



## Pathology Biology Section – 2011

### **G109 The Rising Trend of Ecstasy and Mimic Drugs Among Teenagers in Santa Clara County, California — A Guide and Awareness for Medical Examiners, Coroners, and Toxicologists**

Larry Silveira, MS\*, Santa Clara County Department of Alcohol and Drug Services, 2101 Alexian Drive, Suite 110, San Jose, CA 95116; and Michelle A. Jorden, MD, Santa Clara Medical Examiner, 850 Thorton Way, San Jose, CA 95128

The goal of this presentation is to educate the forensic community about the rise of ecstasy use and mimic drugs in California.

This presentation will impact the forensic science community by presenting a comprehensive report detailing the current growing trend of illicit pill ingestion among teenagers in Santa Clara County to include ecstasy, as well as, other mimic drugs (phenylpiperazines) which may escape detection in a basic toxicologic analysis. At the end of the presentation, attendees will be introduced and will be able to appreciate the new trend of “thizzin” and “popping” by teenagers in this county as well as nationwide. This presentation will also reiterate the importance of complete toxicologic screens on fatal overdoses to help identify common and not so common drugs of abuse and/or cutting agents.

According to 2001 data collected by the Substance Abuse and Mental Health Services Administration (SAMHSA), there have been approximately 100 deaths resulting from ecstasy overdoses in the United States. Nationwide, ecstasy abuse seems to outweigh methamphetamine abuse and only lags behind alcohol, marijuana, and cocaine as a popular drug of abuse among 12th graders. What is most disturbing is the indiscriminate ingestion of different colored and shaped pills (“thizzin”) advertised to teenagers as ecstasy, when in reality, some of the ecstasy pills may be cut with cocaine, heroin, phenylpiperazines, and talc, just to mention a few agents. In Santa Clara County, a rise is being seen in teenagers abusing ecstasy and ingesting pills which may be composed of various drugs, some which may evade the basic toxicology screen. In the past year, Santa Clara County has seen two deaths resulting from ecstasy intoxication or complications thereof. Recently, a male who attended a rave party in a surrounding county died of an acute ecstasy overdose.

A retrospective search over the past nine years at the Santa Clara County Medical Examiner/Coroner Office disclosed a total of five ecstasy overdoses, two within the past year. In April 2009, a 22-year-old female was found deceased in a motel room after partying all night and ingesting ecstasy. During the course of the evening, she complained of headaches and began vomiting. Her friends left her alone in the motel room only to find her deceased hours later. The autopsy examination revealed a morbidly obese woman with an unremarkable internal examination except for marked brain swelling and pulmonary edema. Toxicology revealed the peripheral blood was positive for MDMA at 140 ng/mL (non-lethal) and its metabolite MDA at 20 ng/mL. Vitreous electrolytes revealed a profound electrolyte abnormality that consisted of hyponatremia. The cause of death was attributed to ecstasy-associated hyponatremia.

In January 2010, a 16-year-old adolescent was ingesting ecstasy with friends and had ingested a total of four tablets along with energy drinks when she became unresponsive shortly thereafter. Autopsy examination revealed that both coronary ostia arose from the same semi-lunar cusp but the coronary arteries pursued a normal anatomic course, along with findings of marked pulmonary and cerebral edema. Toxicology revealed the peripheral blood was positive for MDMA at 3200 ng/mL (fatalities arise at 1000 ng/mL) and its metabolite MDA at 140 ng/mL. Death was attributed to an ecstasy overdose.

After this period of recent fatalities, a survey of 1,852 students was conducted at two large comprehensive high schools and two continuation high schools located in Santa Clara County. A one-page anonymous questionnaire to identify use of various mind altering substances was administered from March 24, 2010 to May 12, 2010 to students ranging from ages 14-19.

In all, 25.32% of all respondents admitted to “ever use” of ecstasy (469 out of 1852) which is 390% higher than the teens responding to the national 2009 Monitoring the Future Survey (MTF) and nearly twice the level from the national 2009 Parents and Teens Attitude Tracking Study Report (Partnership for a Drug Free America) (PATS). Additionally, 8.48% of the teen respondents admitted to the use of ecstasy in the past 30 days; 471% higher than the MTF results and 41% higher than the PATS results. Students who had taken ecstasy admitted to maximum doses ranging from one to ten tablets with an average of four tablets. Results from the review of pictures of pills from [www.ecstasydata.org](http://www.ecstasydata.org) by a smaller subgroup of 30 students confirmed that 70% contained phenylpiperazines

For at least local teen populations and perhaps growing geographical regions, it is hypothesized that the drug's ease of availability, reduction in its cost, limited awareness of the risks and risk of death, growing



## Pathology Biology Section – 2011

---

teen permissive attitudes and enabling behaviors from their social subculture, appear to have pushed this drug to their third most frequently used drug surpassed only by marijuana and alcohol. Complete toxicological screens are suggested in this population given their extreme dosing behaviors and the apparent frequent presence of phenylpiperazines.

### **Ecstasy, Mimic Drugs, Rise in Use**