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## SAINT LOUIS UNIVERSITY

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March 31, 2011

Senator Dianne Feinstein, California  
Senator Charles (Chuck) Grassley, Iowa  
United States Senate Drug Caucus on International Narcotics Control

Re: Need for comprehensive control of synthetic drugs

Dear Senators Feinstein and Grassley and Honorable members of the US Senate:

I am the Medical Director of the Missouri Poison Center and Director of Toxicology at Saint Louis University. During daily surveillance activities at the Missouri Poison Center we detected the onset of the trend in use of synthetic marijuana (cannabinoids) specifically "K2" back in late 2009. I reported the first 12 index cases to the CDC via the secure public health platform EpiX. Since that time, we have been tracking the use of K2 and other synthetics in our state and nationwide. In the entire year in 2009, all of the nation's poison centers reported only 14 cases of synthetic marijuana (e.g., K2, Spice) but in **2010 the Missouri Poison Center helped manage exposures in 98 individuals with synthetic marijuana toxicity** ranging in age from 14 to 60 years old (predominantly youth and young adults, however). Nationally, there were **2,874 calls about these products in 2010** and **so far in 2011 there have been 1,246 calls.** Although the DEA took emergency control of 5 synthetic cannabinoids on November 24, 2010, there are literally scores of these synthetics which dealers can replace in products and create new knock-offs. A broad and comprehensive Act with stiff penalties that encompasses all these synthetic analogs and homologs is needed to curtail this scourge.

With regard to other synthetics like bath salts we had received only 18 calls for exposure to bath salts and 4 information calls in all of 2010. As of March 29<sup>th</sup> there have been 86 toxic exposures managed by our poison center and 20 information calls. I have been consulted as a medical toxicologist on many of these cases. **Nationally, there have been 1,241 calls to our nation's poison centers about bath salts as of March 22<sup>nd</sup>** whereas there were 298 bath salt calls in all of 2010. Clearly, the use of these synthetics is reaching epidemic proportions especially when one realizes that calls to our poison center grid represents a smaller proportion of the total use of products nationwide. Whereas "K2", "Spice", and "Demon Incense" to just name a few are "fake marijuana" products, bath salts with a hallucinogenic stimulant are like "fake cocaine" or "fake methamphetamine".

Missouri ranks 5<sup>th</sup> in the nation in total exposures to bath salts. Louisiana is at the top of the list and my colleague at the Louisiana Poison Center, Dr. Mark Ryan, Managing Director, first reported on the toxicity of these synthetic stimulant bath salts. Thus far in Missouri we have managed 29 cases of bath salts just since January 1 to March 29, 2011.

These bath salts contain extremely dangerous hallucinogenic stimulants. Our forensic toxicology laboratory at Saint Louis University has analyzed packets of these bath salts and Dr. Chris Long, PhD found methylenedioxypyrovalerone (MDPV) a known hallucinogenic stimulant. The structure is somewhat similar to another compound with a similar name, methylenedioxy-methamphetamine or MDMA (Ecstasy), that we know is a dangerous controlled substance. Bath salts are snorted like lines of cocaine and nasal inhalation is the most common route of abuse. Some have reportedly injected the product and they are less commonly ingested.

Another issue I have encountered in my clinical toxicology practice here in Missouri and at Saint Louis University is the addictive aspects of these substances (see page 3 for an example). Beyond the acute effects (heart rate stimulation to exaggerated levels, extreme blood pressure elevation, agitation, paranoia, hallucinations, etc) there are psychiatric effects that have lead individuals to harm themselves (some fatal) and/or exhibit extreme paranoia and delusions not unlike schizophrenia or other psychoses. Just yesterday there was a case of multiple assaults in one of Missouri's largest counties. Here is the story from a local news service:

"A 26-year-old St. Charles, Missouri man claiming to be high on a synthetic marijuana entered the First Baptist Church on Mid Rivers Mall Drive and assaulted three people on March 30, police said. Dustin Ostmann, of the 4000 block of Towers Road, has been charged with two counts of assault in the third degree and one count of assault in the second degree. Ostmann told police he started hallucinating after smoking the synthetic marijuana "Supercense." He told officers the hallucinations scared him and he chose the church because he wanted to get help. Police said it does not appear Ostmann had any prior connections to this church and it was picked at random. After entering the church, Ostmann allegedly ran through the hallways screaming, pushing down a 14-year-old victim. The victim was not injured. Police said Ostmann then threw a table at a 71-year-old employee of the church who was trying to block Ostmann from entering another room. The man sustained an injury to his shoulder area and was transported to Progress West Hospital, police said Ostmann assaulted a third subject, a 61-year-old church employee, who was able to restrain him until the St. Peters Police Department was notified and arrived on scene."

