

Understanding Synthetics: K2, Spice, and the Emergence of Novel Cannabinoids

September 25, 2025

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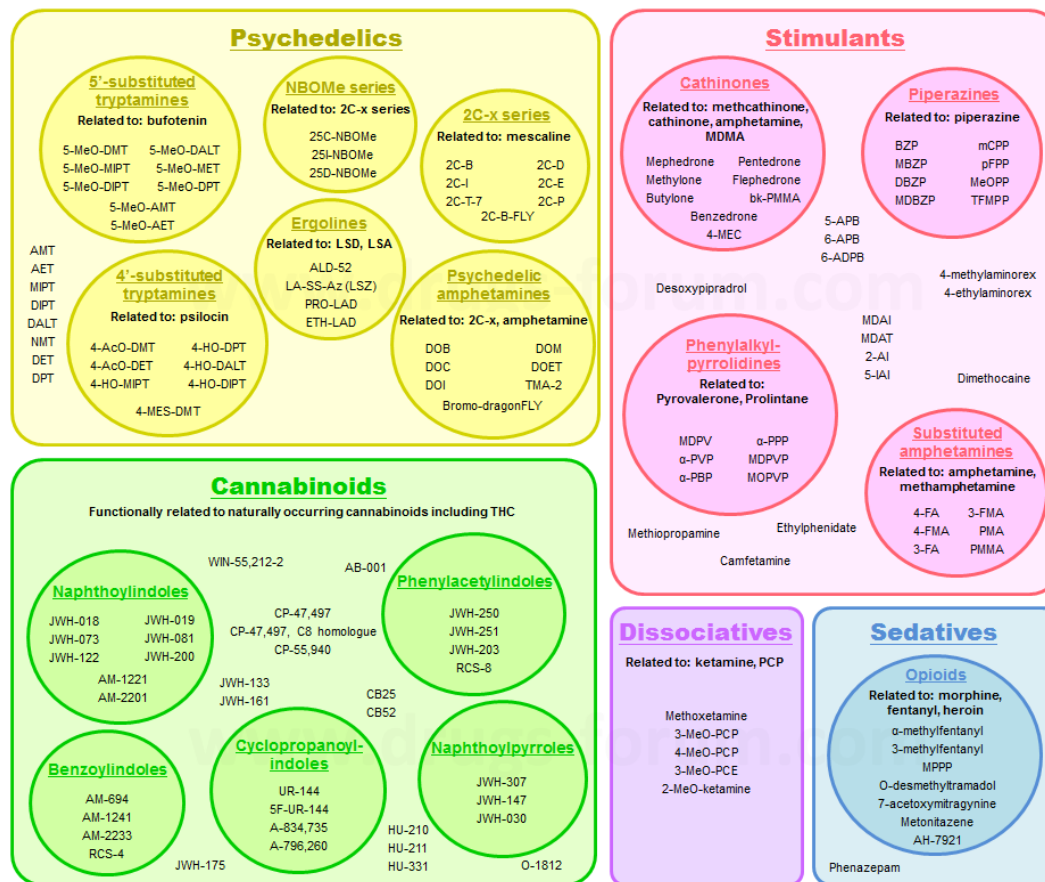
Learning Objectives

- Understand what synthetic cannabinoids (K2/Spice) are and how they are made.
 - Explore the primary effects and overdose risks associated with synthetic cannabinoids
 - Compare synthetic cannabinoids to opioids in terms of their dangers, usage patterns, and public health concerns.
 - Discuss effective overdose response strategies for synthetic cannabinoids.
 - Analyze Nevada-specific data and trends related to synthetic cannabinoids and the implications for public health and the criminal justice
-

Commonly Used Psychoactive Substances

SUBSTANCE	EFFECTS
Alcohol (liquor, beer, wine)	euphoria, stimulation, relaxation, lower inhibitions, drowsiness
Cannabinoids (cannabis, hashish)	euphoria, relaxations, slowed reaction time, distorted perception
Opioids (heroin, opium, many pain meds)	euphoria, drowsiness, sedation
Stimulants (cocaine, methamphetamine)	exhilaration, energy
Club Drugs (MDMA/Ecstasy, GHB)	hallucinations, tactile sensitivity, lowered inhibition
Dissociative Drugs (Ketamine, PCP, DXM)	feel separated from body, delirium, impaired motor function
Hallucinogens (LSD, mushrooms, Mescaline)	hallucinations, altered perception

“Designer” Psychoactive Substances



What are New Psychoactive Substances (NPS)?

- Chemically diverse emergent substances in the global drug market
 - Rapid evolution/emergence and limited data about health effects poses large challenges related to prevention and treatment
 - Analysis, identification, information sharing and monitoring are demanding given how rapidly new substances emerge
-

NPS Categories

- Aminoindanes
 - Benzodiazepines
 - Fentanyl analogues
 - Lysergamides
 - Nitazenes
 - Phencyclidine-type substances
 - Phenethylamines
 - Phenidates
 - Phenmetrazines
 - Piperazines
 - Plant-based substances
 - Synthetic cannabinoids
 - Synthetic cathinones
 - Tryptamines
-

Risks Associated with NPS

- Linked to health problems such as seizures and agitation, aggression, acute psychosis
- Severe intoxication or dependence can result
- Safety data and long-term risks are often unknown
- Purity and composition are often not known
- Polysubstance use can increase risk of hospital admission and death



User Report #1 (Drug not specified)

- *“This is the worst experience I’ve ever had”*
- *“The most anxiogenic substance I’ve ever used”*
- *“Nausea, vomiting, heart pounding like I’m going to have a heart attack”*
- *“Not sure whether I just said that, thought it, or read it”*
- 2 hours later: *“Will never take this again”*

User Report #2 (Synthetic Cannabinoid)

- 3 individual “hits” from a small pipe
- “Organic” taste/no chemical odor or taste
- 5 minutes: *“Feels like cannabis”*
- 10 minutes: *“Like an intense cannabis high”*
- *“More than 3 puffs might be too much”*

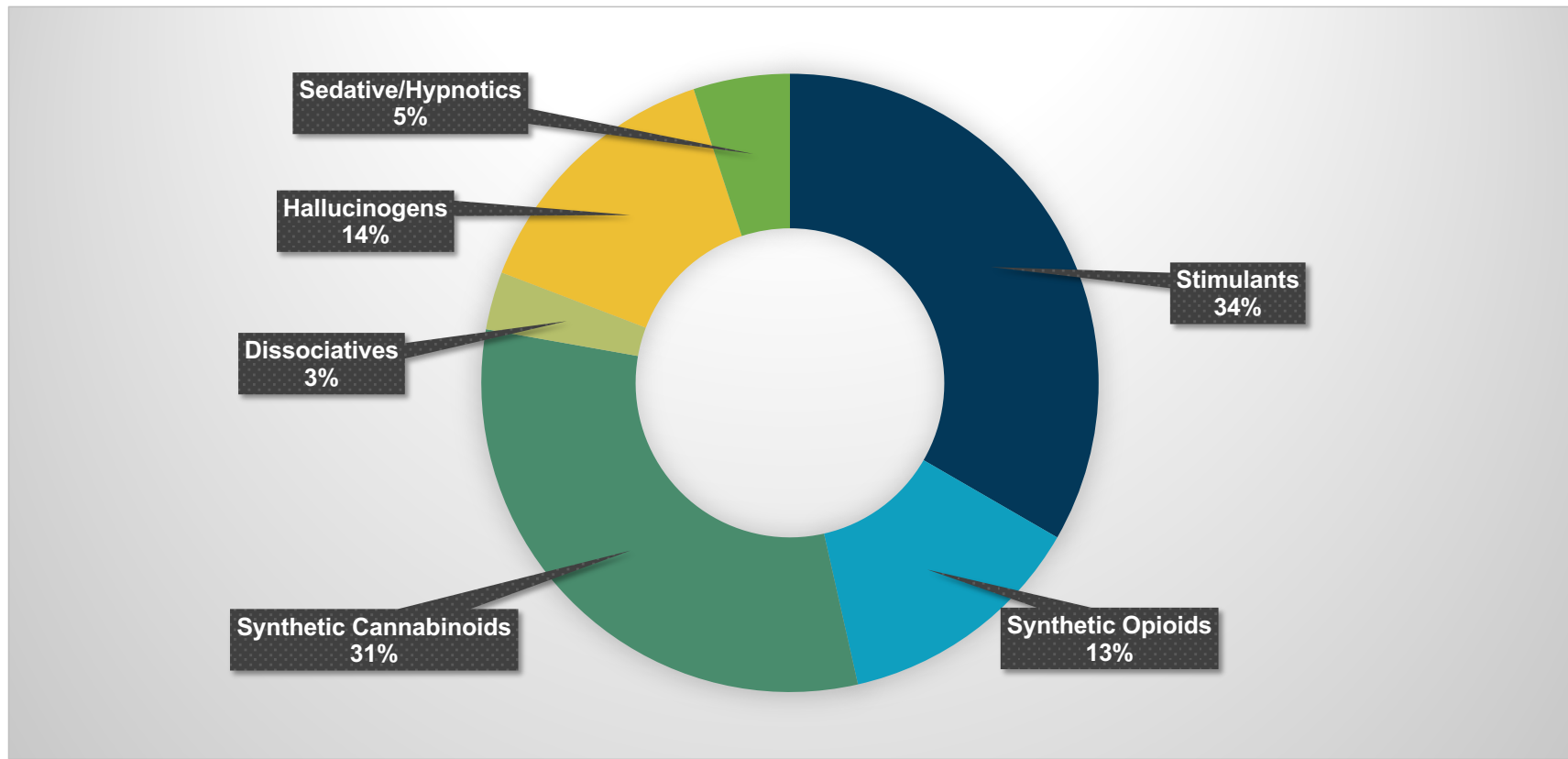
Synthetic Drugs

- Not really “Spice,” “Bath Salts,” “Incense,” or “Plant Food”
- Chemically-based; not plant derived
- Complex chemistry
- Constantly changing to “stay legal”
- Need to prove “intended to use” to convict in some areas

