

# toxtidbits

THE MARYLAND POISON CENTER'S MONTHLY UPDATE.  
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## MDMA (ecstasy)

3,4-Methylenedioxymethamphetamine (MDMA), a popular recreational drug commonly known as "ecstasy" ("E", "X", "XTC") or "adam", is regaining popularity particularly among younger adolescents. A 2011 report from Substance Abuse and Mental Health Services Administration (SAMHSA) reveals a 75% surge in emergency department (ED) visits related to ecstasy abuse from 2004 to 2008. Approximately 70% of the ED visits involved patients between the ages of 18-29, and a large percentage (78%) involved ecstasy abuse with alcohol or other drugs (e.g. marijuana, cocaine).

MDMA is a structural derivative of amphetamine that increases norepinephrine, serotonin and dopamine release while inhibiting their reuptake. Unlike other amphetamines, MDMA selectively targets serotonin release. The resulting sympathetic and serotonergic excess produces psychotropic and stimulant effects. Ecstasy is most often taken orally but can also be crushed for snorting or injection. Combination use with other substances can also occur: e.g., "candy flipping" (ecstasy with LSD), "hippy flipping" (ecstasy with psilocybin mushrooms).

Clinical manifestations of acute MDMA intoxication include tachycardia, hypertension, arrhythmias, seizures and development of profound hyperthermia. Electrolyte abnormalities such as hyperkalemia and significant hyponatremia can occur. Hyponatremia is associated with the syndrome of inappropriate antidiuretic hormone secretion (SIADH) and/or water intoxication; ecstasy users are often encouraged to drink large amounts of water to avoid dehydration. