

## Continuing Education Self-Study Packet

### When Molly Met Superman: The Trip of a Lifetime

This packet contains materials needed to complete 3 hours of continuing education. Please review the required materials, case studies, and attachments. After reviewing the materials, complete the attached quiz. You must score 80% or higher to obtain credit for this module.

#### Materials:

Introduction

JEMS – Wesleyan Students Hospitalized for Overdose

EMS World – Toxicology Today

EMS World – What Kids Are Doing to Get High

Boston Globe: There's Something About Molly

EMS1.com – Naloxone: The Most Abused Drug in EMS

Quiz

## Introduction

Intoxicating substances present themselves in many forms. From every day substances to home-spun concoctions to misused pain medications, drugs present ever-changing challenges to healthcare providers. In this course, we study some of the current street drugs being used today, and how we as pre-hospital healthcare providers can assess and treat patients under the influence of these drugs.

The first three articles present an EMS provider's viewpoint of the challenges of keeping up with some of today's trending intoxicants. Although new synthetic drugs are being produced and experienced in limitless ways, classic methods of getting high are still being used by adolescents. As you review the materials, reflect back on your experience as an EMS provider, and try to identify calls in which these substances may have been used or abused.

The fourth article is an excerpt from the *Boston Globe*. This article provides valuable insight into the world of synthetic drugs from a civilian's perspective. The article details how drug users and even dealers are often unaware of the drugs they are dealing with. The author describes the effects of Molly on partygoers. Reflect, again, on your experiences as an EMS provider. Is it possible that you have ever treated a patient under the influence of this drug?

The final article discusses the principle of treating patients because "we can," not necessarily because patients need to be treated. In the Chicago EMS system, providers are often faced with similar over-worked, over-run conditions. The author discusses the results of an online discussion between EMS providers on the administration of Narcan to suspected opiate overdose patients. The discussion just might change your patient care.

Review the materials presented, and be prepared to discuss your findings in the second module of this program. Complete the attached quiz and bring it with you to the second module.

<http://www.jems.com/articles/2015/01/wesleyan-students-hospitalized-overdose.html>

## **Wesleyan Students Hospitalized for Overdose**

### **12 hospitalized, two in critical condition, after apparent overdose**

Sat, Jan 31, 2015

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HARTFORD, Conn. (AP) — Ten Wesleyan University students and two visitors received medical attention after taking a party drug known as Molly over the weekend on campus, including some who attended a rave music show, school officials said Monday.

Eight people were still hospitalized Monday, university President Michael Roth said.

The school became aware of the incident early Sunday morning after several students showed up seeking treatment at a hospital near campus, university spokeswoman Lauren Rubenstein said. Two students had been flown by helicopter for treatment in Hartford, 20 miles north of the campus in Middletown.

Molly is a term used to describe a refined form of Ecstasy, a synthetic drug also known as MDMA. It can drive up body temperature and cause liver, kidney or cardiovascular failure.

Dr. Mark Neavyn, chief of toxicology at Hartford Hospital, said users who believe they are taking Molly are often receiving different kinds of designer drugs, with ranges of purity and potency making the health risks unpredictable. He said testing is underway to confirm what drugs the Wesleyan patients took.

"When we see these people in the emergency department and they claim to have taken Molly, we don't pay attention to that word anymore. It's so commonly not MDMA, we just start from square one and say it's some sort of drug abuse," Neavyn said.

In a letter to campus, Roth urged students to share any knowledge of who is distributing the drugs "before more people are hurt."

"These drugs can be altered in ways that make them all the more toxic. Take a stand to protect your fellow students," he wrote.

Some of the students who required medical attention attended a rave music show at the school's Eclectic Society social house on campus Saturday night, Rubenstein said.

"Some of the students were there, but not all of them and there is not necessarily a connection

there," Rubenstein said. "They are really looking all over campus."

The show featured disc jockeys from New York who go by the name Swim Team. They did not immediately return an email seeking comment.

The hospital and the school both declined to provide updated patient conditions Monday, citing privacy concerns.

Middletown police Chief William McKenna said his department was pursuing information about a "bad batch" of the drug.

"Our first and foremost goal is to obtain information on the batch of Molly that was distributed to the students on the campus," McKenna said. "This information is critical in ensuring the recovery of those students affected."

## Toxicology Today

by [Steven "Kelly" Grayson, NREMT-P, CCEMT-P](#) and [William E. "Gene" Gandy, JD, LP](#) On May 1, 2012

*Author's note: In this article we will discuss some products that are legal and sold over the counter, and others that are illegal. We will comment upon their use by drug abusers, but in no way do we intend to imply that any of the legally sold products are bad, per se or as marked.*

Today's EMS providers are encountering a new set of drugs being abused, which can cause a variety of serious side effects. Here's a primer on what's on the streets.

### **Bath Salts**

An ER physician described bath salts as having “potentially lethal side effects, which include extreme agitation, increased heart rate and blood pressure, hallucinations and paranoia,” and as being “tremendously addictive.”<sup>1</sup>

Up until now, bath salts have been sold legally in smoke shops, gas stations and other businesses. These substances can be smoked, snorted or swallowed, and produce similar effects to methamphetamine and cocaine.

Arizona and Louisiana have recently joined a number of other states in making the substances illegal to manufacture, possess or sell, but they are still readily available from multiple Internet sites, and not all states, nor the federal government, have yet made them illegal. However, on Sept. 11, 2011, the U.S. Drug Enforcement Administration (DEA) invoked its “emergency scheduling authority” to control mephedrone, methylone and methylenedioxypropylamphetamine (MDPV), the three most common synthetic stimulants found in bath salts. However, chemists are always inventing new versions of the same chemicals and changing the ingredients, so there is no guarantee about what is actually in these substances. *The buyer, in effect, has no idea what he is putting into his body, and responding EMS providers are just as clueless. This presents a nasty dilemma for rescuers—what measures to take to control the body's responses to the substances.*<sup>2</sup>

Bath salts are sold under a delightful variety of imaginative names, such as Blizzard, Snow Leopard, Bliss, Red Dove, Blue Silk, Cloud Nine, Scarface, White Lightning, Hurricane Charlie, Vanilla Sky and White Night, among many others which can be found by Googling “bath salts.”

### **Synthetic Marijuana**

Bath salts are not the only drugs now popular with the party set. Synthetic marijuana is also finding a wide market. Sold under names like K2 and Spice, it is available at “head shops”<sup>3</sup> and other places catering to drug users. It is also widely available through mail order Internet outlets.

These drugs seem to have first popped up around 2000 and were made of compounds which mimicked the effects of cannabis. Two of these compounds, JWH-018 and JWH-200, were both apparently invented by a scientist with the initials JWH, who worked at a major university.

Others such as CP-47, 497 and cannabicyclohexanol were formulated by others. All were placed in Schedule I of the Controlled Substances Act as of March 11, 2011.<sup>4</sup>

However, the chemists manufacturing these so-called “designer drugs” are always searching for ways to thwart the laws by producing isomers of the substances that will be chemically similar to the original substances but different enough to pass legal muster. In the race between regulation and intoxication, intoxication usually finds a way to stay ahead.

It is virtually impossible for law enforcement authorities and toxicologists to keep up with these changes, since none of them are available for testing until they hit the street.

K2 and Spice show up in some areas of the country but not others. Drug fads tend to follow regional patterns. EMS providers are often the first to see folks who are trying something new, and they are always at a disadvantage because neither the patient nor the EMS providers really know what has been ingested.

## **Herbal Teas**

Since the beginning of time, people have experimented with plants and plant extracts to produce both medicines and recreational drugs. Digitalis, originally extracted from the common foxglove plant (*Digitalis purpurea*), is one of the best examples of legitimate use of plants in medicine.

Society has divided plants into those that are acceptable for recreational use and those that are not. For example, tobacco is a dangerous and addictive substance containing nicotine, as almost everyone will agree, but it is legal to smoke and chew. Cannabis, on the other hand, is illegal.

In between are many substances that may be chewed, brewed and smoked and that can produce a variety of physiological and psychological changes in the user. Many substances are anticholinergics when consumed as tea, for example.

One example is Jimson weed, also known as loco weed, devil’s trumpet, angel’s trumpet and by other names. It contains, among other things, belladonna alkaloids which produce strong anticholinergic properties. These alkaloids include atropine and scopolamine. They are competitive antagonists with acetylcholine and bind to peripheral and central muscarinic receptors. The peripheral receptors are on exocrine glands which affect sweating, salivation, and smooth and cardiac muscle. Poisoning causes paralysis of organs innervated by the parasympathetic nervous system. Jimson weed can produce hallucinations, hyperthermia, tachycardia, photophobia and other typical anticholinergic effects.<sup>5</sup>

Use of Jimson weed seems to occur in cycles. Plants can be bought from numerous sources online. With the growth of social media, information about “highs” can explode and result in a surge of overdose cases popping up in various places all over the world.

*Brugmansia* is another genus of flowering plants sometimes called angel’s trumpet. Its properties are similar to Jimson weed’s.

A study published in 2002 reported an increase of intoxications in persons using alkaloid-containing plants for their hallucinogenic effects. The study found that adolescents were the principal users of these plants. The authors found a syndrome of toxic psychosis with hallucinations, disturbances of orientation, psychomotor agitation, aggression and anxiety resulting from use.<sup>6</sup>

For EMS providers, patients experiencing hallucinations are among the most dangerous, since they can become severely paranoid. These patients are also a threat to themselves as well, and they can get into situations that lead to excited delirium.

In 2009, the American College of Emergency Physicians issued a white paper recognizing excited delirium as a syndrome.<sup>7</sup>

Excited delirium is a condition characterized by a number of ingredients: males with a mean age of 36, who become hyperaggressive, combative, and exhibit bizarre behavior, insensitivity to pain, hyperthermia and tachycardia. There is typically a struggle with law enforcement involving physical combat, use of pepper spray or Taser, followed by a period of quiet, and then sudden death. The majority of cases involve ingestion of cocaine, but methamphetamine, PCP and LSD have also been implicated.

The syndrome is characterized by pain tolerance, tachypnea, sweating, agitation, tactile hyperthermia, noncompliance with police, lack of tiring and unusual strength.

EMS providers often arrive to find the patient subdued, handcuffed and possibly hog-tied, and lying on his chest. Prone positioning of the restrained patient can be lethal, so it is most important to place the patient in a position where he can breathe—which means, at a minimum, turning him onto his side.

It is beyond the scope of this article to explore all the aspects of excited delirium. But it is important to understand that it can be a part of the outcome of ingestion of recreational drugs.

## **Drug Cocktails**

The ingenuity of drug users can never be underestimated. They will seek and discover new and more stimulating ways to abuse substances on a daily basis.

But some things remain relatively static. Drug users mix drugs. One of the most famous cases involving a mixture of drugs involved the death of John Belushi, who allegedly self-administered a combination of heroin and cocaine, commonly known as a “speed ball.” There are various versions of that cocktail, but they all involve a depressant plus stimulants. The idea is to produce a “mellow high.”