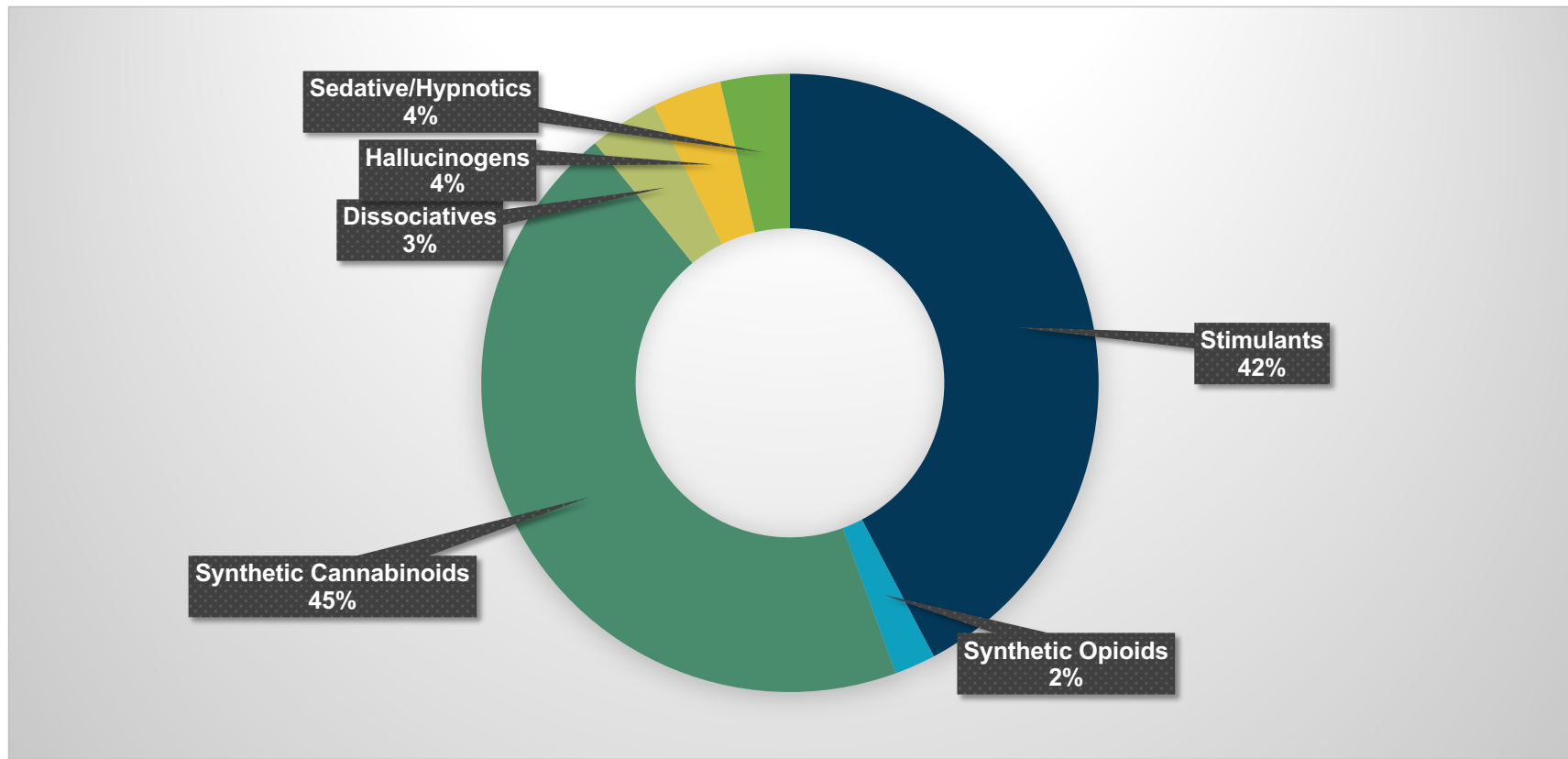
The Good News?

- Significant focus (rightfully so) has been paid to the impact of potent opioids such as fentanyl and co-ingestion of substances such as xylazine
- To date, lab reports have not identified significant co-reported samples of cannabinoid products and fentanyl
- Adulterants or additives raise concern about ingestion of unknown substances
- To this point, few, if any, adulterants have been identified in typical cannabinoid samples

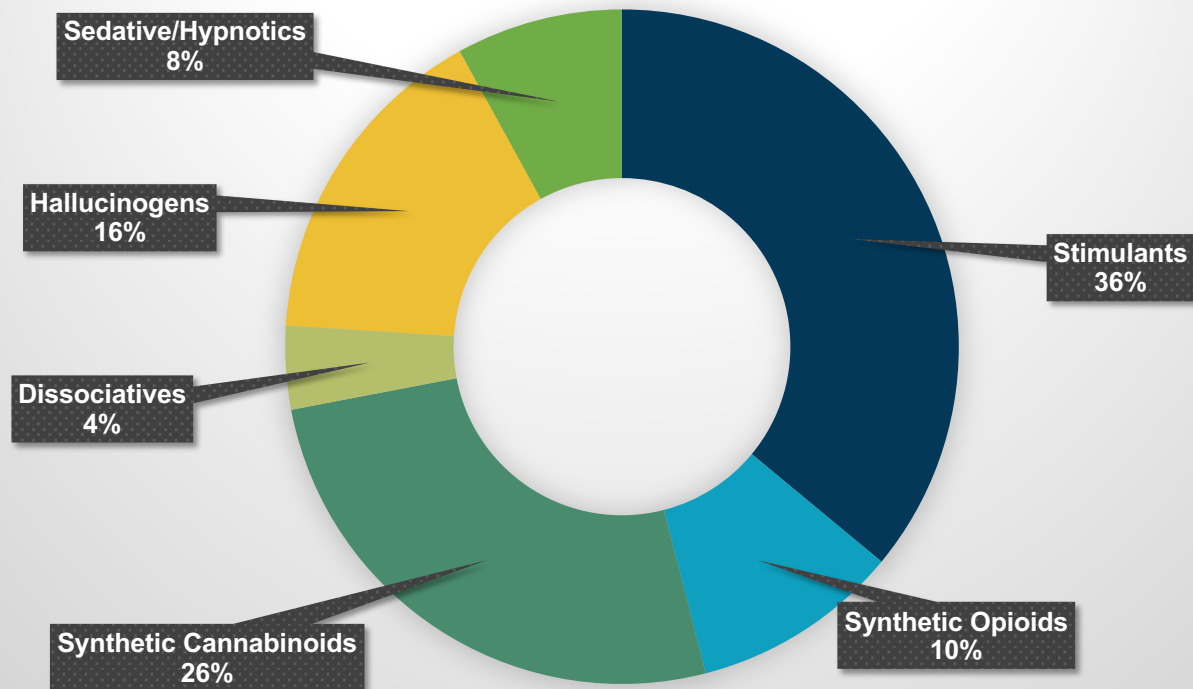
NPS by Effect Group, Worldwide 2013-2025



