



National Council on Substance Abuse

“The Armaira Building”

Cnr 1st Avenue Belleville & Pine Road St Michael, Barbados

Telephone: (246) 535-6272 **Fax:** (246) 535-6279

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Early Warning System Drug Alert:

Synthetic Cannabinoids

What Is Synthetic Cannabinoids?

The term synthetic cannabis is somewhat misleading, as this substance is actually a blend of natural plant materials and artificial psychoactive chemicals. Some similarities exist between synthetic and natural marijuana, including the manner in which both substances are usually abused, but the effect of synthetic marijuana can be much more powerful than what is experienced by ingesting natural marijuana. Also, persons who work in the drug demand reduction field have noted that synthetic marijuana, which is also referred to as *Spice* or *K2*, may be much more dangerous than natural marijuana. Our Forensic Sciences Centre has tested a sample of what appeared to be vegetable matter and discovered it was synthetic cannabinoids which contained **4-fluoro MDMB-BUTICA** and Methyl 3,3-dimethyl-2-(1-(pent-4-en-1-yl)-1H-indazole-3-carboxamido) butanoate (**MDMB-4en-PINACA**).

What is 4-fluoro MDMB-BUTICA?

4-fluoro MDMB-BUTICA is a synthetic cannabinoid that has been sold online and used to mimic the biological effects of tetrahydrocannabinol, the main psychoactive constituent in marijuana. Research and clinical reports have demonstrated that synthetic cannabinoids are applied onto plant material so that the material may be smoked as users attempt to obtain a euphoric and psychoactive “high.” Synthetic cannabinoids have been marketed under the guise of “herbal incense,” and promoted by drug traffickers as legal alternatives to marijuana.

What is MDMB-4en-PINACA?

Methyl 3,3-dimethyl-2-(1-(pent-4-en-1-yl)-1H-indazole-3-carboxamido) butanoate (MDMB-4en-PINACA) is a synthetic cannabinoid receptor agonist. Similar to other synthetic cannabinoids, it is sold as a ‘legal’ replacement for cannabis and controlled synthetic cannabinoids. Because of their high potency, synthetic cannabinoids can pose a high risk of severe poisoning, which in some cases can be fatal.

How Synthetic Cannabinoids can be used:

Synthetic cannabinoids are normally used in a similar way to cannabis:

- They can be mixed with tobacco, rolled up into a spliff or joint, and then smoked.



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- They can be smoked without tobacco using a pipe or bong.
 - As e-cigarettes have become more available, there are reports of some people using e-cig technology for synthetic cannabinoids, and that e-liquids containing synthetic cannabinoids have been produced that can be used with normal e-cigs (vaping).
 - They can also be swallowed, eaten with food or made into a drink.
 - There are increasing reports of synthetic cannabis edibles, looking like sweets such as gummies, lollipops, and other sweets.

Why Is It a Concern

In their pure form, synthetic cannabinoids are either solids or oils. They are then added to dried herbs, vegetable matter or plant cuttings to make a smoking mixture (so that it looks more like real herbal cannabis). The most commonly known synthetic cannabinoid is *Spice*. The smoking mixtures are packaged in small, often colourful sachets with labels describing the contents as incense or herbal smoking mixture, and usually stating '*not for human consumption*'.

Physical health risks

The risks of synthetic cannabinoids are similar to natural cannabis, but because synthetic cannabinoids are more potent, it is easy to use too much and experience the unpleasant and harmful effects. This higher potency also means that the effects may last for longer. Also, because many synthetic cannabinoids are new, they may have unknown effects too.

We know that there have been a number of deaths that have been associated with the use of synthetic cannabinoids, either on their own or with other substances. There may also be risks from smoking the plant material itself as occurs with tobacco and cannabis smoking.

