
Chromium  
Copper  
Iron  
Manganese  
Nickel  
Lead  
Antimony  
Tin  
Zinc



## Carcinogens Found in the Urine of Vapers<sup>9</sup>

Acrylonitrile  
Acrolein  
Propylene Oxide  
Acrylamide  
Crotonaldehyde



## Withdrawal Symptoms<sup>6</sup>

Cravings  
Anxiety  
Tingling  
Nausea  
Cramps  
Weight Gain  
Insomnia  
Mood Disorders  
Depression

\* Proposition 65 (Prop 65) is the Safe Drinking Water and Toxic Enforcement Act of 1986, which requires the State to publish a list of chemicals known to cause cancer or birth defects or other reproductive harm.

An aerosol is a mixture of liquid particles suspended in gas containing many chemicals

# Second & Third Hand Aerosol







# Synthetic Nicotine

- Nicotine made using chemicals in a lab instead of being extracted from a tobacco plant
- Called the “purest version of nicotine” and companies will claim that it is safer than nicotine coming from the tobacco plant
- **Still harmful**
- **Synthetic nicotine is still nicotine-** a highly addictive substance that research suggests is as addictive as heroin, cocaine or alcohol
- Puff Bar, a top vape brand, uses synthetic nicotine

# Flavors & E-Juice



**Mixing juice flavors has become popular.**

Mixing juice can be done at home as well as on a website where the customer purchases products. It's become popular for people to buy juices from each other as well.

## Nicotine Salts

Nicotine salts is called the “new and upcoming star” by the e-cigarette companies



# **21st Century Marijuana**



# Marijuana

- The leaves, stems, and seeds of the hemp plant are called *Cannabis sativa*
- Goes by so many names...
  - Weed
  - Pot
  - Cannabis
  - MJ



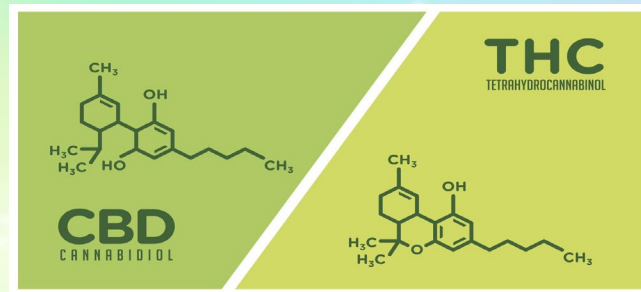
# Key Cannabinoids: The Chemical Compounds in Marijuana

## CBD (Cannabidiol):

- Attaches to the receptors in the immune system
- Influences response to pain & inflammation
- **Does not** cause a high

## THC (Tetrahydrocannabinol):

- Attaches to receptors in the brain
- Influence memory, appetite, movement, pain, emotions, mood, thinking, etc.
- **Does** cause a high



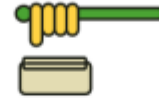
# Methods of Ingestion

Research shows that the faster a drug reaches the brain, the more likely it is to be addictive.

The mode of delivery can influence which part of the brain is most affected by cannabis.



smoking



dabbing



vaping



edibles



topicals

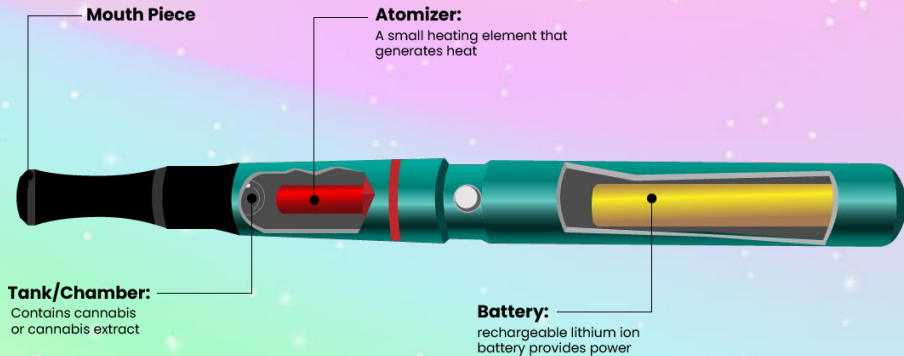


tinctures

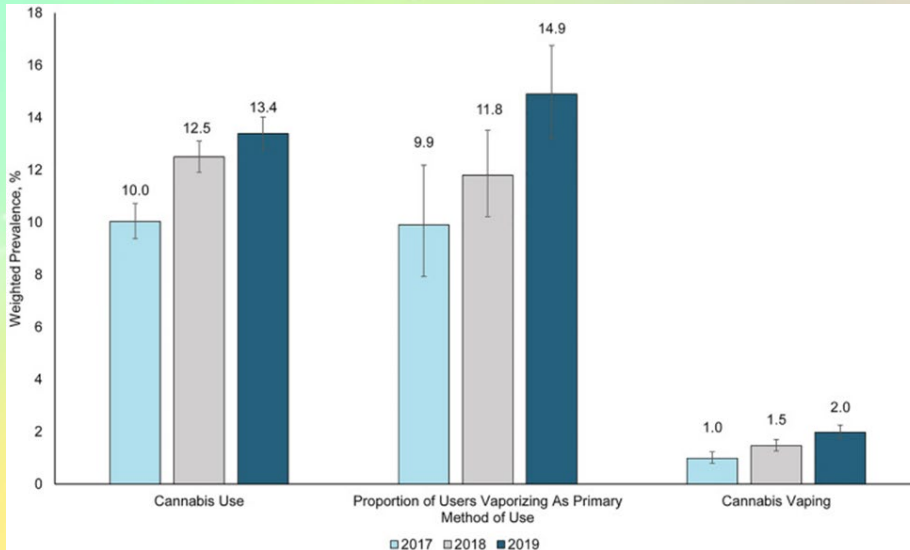
# Vaporize

- Alternative to smoking
- Vaporizing allows for a way to inhale cannabis
- Involves slowly heating cannabis to a temperature high enough to extract cannabinoids which converts them to airborne vapors