Currently, ethanol (ETOH) is one of the most commonly used depressants, and crack cocaine or methamphetamines, or other versions of them, are commonly used with it to produce that “mellow” high.

In the context that cocaine and meth are illegal, caffeine has become one of the drugs of choice to mix with ETOH. So-called “energy drinks” containing large amounts of caffeine are commonly used with ETOH to produce an “awake drunk.” Some also add in opioids. Vicodin (acetaminophen and hydrocodone) is one of the most often abused opioid combinations. According to users, it “smoothes out” the drug response to caffeine and ETOH. Typical drug cocktails would involve caffeine, ETOH and Vicodin.

Caffeine is available from many sources. Traditionally coffee and tea were the vehicles for caffeine ingestion, but common soft drinks such as colas were also sources. Then came the energy drinks, such as Red Bull and 5-Hour energy.

They advertise that they contain about as much caffeine as one-half (5-hour Energy) to one (Red Bull) cup of coffee. Red Bull contains about 80 mg of caffeine.

Recently, new ways to ingest caffeine have come on the market. One such product is Sheets brand energy strips. These are “paper-thin dissolvable strips” which dissolve on the tongue. Each “sheet” contains 100 mg of caffeine.<sup>8</sup> These are sold at convenience stores, liquor stores and other venues. They are popular at parties and are mixed with ETOH—typically vodka—to produce a “balanced high.”

The latest version of caffeine products is AeroShot Energy, a caffeine inhalant. It comes in a canister filled with powder that “you draw into your mouth,” according to its website, which also discloses that it contains 100 mg of caffeine plus “B-vitamins.”<sup>9</sup>

There is nothing wrong with these caffeine products. They are legal, and we do not intend to cast any aspersions upon them. However, while these products appear to be marketed as legitimate energy enhancers, they are nonetheless popular choices among recreational drug users as new ways to get high.

## **The Skittles Party**

Finally, the most disturbing trend in drug abuse is something called the “Skittles party,” or pharm parties. Here, party-goers raid their parents’ medicine cabinets and bring all the prescription and non-prescription pills they can find to the party and toss them into a bowl.

The pills and capsules are usually prescription drugs such as pain killers, muscle relaxants, tranquilizers or antibiotics, but could also be over-the-counter cold medicines and illicit drugs bought from dealers. The party is called a “Skittles party” because of the varied colors of the pills.

While typically consuming ETOH and frequently marijuana, the partiers dip into the bowl of pills and take them, having no idea what they are taking. When EMS is called, the challenges are



great. Neither patient nor caregiver has the slightest idea what has been ingested. This is a recipe for disaster. All the EMS providers can do is offer basic life support and, if necessary, advanced life support using the tools we have.

For patients showing signs of opioid overdose, naloxone is the indicated drug. For anticholinergic poisoning, there is little to do in the prehospital setting.

For the agitated patient, benzodiazepines probably are the first thought, but neuroleptic drugs such as haloperidol (Haldol) or ziprasidone (Geodon) may be useful.

For anticholinergic syndrome, physostigmine was once recommended, but it is not normally carried on ambulances and its use has been called into question for cardiac side effects.

Overall, basic life support, IV fluids and, when necessary to protect the airway, advanced airway management may be indicated. Sometimes patients will be hyperthermic and cooling measures may be needed.

## **Bottom Line**

Management of the agitated patient is challenging. There are often many signs and symptoms which must be dealt with, without a clear understanding of what has happened to the patient physiologically.

Histories are often difficult or impossible to obtain due to chaotic situations, uncooperative patients and witnesses, and the fact that the patient and witnesses may not know what has been consumed.

Keeping up with what drug abusers are doing is a never-ending process. Illicit drug suppliers are forever inventing new drugs and drug users are ingenious at finding new ways to get high. EMS providers are often caught unaware of what is going on in the drug-abuse community. Understanding the basics of pharmacology is mandatory, because if we understand the actions of the substances that people take, we will be better able to deal with them.

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# What Kids are Doing to Get High: Part 1

by [Janet Taylor, RN, CEN](#) On Apr 2, 2014

- • You and your partner are dispatched for two male patients who have altered levels of consciousness on a local college campus. Dispatch doesn't have much more information than that, other than PD is already on scene and it is secure.

You arrive to find a group of college-age kids standing in the lobby of a large dormitory. You are escorted to a back hall where PD is questioning a young woman; she is crying and begs you to save her boyfriend. You step into a dorm room that looks like a typical one with a set of bunk beds, two desks with computers, a mini-fridge and empty alcohol containers on the floor. Sitting in a desk chair is a young man who has a metallic gold color surrounding his mouth and nose. He makes eye contact with you and gives a nod. Your partner administers oxygen and begins to get a set of vital signs.

The second patient is another young man who is lying on the bottom bunk. He opens his eyes to a sternal rub and moans briefly. His airway is clear, he is breathing at 28 times per minute and his radial pulse is 140. As you apply a non-rebreather you overhear what the girlfriend is telling the police officer: in celebrating the end of their first semester at college, a group of kids decided to try some "dex" and spray paint to get a nice buzz before leaving the next morning for their parents' homes for the holiday break.

As you get ready to establish an IV in your patient, he opens his eyes, sees the police officer and begins swinging his arms and kicking you away from the bed, screaming something about the "Feds" coming to take him away and how he will lose his scholarship.

What is "dex," and are your assessment findings typical of this drug? What is it with the gold coloring on the first patient's face? Is there anything else you can do to help your patients other than supportive care?

In this series, we will review several of the most popular substances being used specifically by teens today that are easily accessible due their availability at the local convenience or retail store without a prescription. Keep in mind that the availability of a few of the substances that will be mentioned varies based on state law. However, regardless of where you live or work, you should be aware of *what kids are doing these days to get high*.

## **Inhalants/Huffing**

(Paint thinner, starter fluid, Freon, white-out, compressed air for electronics, certain glues and aerosol products such as room freshener and spray paint)

Method of Abuse: inhalation

Availability: home improvement stores, hardware stores, “Big Box” stores, office supply stores

Volatile solvents are either sniffed directly from the container or dribbled into a napkin and placed over the nose and mouth and inhaled deeply. While aerosols such as spray paint create an effective high, it is reported that metallic spray paint creates the best high, probably due to the amount of benzene they contain.<sup>1</sup> The easiest way to “administer” the spray paint is to spray it into a large plastic bag and then fit the bag tightly over the nose and mouth, and inhale. A euphoric high is initially achieved through the hypoxia that occurs, since the oxygen we should be breathing is being replaced with the propellant from the aerosol can.<sup>2,3</sup> A telltale sign of someone who has recently huffed spray paint is the metallic mask noted around the nose and mouth.<sup>2</sup> Some may have a strong odor to their breath.<sup>4</sup>

Room deodorizers are often abused due to the sexual enhancement they create, as opposed to euphoria.<sup>2</sup> This is due to the nitrates that are found in room deodorizers.

Immediate effects of huffing are dizziness, paresthesia, tachypnea, confusion, slurred speech and poor coordination.<sup>2</sup> Long term effects of huffing include depression, chronic muscle ataxia and irreversible brain and lung damage.<sup>5</sup> Although sales of inhalants are prohibited to anyone under the age of 18, minors don’t usually have a problem finding someone over 18 to buy these items for a cash incentive. High-flow oxygen will alleviate part of the disorientation caused by hypoxia.<sup>6</sup>

...As you are treating the young man who is agitated, the young woman comes running in to the room and goes to his bedside, trying to convince him that you and your partner are there to help him and that his scholarship isn’t at risk. The young man settles down but refuses the IV. He will allow a nasal cannula to be applied but nothing to cover his face, such as a non-rebreather. The woman sits at his side, holding his hand, and appears to have a calming effect on him. He is awake and talking to her and complains of feeling shaky and “hazy.”

Your partner assists the first patient to the bench seat of the ambulance, secures him, gets another set of vital signs and repeats his assessment.

You are able to convince the second young man that he needs to be evaluated by a physician, and he agrees to go as long as his girlfriend can accompany him. You agree that the young woman can ride along since she remains calm and cooperative. Before you leave the scene, your partner reports to you that the first patient is cooperative, alert and oriented, and admits to huffing spray paint but denies any other recreational drug use. He has a non-rebreather with high flow oxygen and his vital signs are stable. He answers questions appropriately and says he had a headache but that it has started to go away since the oxygen was applied. As you begin transport, your partner tells you it will be 30 minutes to the nearest facility, as traffic is heavy at this time of the evening.

The second patient is lying on the cot with the nasal cannula in place. After talking with him for a few minutes, you are able to convince him that you aren’t the police and that you are there to

help him. He agrees to allow you to put him on the monitor and start an IV. The monitor shows sinus tachycardia at a rate of 120. When asked what he took this evening, his girlfriend volunteers that he drank a 4-ounce bottle of Vicks Formula 44 cough syrup. You are able to gain IV access and give a fluid bolus, and you call ahead to the receiving facility. Medical Control is made aware of the two patients you are bringing in and offers no additional orders at this time.

You arrive and give report to the receiving ER team. No changes in assessment are noted at the time of transfer of care.

When you follow up with the ER staff the next day, they tell you that the two young men were treated and released from the ER to the care of their parents, who were called to come and pick them up. The young men admitted experimenting with the substances after hearing from upper classmen that it was “worth the ‘trip.’” Both of the men were embarrassed and said they didn’t want to do anything like that again.

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<http://www.bostonglobe.com/magazine/2014/01/26/what-drug-molly-and-how-turned-lethal/1x7T7p7lGlxCaSUj3sUwI/story.html>

## There's something about Molly

How a supposedly safe party drug turned lethal.

By Michael Blanding January 26, 2014



iStockphoto

MULTICOLORED LASER LIGHTS search the darkness, picking out bodies crowded into the tight, hot space of Rise. Located in the Theatre District, the city's only after-hours dance club is packed at 3 a.m., full of people swaying to a pounding bass line, music you can feel in your

chest. Most are in their late teens or 20s, and many are clearly rolling — they're under the influence of a drug called MDMA, sometimes called Molly, that causes a flood, or "cascade," of serotonin and other neurotransmitters to the brain.

The effect, for most users, is reduced anxiety, an increased feeling of connection to others, and heightened sensations — sight, hearing, touch — making everything feel good. Downstairs, a dozen clubgoers lounge on couches under a pair of disco balls. A shirtless guy with flowy pants is wearing gloves with glowing, colored tips, spinning them repetitively in front of a woman wearing sunglasses while another guy gives her a back rub.

Rise is a private club for members, and it doesn't serve alcohol. For a \$20 fee, nonmembers can come in, dance, buy water, and relax until dawn. A guy wearing a black-and-white baseball shirt has arms covered in what members of the electronic dance music scene call kandi, beaded bracelets given out to make friends and share good vibes. On one arm is a line of tattoos — a peace sign, a heart, a yin and yang — that represents the rave doctrine of PLUR, short for peace, love, unity, and respect. He's still working on the last tattoo, he says.

### **[RELATED: EMS treat dozens at Avicii concert at TD Garden](#)**

"This is a way of life for me. I've met a lot of great people, and I know it sounds weird but I've learned a lot about myself," says the 21-year-old clubgoer, who freely admits that he's rolling but asks not to be quoted by name. He says he first tried club drugs in 2012 and has been regularly coming to events like this — DJ shows, after-hours dance parties, raves in underground spaces — for nine months. "You're very comfortable when you are rolling; you really connect with people," he says. "Like that girl." He points to a woman across the room. "I love that girl. . . . She's awesome."

His exuberance may be fueled by the drug he's using, but his joy appears genuine enough. In fact, everyone here seems mellow and happy, enjoying the free-flowing good vibes and a total lack of aggression you don't always see on the bar scene. "For years, I listened to heavy metal music. Then I heard a trance song and I felt at home for the first time," says another young man in a black winter hat with bulging muscles who also requests anonymity. "I've never met someone rolling who wants to listen to death metal," he says, adding that drugs make the club's music "that much better."



Like everyone I ask here, he's heard about the dangers of club drugs, including reports of multiple Molly overdoses last summer and fall. Within a three-month period, five people on the East Coast died, including one rushed to the hospital from Boston's House of Blues over Labor Day weekend. Multiple news stories followed, warning of a possible "bad batch" laced with dangerous chemicals. The man in the black hat shrugs off the dangers. "MDMA never killed anyone," he says. "Everything is OK in moderation." The guy in the baseball shirt agrees. "More people die from alcohol than MDMA. If you don't know how to do it, don't do it."

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MDMA, or 3,4-methylenedioxymethamphetamine, was originally created in 1912 as a possible blood-clotting agent by the German pharmaceutical company Merck, according to archival research of that company's records published in 2006 in the medical journal *Addiction*. Although it underwent animal testing soon after, it wasn't tried on humans until the 1950s. In the mid-'70s, according to a 2010 *Addiction* article, a Dow chemist named Alexander Shulgin learned of its effects, resynthesized the drug, and performed tests on himself. Soon he was touting the drug for producing feelings of closeness and empathy. He became known as the "Father of MDMA," or ecstasy, as the drug was known in the club scene of the late 1980s and 1990s, the burgeoning of electronic music.

Classified as a psychostimulant — the same drug family as methamphetamine and the attention-deficit hyperactivity disorder drugs Ritalin and Adderall — MDMA works by increasing the level of the body's natural neurotransmitters, mostly serotonin but also dopamine and norepinephrine. In extreme cases it can cause serotonin syndrome: a rapid increase in body temperature, heart rate, and blood pressure that can lead to hyperthermia and sometimes death. In law enforcement terms, it is a Schedule 1 drug, meaning it has no accepted medical use and a high potential for abuse.



While medical experts don't call it safe, the risks of MDMA use are slight compared with other illegal street drugs such as crack, crystal meth, and heroin. "I don't know of any clinical trials that show it's addictive," says neuropharmacologist David Farb, a professor and chairman of the Department of Pharmacology and Experimental Therapeutics at Boston University School of Medicine. "Mucking around with brain chemistry is dangerous territory," he says. But then you could say that about a lot of chemicals that are more socially acceptable. "I know alcohol is very dangerous," adds Farb. "And yet drinking is pervasive in our culture, and I love to have a glass of wine with dinner."

More worrisome than the pure drug, however, is the unpredictability of what today is sold on the street as Molly. Almost from its beginning, MDMA was mixed with methamphetamine, heroin, the anesthetic ketamine, and other potentially addictive and harmful substances, fueling concerns about its safety. The same concerns came back with the resurgence of the electronic music scene about five years ago, says Missi Wooldridge, the executive director of DanceSafe, a nonprofit based in Denver that promotes health and safety within the electronic music community. Her background is in public health. Molly emerged in the late 1990s, she says, as a "more pure" form of MDMA, unadulterated by other substances. "It's basically just been a re-branding," says Wooldridge. It was sold in a crystalline form that users swallowed, snorted, or simply let dissolve in their mouths. "At that point you could pretty much guarantee purity," she says.

Around 2007, Molly really took off, Wooldridge says. And as the drug became more popular — name-checked in songs by Kanye West and, recently, Miley Cyrus — more and more college students began taking it, and supply started to outpace demand. Molly pills appeared, and the drug was often adulterated or even substituted with other drugs, she says. "As [the drug] gained popularity," she explains, "access to pure Molly has become pretty rare."

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THIS WAS CONFIRMED by a dealer who agreed, through a mutual acquaintance, to meet me at night in a Dunkin' Donuts parking lot in the Beachmont section of Revere. Worried about being identified, he wore a striped hoodie over a Guy Fawkes mask, which he kept on throughout our half-hour interview in my Honda.

He tried pure Molly in 2011, he says, sipping from a nip bottle of Fireball Cinnamon Whisky beneath the mask while we talk, and "started selling as soon as I was taking it." Back then, he would buy MDMA in crystal form for \$30 a gram online, he says, and sell it for \$100. He says he bought it primarily through a website called Silk Road, a clearinghouse for illegal drugs that the FBI shut down last October. The dealer is understandably vague about where he sources drugs, though he says he still buys online. (The Suffolk County District Attorney's Office says that in 2013 the street price of MDMA was \$85 per gram.)