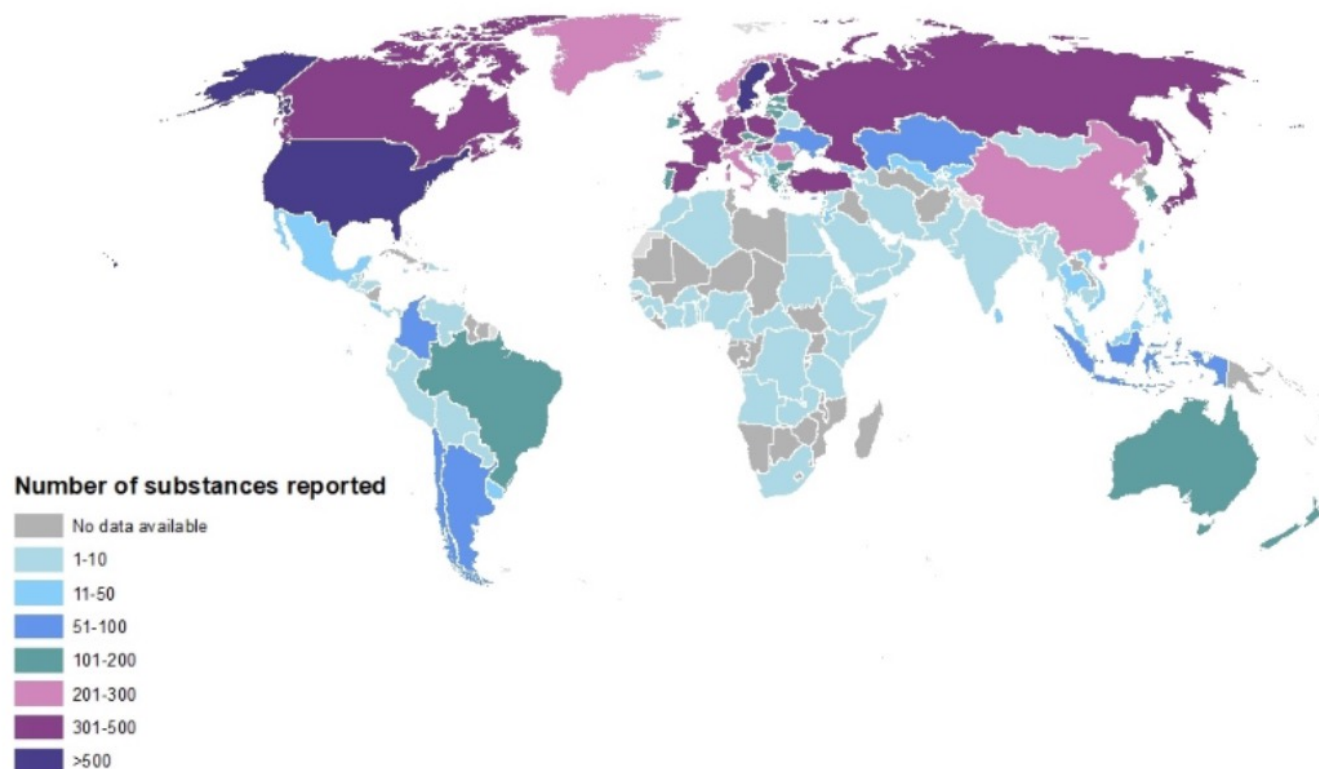
NPS by Effect Group, Worldwide 2013



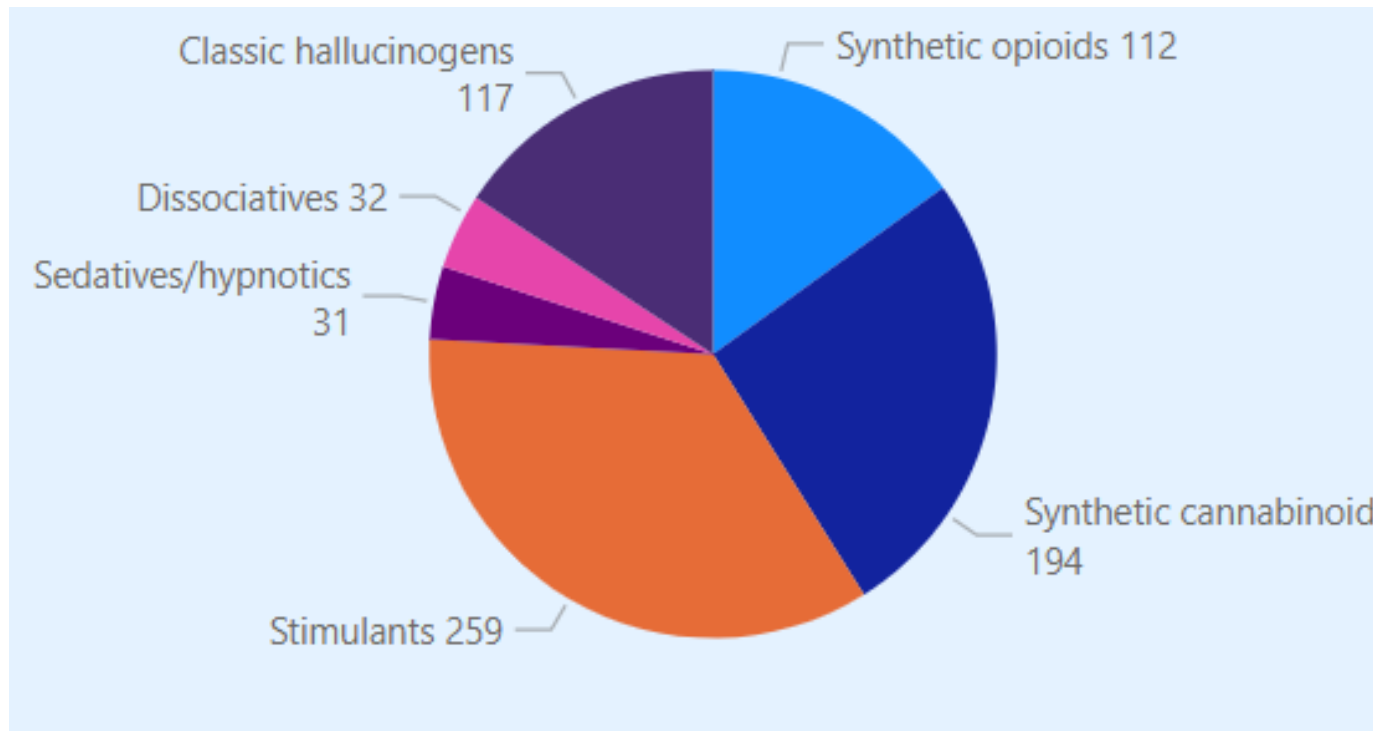
NPS by Effect Group, Worldwide 2025



Global Emergence of New Psychoactive Substances



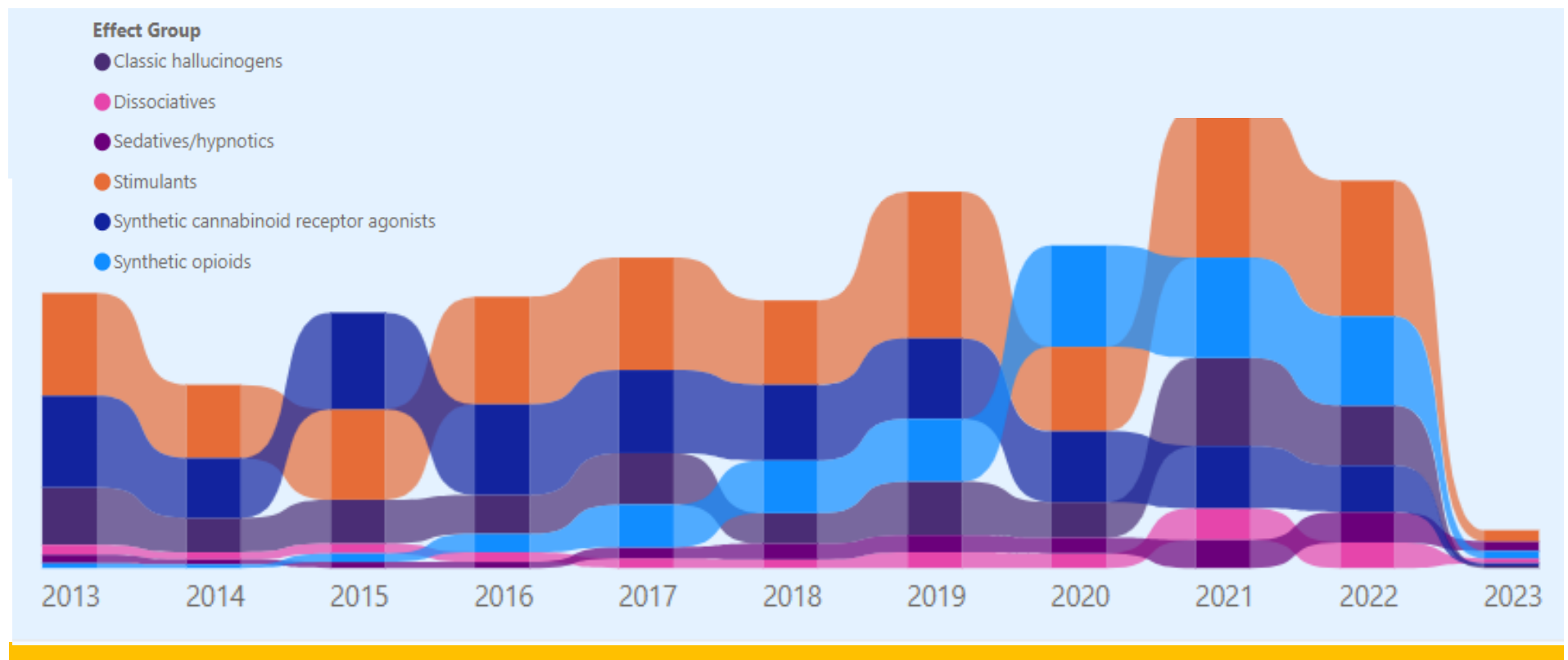
Distribution of NPS Reported Within Each Effect Group, North America 2013-2023



Total Number of NPS Reported Each Year, North America 2013-2023



Trend in NPS Reported Each Year, North America 2013-2023

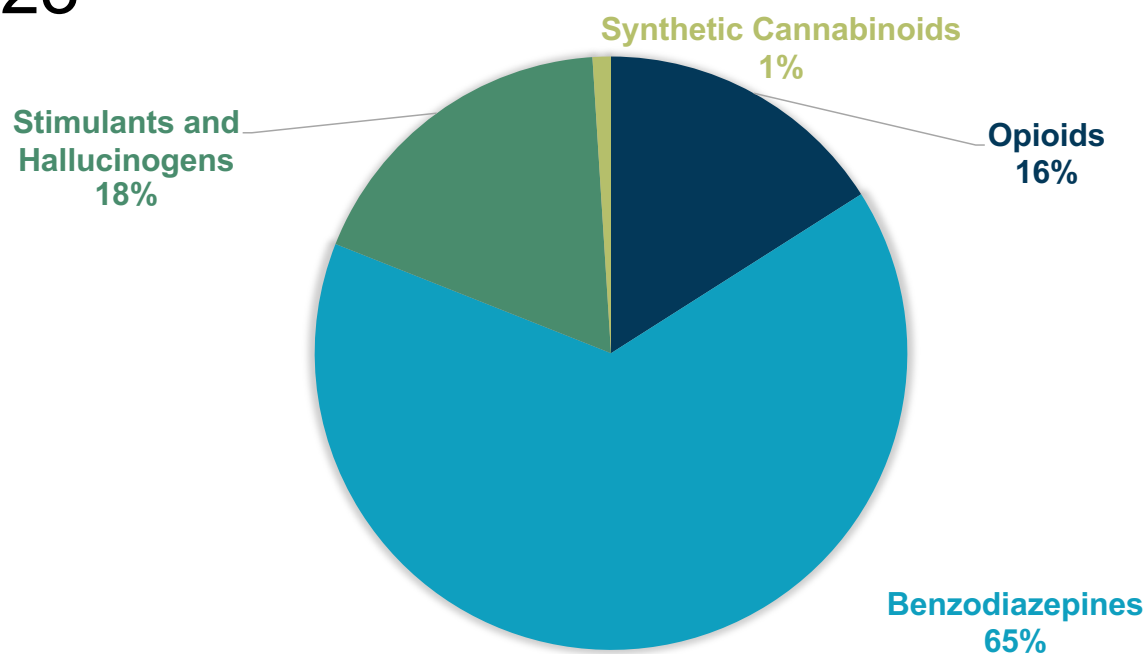


Synthetic Cannabinoids, North America 2013-2023

Substance Name	Year of first report to EWA	Year of initial scheduling
CUMYL-PEGACLONE	2017	2021
MDMB-4en-PINACA	2018	2021
4F-MDMB-BINACA	2018	2020
5F-AMB-PINACA	2013	2020
5F-MDMB-PICA	2016	2020
AB-FUBINACA	2012	2020
ADB-CHMINACA	2014	2019
ADB-FUBINACA	2012	2019
CUMYL-4CN-BINACA	2016	2019
FUB-AMB	2015	2019
5F-MDMB-PINACA	2015	2018
5F-PB-22	2013	2018
AB-CHMINACA	2013	2018

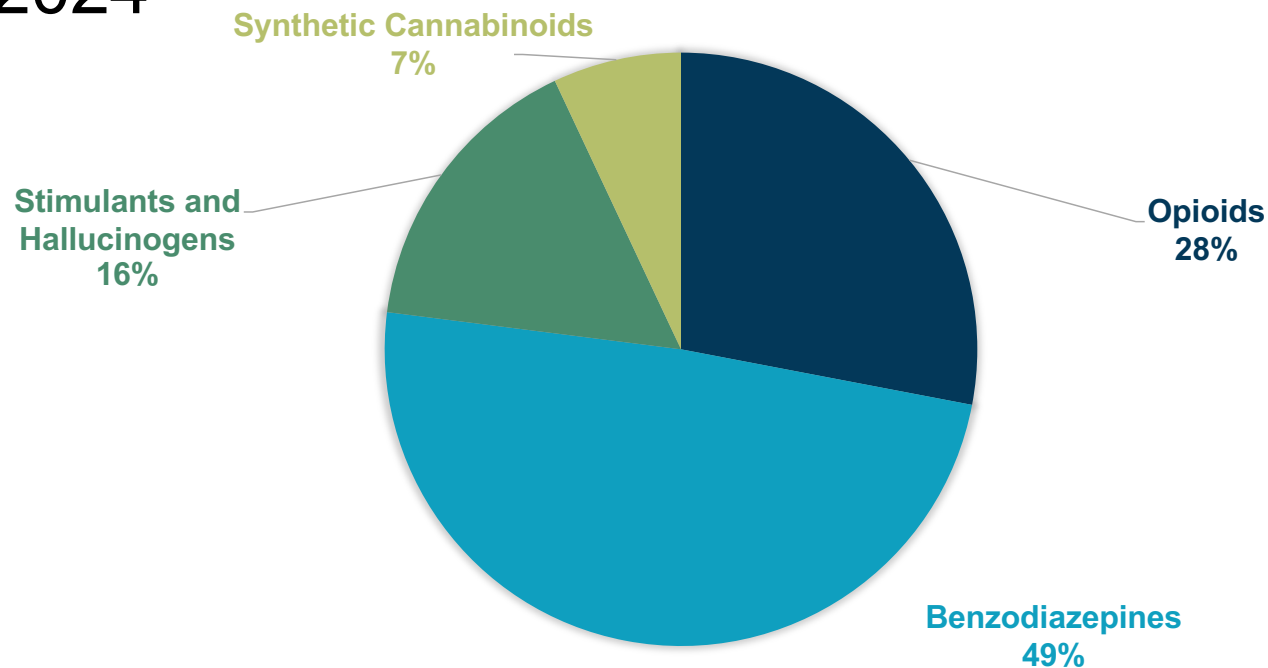
- Binding to one of the known cannabinoid receptors
- Effects similar to delta-9-THC
- Often laced into herbal products and sold as spice

Center for Forensic Science Research and Education, Synthetic Cannabinoid Trend Report, Q3 2023

