



NEW YORK CITY DEPARTMENT OF
HEALTH AND MENTAL HYGIENE
Michelle Morse, MD, MPH
Acting Commissioner

2025 Health Advisory #21: Increases in Synthetic Cannabinoid (K2)-Related Emergency Department Visits in NYC

Summary:

- Synthetic cannabinoids, also referred to as K2 or Spice, are lab-created substances that are meant to mimic the effects of THC but are associated with wide-ranging and severe adverse effects, including arrhythmias, agitation, nausea/vomiting, and seizures. While rare, synthetic cannabinoid use can result in death.
- Data from the NYC Health Department indicate a sustained elevation in synthetic cannabinoid-related emergency department (ED) visits citywide, affecting primarily residents of Highbridge-Morrisania, Southeast Queens, and Central Harlem-Morningside Heights.
- Between January and August 2025, there were at least nine unintentional drug overdose deaths that involved synthetic cannabinoids and no other substances, an increase from at least two deaths during all of 2024.¹
- While there have been no confirmed cases of fentanyl contamination in synthetic cannabinoid products in NYC, it is important to administer naloxone whenever an opioid overdose is suspected.
- Provide supportive care to manage the symptoms of people experiencing suspected synthetic cannabinoid-related adverse effects.
- Contact the NYC Poison Center immediately at 212-POISONS or 212-764-7667 if you observe or learn of unusual overdoses or other adverse events.

October 6, 2025

Dear Colleagues,

The NYC Health Department has seen an increased number of emergency department visits and deaths related to synthetic cannabinoids. Synthetic cannabinoid-related emergency department visits increased citywide from October 2024 through May 2025, and remain elevated among residents of Highbridge-Morrisania, Central Harlem-Morningside Heights, and Southeast Queens through September 2025. Further, there have been at least nine unintentional drug overdose

¹ Data are from the NYC Health Department's Bureau of Vital Statistics and the NYC Office of Chief Medical Examiner. Data are provisional and subject to change.

deaths involving synthetic cannabinoids and no other substances from January to August 2024, an increase from at least two deaths in 2024.

Synthetic cannabinoids are lab-made substances intended to mimic the effects of THC.ⁱ There are hundreds of synthetic cannabinoid substances with a range of chemical structures, and new types emerge frequently. Synthetic cannabinoid products are often sold as dried herbal blends and consist of non-psychoactive plant material sprayed with synthetic cannabinoid compounds dissolved in acetone or ethanol.ⁱⁱ These products are affordable and widely available and are not detected through standard urine toxicology tests.ⁱⁱⁱ Because of this, synthetic cannabinoid use may be more common among people who are subject to routine urine screenings as a condition of parole, probation, employment, or military service.^{iv}

Providers have expressed concerns about fentanyl contamination following observations of unresponsiveness among individuals using synthetic cannabinoids. Of note, NYC Health Department data suggest that unresponsiveness is a relatively common symptom of synthetic cannabinoid-involved overdose. **To date, there have been no confirmed cases of fentanyl contamination in synthetic cannabinoids in NYC.**

Providers should discuss the unpredictable health effects of synthetic cannabinoids with their patients. Within a single batch or brand of product, the specific synthetic cannabinoid compounds present as well as their concentrations may vary.ⁱⁱ Even within a single product, the concentration of synthetic cannabinoids may be inconsistent due to the creation of “hot spots” during the spraying process. This makes synthetic cannabinoid products difficult to dose and results in unpredictable and varied experiences.

Clinical Information on Synthetic Cannabinoids

- Synthetic cannabinoid intoxication can cause a range of symptoms. Some of the most commonly reported severe adverse effects are arrhythmias (particularly tachycardia), agitation, nausea/vomiting, unresponsiveness and seizures.^{i,v}
 - While rare, synthetic cannabinoid use can result in death.^{i,v,vi}
- People who use synthetic cannabinoids regularly may also experience withdrawal.^{iv} Symptoms associated with synthetic cannabinoid withdrawal significantly overlap with symptoms of overdose.
- Identification and management of synthetic cannabinoid intoxication is challenging because:
 - There are hundreds of synthetic cannabinoid compounds, new types emerge frequently, and their effects vary.
 - Many symptoms of synthetic cannabinoid intoxication overlap with symptoms of intoxication from other substances.
 - Standard urine toxicology tests do not detect synthetic cannabinoids, which makes identifying their involvement difficult and often based on self-report.
 - There is no antidote to synthetic cannabinoid intoxication.