Some of the effects including depression appear to be long-lived at least within the time frame we have observed them. Very long term effects are not known presently but I have concern based on testimony given to me from many individuals and parents who have contacted me from several states including most recently, West Virginia. I spoke with a concerned West Virginia mom for 45 minutes last week about new onset depression and suicide ideation in her previously happy daughter who smoked a synthetic marijuana product.

I am very concerned about the toxic effects of these synthetic cannabinoids on adolescents and young adults who have recreationally abused these products. Symptoms include:

- **racing heart beat (tachycardia to 170 or 180 in some cases),**
- **elevated blood pressure (as high as 200/114),**
- **hallucinations**
- **anxiety**
- **agitation**
- **significant delusions and paranoia, which have resulted in harm to individuals including suicide**

Page Three Testimony to US Senate Drug Caucus on dangers of synthetic drugs

I believe wholeheartedly as a servant of the public health and medical toxicologist that our nation should take a broad stance against these compounds and ban MDPV found in bath salts, synthetic marijuana products, as well as other chemicals found in a wide variety of synthetics. For example, another dangerous chemical found in some of the bath salts is 3-methyl-methcathinone (4-MMC) which is commonly known as mephedrone.

These bath salt packets are sold in mainstream convenience stores, gas stations, bait and tackle shops, and head shops but also with fancy marketing on the Internet. They are made to appeal to youth and there is no age restriction on purchasing them. The packets range from \$19.99 to \$29.99 in small 0.2 gram (200 mg) packets. To put this in perspective, the K2 packets that Missouri law banned in August of 2010 are 3 gram packets and sold similarly.

I would like to share the details of some recent cases (anonymously) that I was consulted on in the hope that it might help put this in perspective and bring it down to a more personal level:

A 22 year old male from St. Louis who I had been following for toxicity from using K2 synthetic marijuana (cannabinoids) recently was hospitalized after going on a 6 day binge, first time use of bath salts (the brands that contain MDPV). He described to me that he was now extremely fearful of the effects of "the saltz" as he referred to them. He added that although K2 made his heart race, he felt that after using the salts, his "heart felt like it was going to explode in his chest". He described intense paranoia and agitation. I noted multiple lacerations on his knuckles and hands from, as he and his mother described, him punching holes with his bare hands in the walls of his house. This was in part due to the delirium while under the influence of the bath salts but also from paranoia that someone was behind the walls. This is typical of many users. My patient also described in a more sober state after detox that he recalls bending over on his hands and knees trying to snort "white powder" off his carpet thinking it was some spilled bath salts from a packet as he **had** to have some more. In retrospect, he added, "I think Dr. Scalzo, it could have just been plaster dust from the wall that I punched holes in!" He added, "This stuff scares me." This patient is not naïve to use of drugs of abuse (cocaine, marijuana) in the past. He stated to me that he preferred K2 for its high and escalated to bath salts only recently.

In another case, a Police Chief from Macon, Missouri consulted me in February about a couple in their early 40s who were using their 13 year old daughter to lure other 13 to 15 year girls into their home, getting them to smoke K2 and then sexually assaulting them when they were unable to move. This immobility can be explained by cannabinoid effects on brain dopamine receptors.

I hope these stark images are sufficient to convince you and all of your colleagues in the US Senate of the imminent dangers of these insidious products. In addition, we have been seeing a surge in use of other synthetics namely "2C-E" and "2C-I" (phenethylamine derivatives) which may be likened to "fake LSD". These compounds equally concern me and should be included in comprehensive substance abuse legislation for synthetics.

In conclusion, I cannot advocate more strongly for an immediate ban on the manufacture, distribution, sale and possession of these products. In short, these synthetics abused by our youth and young adults are dangerous. The bath salts are not the innocent products sold at bath, beauty and health stores containing only compounds like Epsom salts (magnesium sulfate) and fragrances. The motive in my opinion for the sale of these synthetics including K2, bath salts, and the 2C series is nothing more than unbridled greed and indifference to the toxic consequences and health effects both physical and mental on our youth as well as adults.

Respectfully submitted,



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