The dealer says that by the end of 2012 he was seeing more of another drug, a synthetic cathinone called methylone or M1, which has some effects similar to MDMA but more stimulant properties and fewer euphoric properties. (Synthetic cathinones, including M1, are often active ingredients in drugs known as bath salts.) M1 is preferred by some clubgoers, who compare it to cocaine or methamphetamine. "MDMA makes people very relaxed," says the dealer. "M1 is

more speedy.” Some dealers prefer it, this one tells me, because it costs half the price of MDMA wholesale but goes for nearly as much on the street, a claim DanceSafe executives say is accurate based on their knowledge of Silk Road’s and street prices.

Synthetic cathinones are also relatively unknown and unpredictable. According to the researcher Farb, they can produce feelings of anxiety and paranoia as well as hallucinations. They’re not well understood, he says, though they have been on the club scene and in academic textbooks about drugs for about 20 years.

The clubgoers I spoke with at Rise who have tried both drugs were dismissive of M1 as inferior to MDMA. They also said it had significant negative side effects the following day.

The dealer insists he didn’t sell M1 as Molly. He says, “I didn’t lie to people; I told them what it was,” but he can’t say what other dealers told their clients.



Yoon S. Byun/Globe staff/file

Brittany Flannigan, 19, was rushed to the hospital from Boston’s House of Blues when an employee found her in distress; she died that night.

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BOSTON MAY HAVE SEEN the results of the adulteration of Molly firsthand on August 28, the Wednesday before Labor Day, when an excited crowd filled up the House of Blues, a music club on Lansdowne Street behind Fenway Park. They were there for one of the last electronic music concerts of the summer — a show by superstar DJ Anton Zaslavski, a German better known by his stage name, Zedd. Just after midnight, a security officer noticed a young woman “in a state of convulsion while still on her feet” in a stairwell. The guard helped the woman lie down, and noted that she was unresponsive. Within five minutes, an ambulance arrived to take

the woman, 19-year-old Brittany Flannigan, to Beth Israel Deaconess Medical Center's emergency room. When police arrived at the hospital, she was already dead.

Flannigan, an honor-roll student at Plymouth State University from Derry, New Hampshire, had a bright smile and volunteered with the disabled. She was one of three concertgoers police say overdosed at the club that night. A man in his 20s found wandering dazed in the lobby and a 25-year-old woman who fell down on the dance floor were also taken to the hospital. There, doctors discovered two pills in the woman's pocket and a bag of white powder in her bra. Immediately, police blamed Molly for the overdoses and for Flannigan's death, though a toxicology report has yet to be completed.



Police blamed Molly, though a toxicology report has yet to be completed. Pictured, Flannigan.

The cases were part of a string of apparent club drug overdoses over Labor Day weekend. That Saturday at the Bank of America Pavilion in Boston, police apprehended a man who said he

blacked out after taking a hit of Molly. When they arrived, he was fighting with security and tried to hop out of a moving ambulance on the way to the hospital. The same night, a pair of men overdosed at the summer outdoor concert venue Ocean Club in Quincy — two of a dozen overdoses at the club in three weeks. And in New York City that Saturday, two concertgoers died and four became critically ill at the Electric Zoo Music Festival. One of those who died was a 20-year-old North Providence, Rhode Island, native and University of New Hampshire student named Olivia Rotondo. According to newspaper reports, she told EMS workers “I took six hits of Molly” before collapsing into seizures.

New York City released a statement following the deaths, blaming them on “the drug MDMA (ecstasy or Molly),” and then canceled the last day of the festival. The Verizon Wireless Arena in Manchester, New Hampshire, canceled an electronic dance music concert called the Barstool Blackout Tour. Newspapers around the country began sounding the alarm about Molly, warning of a “bad batch” of the drug going around the Northeast. Two other deaths — in New York in July and Washington, D.C., in August — are reportedly linked to the drug.

Despite the alarm, club drugs actually are to blame in only an infinitesimal portion of overdoses. In Boston, according to a 2012 report of more than 15,000 emergency room admissions for substance abuse treatment, heroin and other opioids accounted for 57 percent, alcohol for 32 percent, cocaine and crack for 4 percent, and marijuana for 3 percent. Admissions for psychostimulants like Molly didn’t even make the stats.

Dr. Matthew Mostofi, assistant chief of emergency medicine at Tufts Medical Center, says he and his colleagues each sees three or four cases a year, compared with daily incidents involving alcohol and heroin. “The fact is, there are more opiate users dying every day than someone using Molly or ecstasy,” he says. He attributes the attention given to the substance not to its dangers — though he doesn’t think it is safe — but to the type of users who have died. “Any time a 19-year-old girl in college dies, that is a story.” One public official, speaking off the record, is more blunt when asked why Molly received so much attention this fall: “Because it was a pretty white girl who died.”

Following the cases at House of Blues and Bank of America Pavilion, the City of Boston’s licensing board found the clubs were not at fault. The report on the incidents at the House of Blues stated that all of the patrons who overdosed purchased the drugs outside the club and that staff checked bags properly and moved quickly upon signs that medical care was needed. The licensing board found adequate security and thorough inspections at the Pavilion as well. “You can’t really detect a small pill, especially with one woman who had it inside her bra,” says licensing board chairwoman Nicole Murati Ferrer.

Even so, last fall, more than 125 owners and managers from 28 Boston clubs, bars, and concert venues (including House of Blues and Bank of America Pavilion) joined city police and the Public Health Commission for additional training. Police and emergency medical services workers taught staff to recognize signs of drug use so they could turn away people using drugs and, when appropriate, call 911. Inside the clubs, officials recommended having free, sealed water bottles available, a cool-down area off the dance floor, and checks every 15 minutes of bathrooms and other dark corners where drugs might be sold or taken.

