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**UNDERSTANDING
ADDICTION *to*
BATH SALTS**

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UNDERSTANDING ADDICTION TO BATH SALTS

America has always had a troubled relationship with intoxicants, both legal and illicit. A quick look back at our history shows that there has been a constant conflict between the puritanical and hedonistic elements of our culture, from the Women’s Christian Temperance Movement of the 1870s and the Prohibition period of the early 20th century to more modern manifestations like the War on Drugs or the movement to legalize marijuana. Through all of this, there have always been people who, for one reason or another, have pursued ways to escape the problems of their lives through intoxication. Unfortunately, in the past few years a group of nominally legal substances have exploded into popularity – with dire effects.

In the late 2000s, two kinds of drugs arrived on American shores in innocuous, street-legal packaging. By 2011, these drugs had claimed dozens of lives and sent thousands more to emergency rooms all across the country. These two drugs – known colloquially as “bath salts” and “spice” – were labeled as “not for human consumption” in order to circumvent federal regulations, yet were marketed by word-of-mouth as “safe” and “clean.” After a few high-profile incidents, they became the target of a hyperbolic news media campaign the likes of which had not been seen since

the “crack epidemic” of the 1980s. Suddenly, every major news outlet was shrieking about the horrible new drugs that would turn people into “face-eating zombies,” and as a result, people panicked.

There is no question that bath salts and spice are both dangerous and poorly-understood kinds of drugs; but it is *how* and *why* they are so dangerous that needs to be clearly understood so that we can best care for those whose lives are affected by them, as well as ensure that they cannot continue to harm people.

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The History of “Legal Highs”

The Development of Synthetic Cathinones

The exact origins of khat, or *Catha edulis*, are unknown, but theories suggest it was first cultivated recreationally in either Ethiopia or the Arabian Peninsula, many

thousands of years ago. It was even used as a part of religious rituals in Ancient Egypt. Chewing khat leaves has a mild stimulant and euphoric effect, and on the whole was used in the same way that the ancient cultures of the Andes Mountains chew coca leaves, or much how coffee is now. However, as the plant became more understood by modern chemists and botanists, the chemical responsible for the euphoric effect, cathinone, was noted to have some potential for abuse, albeit less than tobacco or alcohol. Thus, the World Health Organization enacted regulations and limits on the international trade of khat in 1980. Various nations have taken different stances on khat's legality, but because of cathinone's potential for abuse, the United States placed it in Schedule I of the Controlled Substances Act in 1993, also effectively ending all import or sale of khat in the country. However, no part of khat is used in the production of bath salts.

Bath salts are usually composed of a mix of *synthetic* or *substituted* cathinones, all of which are lab-created compounds. The most common synthetic cathinones in bath salts are methcathinone, mephedrone, methylone, and methylenedioxypropylone (more commonly known as MDPV). All of these compounds were developed in laboratories over the course of the 20th century, although they found little medical use, other than a period in the 1930s when the Soviet Union marketed methcathinone as an antidepressant under the name "ephedrone."

It was only in the early 2000s when synthetic cathinones were first observed to be used recreationally, as a club drug in Israel. These drugs were the first “bath salts,” packaged and marketed as various non-edible consumer products to avoid government regulations. This method of distribution soon caught on in the United Kingdom and most of continental Europe; by the middle of the decade, bath salts – mostly composed of mephedrone – were some of the most popular club drugs in England and Ireland.

Bath salts soon appeared in the United States, becoming popular in 2009 and growing steadily more so until an incident in Florida in 2011, when a young man had a psychotic episode where he fatally devoured and mauled a homeless man and had to be stopped by local law enforcement by use of deadly force. Remarks from authorities after the attack implied the young man was high on bath salts at the time, and the news media quickly began calling bath salts “cannibal zombie drugs.” Testing during the young man’s autopsy, however, showed that the only intoxicant in his system was a small quantity of marijuana, leading medical officials to believe that his psychosis was not immediately drug-related. The media frenzy did not bother changing the story, though, and bath salts continued to be hyped as “zombie drugs.”

In the two years since, usage of bath salts seems to have decreased on a national level, as the compounds involved in their creation have been banned through both federal

and state channels, and overall public sentiment towards the drugs has turned extremely negative. However, they are still available in some states and through some online retailers, and they are still extremely dangerous.

The Development of Synthetic Cannabinoids

Synthetic cannabinoids – artificially created versions of the psychoactive compounds in marijuana – have been around since the mid-1980s, when chemist John W. Huffman began working with them in hopes of isolating the medically valuable components of marijuana. Over a twenty-year period, Huffman and his team developed almost 500 different compounds and contributed a great deal to the medical understanding of marijuana. However, in the late 2000s, German authorities identified two of Huffman’s synthetic cannabinoids in products being marketed as marijuana alternatives.