## Weed Vape Pen Parts



# Vaping



- Nicotine vapes can be “hacked” to work with cannabis from online resources
- Of all cannabis users 33% vape THC






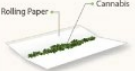
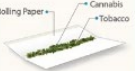
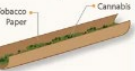






# Smoking

Smoking cannabis is the most popular method of use.

Typical ways to smoke cannabis includes:

- Joints
- Blunts
- Pipes
- Bongs
- Hookahs (larger version of a bong)

## JOINT VS SPLIFF VS BLUNT

	JOINT	SPLIFF	BLUNT
APPEARANCE			
CONTENTS	 <p>Rolling Paper Cannabis</p>	 <p>Rolling Paper Cannabis Tobacco</p>	 <p>Tobacco Paper Cannabis</p>
EXPERIENCE	Users experience the effects of cannabis only.	The effects of cannabis and tobacco are mixed, giving users a stimulating and energetic buzz.	Considered to be the heaviest hitters due to the interaction between the tobacco paper and cannabis.
QUANTITY	 <p>Rolling papers are small allowing for use of smaller amounts of cannabis.</p>	 <p>The ratio of cannabis to tobacco can easily be varied.</p>	 <p>Tobacco paper is large in size requiring a larger quantity of cannabis.</p>
PAPER	Rolling papers are mostly made from hemp, flax, rice or wood pulp. They can be plain or artificially flavored.	Rolling papers are mostly made from hemp, flax, rice or wood pulp. They can be plain or artificially flavored.	Tobacco paper can be bought separately or obtained by hollowing out a cigar. Tobacco tends to have a sweeter flavor.
BURN	 <p>Rolling papers burn more quickly.</p>	 <p>Rolling papers burn more quickly.</p>	 <p>Tobacco paper is thick and burns slower.</p>
POPULARITY	More common in the United States and Canada.	More common in Europe.	Popular in urban communities.

# Sublingual Absorption



- **Tinctures** - concentrated liquid herbal extracts made from plants, usually put under the tongue for absorption
- **CBD Tincture** - only has CBD in it, CBD tinctures also have no psychoactive effects
- **THC Tincture** - contain only THC and they're typically quite potent

# Edibles

The method of eating foods or beverages that contain cannabis.

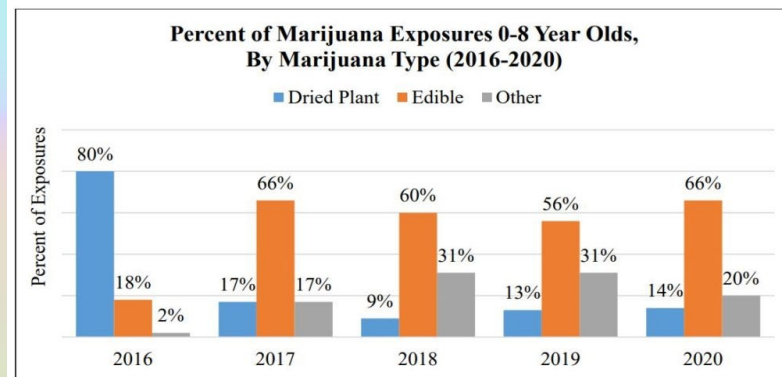
This method can take anywhere between a half hour to two hours to feel the effects.

Can be dangerous due to the time delay which can cause the potential to consume more.



# Edibles

- Almost any product may be infused with THC
- Of cannabis users 56% choose edibles as a method of marijuana use
- Amount of THC is difficult to measure & is often unknown



SOURCE: Rocky Mountain Poison and Drug Center

**NOTE:** The code for marijuana edibles did not go into effect until 2016. Therefore, any cases of edible marijuana exposure which occurred prior to 2016 were coded under "dried plant." Other marijuana includes oral pills/capsules, concentrated extracts (to include oils and tinctures), topical preparations, marijuana devices, and unknown/other forms of marijuana.

## **Topicals**

Made from cannabis extracts and oils that are applied directly to and absorbed through the skin. Products include lotions, balms, sprays, and ointments.

## **Concentrates**

Concentrated amount of cannabis in a sticky substance. Used in a variety of ways including being heated up, vaporized, and then inhaled.