Reported side-effects from using synthetic cannabinoids include:

- feelings of lightheadedness, dizziness, confusion and tiredness
- feeling excited, agitated and aggressive
- mood swings
- anxiety and paranoia
- suicidal thoughts
- memory problems and amnesia
- nausea and vomiting
- hot flushes
- increased heart rate and blood pressure, which may cause chest pains and damage your heart and even cause a heart attack



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- excessive sweating
 - fingers, toes or muscles feel numb and tingly
 - tremors, seizures and fits

Other risks for synthetic cannabinoids:

Research suggests that there may be an association between using synthetic cannabinoids and acute kidney injury. Many synthetic cannabinoids have a chemical structure that is similar to serotonin, a natural chemical found in the body. It's been suggested that there's a risk that synthetic cannabinoids could overstimulate the serotonin system (called serotonin syndrome), which can result in high fever, rapid pulse, sweating, agitation, confusion, convulsions, organ failure, coma and even death. Because of the way that smoking mixtures are made, there can be differences in the concentration of synthetic cannabinoids in individual packets and between different batches. You can never be 100% sure of how powerful a dose you are going to take.

Mental health risks

Synthetic cannabinoids are more likely to be associated with hallucinations than natural cannabis, possibly because of their potency. Use of synthetic cannabinoids can cause psychotic episodes, which in extreme cases could last for weeks. Regular use could cause a relapse of mental health illness or increase the risk of developing a mental illness, especially if you have a family history of mental illness.

Signs and Symptoms of Synthetic Marijuana Abuse

Synthetic marijuana abuse may reveal itself via a wide range of signs and symptoms, including many of the following:

Behavioral symptoms:

- Failure to attend to grooming and personal hygiene
- Lying or being deceptive about one's activities and whereabouts
- Multiple unexplained absences from work
- Unexplained drop in performance at work
- Possession of drug paraphernalia
- Engaging in risky, reckless, or otherwise dangerous behaviors
- Using substances as a means of coping with failures or celebrating successes

Physical symptoms:

- Watery eyes and runny nose
- Increased blood pressure
- Irregular heartbeat
- Headaches and nausea
- Exhaustion



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Cognitive symptoms:

- Disorientation
- Confusion
- Delayed reaction time
- Inability to concentrate or focus
- Impaired problem-solving capabilities

Psychosocial symptoms:

- Dramatic mood swings
- Anxiety
- Paranoia
- Depression
- Diminished ability to experience pleasure
- Desire to withdraw from family and friends

Withdrawal

As with other addictions, synthetic marijuana addiction can lead to withdrawal symptoms after the last dose. This occurs as the brain attempts to readjust from suddenly quitting these substances, resulting in painful and often damaging effects. These symptoms may be mild or severe, depending on the person and can cause:

- Headache
- Nausea
- Sweating
- Restlessness
- Breathing issues
- Rapid heart rate
- Chest pain
- Seizures

Since withdrawal can be highly uncomfortable, many may continue to misuse synthetic marijuana to avoid it. As a result, it's helpful to undergo medical supervision while withdrawing from synthetic cannabinoids.



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Recovery

Synthetic marijuana addiction treatment typically involves medical assessment, detox, therapy and ongoing care:

1. Medical Evaluation:

When you first enter a synthetic marijuana addiction treatment center, professionals will assess you medically to determine the appropriate care path for your needs. Physicians might design a plan to help you safely detox, while therapists and counselors can assist your ongoing recovery needs and goals.

2. Medical Detox:

The withdrawal process can take several weeks, depending on how long you’ve been using synthetic marijuana. Highly trained care professionals will administer the medication you need to taper substances from your body safely. This way, you can experience a smoother recovery process.

Medicines commonly used to treat withdrawal addiction include:

- Buprenorphine
- Naltrexone
- Suboxone
- Vivitrol

These medications can treat withdrawal symptoms like cravings, diarrhea, anxiety, flu-like symptoms, pain, sensitivity, irritability and stomach cramping. At the same time, clients struggling with co-occurring disorders might receive medication to treat the mental illness symptoms they’re experiencing.

3. Inpatient Program:

Inpatient programs are highly beneficial for those who require intensive addiction treatment. Due to the dangerous chemical compounds used in synthetic marijuana, it’s tough to know how one’s body will react. Under the supervision of mental and medical professionals, individuals can receive immediate intervention to treat the onset of complications.

