

# Illegal Drug Impersonators

## The Synthetic Drug Abuse Boom

By Carol Falkowski

■ The Internet has opened the door to marketers of products that contain substances that when ingested mimic the effects of illegal drugs such as marijuana, cocaine, and LSD. This article traces the history of synthetic drugs, describes some of the newest substances on the market and their physiologic and psychological effects, and discusses efforts aimed at curbing their sale and use.

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**T**he latest development in recreational drug abuse is the aggressive, direct-to-consumer, web-based marketing of chemical substances that produce strong, psychoactive effects akin to those of illegal drugs such as marijuana, amphetamines, cocaine, LSD, MDMA, and other substances. The catch is that these substances are packaged as legitimate products such as bath salts, incense, plant food, or even research chemicals. For example, synthetic THC or “fake pot” (delta-9-tetrahydrocannabinol, the psychoactive ingredient in marijuana) is being sold as herbal incense.

Drug abusers learn about these substances by word of mouth and online. A growing number of people in Minnesota and across the United States are using them to get high and instead encounter negative effects. Case in point, young people at a party in Blaine, Minnesota, last March intentionally ingested what was purported to be a research chemical. Although the substance, which was purchased online, was labeled “not for human consumption,” they took it anyway, expecting to feel euphoric. Instead, 11 young adults were hospitalized, and one 19-year-old man died.

This article describes this trend in drug abuse and discusses some of the newest synthetic drugs, how these substances work, the consequences associated with taking them, and what is being done to stop their sale and abuse.

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### It Started with Ecstasy

More than two decades ago, raves (dance parties) introduced America’s young people to a variety of new party drugs, sometimes called “designer drugs” because they were variations on marijuana, amphetamines, cocaine, hallucinogens, and heroin. Instead of producing a single effect, they produced a combination of effects. One of the first such designer drugs was MDMA, also known as “ecstasy,” “X,” or “e.” It is an amphetamine-like stimulant that also produces mild hallucinogenic effects. MDMA (3, 4 methylenedioxymethamphetamine) sold for about \$20 a pill, and its effects lasted for up to eight hours.

Raves were crowded, all-night dance parties with loud, highly percussive music. Initially, they were held in secret, remote locations with limited advance notice. Eventually, however, they became more mainstream, commercialized events that took place in large venues and featured noted disc jockeys.

Raves and the use of MDMA and similar designer drugs went hand in hand, as MDMA gave people the energy they needed to dance all night long. Among the physical effects of MDMA are increased motor activity, heightened tactile sensations, and increased alertness, heart rate, and blood pressure. The drug also can cause muscle tension, involuntary teeth clenching, muscle cramps, tremors, nausea, a faint feeling, chills, profuse sweating, and blurred vision. In high doses, MDMA can interfere with the body’s ability to regulate tem-

perature, resulting in hyperthermia and possibly leading to liver, kidney, and cardiovascular failure.

In 1988, the U.S. Drug Enforcement Administration (DEA) designated MDMA a Schedule I drug (no approved medical use and high potential for abuse). Soon after, the hallucinogenic drug 2C-B (4-bromo-2, 5-dimethoxyphenethylamine), also known as “Nexus,” began appearing in dance clubs in Miami, New York, and other major urban areas. Sold in head shops and sex shops, it produced MDMA-like effects and enhanced sexual pleasure in low doses; but larger amounts produced extreme, sometimes alarming LSD-like hallucinogenic effects, and pronounced delusions. In 1995, the DEA designated 2C-B a Schedule I drug.

### Synthetic Drugs Sold Online

Since then, a number of other substances have come on the scene. By the late 1990s, with the growth of online retail marketing, rogue websites began selling designer drugs in disguise, that is, as products that are not manufactured for their stated purposes. Drug abusers learned that these substances could produce the same psychoactive effects as illegal drugs. They also became aware that it was unlikely that these new chemicals would be detected by routine urinalysis. (A number of labs can now detect their presence in urine; but these tests are not, as yet, part of a standard drug screen.) During the last decade, these drugs began to appear in the lockers of high school students and at college house parties. References to them began showing up in emergency room case studies and in poison control center reports. These substances represent a growing and significant threat to both public health and public safety. What follows are descriptions of the substances that have appeared in recent years.

