

K2 WHAT CLINICIANS NEED TO KNOW

What Is K2?

- K2 refers to a wide variety of synthetic cannabinoids and other chemicals. They are sprayed onto shredded, dried plant materials or sometimes paper.
- It is not cannabis (weed) but it is sometimes sold as an “alternative to cannabis.” The effects are rarely like cannabis, so many people try it once but are disappointed.
- K2 is popular in prison because of its potency, undetectability, and availability.
- “Jail paper” is a term used to describe paper laced with K2. This form has become increasingly popular as the paper can be soaked in liquid K2, dried, and then sent or shared with incarcerated individuals as any other correspondence would be. Once an incarcerated individual receives jail paper, they can tear it into small pieces, which can then be smoked or ingested to achieve a high.
- K2 can vary from batch to batch or between different brands. Its strength can differ even within one packet as there are hundreds of different synthetic cannabinoids used in K2 formulations.
- K2 can have severe and unpredictable clinical implications due to its potent and unregulated nature.

Other Names

- K2 is also known as Spice, Green Giant, Potpourri, Bizarro, Geeked Up, Smacked, AK-4, RedX Dawn, Paradise, Demon, Black Magic, Spike, Mr. Nice Guy, Ninja, Zohai, Dream, Genie, Sence, Smoke, Skunk, Serenity, Yucatan, Fire, Skooby Snax, and Crazy Clown.
- These products are wrapped in brightly colored packages and sold under a variety of brand names – K2 and Spice being the most recognizable.

Who Uses K2?

- Use of K2 appears to be more common among men in their 20s and 30s.
- Use is more common among low-income individuals, those who experience homelessness, and those in institutional settings like jails or prisons.

Why Do People Use K2?

- K2 is cheaper and more accessible than other illicit drugs.
- It is powerful and intense, producing a potent and long-lasting effect.
- For some, it can be used to cope with the difficult conditions of street life.
- Some K2 users report that the drug makes them feel warm.
- K2 can act as a powerful sedative. It can help users sleep while in public or vulnerable environments.
- K2 is not detectable in standard urine drug testing. As such, people who fear the consequences of a positive drug test might see this as a reason to continue using K2. They may use it to avoid detection in drug tests mandated for probation, housing programs, jobs, etc.



Clinical Implications

Acute Effects and Toxicity

- **Neurological:** K2 can cause a range of neurological effects, including agitation, confusion, dizziness, seizures, stroke, altered mental status, and loss of consciousness.
- **Psychiatric:** Users may experience hallucinations, delusions, psychosis, violent behavior, and suicidal thoughts.
- **Cardiovascular:** Tachycardia or bradycardia, hypertension, chest pain, and heart attacks are among the potential cardiovascular effects.
- **Other Physical:** Severe nausea and vomiting, rhabdomyolysis (muscle breakdown), kidney failure, and even death have been reported.
- **Unpredictability:** The effects are unpredictable due to variations in chemical composition and potency, even within the same batch.

Withdrawal

- **Physical:** Withdrawal symptoms can include rapid heart rate, chest pain, palpitations, difficulty breathing, headache, nausea, vomiting, and seizures.
- **Psychological:** Users may experience severe anxiety, intense cravings, depression, irritability, nightmares, and hallucinations.
- **Severity:** The severity of withdrawal symptoms may be linked to the duration and frequency of K2 use.

Serious Short-Term Symptoms

- Violent behavior
- Increased heart rate
- Suicidal tendencies
- Repeated vomiting

Long-Term Effects

- **Unknown Long-Term Effects:** The long-term effects of K2 use are not well understood due to the drug's relatively recent emergence.
- **Potential for Dependence:** K2 can lead to physical and psychological dependence, making it difficult to quit.
- **Organ Damage:** Some long-term consequences may include heart and renal damage.

References

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Diagnosis

- Diagnosing K2-related illness without a history of exposure is challenging. It is a clinical diagnosis, but it has no well-defined toxicological syndrome.
- Because K2-related illness can present with altered mental status, consider it in the differential diagnosis of patients presenting with altered mental status with no other obvious explanation.
- Given the constant changes to K2 chemical structures, we can expect patients to show up with new signs and symptoms. This makes diagnosis and treatment challenging.

Clinical Management

- Treatment is generally supportive. There is no specific antidote or antagonist.
- Supportive treatment options include (as needed):
 - > Intravenous fluids, supplemental oxygen, and airway protection
 - > Antiemetic medications
 - > Benzodiazepines (commonly used to treat agitation, combativeness, and muscular hyperactivity)
- People who use K2 may also be dependent on opioids. If the initial presentation was decreased level of consciousness, they may have also received multiple doses of naloxone and be in withdrawal.

Harm Reduction Strategies for Patients

- Avoid mixing K2 with other substances.
- Start low and go slow (take one hit and wait to see how it affects you before using more).
- Avoid using alone (use with someone or call the [Never Use Alone Hotline](#) at **800-484-3731**).
- Carry naloxone and use in case of suspected overdose.
- Stay hydrated! Drink plenty of water before and during use.
- Use safer smoking supplies, don't share supplies, and follow other safer smoking practices to lower the chance of health issues.
- Use in a safe environment with people you trust.
- Ask for help if you are experiencing withdrawal symptoms and/or negative side effects!