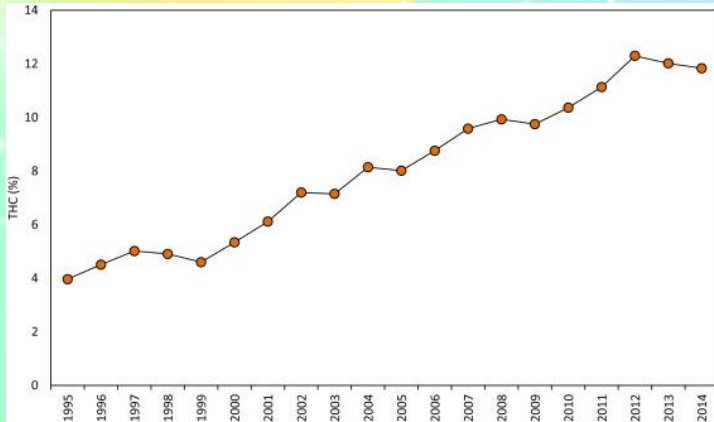
# Concentrates

- Contains high THC levels ranging from 40-80%
- Consumed via dabbing (heating the wax & inhaling the vapors), vape pens, tinctures, topicals, and edibles
- Of cannabis users 22% use concentrates as their method of marijuana use



# Changes in THC Potency

- THC potency has increased in the past two decades
- Up from 4% in 1980s to an average of 15% today (10% is considered high potency)
- Products like THC extracts, which are used in dabbing and edibles, can contain an average of 50% and up to 90%

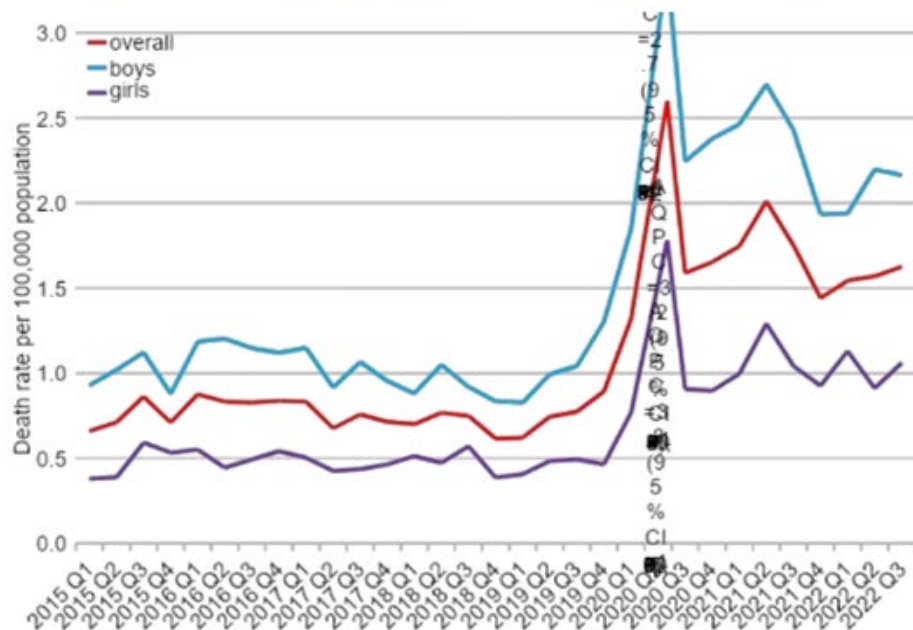


**Opioids,  
Fentanyl,  
Xylazine &  
Psychostimulants**



**US Substance Use  
Trends: Opioid  
Use, Overdose &  
Fatality**

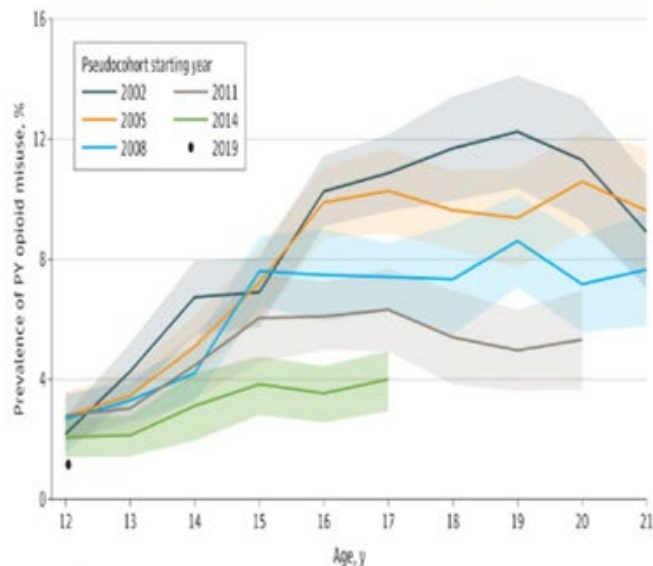
## Unintentional drug overdose death rates among US youth aged 15-19



Data sources: National Vital Statistics System multiple-cause-of-death 2015-2021 final and 2022 provisional data and the U.S. census monthly data. \*: Joinpoints w significant changes in nonlinear trends using Bayesian Information Criterion. AQPC=average quarter percentage change in 2015 Q1-2022 Q3.