#### ■ Synthetic THC

According to the DEA, synthetic THC products first appeared in the United States in December of 2008. Synthetic THC is a man-made chemical concoction with properties similar to delta-9-tetrahydrocannabinol, the naturally occurring psychoactive ingredient found in plant marijuana. Synthetic THC is sprayed onto various herbal mixtures and sold as herbal incense on websites and in head shops and smoke shops. The most recognized product names are “K2” and “Spice.” The cost is around \$30 per gram. Like plant marijuana, synthetic THC products most often are smoked.

The effects of smoking synthetic THC are very different from those of smoking marijuana. Being under the influence of synthetic THC is typically not a laid-back, relaxing experience, and its adverse effects include anxiety, agitation, nausea, elevated blood pressure, tachycardia, seizures, and hallucinations.

The American Association of Poison Control Centers reported 2,874 calls regarding exposures to synthetic marijuana (THC homologs) in 2010, and 1,639 through April 20, 2011. In the Twin Cities, the Hennepin Regional Poison Center reported 89 synthetic cannabinoid calls in 2010 and 49 in the first quarter of 2011.

In March 2011, the DEA, using its emergency scheduling authority, temporarily designated five synthetic cannabinoids—JWH-018, JWH-073, JWH-200, CP-47,497, and cannabicyclohexanol—as Schedule I substances.

Nevertheless, online sales continue. Moreover, numerous reports from school counselors in the Twin Cities metro area document the escalating abuse of these mixtures by students. In several cases, the use of synthetic THC produced highly combative and aggressive behavior, vomiting, and seizures. One student, who was smoking up to 3 grams per day, experienced insomnia, delusions, and hair loss. In May 2011, two Twin Cities-area high school students were taken by ambulance from school to the hospital when they experienced vomiting and agitation after ingesting “herbal incense” containing synthetic THC that was baked in cookies.

#### ■ Research Chemicals

Chemical mixtures are being sold online as research drugs or research chemicals that are labeled “not intended for human consumption.” Exactly what type of research these substances are used for is never specified. Nor is it always clear what these drugs are. Drug abusers may simply know that the chemicals can get them high. The young people in Blaine ingested a chemical compound known as 2C-E (2, 5-dimethoxy-4-ethylphenylethylamine) and were expecting to experience effects similar to those produced by MDMA or “ecstasy.” Instead, they experienced profound hallucinations and became highly agitated and distressed. Later reports indicated that some thought they were ingesting 2C-I, a chemical cousin of 2C-E that allegedly has milder effects. Both are in the phenylethylamine class and share significant structural similarities with 2C-B, a Schedule I substance.

According to the DEA, oral doses of 2C-I ranging from 3 mg to 25 mg produce LSD-like hallucinations and visual distortions and MDMA-like empathy. Onset of action is 40 minutes, and duration of action is up to two hours. The delayed onset of action relative to other drugs can heighten the risk of accidental overdose.

Calls regarding 2C-I and related analogues reported to the Hennepin Regional Poison Center numbered four in 2009, seven in 2010, and 12 in the first quarter of 2011.

#### ■ Bath Salts and Plant Food

A number of products being sold as bath salts and plant food were never intended for use in the bathtub or garden. They are chemical mixtures that have been manufactured to produce effects similar to those of drugs such as cocaine, methamphetamine, or MDMA. Their negative effects include chest pains, increased heart rate, elevated blood pressure, agitation, vomiting, dizziness, delusions, suicidal thoughts, severe psychotic episodes, the urge to wound oneself, and extreme paranoia. In some cases, profound paranoid delusions have persisted long after ingestion of the substance.