Recommendations: Overdose Response

- Contact the NYC Poison Center immediately if you observe or learn of unusual overdoses or other adverse events.
 - Call 212-POISONS or 212-764-7667 to report unusual overdoses or adverse events following synthetic cannabinoid use.
- Provide supportive care to manage the symptoms of people experiencing suspected synthetic cannabinoid-related adverse effects.

Recommendations: Counseling and Education

- Educate people who use synthetic cannabinoids about the unpredictable dose, potency, and clinical effects of synthetic cannabinoid products.
- Counsel people who use synthetic cannabinoids about strategies to reduce their risk of adverse effects including:
 - Going slow and taking breaks between hits
 - Avoiding using drugs alone
 - Sitting down before using drugs
 - Avoiding mixing drugs (including alcohol)
 - Eating before using synthetic cannabinoids
 - Staying hydrated
 - Using drugs in a safe place
- Talk to people who use synthetic cannabinoids about any symptoms or conditions they are aiming to relieve through synthetic cannabinoid use (e.g., pain, anxiety). Consider clinical management of these symptoms.
- Provide person-centered, trauma-informed care to people who use drugs, even if they are not ready to stop using.

Recommendations: Connections to Care

- If a person is concerned about the potential presence of fentanyl or other unexpected substances in their synthetic cannabinoid product(s), encourage them to connect with drug checking services.
 - While the NYC Health Department's drug checking service is not able to provide point-of-care testing for synthetic cannabinoid products, they can send samples to a partner laboratory for testing and identification of substances.
 - More information about the NYC Health Department's drug checking services is available [here](#) on the NYC Health Department website.
- Familiarize yourself with a local harm reduction organization so you can connect people who may benefit from these services. Click [here](#) for a list of NYC's syringe service programs.
- People seeking support to stop using drugs or other resources can call or text 988 or chat at nyc.gov/988. Counselors are available 24/7 in more than 200 languages.

Additional Resources

- [K2 | NYC Health](#)
- [Synthetic Cannabinoids | NYS Office of Addiction Services and Supports](#)
- [Synthetic Cannabinoids \(Spice\): An Overview for Healthcare Providers | CDC](#)
- [Substance Use Disorder Provider Resources| NYC Health](#)
- [Overdose Prevention Resources for Providers| NYC Health](#)

Sincerely,

Rebecca Linn-Walton, PhD, LCSW

Assistant Commissioner

Bureau of Alcohol and Drug Use

Shivani Mantha, MPH

Executive Director of Research,

Surveillance, Policy, and

Communications

Bureau of Alcohol and Drug Use

ⁱ Campello de Oliveira M, Capelo Vides M, Lassi DLS, et al. Toxicity of synthetic cannabinoids in K2/Spice: A systematic review. *Brain Sci.* 2023;13(7):990. doi:10.3390/brainsci13070990

ⁱⁱ Alves VL, Gonçalves JL, Aguiar J, Teixeira HM, Câmara JS. The synthetic cannabinoids phenomenon: From structure to toxicological properties. A review. *Crit Rev Toxicol.* 2020;50(5):359-382. doi:10.1080/10408444.2020.1762539

ⁱⁱⁱ Gunderson EW, Haughey HM, Ait-Daoud N, Joshi AS, Hart CL. A survey of synthetic cannabinoid consumption by current cannabis users. *Subst Abus.* 2014;35(2): 184-189. doi:10.1080/08897077.2013.846288

^{iv} Cooper ZD. Adverse effects of synthetic cannabinoids: Management of acute toxicity and withdrawal. *Curr Psychiatry Rep.* 2016;18(5):52. doi:10.1007/s11920-016-0694-1

^v Tait RJ, Caldicott D, Mountain D, Hill SL, Lenton S. A systematic review of adverse events arising from the use of synthetic cannabinoids and their associated treatment. *Clinical Toxicology.* 2015;54(1):1-13. doi:10.3109/15563650.2015.1110590

^{vi} Castaneto MS, Gorelick DA, Desrosiers NA, Hartman RL, Pirard S, Huestis MA. Synthetic cannabinoids: Epidemiology, pharmacodynamics, and clinical implications. *Drug Alcohol Depend.* 2015;18(0):12-41. doi:10.1016/j.drugalcdep.2014.08.005