## Opioid Misuse Among 12 to 21 Years Old in the US

### Prevalence Past-Year (PY) Opioid Misuse

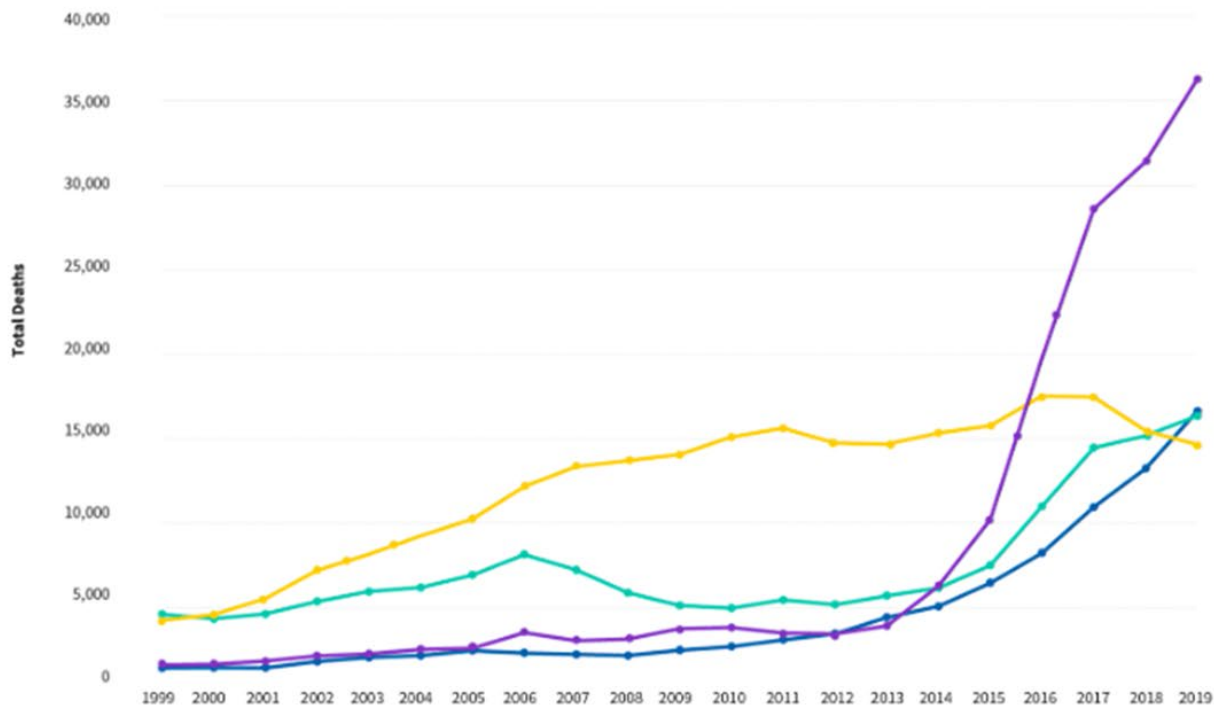


Opioid misuse has been decreasing in adolescents



# Trends in U.S. Drug Overdose Deaths (1999 - 2019)

The overdose crisis has evolved over time and is now largely characterized by deaths involving illicitly manufactured synthetic opioids, including fentanyl, and, increasingly, stimulants. Since 1999, the rate of overdose deaths has increased by over 250%.



**Synthetic opioids** excluding methadone overdose deaths increased **50-fold**

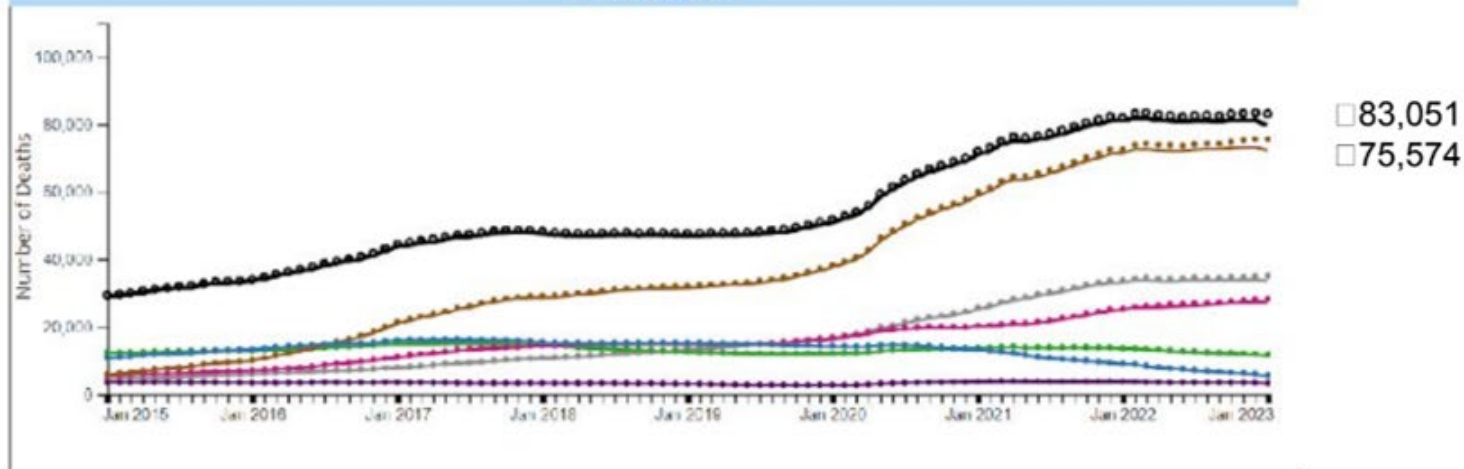
**Psychostimulants with abuse potential** (primarily methamphetamine) overdose deaths increased **30-fold**

**Cocaine** overdose increased **4-fold**

**Rx opioid** overdose deaths increased **4-fold**

# Synthetics Are Now Linked to Almost 90% of Opioid Overdose Deaths

Figure 2. 12 Month-Ending Provisional Number of Drug Overdose Deaths by Drug or Drug Class: United States