Mephedrone (4-methylmethcathinone or 4-MMC), a substance within the phenethylamine class that shares similarities with methcathinone, a Schedule I substance, has been found in

bath salts, as has methylenedioxypyrovalerone (MDPV), another substance in the phenethylamine class. MDPV is structurally related to cathinone, the active alkaloid found in the khat plant, and to methamphetamine and MDMA.

Bath salts are sold under many names including “Vanilla Sky,” “Bliss,” and “Ivory Wave.” Mephedrone alone is also known as “Meow Meow,” “M-CAT,” “Bubbles,” or “Mad Cow.” It is snorted, smoked, taken orally with liquids, or injected. MDPV has been identified in “Energy 1” and is sold on United Kingdom-based websites.

The DEA’s National Forensic Laboratory Information System (NFILS) reported local law enforcement encounters involving MDPV in 2009 and 2010 in Iowa, Kansas, Kentucky, Minnesota, North Dakota, Oklahoma, Texas, and Wisconsin. There were two incidents involving MDPV reported in NFLIS in 2009 and 161 in 2010.

The American Association of Poison Control Centers reported 303 calls regarding bath salts in 2010 and 3,470 through June 2011. Calls regarding bath salts reported to the Hennepin Regional Poison Center increased from six in 2010 to 26 in the first quarter of 2011.

In September of this year, the DEA published its intent to reschedule mephedrone, MDPV, and methylone—three stimulants frequently found in products marketed as bath salts or plant food—as Schedule 1 substances, making their sale and possession illegal. The change in scheduling will last for one year, during which time the government will determine whether it should permanently control these substances.

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**Stopping the Abuse**

The Federal Controlled Substance Analogue Enforcement Act, which was passed in 1986, deemed the possession and sale of chemical analogues of otherwise illegal Schedule I substances to be illegal and prosecutable. To qualify as an analogue, a drug must be both chemically and pharmacologically similar to an illegal substance. In an effort to circumvent the law, manufacturers of these chemicals have placed the warning on their packaging “not for human consumption.”

The DEA has successfully conducted investigations that have resulted in the prosecution of online vendors of these products. Most notably, in 2004, they shut down five websites that were selling designer-drug analogues and were known to have thousands of customers. But just as the old vendors disappeared, new ones emerged.

Minnesota’s version of the Federal Controlled Substance Analogue Enforcement Act, which took effect July 1, makes the sale and possession of controlled substance analogues of synthetic THC, methcathinone, and phenylethylamines (2C-I and 2C-E) punishable as a gross misdemeanor. Minnesota Sen. Amy Klobuchar is championing federal legislation that outlaws these three groups of substances as well.

Minnesota’s new analogue law is a step toward preventing people from accessing and using these products. But the criteria

and process for identifying a synthetic drug as an analogue in the first place is complicated, costly, and time-consuming, thus making it difficult to keep pace with the thousands of chemical formulations that can possibly produce mood-altering effects akin to those of scheduled substances.

Legal approaches are critical to curbing the sale and use of synthetic drugs. In addition, we can all engage in public dialogue about the dangers of these substances. Adolescents and young adults may not realize that ingesting them can be harmful or even fatal. Therefore, it’s imperative that health professionals, parents, educators, and community leaders talk with them about the dangers of these products.

We are all still learning about these new substances. Odds are that the synthetic drug abuse business will expand and that the number of hospitalizations and deaths associated with these substances will increase before it starts to contract. In the meantime, we can all help by educating young people and each other. **MM**

Carol Falkowski is the drug abuse strategy officer at the Minnesota Department of Human Services and author of the book, *Dangerous Drugs: An Easy-to-Use Reference for Parents and Professionals*. She is also a member of the National Institute on Drug Abuse’s Community Epidemiology Work Group and has written reports on current drug abuse trends twice a year since 1986.

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