“We were quite pleased with how receptive club owners and staff were to training,” says Robert Merner, superintendent of the Boston Police Department’s Bureau of Investigative Services. “It’s not the days of the ’70s or ’80s when you have 10 people in a bathroom stall doing cocaine [or] when clubs had private ambulances waiting behind the back door.” The city has distributed posters urging clubgoers not to take drugs, but is also promoting treatment rather than threatening punishment for those showing signs of physical distress. “The most beneficial thing we can do is save lives,” says Merner. “We don’t need any more stories of 19-, 20-year-olds dying.”

Outside the clubs, Boston police have attempted to flush out and arrest dealers of Molly and other club drugs in an investigation dubbed “Operation Party Favor.” Since September, investigators have gone undercover on Internet sites, including Facebook and Craigslist, posing as young women offering to buy Molly or trade sex for it. They then meet dealers at restaurants or clubs in sting operations. So far, says Merner, the operation has resulted in more than 40 arrests of alleged dealers now awaiting prosecution.

Merner dismisses rumors of a particular “bad batch” of Molly being behind the overdoses last summer and fall. He says the drugs being sold as Molly that Boston police seized were MDMA cut with ingredients such as heroin, cocaine, methamphetamine, and caffeine. “Any batch would be considered a bad batch in my opinion,” says Merner.

In Quincy last summer, undercover police arrested 12 men allegedly selling drugs as Molly at the Ocean Club, both in the venue and in the parking lot. From them they seized a combined 100 grams of what turned out to be methylene, not MDMA. According to drug unit commander Patrick Glynn, the city licensing board members and police chief have been in discussions with the club’s owners as they conduct their investigations; still, the club may not open this summer. Quincy police also got a report of two shipments of Molly from China and seized 2 kilos. That, too, says Glynn, was methylene.



Karsten Moran/New York Times

The Electric Zoo Music Festival (shown here, in 2012) is an annual event on Randall's Island in New York. City officials canceled the last day of the 2013 festival, blaming two concertgoers' deaths on Molly.

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DANCESAFE and Wooldridge are officially neutral about the drugs clubgoers take, but she sees efforts to ban drugs and events as unrealistic in terms of solving the overdose problem. "It's really unfortunate that people think that by banning events it's going to end the party or end drug use," she says. "It's just going to move into an underground setting or someone's house." The group has its own solutions, including education efforts focusing on drugs in the marketplace. It cosponsors a website, [ecstasydata.org](http://ecstasydata.org), that shows pictures of different types of pills and powders bought on the street, together with an independent analysis of what's in them. DanceSafe started testing in 2001 and the site is constantly updated; in 2013, the group tested more than 300 pills that had been sold around the world. Of those, only 28 percent were pure MDMA, 13 percent contained MDMA and something else, and 32 percent had no MDMA at all.

In addition, DanceSafe sells \$20 home-testing kits that allow those contemplating taking a pill or powder to identify some of the substances it contains. One kit, for example, includes a reagent that causes MDMA to turn purple and methylene to turn brown; another causes MDMA to turn blue and cocaine to turn yellow. By process of elimination, users can be reasonably assured of what they are taking. For those without a testing kit, she recommends starting with a small amount to see how their body reacts before taking more, staying hydrated, and using the "buddy system" to look out for friends. "I don't think the average person going to events is a drug addict; they are recreational users, going through an experimental phase," says Wooldridge. "Personally, I think it's all about making educated and informed decisions. If you do choose to experiment, you should know what you are doing."

During the winter months, the electronic dance music scene dies down and shows are fewer. But come summer, the DJs will spin once again in the clubs and college students will be swallowing Molly in search of new experiences. Police are optimistic that they have stemmed the flow of the drug but do not pretend they have eradicated it from the clubs. "It's a tough situation," says Quincy's Glynn. "The best we can do is try and keep ahead of it to keep people safe."

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**The Ambulance Driver's Perspective**  
by Kelly Grayson

<http://www.ems1.com/ems-products/education/articles/397052-Naloxone-The-Most-Abused-Drug-in-EMS/>

## **Naloxone: The Most Abused Drug in EMS**

By Kelly Grayson

“How are his vitals?” I asked.

“Stable as can be,” my partner grunted. “BP 118/70, heart rate 60, respirations 14, saturation 97 percent on room air. Pupils are pinpoint. You smell the alcohol?”

“Yeah,” I answered with a grunt of my own. “Drunk, and high on opiates. Let’s give him some Narcan.”

“Whoa. You think he needs Narcan?”

“Needs Narcan? No, but it’s 3:30 a.m. and we should be in bed. He darned sure *deserves* Narcan — maybe an intubation, too.”

It pains me to admit it, but that was an actual conversation my partner and I had over the prone body of an overdose patient found passed out in a hotel parking lot. It happened nearly 15 years ago, shortly after I had become a paramedic.

I was tired, overworked and ready to get back to bed. I resented having to be there. I was going to punish the man responsible — the junkie, as I saw it — for rudely interrupting my sleep.

*I was also doing exactly what I had been taught.*

So we packaged the patient, taking care to assure that he was strapped down tightly, gave two milligrams of intravenous naloxone, and waited for the inevitable hissy-fit as the medication rudely yanked him out of his opiate-induced haze.

When the patient refused to freak out and go into withdrawals as expected, I compounded the sin by inserting an endotracheal tube, justifying my battery under the doctrine of “GCS less than 8, intubate.” I wasn’t doing unnecessary procedures to a patient just because he had inconvenienced me; I was *protecting his airway*.

*Riiiiiiight.*

Obviously, that was not my finest hour as a paramedic.