Legend for Drug or Drug Class

Cocaine (T40.5)

Heroin (T40.1)

Methadone (T40.3)

Natural & semi-synthetic opioids (T40.2)

Opioids (T40.0-T40.4,T40.6)

Psychostimulants with abuse potential (T43.6)

Synthetic opioids, excl. methadone (T40.4)

— Reported Value

○ Predicted Value



**Opioids,  
Fentanyl &  
Xylazine**

# Fentanyl

- A synthetic opioid available by prescription in multiple forms
- 100x more potent than morphine
- Bonds more readily to receptor sites- can require higher/more doses of naloxone to reverse an overdose
- Powder form readily mixes with other drugs



# One Pill Can Kill

Counterfeit pills containing fentanyl are increasingly available and deadly

Manufactured to look like prescription opioids like oxycodone (OxyContin), benzodiazepines (such as Xanax), or stimulants (such as Adderall)



**Authentic oxycodone M30 tablets**



**\*Counterfeit oxycodone M30 tablets containing fentanyl**





The record quantities of fentanyl that DEA seized in 2022 are enough to **kill every American.**



**ONE**  
~~PILL CAN~~  
KILL

## OPIOID POTENCY



Carfentanil: **10,000x**

Fentanyl: **100x**

Heroin: **2x**

Morphine: **1x**

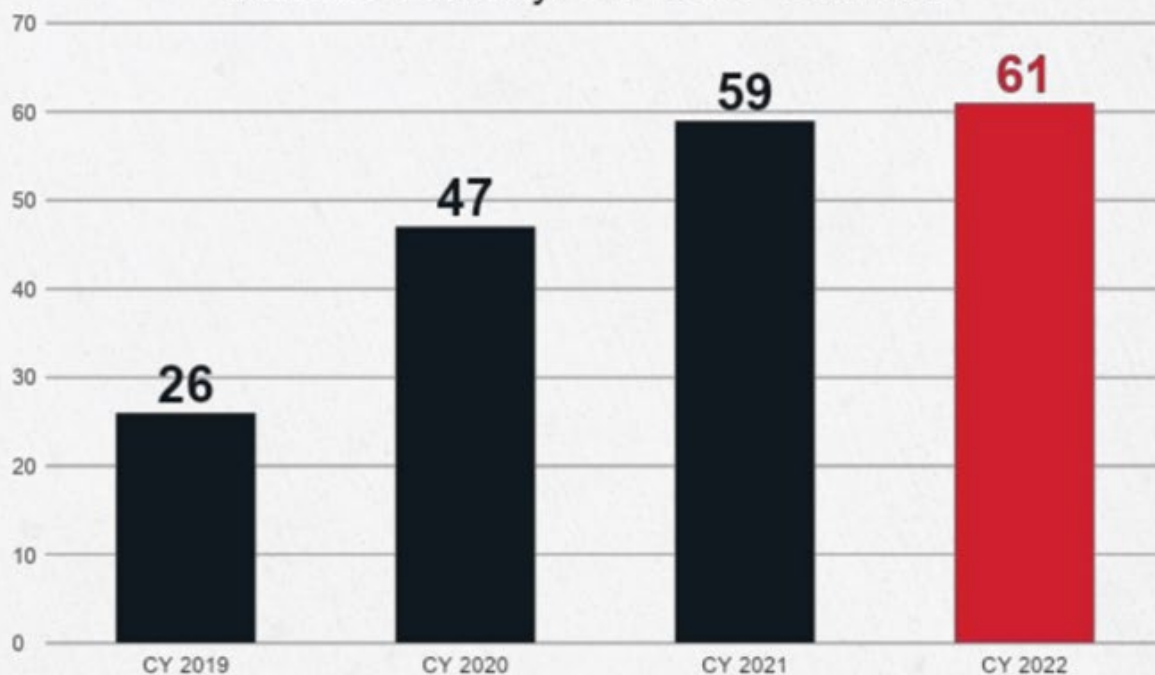
Fatal doses  
of Fentanyl  
(2 mg) and  
Carfentanil  
(0.02 mg)