In the decade since they hit the market, synthetic marijuana products, marketed under names like “Spice” and “K2,” have become extremely popular in Europe and the United States. These products, similar to bath salts, are sold in packaging claiming them to be “incense” or “herbal aromatherapy blends,” and are supposedly not made for human consumption. They are comprised of various kinds of vegetable matter that have been sprayed or coated with one or more synthetic

cannabinoids, the most common of which is JWH-018 – the eighteenth compound developed by John Huffman.

Huffman himself has received a staggering amount of blame for the notoriety of synthetic marijuana, even though he himself has repeatedly stated that he is extremely concerned about the use of these compounds as recreational drugs, as they were developed to only be used in laboratory settings and there was no thorough testing done on their effect on the human brain.

By July of 2012, most of the common compounds found in synthetic marijuana had been placed under Schedule I of the Controlled Substances Act, but the drugs can still be found in various forms in a few states.

The Science of Bath Salts

Lumping all bath salts together into one category is somewhat of a misnomer; the various compounds used have extremely different results. MDPV, for example, has an effect very similar to that of methamphetamine, whereas mephedrone (known colloquially as “drone” or “MCAT”) acts similarly to MDMA, or “Molly.” These effects in and of themselves are not necessarily detrimental to the user’s health. The major issue with bath salts is that, as there is no regulation or standardization to their manufacture, there is no way for the user to tell exactly which drug (or mixture of drugs) they are using, or in what dosage. Considering that the majority of

bath salts are a mixture of MDPV and mephedrone, the resulting neurological effect can be equated to turning your bathroom sink on and closing the stopper at the bottom, forcing it to overflow. The combined neural action of MDPV and mephedrone has a similar effect on the brain's serotonin system, causing a severe imbalance that can last for several days and have extremely varying effects, depending on the person in question.

The “desired” effects of bath salt use are increased energy, heightened alertness, euphoria, and increased sexual arousal. However, there is no reliable way of guaranteeing these effects due to the unreliable nature of the drugs, and they can frequently result in some severely adverse side effects, including hypertension, tachycardia, hyperthermia, dehydration, heart palpitations, tremors, insomnia, and paranoia. Although poison control cases involving bath salts have decreased from their peak in 2011, there are still numerous emergency room cases involving the drug every year.

Psychologically, the various components bath salts are extremely addictive, with numerous laboratory studies on rats showing they have similar addictive properties to cocaine or methamphetamine. Bath salt users frequently speak of the compulsive need to continue doing the drug to prolong the experience of the high, resulting in binges that can last for several days – this kind of behavior is called “fiending.”

Unlike some other drugs, there is no universal use culture

to bath salts, due to their sporadic availability through legitimate channels. When bath salts were legal for sale in the United States, they could be found anywhere, from specialty head shops to common gas stations, and as a result there are few trends or patterns to bath salt abuse. Bath salts are most commonly insufflated – that is, snorted in the same manner as cocaine – although there have been some reports of oral ingestion and IV usage.

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The Science of Spice

Synthetic cannabinoids are all variations on tetrahydrocannabinol, the principal psychoactive component of the cannabis plant. Tetrahydrocannabinol, or THC, acts on two different receptors in the human brain as a partial agonist, which means that THC molecules do not perfectly react with the cannabinoid receptors. That does not mean that THC is not a potent drug – it has mild to moderate analgesic effects, as well as numerous other symptoms. One of the potential major side effects of THC, although this is debated, is psychosis. This is mostly in debate in regards to the use of actual marijuana, as another major cannabinoid, cannabidiol (CBD), has highly effective antipsychotic and anxiolytic properties.

This difference is at the crux of the major health issues posed by synthetic marijuana. All synthetic cannabinoids in common use are variations on THC, most of which are designed to be more potent; to use the technical phrase, synthetic compounds like JWH-018 are full agonists of the cannabinoid receptors, meaning they have a far greater effect on the nervous system. It is theorized that without the corresponding effects of an analogue to CBD, JWH-018 and other synthetic cannabinoids have a much higher chance of causing debilitating psychological side effects.

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Synthetic marijuana usually leaves users feeling euphoric and relaxed, similarly to real marijuana. In numerous cases, however, users have reported feeling anxious and paranoid, and there have even been cases that have led to full psychotic breaks, suicides, and episodes of extreme violence. Physical side effects can include tachycardia and seizure activity.