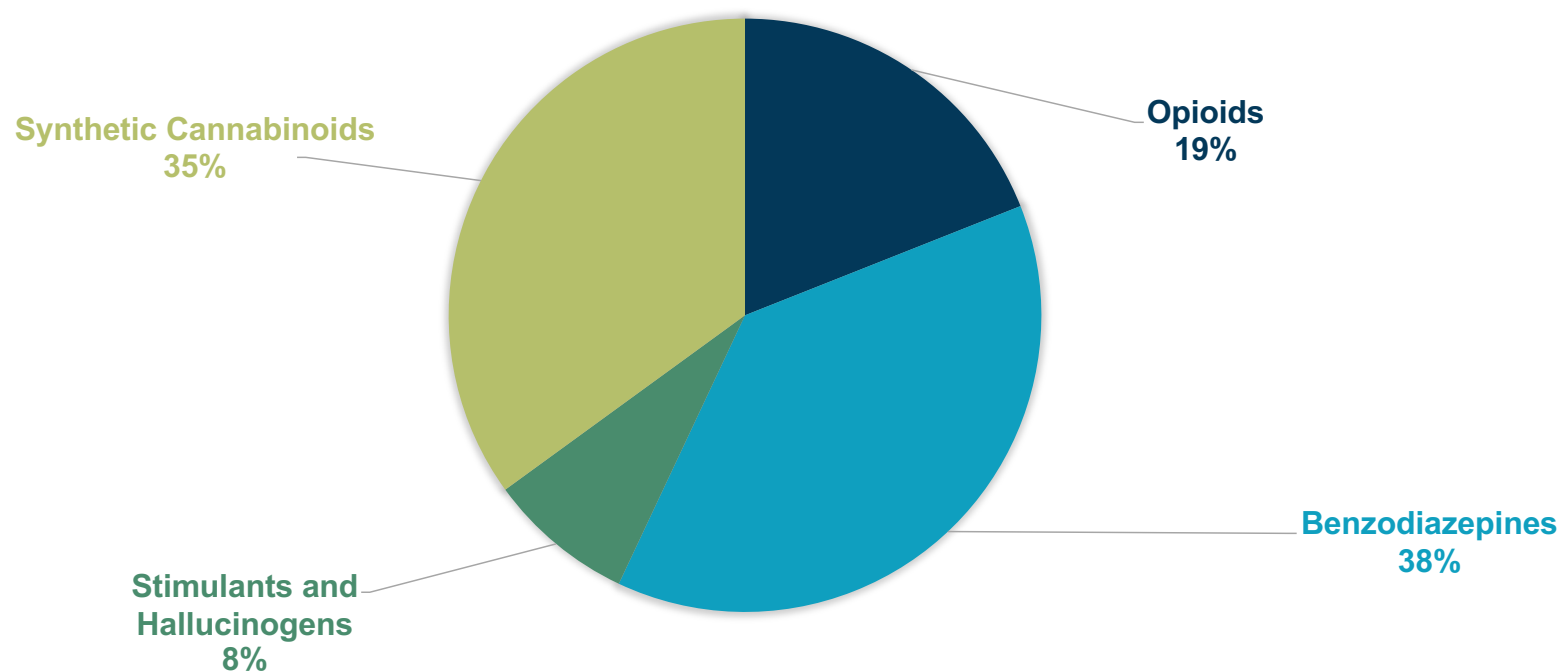


<https://www.cfsre.org/nps-discovery/trend-reports>

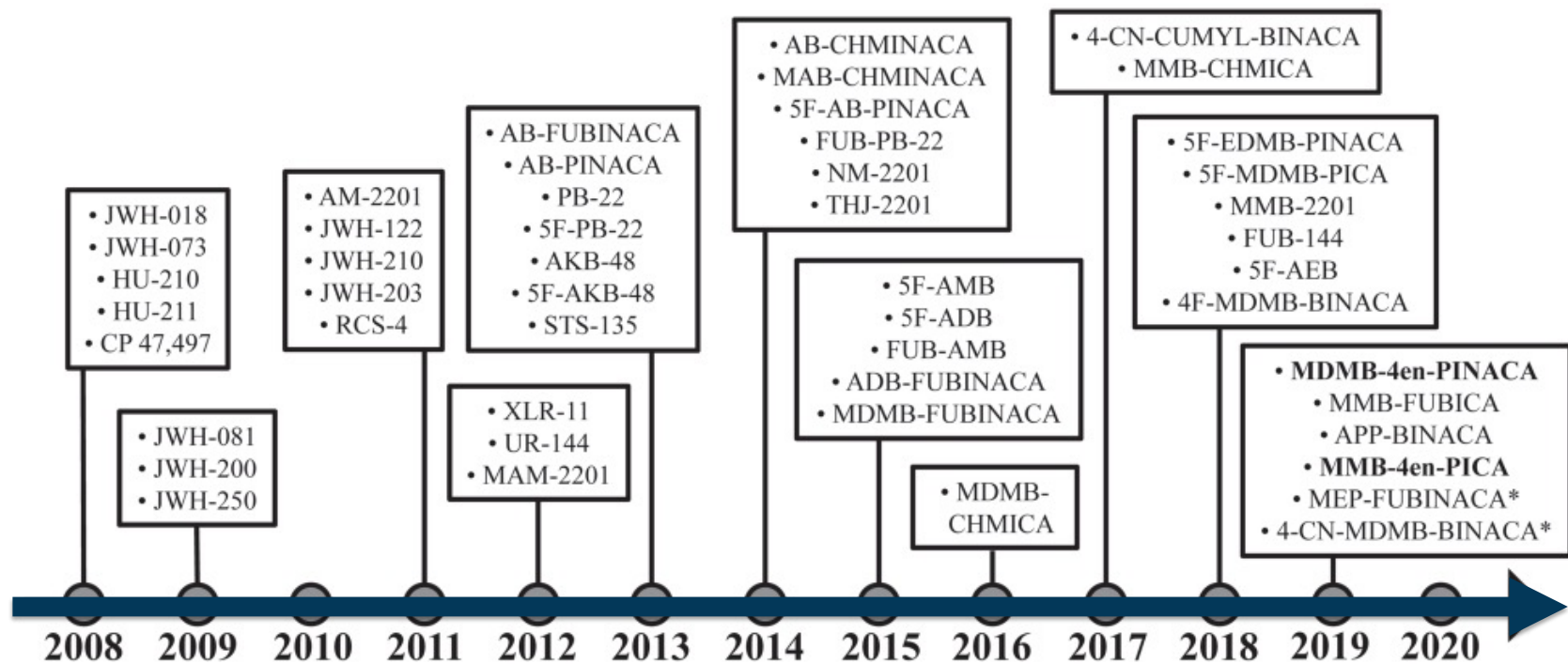
Center for Forensic Science Research and Education, Synthetic Cannabinoid Trend Report, Q1 2024



Center for Forensic Science Research and Education, Synthetic Cannabinoid Trend Report, Q2 2025



Cannabinoids by Year



**NFLIS Snapshot Report*

Naming Conventions

Developer/institution

- JWH = John W. Huffman
- AM = Alexandros Makriyannis

Website

- RCS-4 (SR-19, BTM-4)
- RCS-8 (SR-18, BTM-8)

Pharmaceutical companies

- A = Abbott Laboratories
- WIN = Sterling Winthrop

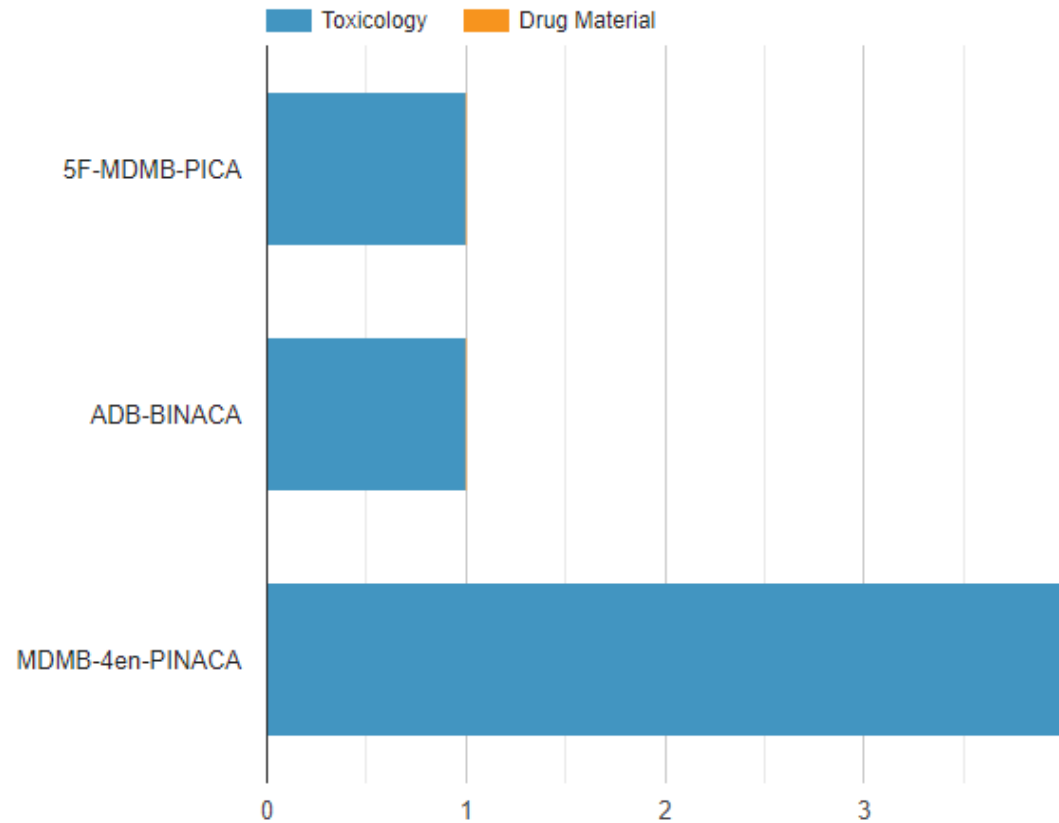
Pop culture references

- 2NE1
- AKB48
- STS135
- XLR-11
- BB-22

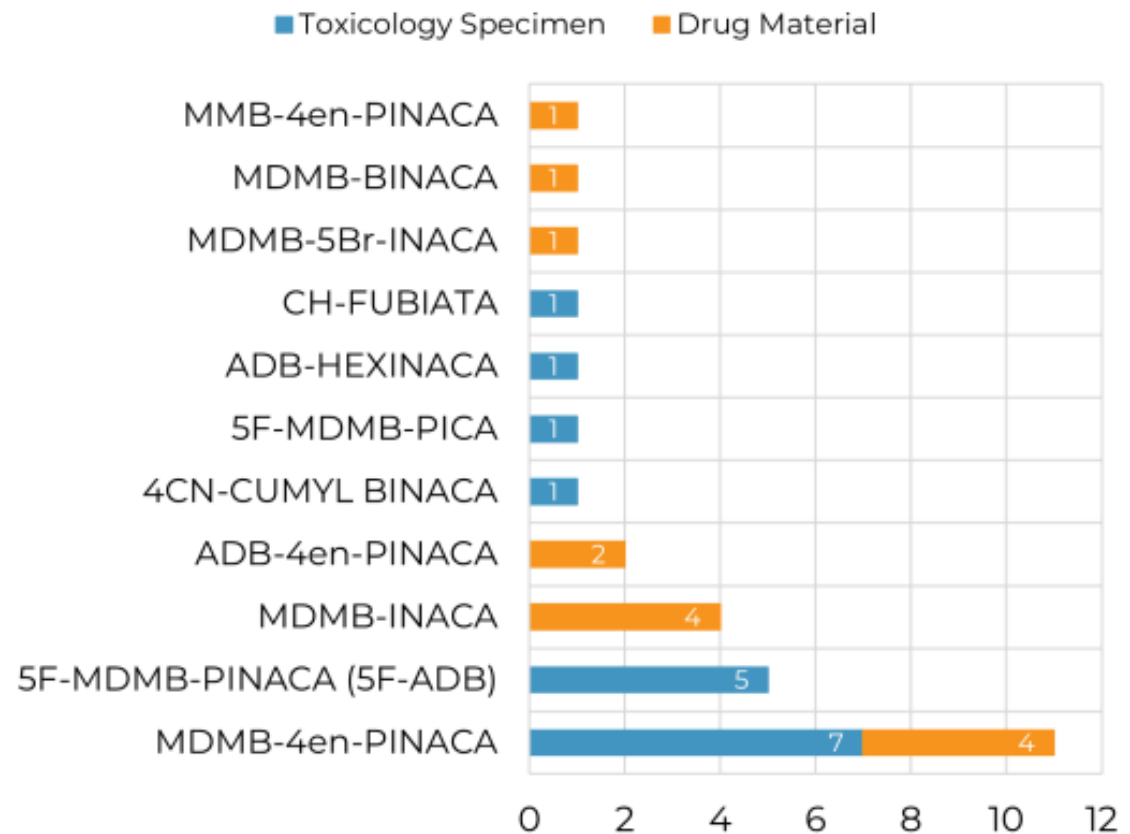
Chemical names

- QUPIC (PB-22)
 - AB-FUBINACA
 - AB-PINACA
- N-(1-**A**mino-3-methyl-1-oxo**B**utan-2-yl)-1-(**P**entyl-1H-**INdA**zole-3-Carbox**A**mide)