**DEA**

## Percentage of Tablets Containing 2 mg or More of Fentanyl CY 2019–CY 2022



**ONE  
PILL CAN  
KILL**

Source: DEA Advanced Information on Drugs Dashboard, November 2022





DEA



## Additional Threat: Access

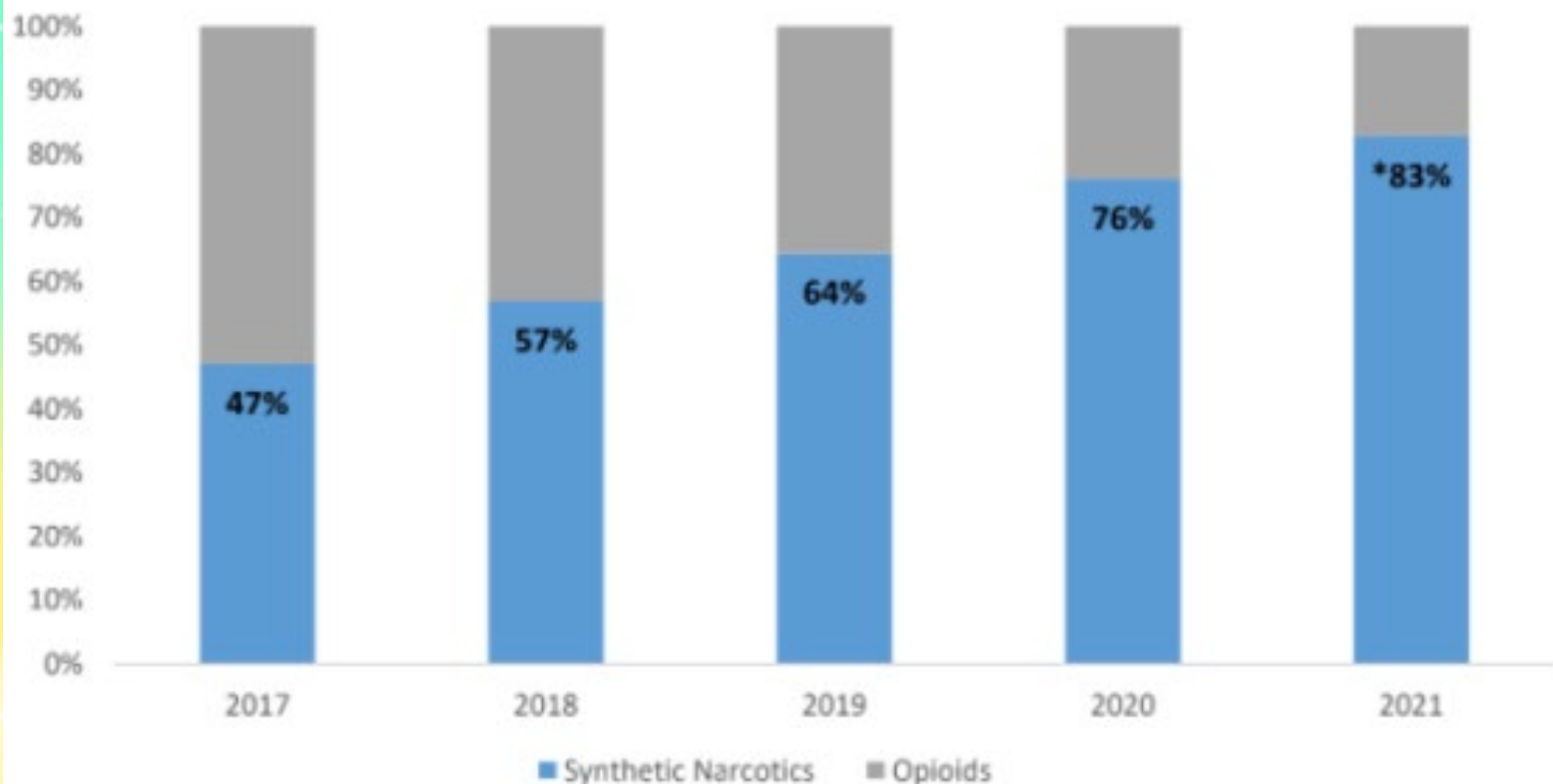
Fake Rx pills are easily accessible & often sold on social media & e-commerce platforms; available to anyone with a smartphone.

**ONE  
PILL CAN  
KILL**



## Iowa Deaths Involving Synthetic Narcotics (e.g., Fentanyl)

% of All Yearly Opioid-Related Deaths 2017-2021\* Year-To-Date



\*Preliminary Data as of January 1, 2022

Iowa Department of Public Health/Bureau of Health Statistics, 2022

# Xylazine

Also known as “tranq” or “tranq dope”

Veterinary sedative not approved for use in humans

When used in combination with opioids like heroin and fentanyl, it extends the duration of their analgesic and reward effects

Can depress breathing, heart rate, blood pressure and body temperature to critical levels



# Xylazine

Can cause circulatory changes with severe effects on human tissue - painful open lesions, necrosis, and even limb loss

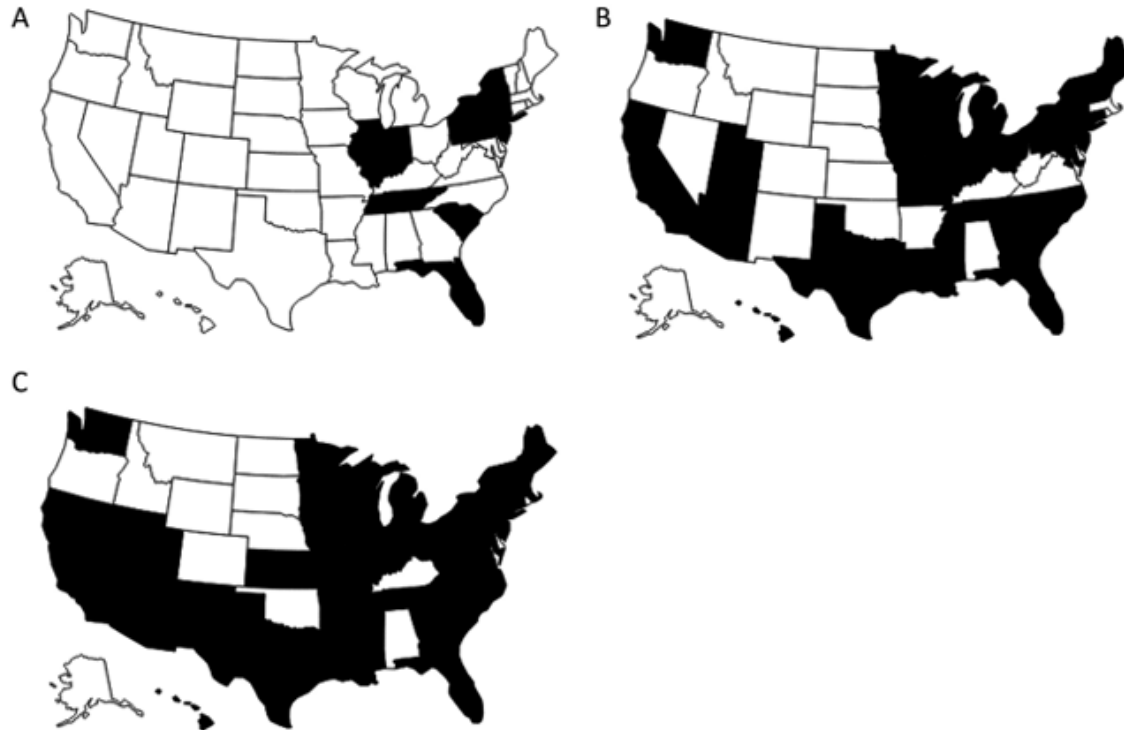
Not necessarily associated with injection site location or route of administration