Synthetic marijuana, like the actual plant, is most commonly smoked through pipes or bongs or rolled into cigarettes. There are few reports of it being ingested orally, which seems to indicate there is no use culture for “edible” synthetic marijuana.

CHECKLIST:

Common Symptoms of Bath Salt Addiction

- Tachycardia
- Hypertension
- Hyperthermia
- Delusions/hallucinations
- Seizures
- Paranoia
- Agitation
- Violent and aggressive behavior
- Suicidal ideations
- Anxiety
- Compulsive need to continue drug use

CHECKLIST:

Common Symptoms of Spice Addiction

- Anxiety
- Hallucinations
- Loss of motor control
- Slurred speech
- Drowsiness
- Tachycardia
- Hypotension
- Psychotic episodes

Treatment for Addiction to Spice or Bath Salts

Withdrawal from Synthetic Drugs

Overcoming an addiction to either of these drugs requires going through withdrawal – the period where the user’s body, which has come to rely on the drugs to function, must return to a state of homeostasis, purging any remaining quantities of toxins still present. This process is usually painful, and involves a whole list of symptoms that are almost impossible to handle without outside assistance. Addicts who attempt to go through withdrawal on their own inevitably relapse, which usually leads to an overdose; relapsing addicts will resume using spice or bath salts in the same quantities they were used to before beginning withdrawal, but during the withdrawal period their tolerance for the drug will have gone down, and thus what before may have only gotten them a little high can now possibly result in a seizure or cardiac arrest. This is why medical supervision is so important, especially during the withdrawal process. Properly trained recovery specialists can administer medications to help ease the pain of withdrawal symptoms, as well as provide counseling and assistance with any psychological issues that may arise.

Common Symptoms of Bath Salt Withdrawal

- Insomnia
- Gastric distress
- Tremors
- Anxiety
- Paranoia
- Suicidal behavior
- Psychotic behavior
- Delirium
- Hallucinations

Inpatient and Outpatient Rehabilitation

Successfully recovering from bath salt or spice addiction means getting help from the right people –people like the staff at Behavioral Health of the Palm Beaches. Once you’ve checked into a recovery facility, you will be placed in a detoxification program so that you will have the necessary medical assistance and supervision as you go through withdrawal. After the detox, which cleans your system of any drugs or other toxic substances, you will enter an inpatient residential rehabilitation program.

In a residential rehab program, the patient is removed from whatever circumstances may have influenced their addiction, and by no longer being exposed to that environment they can more easily undergo the process of recovery. For most patients, this kind of program lasts for thirty days, during which they stay in a supervised facility and attend therapy sessions and workshops to address the root causes of their addiction. Residential programs like those at Behavioral Health of the Palm Beaches provide both medical supervision and emotional support to patients at this vulnerable stage in their recovery.

For patients in need of greater support, Behavioral Health of the Palm Beaches offers a long-term residential rehab program that can last from two to twelve months. This program is focused on giving patients a new perspective on life, which can be extremely helpful for people who have spent many years grappling with addiction, as the effects of long-term synthetic cationine or cannabinoid use on both a person's brain chemistry and personality are extensive.

Recovery Maintenance Programs

After a patient has finished treatment at Behavioral Health, their recovery is by no means finished. Maintaining sobriety can be a difficult task after returning to the pressures of everyday life, and that is

why Behavioral Health offers a supportive community for alumni of their programs, as well as for the friends and loved ones of those alumni. Through the Behavioral Health Alumni website, former patients can maintain an open dialogue about their progress and their successes, chat with other fellow alums, and organize in-person events. It can be impossible to maintain recovery alone, but with the help of the Behavioral Health alumni community, there will always be someone to talk to who is personally invested in your success.

A Clear Path to Recovery

Recovery is a continuous process; even after you've finished detoxification and rehabilitation, there will still be hardships to overcome. But Behavioral Health's program will give you the tools and the strength to get through those hard times.

There is hope. We can help.

Resources

Fattore, Liana, and Walter Fratta. “Beyond THC: The New Generation of Cannabinoid Designer Drugs.” *Frontiers in Behavioral Neuroscience* 5 (2011).

Gries, Ryan R., and Kristylen Straw. “Manifestations and Treatment of Central Nervous System Complications Associated with Synthetic Cathinone (“Bath Salts”) Toxicities.” *Mental Health Clinician* 3.6 (2013).

Huang, Pai-Kai, Shawn M. Aarde, Deepshikha Angrish, Karen L. Houseknecht, Tobin J. Dickerson, and Michael A. Taffe. “Contrasting Effects of D-methamphetamine, 3,4-methylenedioxymethamphetamine, 3,4-methylenedioxypropylamphetamine, and 4-methylmethcathinone on Wheel Activity in Rats.” *Drug and Alcohol Dependence* 126.1-2 (2012): 168-75.