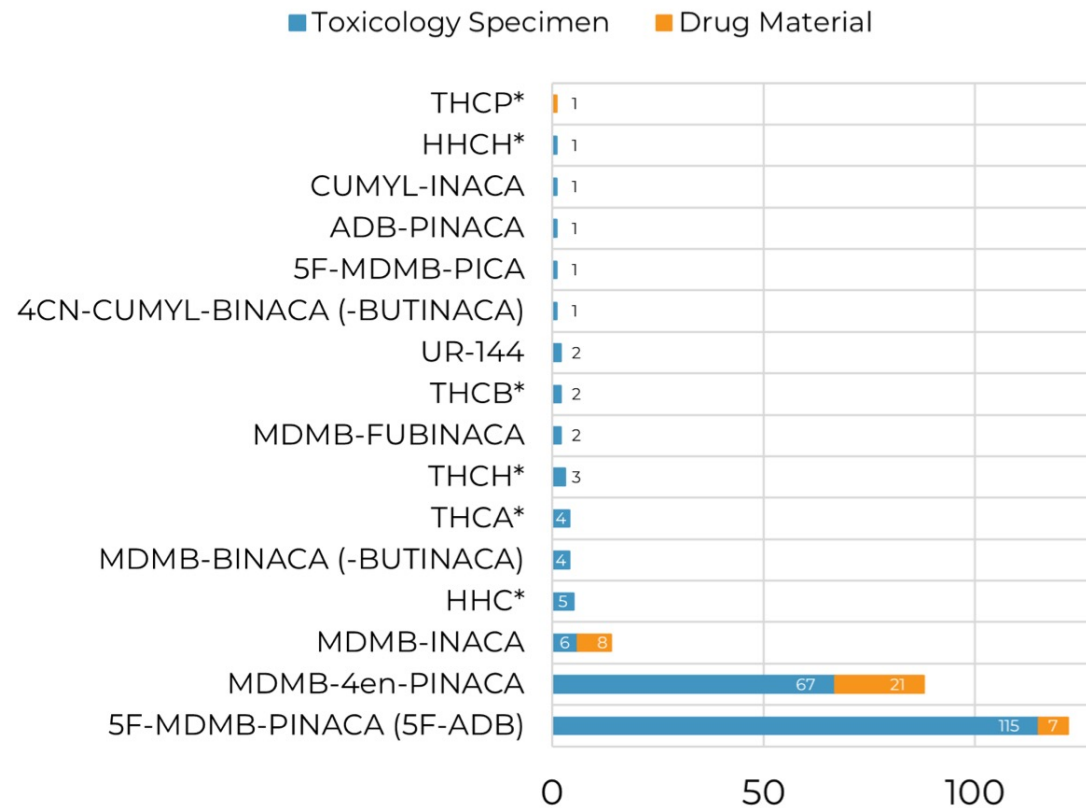
CFSRE Synthetic Cannabinoids Identified, Q3 2023



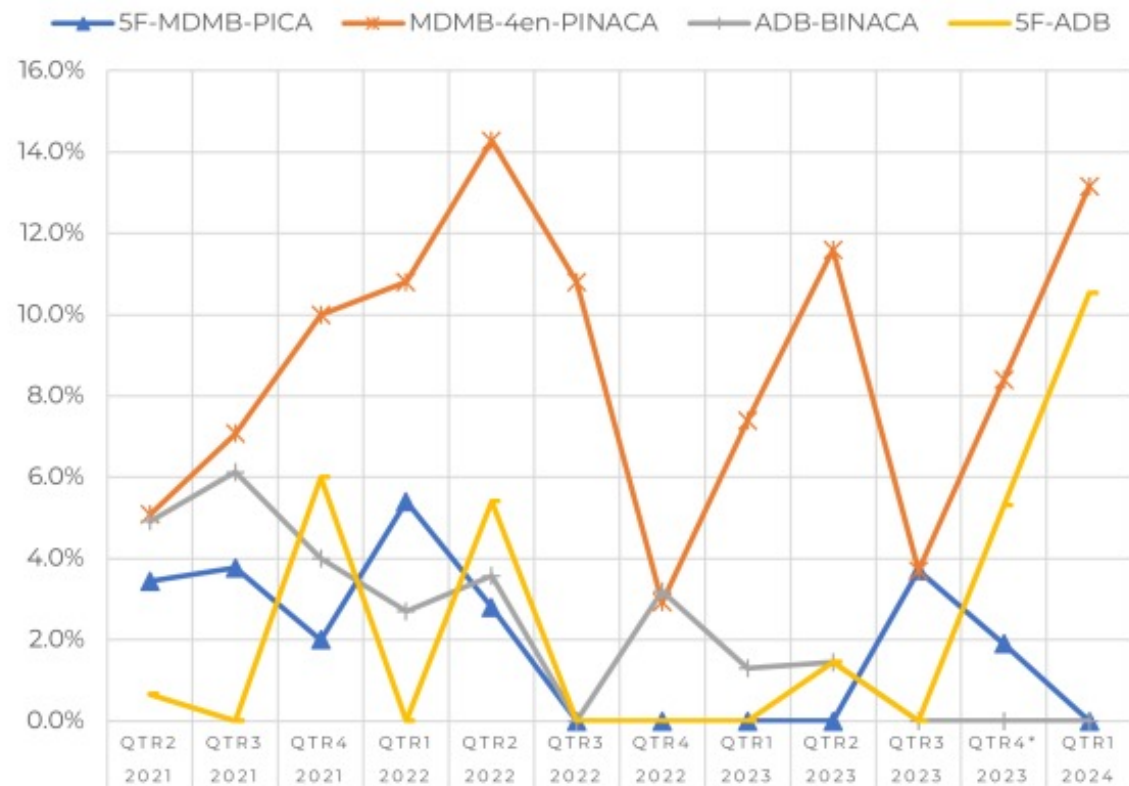
CFSRE Synthetic Cannabinoids Identified, Q1 2024



CFSRE Synthetic Cannabinoids Identified, Q2 2025



CFSRE Synthetic Cannabinoid Trend Report, Q4 2020 to Q3 2023



What is the status of cannabis
in Nevada?



“Research into cannabis **remains limited**. Even though it is legal in Nevada, it’s still classified as a Schedule I controlled substance at the federal level, which **restricts research access and funding**.”

UNLV students innovate to look into underreported impacts of cannabis

Despite federal regulations limiting research capabilities, UNLV students were able to examine new data and futures involving cannabis



Kiara Adams September 10th, 2025 at 2:00 AM

SHARE

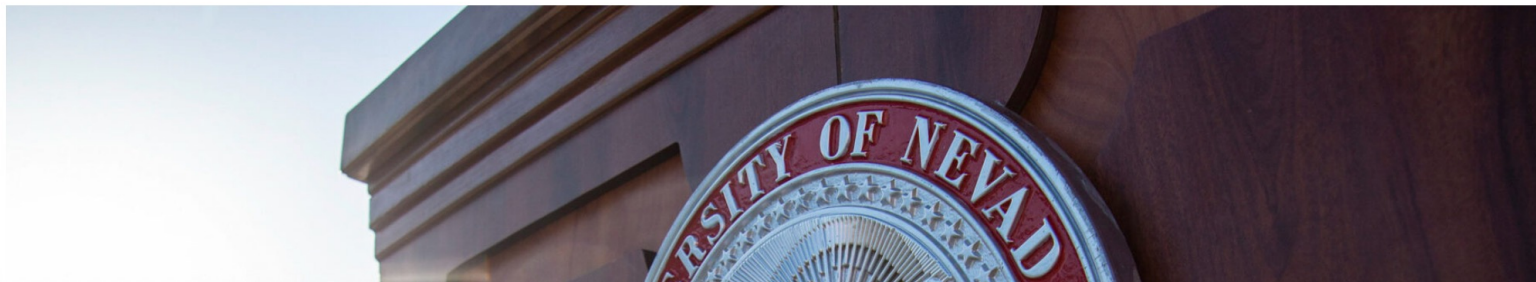


Economy

Education

Higher Education

Marijuana



Cannabis in Nevada

- SAMHSA studies found that between 2021 and 2022, Nevada had the second highest usage rate among youth in the country
- Approximately 22.3% of Americans aged 12+ have used cannabis in the past 30 days
- Recent survey data in Nevada indicated that 3.5% of respondents use cannabis daily
- Black and Hispanic individuals are at greater risk of CUD (3x and 2x, respectively)
- Higher income is associated with less use
- Religious identification is associated with reduced use but higher risk of CUD

Challenges in Nevada

- No concerted public health messaging around cannabis, illicit markets and synthetics
- Status of legalization and income related to legalization
- 15% wholesale tax and 10% store tax
- Excise taxes resulted in \$133million in tax revenue in 2023
- Tax revenue is allocated for school and educational enhancement
- In addition to regular sales tax, cannabis products are taxed at a minimum of 31%

What does this mean from a public health standpoint?