May cause severe withdrawal symptoms that are not affected by medications for opioid use disorder (MOUD)

Effects are NOT reversed by naloxone

Routine toxicology screens do not test for it, so it may be under-accounted for in overdoses and deaths

Figure 1. States with at least one positive xylazine detection in A) January 2019, B) January 2020 and C) June 2021.



# Overdose Reversal Agents & MOUD News



## FDA NEWS RELEASES



### **FDA Approves Prescription Nasal Spray to Reverse Opioid Overdose**

*Nalmefene Hydrochloride in Nasal Spray Form Provides Additional Tool for Harm Reduction Groups and First Responders*

FDA NEWS RELEASE

### **FDA Approves First Over-the-Counter Naloxone Nasal Spray**

*Agency Continues to Take Critical Steps to Reduce Drug Overdose Deaths Being Driven Primarily by Illicit Opioids*

FDA NEWS RELEASE

### **FDA Approves New Buprenorphine Treatment Option for Opioid Use Disorder**



# **Psychostimulants: Kratom**

# Kratom

A tropical tree native to Southeast Asia, the Philippines & Papua New Guinea

**Common Forms:** Fresh or dried leaves, powder, capsules, tablets, tea bags

**Common Ways Taken:**

Whole leaves are chewed

Dried/powdered leaves are mixed in food/drinks, brewed as tea, or encapsulated

**Short-term effects:**

1-5 grams = **stimulant** effects similar to caffeine

5-15 grams = **relaxing** and analgesic effects

15+ grams = **sedating** effects, opioid substitute



*Mitragyna speciosa*

# Kratom: Understanding the Brain Science

The two best-studied kratom compounds (Mitragynine and 7-hydroxymitragynine) bind to **opioid receptors** on the surface of nerve cells

Less likely to cause some of the more serious adverse effects of opioids, like respiratory depression

National Institute on Drug Research actively researching where and how kratom compounds work in the brain



# Potential Effects of Kratom

## Positive Effects

- ↑ energy
- Alertness
- Relaxation
- Pain relief

## Adverse Effects

- Nausea/vomiting
- Constipation
- Dizziness
- Drowsiness
- Confusion
- Tremors
- Seizures
- High blood pressure
- Slow breathing
- Liver problems

# Dangerous Drug Interactions

Chemicals found in kratom may interfere with the body's metabolism of other drugs

Dangerous drug interactions effects possible (even when combined with other legal medications)