After medical detox or while gradually tapering substances, clients may be offered different forms of therapy to help them through the recovery process:



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Motivational interviewing: Through motivational interviews, clients can better understand how sobriety will benefit their life and enter treatment with an optimistic outlook to beat addiction.

Cognitive behavioral therapy (CBT): In cognitive behavioral therapy, specialists can help you face your addiction triggers and provide the tools to overcome them. You'll learn healthier coping skills and treat any co-occurring mental health disorders that may worsen your substance use disorder.

Support groups: When you attend support groups and group counseling, you'll have a safe space to discuss your substance use. You'll work with others struggling with addiction as you help each other heal and maintain sobriety. Peers and counselors might also provide tips to help you navigate the changes associated with your healthier lifestyle.

4. Outpatient Care and Ongoing Treatment

Outpatient care might follow inpatient care as a form of ongoing treatment or as a substitute for residential care. Outpatient programs allow clients to receive addiction treatment while simultaneously taking care of work, home or school obligations.

And since addiction is chronic, ongoing treatment can support long-term sobriety and wellness. For example, 12-step groups and other support groups can help those struggling with synthetic marijuana addiction. In these programs, you'll have the support of others to help avoid relapse and achieve a happier, healthier lifestyle.

SCIENTIFIC ANALYSES REPORT

The unknown substance submitted to the Forensic Sciences Centre on 03 August 2023 by Dr Yearwood of NCSA **tested positive for MDMA 4en PINACA and 4-Fluoro MDMA Butica, two synthetic Cannabinoids** (two chemicals listed as new psychotropic substances (NPS)) detected by GC-MS using SWGDRUG library.

Effects of MDMA 4en PINACA

From literature, a total of 4 deaths with confirmed exposure to MDMA-4en-PINACA were reported by the United Kingdom (3) and Sweden (1). The cases occurred between 2019 and 2020.

4-Fluoro MDMA Butica

First identified in the US in May 2020. 11 deaths were caused by drug between May and August 2020 in Hungary.



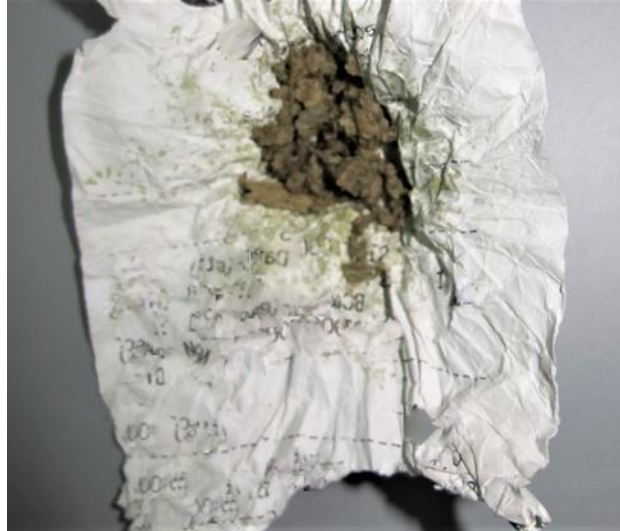
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RECOMMENDATIONS

The FSC remains on high alert for NPS and share information with members of EWS.

Referenced Legislation

Cap 1971.	131 <i>The Convention on Psychotropic Substances signed at Vienna on 21st February,</i>
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The Convention Against Illicit Traffic in Narcotic Drugs and Psychotropic Substances signed at Vienna on 16 December 1988.

Recommendations

The NCSA’s last three BARDIN Reports highlight that fact that our local drug situation have been changing slightly with reported seizures of methamphetamine and ecstasy. Now we have confirmed reports that synthetic cannabinoids are on island. BARDIN Reports also, indicated stated that some persons are seeking treatment for non-traditional substances for example, benzodiazepines and ketamine. The government response to this would include the following:

- A universal public awareness campaign which would be led by the NCSA. This campaign will share information on the sign and symptoms of synthetic cannabinoids, harms associated with synthetic cannabinoids use and where you can go for help. This campaign will target all demographics with age-appropriate information.



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- Training for first responders (boarder security personnel)
 - Training for treatment professional’s use and
 - Training and sensitization of ER to manage the violence-related side effects of the substance.

References

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