Figure 3: Nevada's Actual Versus Projected Cannabis Tax Revenues

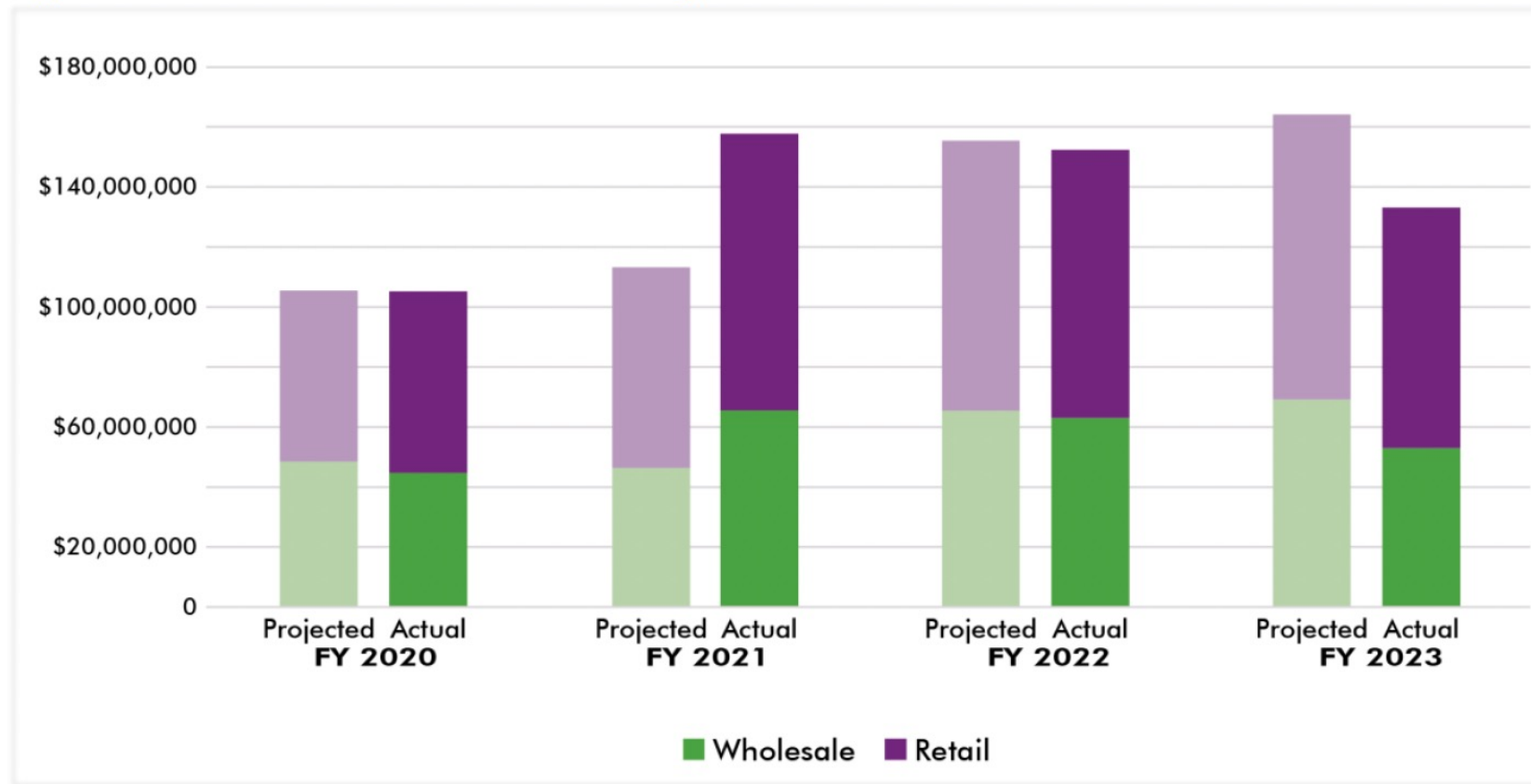
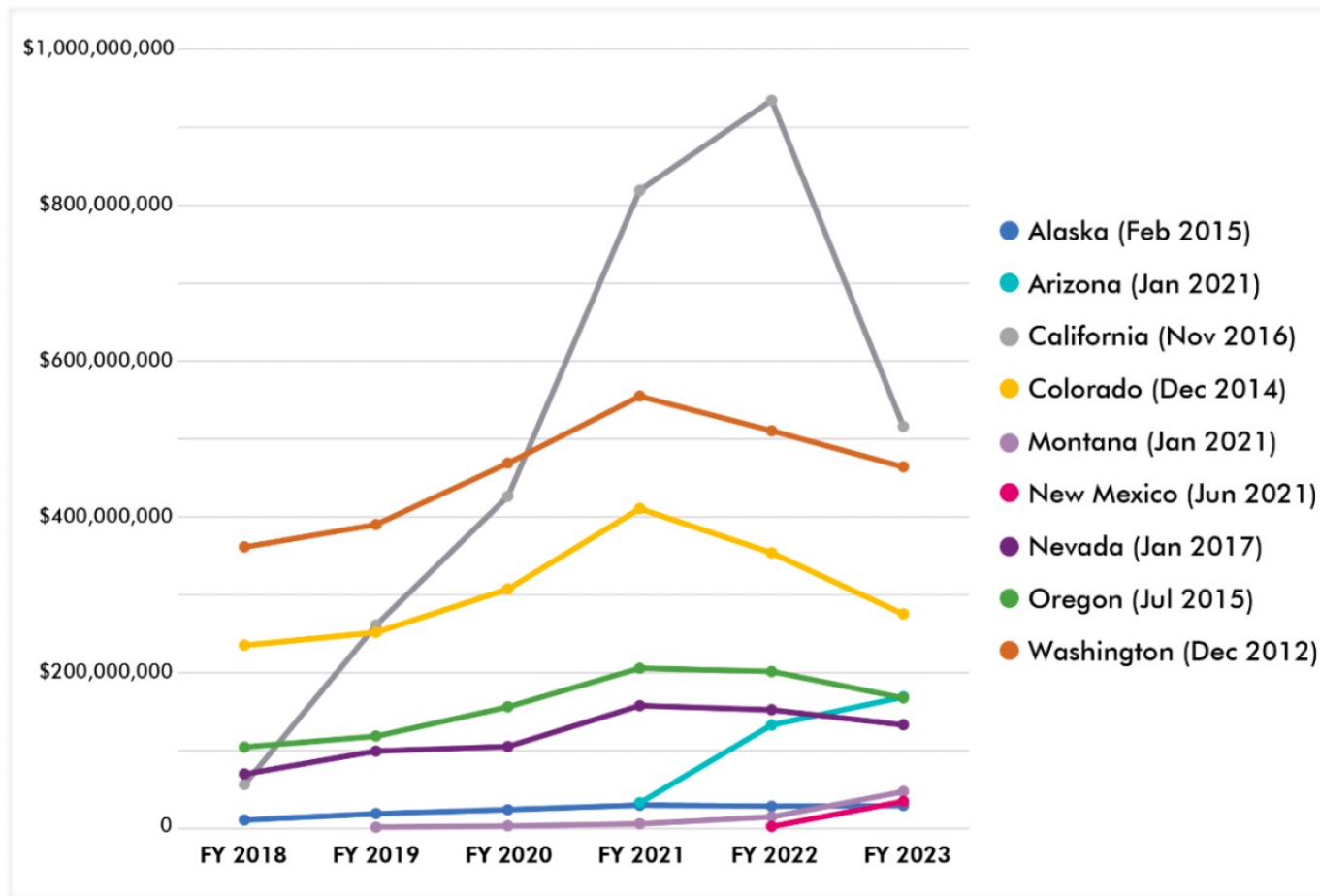


Figure 5: Western States Yearly Tax Revenues for Recreational Cannabis
(includes the year recreational use was authorized)



Takeaways

- Substantial tax revenue generated for education continues to decrease
- While tax revenue has decreased, illicit sales continue to increase, generating nearly \$370 million in sales annually*
- Rates of current use continue to increase among young adults
- Enhancing understanding of the risks of illicit/synthetic substances is a key public health initiative
- If someone **is** spending on cannabis, spending at legal shops will reduce availability to youth



Nevada BFRSS Dashboard

TRENDS

DATA AS OF 12/31/2023

National and Nevada's responses to the Behavioral Risk Factor Surveillance System (BRFSS) survey are shown below by year and demographic category. The "*" indicates the survey question has been changed during the reported period in in terms of wording, choices of answers, dividing or combining questions. Data are not shown or are left blank for demographic categories in which total unweighted sample size was fewer than 50 respondents. Balance of State includes Carson City, Churchill, Douglas, Elko, Esmeralda, Eureka, Humboldt, Lander, Lincoln, Lyon, Mineral, Nye, Pershing, Storey, and White Pine counties. [Learn more](#)

SELECT A CLASS

- ☐ Healthcare Access
- ☐ General Health and Behaviors
- ☐ Chronic Disease
- ☐ Preventive Care
- ☒ Substance Use
- ☐ Mental Health
- ☐ Gambling (Nevada Only)

SELECT A DEMOGRAPHIC CATEGORY

- ☒ Age
- ☐ Education
- ☐ Geography
- ☐ Income
- ☐ Race/Ethnicity
- ☐ Sex

SELECT A LOCATION

- ☐ National
- ☒ Nevada

SELECT A QUESTION

Used Marijuana or Cannabis in the Past 30 Days

KEY METRICS (2023)

18.5

WEIGHTED PERCENTAGE
Nevada, Statewide

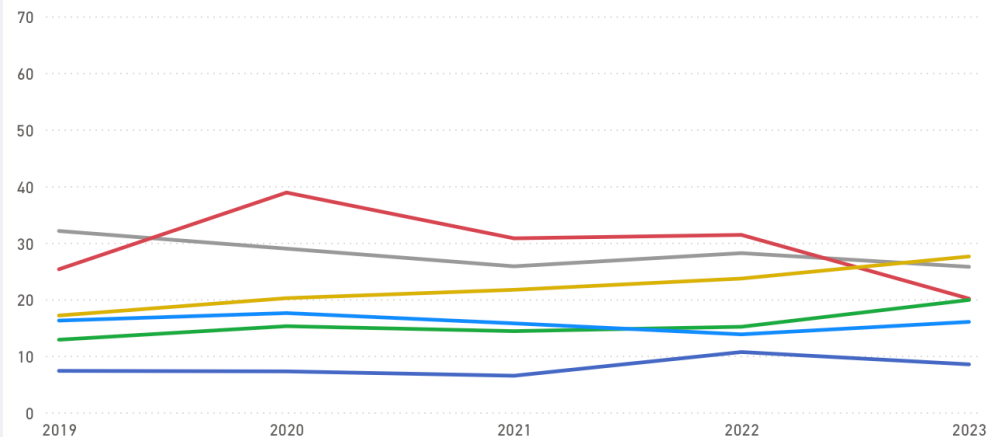
14.8

WEIGHTED PERCENTAGE
National

Location		Nevada	
Year	Weighted Percentage (%)	Annual % Change	
2023	18.5	-5.2% ▼	
2022	19.5	7.2% ▲	
2021	18.2	-6.2% ▼	
2020	19.4	11.5% ▲	

WEIGHTED PERCENTAGE BY YEAR AND DEMOGRAPHIC CATEGORY

● 18-24 ● 25-34 ● 35-44 ● 45-54 ● 55-64 ● 65+



Synthetic Cannabinoids: Spice vs. “Spice”



Cannabis

- Often called pot, grass, reefer, marijuana, weed, herb
- A mixture of the dried, shredded leaves, stems, seeds, and flowers of *Cannabis sativa*—the hemp plant
- Most commonly used drug in the U.S.
- Delta-9-tetrahydrocannabinol (THC) is the main active ingredient in cannabis
- Common effects include: euphoria, relaxation, heightened sensory perception, laughter, altered perception of time, and increased appetite
- May also produce anxiety, fear, distrust, or panic, and can lead to severe mental health problems for some users.

Synthetic Cannabinoids

- Wide variety of herbal mixtures
- Marketed as “safe” alternatives to cannabis
- Brand names include: “Spice,” “K2,” fake weed, “Yucatan Fire,” “Skunk,” “Moon Rocks,” herbal incense, “Crazy Clown,” “Herbal Madness”
- Labeled “not for human consumption”
- Contain dried, shredded plant material (inert) and chemical additives that are responsible for their psychoactive effects.



Synthetic Cannabinoids (2)

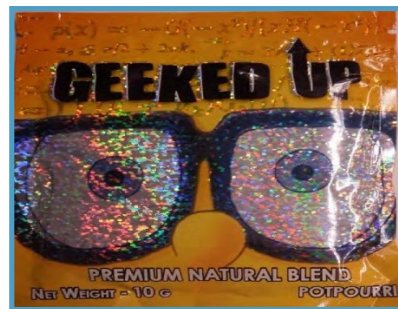
- Synthetic cannabinoids are often associated with adverse health risks due to potency
 - Neurological effects (psychosis, agitation, paranoia, confusion)
 - Psychiatric episodes such as hallucinations, delusions, delirium and self-harm
 - Physical ailments (tachycardia, hypertension, arrhythmia, chest pain, GI distress, kidney injury, nausea, vomiting, fever)
-

Synthetic Cannabinoids (3)

- Mainly used by **smoking** (alone or with cannabis); may also be prepared as an herbal infusion for **drinking**.
- Many of the active chemicals most frequently found in synthetic cannabis products have been classified by the DEA as Schedule I controlled substances, **making them illegal to buy, sell, or possess**.
- Multiple “generations” of drugs.