Luckily for me and the patient, the withdrawals never happened. *That* rodeo commenced after the patient’s transport to the local ER, where the staff decided to give him flumazenil, a drug only slightly less misused than naloxone.

We did indeed succeed in ruining his high. However, all of us were lucky that the reversal agents only resulted in an angry patient. It could have been much worse. He could have had intractable seizures, flash pulmonary edema, myocardial infarction or severe hypertension.

That's what happens when you give medications because you *can*, rather than because you *should*. Aside from the injudicious use of antiarrhythmics, I can think of no other drug in our boxes more misused than good old naloxone.

At least when we give antiarrhythmics, we're presumably trying to do the patient some good. Not so with naloxone. All too often, we give it for punitive reasons rather than therapeutic.

A recent thread on an internet EMS discussion list showcased a wide disparity in the way we use narcotic and benzodiazepine reversal agents, and by extension, the way we regard the patients to whom we're administering the drugs.

A relative minority felt that it was acceptable to administer large doses of intravenous naloxone to somnolent opiate overdose patients to "wake them up."

One poster, an experienced Boston EMS paramedic, pointed out that addicts take opiates and other sedatives specifically to induce a pleasant stupor. In his words, "If they're lethargic and hard to arouse, but still breathing effectively, it's not an overdose. It's a *dose*."

Encouragingly, the majority of posters advocated a more judicious use of naloxone: using small doses of 20-40 micrograms titrated to restoration of respiratory drive, while still acknowledging that a significant number of their colleagues still firmly subscribe to the "wake the junkie up" school of thought.

Some posters felt that treatment should first begin with endotracheal intubation and ventilatory assistance, followed by judicious administration of naloxone. They ignored the fact that endotracheal intubation itself poses its own set of risks and complications, and probably should be deferred if less invasive means of delivering adequate ventilations are available.

The wiser heads in the group pointed out that naloxone merely restores respiratory drive and does very little to blunt the hypotension associated with such overdoses. They advocated starting with BVM ventilation if necessary, followed by small doses of naloxone, in order to reach the end point of the restoration of respiratory drive — *period*. Some preferred IV naloxone, while others advocated intramuscular or nasal mucosal administration.

Don't try to wake them up, they advised, even if it's just to "sleepwalk" them to the rig. The risks — pulmonary edema, vomiting and potential aspiration, myocardial infarction, seizures, the list goes on — just aren't worth it. Just because you *can* give a drug, doesn't mean you *should* give a drug.

Sometimes, less is more.



Name: \_\_\_\_\_ Date: \_\_\_\_\_

Continuing Education – When Molly Met Superman: The Trip of a Lifetime

1. Molly is a refined form of \_\_\_\_\_.
  - a. Speed
  - b. Ecstasy
  - c. Cocaine
  - d. Cannabis
2. Bath Salts cause a patient to undergo which of the following symptoms:
  - a. Tachycardia
  - b. Hyperthermia
  - c. Agitation
  - d. All of the above
3. Excited Delirium is NOT characterized by which of the following:
  - a. Unusual strength
  - b. Hyperthermia
  - c. Hypothermia
  - d. Agitation
4. Patients exhibiting signs of Excited Delirium must be:
  - a. Approached carefully
  - b. Placed in a prone position
  - c. Tasered
  - d. Given supportive care with extreme sensitivity to agitation
  - e. A and D
5. Alcohol is a CNS \_\_\_\_\_. Caffeine is a CNS \_\_\_\_\_.
  - a. Depressant, depressant
  - b. Stimulant, depressant
  - c. Depressant, stimulant
  - d. Stimulant, stimulant
6. Any patient with an altered mental status should have their \_\_\_\_\_ evaluated.
  - a. Blood pressure
  - b. GCS
  - c. Pupils
  - d. Blood Sugar
  - e. All of the above

This scenario should be used to answer questions 7, 8, and 11.

You respond for multiple persons down from the unknown cause. An ALS ambulance, ALS engine company, and a BLS truck company arrive on scene at the same time. Police officers are inside a college dormitory where about a dozen college-age adults scatter as you approach. Inside the building, you find 2 male and 2 female patients, all laying prone on the floor, unresponsive.

7. What is your first priority?
  - a. Calling for more ambulances
  - b. Opening the airway of each patient
  - c. Ensuring scene safety
  - d. Beginning triage
  
8. You find a large bowl of pills, of various shapes, sizes, and colors. You also note many open bottles of alcohol around the apartment. While paramedics begin patient care, it would be beneficial to obtain what information?
  - a. The signs and symptoms of anyone else sick
  - b. The names of any medications found in the apartment
  - c. If any responsible party is willing to discuss the type and origin of the pills
  - d. All of the above
  
9. MDMA, like other drugs, may be mixed with other drugs to\_\_\_\_\_.
  - a. Create a “custom” high
  - b. Cut the cost of the pure drug
  - c. Intentionally harm the user
  - d. A, B, and C

10. Discuss several considerations for scene safety when entering scenes with patients under the influence of illicit drugs.

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11. Refer to the scenario given for question 7. In this scenario, proper treatment for these patients is primarily supportive, due to the many unknowns presented. List three key findings that may influence specific treatments. (example: constricted pupils may indicate the use of Narcan)

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12. You respond to a call for a suspected opiate overdose. Upon arrival, the patient is sleepy but answers questions appropriately, with stable vital signs. The patient appears to be in no distress. You note the patient has pinpoint pupils. Your standing medical orders dictate that Narcan should be given in patients with altered mental status. Is it appropriate to give Narcan to this patient? Do you feel the benefits outweigh the risks? Why?

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