Murray, Brittany L., Christine M. Murphy, and Michael C. Beuhler. “Death Following Recreational Use of Designer Drug “Bath Salts” Containing 3,4-Methylenedioxypropylamphetamine (MDPV).” *Journal of Medical Toxicology* 8 (2012): 69-75.

Olives, Travis D., Benjamin S. Orozco, and Samuel J. Stellpflug. “Bath Salts: The Ivory Wave of Trouble.” *Western Journal of Emergency Medicine* 13.1 (2012): 58-62.

Prosser, Jane M., and Lewis S. Nelson. “The Toxicology of Bath Salts: A Review of Synthetic Cathinones.” *Journal of Medical Toxicology* 8 (2012): 33-42.

Rosenbaum, Christopher D., Stephanie P. Carreiro, and Kavita M. Babu. “Here Today, Gone Tomorrow...and Back Again? A Review of Herbal Marijuana Alternatives (K2, Spice), Synthetic Cathinones (Bath Salts), Kratom, Salvia Divinorum, Methoxetamine, and Piperazines.” *Journal of Medical Toxicology* 8.1 (2012): 15-32.

Thornton, Stephen L., Roy R. Gerona, and Christian A. Tomaszewski. “Psychosis from a Bath Salt Product Containing Flephedrone and MDPV with Serum, Urine, and Product Quantification.” *Journal of Medical Toxicology* (2012): 310-13.

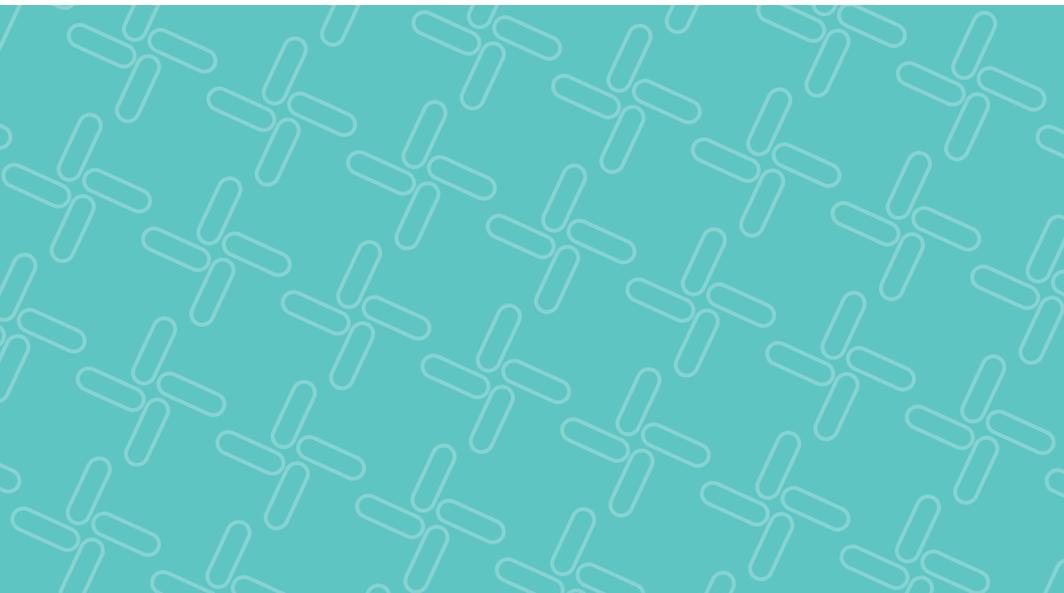
Understanding the “Spice” Phenomenon. EMCDDA.

European Monitoring Centre for Drugs and Drug Addiction, Nov. 2009. Web. 06 Jan. 2014.

<http://www.emcdda.europa.eu/publications/thematic-papers/spice>

Watterson, Lucas R., Lauren Hood, Kaveish Sewalia, Seven E. Tomek, Stephanie Yahn, Craig T. Johnson, Scott Wegner, Bruce E. Blough, Julie A. Marusich, and M. F. Olive. “The Reinforcing and Rewarding Effects of Methylone, a Synthetic Cathinone Commonly Found in “Bath Salts”” *Journal of Addiction Research and Therapy* (2012).

Zimmermann, Ulrich S., Patricia R. Winkelmann, Max Pilhatsch, Josef A. Nees, Rainer Spanagel, and Katja Schulz. “Withdrawal Phenomena and Dependence Syndrome After the Consumption of “Spice Gold”” *Deutsches Arzteblatt International* (2009): 464-67.



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