Harmful effects range from seizures to severe liver damage





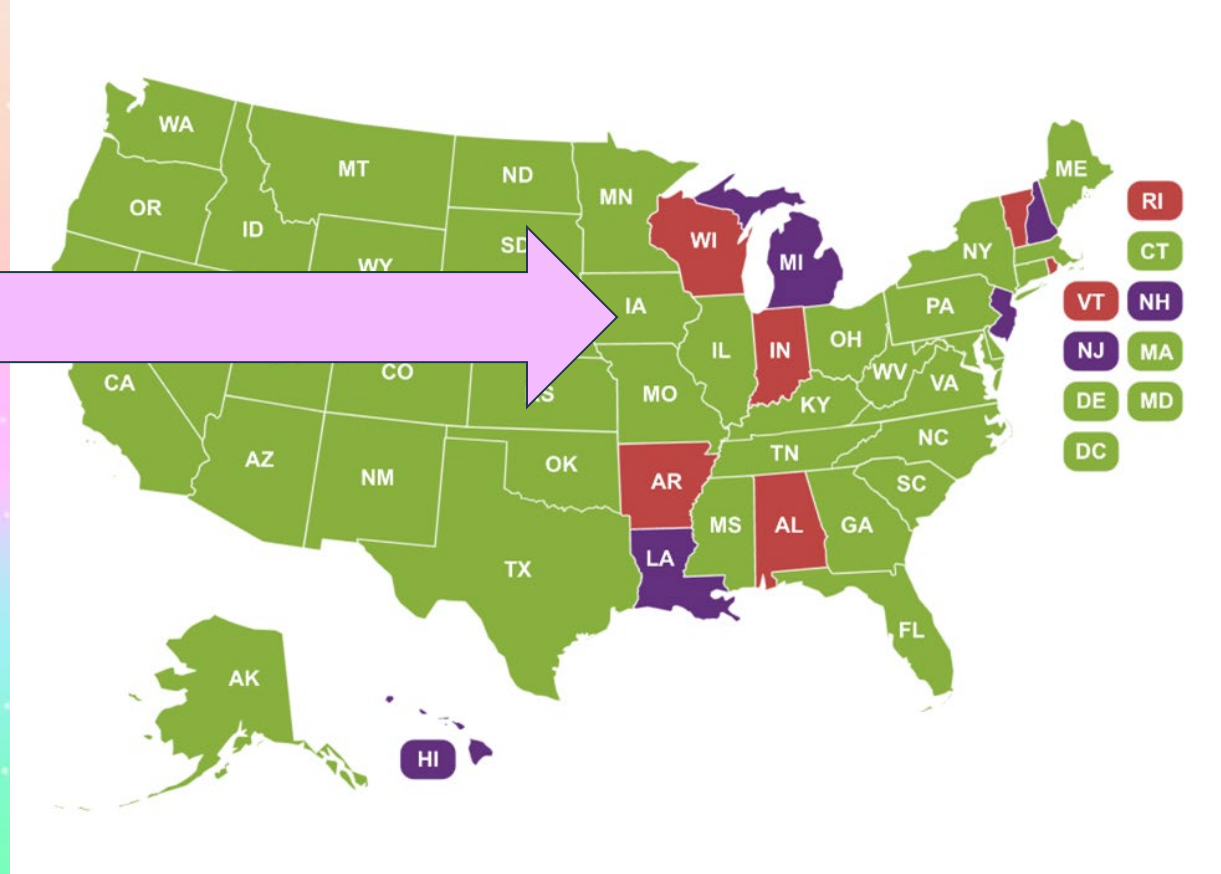
# Is Kratom Addictive?

- Researchers and the DEA say kratom consumption can lead to addiction
- Addiction can develop in as little as 6 months
- Kratom is sometimes promoted to combat opioid use disorder
- Post-acute withdrawal syndrome for weeks or months is possible after heavy regular kratom use

Symptoms are similar to those of opioid withdrawal:

Sweating, irritability, high blood pressure, abdominal and muscle pain, diarrhea, kratom cravings

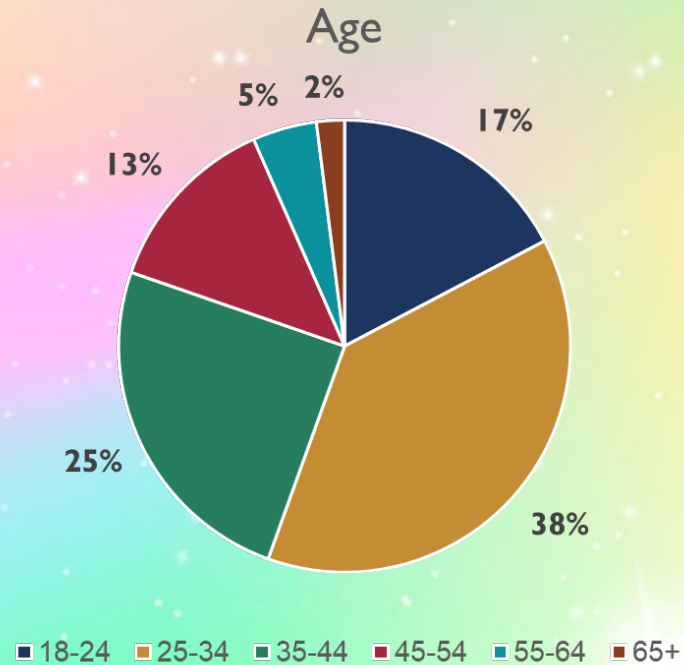
# Legal Status By State



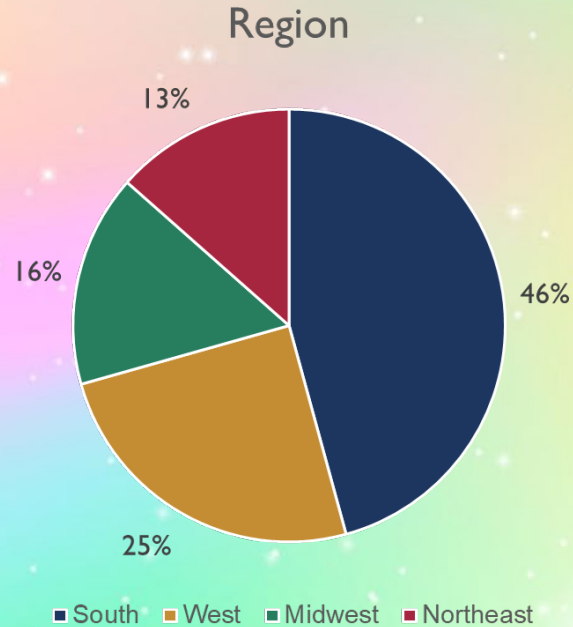
# FDA Warning

- No FDA-Approved uses for kratom
- FDA is concerned with risk for addiction, abuse, and dependence
- Warns consumers against use of any products labeled as containing kratom or its psychoactive compounds (mitragynine and 7-hydroxymitragynine)
- More research is encouraged to better understand kratom's safety profile

# Kratom Use By Age



# Kratom Use By Region







**Questions?**