Synthetic Cannabinoid Packaging



Factors Associated with Synthetic Cannabinoid Popularity

- They induce psychoactive effects
- They are readily available in retail stores and online
- The packaging is highly attractive
- They are perceived as safe drugs
- They are not easily detectable in urine and blood samples

Six States Report Cases of Kidney Damage Linked to Synthetic Cannabinoids

- Sixteen cases of kidney damage reported by CDC
 - All admitted to hospital
 - Five required hemodialysis
- Fifteen of the patients were male; ranged in age from 15 to 33, no history of kidney disease
- In early Feb 2013, UA-Birmingham reported 4 cases of previously healthy young men, whose acute kidney injury was associated with synthetic cannabis
 - Symptoms of nausea, vomiting, and abdominal pain
 - All four men recovered kidney function, and none required dialysis

Kidney Injury and Synthetic Cannabinoid Use

- Remember: as with many other substances, there is no “typical” user
 - Recent reviews of literature have indicated that common presentation is male aged 13-40 with tachycardia, agitation, nausea, and vomiting
 - Both CB1 and CB2 receptors are expressed in the kidneys, raising concern about the impact of synthetic cannabinoids on renal blood flow and sodium reabsorption
-

Kidney Injury and Synthetic Cannabinoid Use (2)

- Synthetic cannabinoids can decrease renal blood flow through inotropic effects
 - This can be worsened in the presence of cannabinoid hyperemesis syndrome (more common in long-term use)
 - CHS is characterized by nausea, vomiting, and abdominal pain
 - Synthetic cannabinoids may cause acute kidney injury via drug injury (direct) or rhabdomyolysis (secondary)
 - The exact components and mechanisms are still unclear and there is no “antidote” for intoxication
-

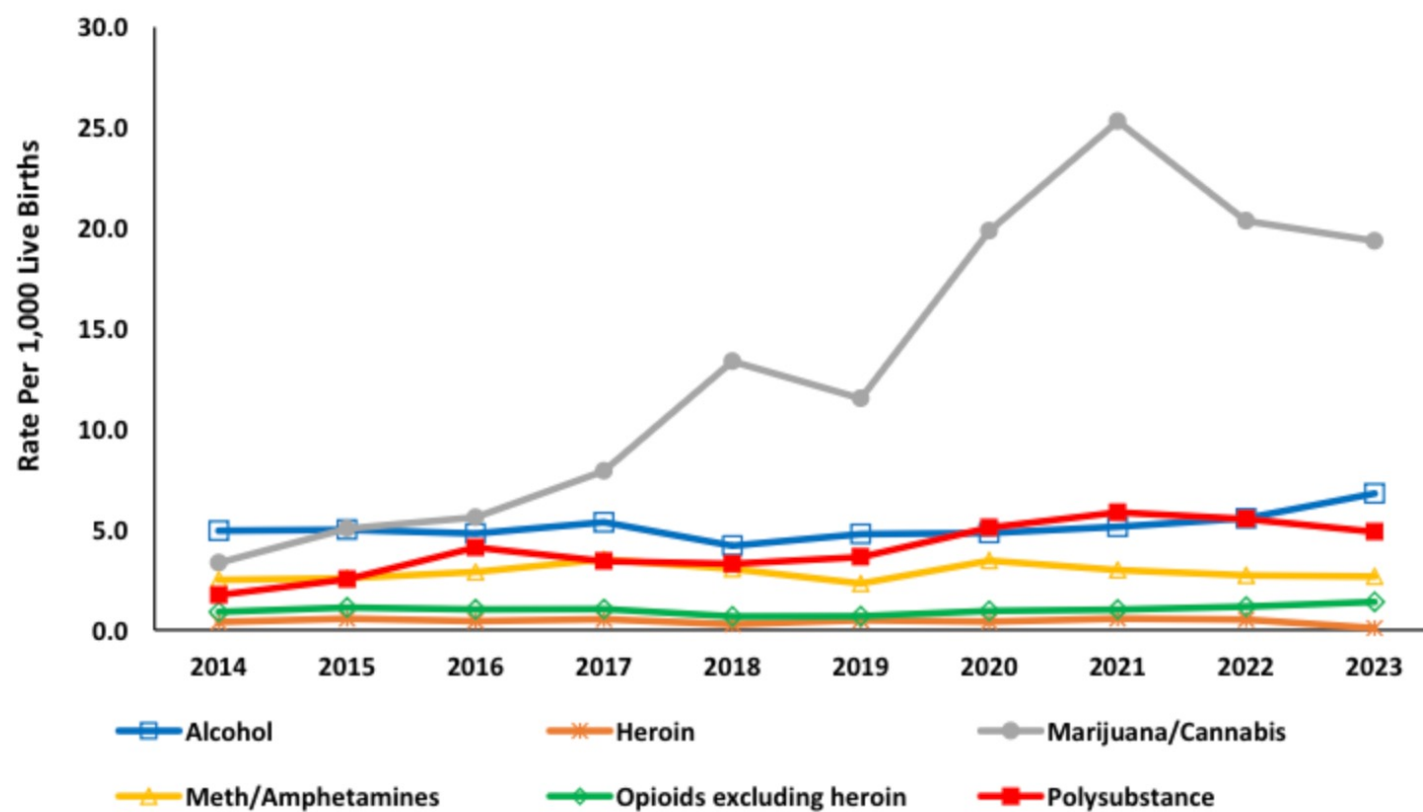
Synthetic Cannabinoid Use Leads to Dangerous Symptoms in Pregnant Women

- Leads to symptoms similar to those caused by dangerous conditions known as preeclampsia and eclampsia
 - Preeclampsia is marked by high blood pressure and a high level of protein in the urine
 - Preeclampsia can lead to eclampsia, which can cause a pregnant woman to develop seizures or coma, and in rare cases is fatal

Case Example: Synthetic Cannabinoid Use among Pregnant Woman

- A woman (35 weeks pregnant) suffered a seizure and appeared agitated
 - High blood pressure and protein in urine, treated for eclampsia
 - An emergency C-section was performed (baby in distress)
- The woman screened negative for drugs, but an anonymous caller reported the woman regularly smoked “Spice Gold,” a synthetic cannabinoid.
 - Spice Gold cannot be detected with a standard urine test.
- The baby tested negative for drugs.
- The woman required psychiatric care for psychotic behavior the day after delivery.
 - *“This was not a pregnancy problem but a drug problem. Eclampsia is cured with delivery of the baby, but she did not get better after delivery.” (Dr. Cindy Lee)*

Figure 114. Self-Reported Prenatal Substance Use Birth Rates for Select Substances, Nevada Residents, 2014-2023.



Source: Nevada Electronic Birth Registry System.

Additional Emerging Cannabinoids

- Cannabidibutol (THCB, CBCB) – butyl analogue of THC with comparable potency to Δ 9-THC
 - Δ 8, Δ 10, Δ 11-THC
 - Hexhydrocannabinol
 - THCA*
 - ACRCC- Δ 8-THC – “designer drug” synthesized from hemp-derived CBD and not extracted from naturally grown *C. sativa* material
-

Classification of THCOs

- Hemp products are not subject to DEA scheduling
- Unless THC content is higher than 0.3%
- THC-O (tetrahydrocannabinol acetate ester) has not been studied extensively
- Some indicators that potency is 2-4x greater
- Because THCO does not occur naturally, they do not fall under the classification of hemp and are subjected to THC scheduling



U. S. Department of Justice
Drug Enforcement Administration
8701 Morrisette Drive
Springfield, Virginia 22152

www.dea.gov

February 13, 2023

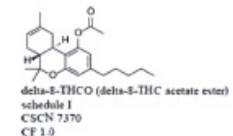
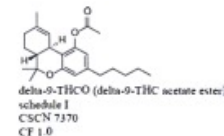
[REDACTED]
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This is in response to your letter dated August 17, 2022 and subsequent email dated February 7, 2023, in which you request the control status under the Controlled Substances Act (CSA) of THC acetate ester (THCO). The only substances of which the Drug Enforcement Administration (DEA) is aware of the THC acetate ester are delta-9-THCO (delta-9-THC acetate ester) and delta-8-THCO (delta-8-THC acetate ester). The Drug Enforcement Administration (DEA) reviewed the CSA and its implementing regulations with regard to the control status of these substances.

The CSA classifies tetrahydrocannabinols (THC) as controlled in schedule I. 21 U.S.C. § 812, Schedule I(c)(17); 21 CFR 1308.11(d)(31). Subject to limited exceptions, for the purposes of the CSA, the term "tetrahydrocannabinols" means those "naturally contained in a plant of the genus *Cannabis* (*cannabis* plant), as well as synthetic equivalents of the substances contained in the *cannabis* plant and/or synthetic substances, derivatives, and their isomers with similar chemical structure and pharmacological activity to those substances contained in the plant." 21 CFR § 1308.11(d)(31).

Delta-9-THCO and delta-8-THCO do not occur naturally in the *cannabis* plant and can only be obtained synthetically, and therefore do not fall under the definition of hemp. Delta-9-THCO and delta-8-THCO are tetrahydrocannabinols having similar chemical structures and pharmacological activities to those contained in the *cannabis* plant. Thus, delta-9-THCO and delta-8-THCO meet the definition of "tetrahydrocannabinols," and they (and products containing delta-9-THCO and delta-8-THCO) are controlled in schedule I by 21 U.S.C. § 812(c) Schedule I, and 21 CFR § 1308.11(d). The Controlled Substances Code Number (CSCN) assigned to these substances are 7370, which is that of tetrahydrocannabinols, and the conversion factors (CF) are 1.00. Because delta-9-THCO and delta-8-THCO are controlled substances, they do not meet the definition of controlled substance analogues under 21 U.S.C. § 813.

The chemical structures shown below were used to make these determinations. If you have any further questions, please contact the Drug and Chemical Evaluation Section at DCE@dea.gov or (571) 362-3249.



The Neurobiology of Synthetic Cannabinoid Use

Cannabinoids

- Neurobiological Concerns:
 - Shown to induce dopamine release (although less directly than stimulants) → brain reward signal → potential for compulsive use/addiction
 - Shown to impact regions of the brain responsible for coordination, problem-solving, sense of time, motivation, etc. → impaired when high
 - Effects on regions underlying learning and memory → possible long-term effects
 - Possible link to psychosis and schizophrenia

“Classic” Cannabinoids

- Endocannabinoid system
 (“endo” = within)
 Only recently discovered, unusual, not well understood
 - Receptors: CB1 (brain), CB2 (immune system)
 - Transmitters: Anandamide, 2-AG
- THC: binds to CB1 receptor
 - But not very well (low affinity) and not very good at inducing effects (partial agonist)
 - But unlike endocannabinoid transmitters, not degraded immediately, so CB1 activation is extended/exaggerated compared to anandamide

Synthetic Cannabinoid Receptor Activity

- No structural similarity to THC, but same effects profile
- Higher receptor affinity (binding/potency) AND each binding event has greater effect (full agonist)
 - 4x higher affinity for CB1, 10x for CB2
 - Longer half-life so effects longer lasting
- Products of break-down (metabolites) also psychoactive
- Meaning: more, more-likely, and longer-lasting adverse effects (especially if dosing is based on cannabis)

Synthetic Cannabinoids – Clinical Presentation

- Persistent depression
- Memory problems (can last for several weeks)
- Blunted affect
- Difficulty focusing
- Difficulty participating in clinical until stabilized
- Users also report elevated mood, relaxation, and altered perception
- Psychotic effects, such as extreme anxiety, paranoia, and hallucinations

Sample Clinical Treatment Protocol for Synthetic Cannabinoid Users

- Direct individual to emergency room via ambulance
- Consult a regional Poison Control Center
- Acute management consists of:
 - Supportive care with the use of benzodiazepines, if needed, to control agitation and anxiety
 - Observe until resolution of abnormal vital signs, vomiting, and psychiatric symptoms
 - Remember: because of variability in chemical structure and manufacturing, toxicity/overdose can be difficult (nearly impossible) to predict

What do you do if someone has taken a Synthetic Drug?

- Call your local poison center at 1-800-222-1222
 - 57 poison centers around the country have experts waiting to answer your call.
 - The experts at the Center can help you decide whether someone can be treated at home, or whether he or she must go to a hospital.
- Dial 9-1-1 immediately if they:
 - Stop breathing
 - Collapse
 - Have a seizure**...or if they have taken one of these and are having physical symptoms or behaving in a way that is concerning to you**

Strategies to Address Use of Synthetics

- Strategies should be built on science, evidence, and knowledge to be effective
- Practical cross-cutting tools that are available and accessible enhance action
- Utilize existing frameworks that incorporate international, regional, national, and local action steps



Types of Testing Provided by Toxicology Laboratories

Toxicology Testing Performed	Number	Percentage
Human performance (e.g., driving under the influence of drugs, drug-facilitated sexual assault, major crime, vehicular manslaughter)	114	55.8
Postmortem	91	44.6
Clinical drug testing (e.g. substance use treatment, methadone maintenance, pain management, primary care, mental health)	84	41.2
Workplace drug testing	55	27.0
Criminal justice supervision (probation, parole)	47	23.0
Performance enhancing (sports testing)	6	2.9
Total	204	

Cases Submitted to Toxicology Laboratories and Turnaround Time in Days

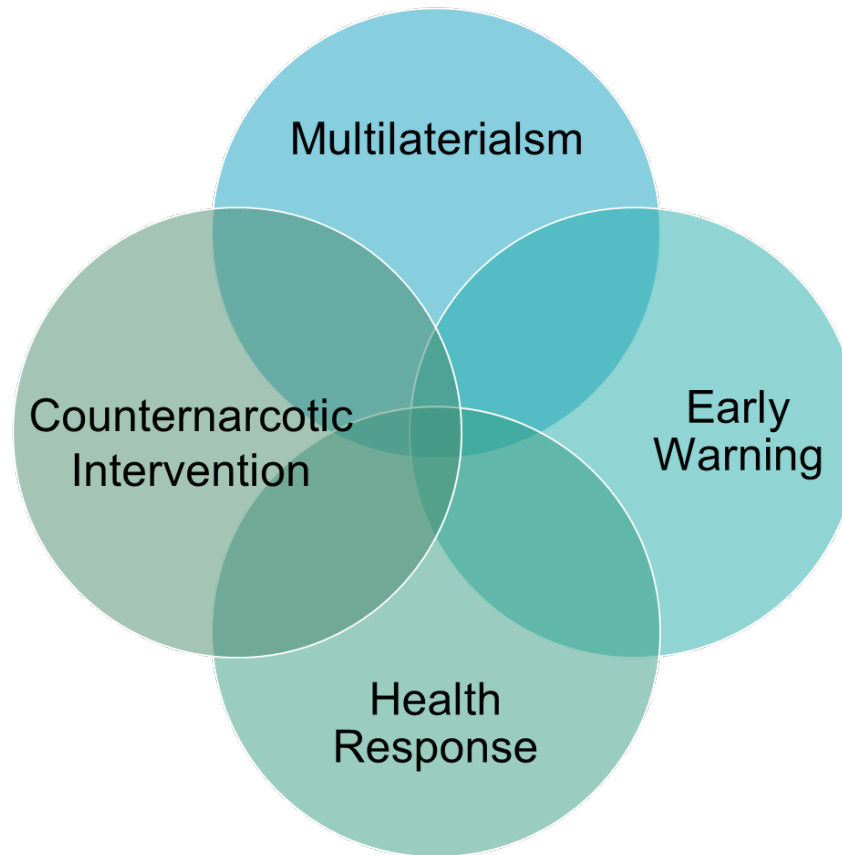
TL Type	Total Toxicology Cases Submitted to Responding TLs	Average Number of Cases Submitted	Median Number of Cases Submitted
Public	1,847,843	16,068	2,491
Private	26,540,113	298,204	38,246
Total¹	28,387,956	139,157	5,327

TLs	Average	Median	Maximum
Public	55.2	42.0	250.0
Private	4.1	2.0	48.0
Overall ¹	33.3	19.0	250.0

Percentage of Laboratories Conducting Regular Analysis by Substance Category

≤ 25% of TLs	26% to 49% of TLs	≥ 50% of TLs	
Phenethylamines	Anticonvulsants	Amphetamines	Fentanyl
Piperazines	Antipsychotics	Antidepressants	Heroin
Synthetic cannabinoids	Fentanyl-related compounds	Barbiturates	Marijuana/THC
Synthetic cathinones	Gabapentin	Benzodiazepines	Muscle relaxants
	Inhalants/volatiles	Buprenorphine	Opiates and opioids (other than heroin and fentanyl)
	Ketamine	Carisoprodol	Phencyclidine (PCP)
	Over-the-counter medications	Cocaine	Z-drugs
		Ethanol	

Strategies to Address Use of Synthetics: 4 Spheres of Action



Sphere 1: Multilateralism and International Cooperation

1. Support scientifically-informed deliberations and international cooperation to identify emerging synthetic drug challenges
 2. Support development of frameworks incorporated into national decision-making
 3. Support the prioritization of the most harmful and persistent substances for international action
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Sphere 2: Early Warning on Emerging Synthetic Drug Threats

1. Enable early detection and prompt response by national institutions to emerging synthetic drugs and precursor chemicals
 2. Promote and improve processes for development of evidence-based responses, with particular focus on youth and women
 3. Strengthen the capacity for laboratory testing
 4. Build the capacity for early warning systems worldwide
 5. Support the development of global campaigns to raise awareness
 6. Enter into partnerships with forensic and scientific associations
 7. Increase the understanding of toxic adulterants and use of pharmaceuticals in the production of synthetic drugs
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Sphere 3: Promote Science-Informed Health Response

1. Promote non-stigmatizing attitudes with a focus on gender and marginalized communities with a goal of enhancing access to care
 2. Promote awareness-raising, education, and training
 3. Promote and facilitate access to science-based, affordable, and quality drug prevention, treatment and care
 4. Enhance international scientific collaborations
 5. Improve the participatory role of people who use drugs in addressing the problem
 6. Promote the involvement of youth in prevention efforts
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Sphere 4: Strengthen Disruptions in Synthetic Trafficking

1. Leverage technology and innovation to make science available to law enforcement agencies
 2. Promote public-private partnership in identification and interdiction, including disposal
 3. Prevent diversion in precursors and pre-precursors
 4. Enhance online investigative capacity
 5. Build the capacity of frontline law enforcement and forensic personnel
 6. Enhance access for criminal justice systems to science services
 7. Encourage the development of national disposal guidelines
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Sphere 4: Strengthen Disruptions in Synthetic Trafficking (2)

- According to NFLIS, the total number of drugs reported in 2021 increased
 - However, the total number of cases continued to decrease from 2019
 - What accounts for the decrease?
 - A number of factors including disrupted markets (manufacturing and distribution), staffing and reporting (law enforcement and laboratories) due to lingering COVID impacts
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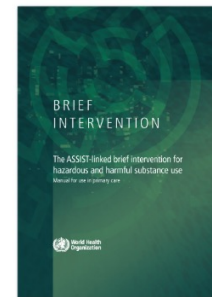
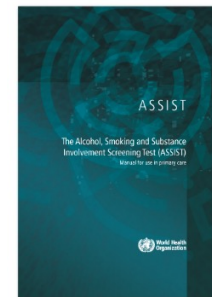
United Nations Toolkit on Synthetic Drugs



<https://syntheticdrugs.unodc.org/syntheticdrugs/en/toolkit-index.html>

Prevention Strategies: WHO and UNODC

- Use of prevention strategies to reduce the continued health burden of substance use
 - <https://syntheticdrugs.unodc.org/syntheticdrugs/en/prevention/evidence/system.html>
- Integrated networks of intervention and policy:
 - Supportive policy and legal framework
 - Scientific evidence and research
 - Coordination between multiple sectors
 - Training of policy makers and practitioners
 - Commitment to long term resources



Guidelines For Treatment: WHO and UNODC

- <https://syntheticdrugs.unodc.org/syntheticdrugs/en/treatment/managementDUD/identification.html>
 - Recommends incorporating aspects of:
 - Outreach services
 - Screening and brief intervention
 - Inpatient and outpatient treatment
 - Evidence-based pharmacological treatment and psychosocial interventions
 - Long-term residential treatment, rehabilitation and recovery-support services
-

Screening for Synthetic Cannabinoids

- Development is ongoing for rapid and effective biological marker tests on emerging synthetic cannabinoid compounds
 - The United States Preventative Services Task Force recommends screening for unhealthy drug use among individuals 18+
 - The American Academy of Family Physicians disagrees due to limited evidence on screening for risky substance use (besides opioids use disorders)
 - Consider a behavioral approach: Cannabis Use Disorders Identification Test – Revised (CUDIT-R) is currently the most widely used screening tool for risky cannabis use
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CUDIT-R

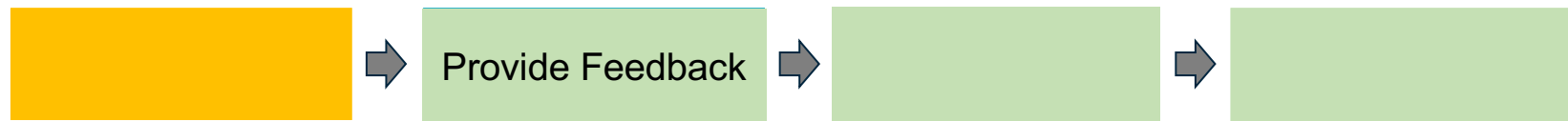
- Eight questions designed for self-administration
- Each item is scored on a scale of 0-4 for a possible total score of 32
- Scores of 8 or more indicate hazardous cannabis use
- Scores of 12 or more indicate possible cannabis use disorder



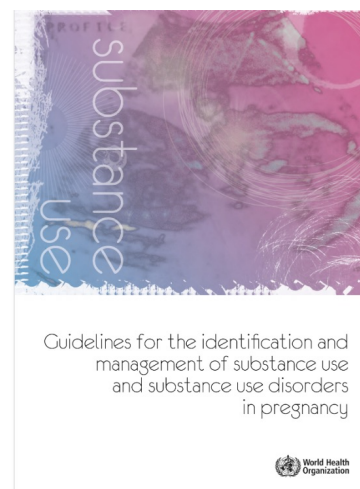
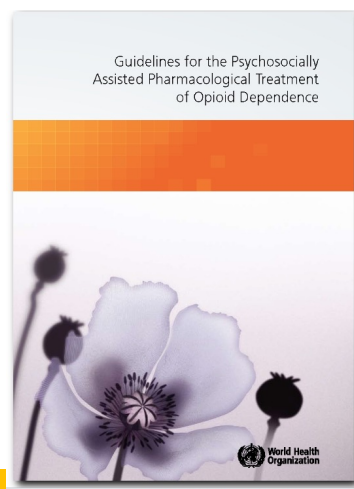
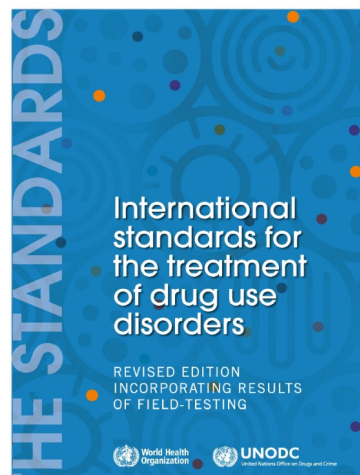
Brief Negotiated Interview (BNI)/ Brief Intervention (BI)

- A specialized “brief intervention” has foundations in motivational interviewing (MI) techniques. It was originally created for the emergency department in collaboration with Stephen Rollnick.
- Structures the conversation with the support of the BNI “algorithm.”
- Designed to elicit reasons for behavior change from the individual, entering their voice and autonomy.
- Individual can end the conversation at will.

BNI Structure



Examples of Treatment Workbooks



Recommendations

- Implement a process for initiating conversations and identifying use (via SBIRT)
- Enhance regular, organized public health messaging specific to vulnerable populations (youth; expectant mothers; Black, Hispanic, and Native/American Indian populations) to clarify impacts of cannabis use
- Targeted messaging about the medically-approved use of cannabinoids versus recreational/illicit use of synthetic cannabinoids



Resources for Continued Learning

- American Association of Poison Control Centers, www.aapcc.org
- National Forensic Laboratory Information System, <https://www.nflis.deadiversion.usdoj.gov/drug.xhtml>
- Center for Forensic Science Research & Education, www.cfsre.org/nps-discovery
- National Institute on Drug Abuse, www.nida.nih.gov
- Pacific Southwest ATTC, www.psattc.org (refer to *Synthetic Drugs Training Package*)

Thank You For Your Time!

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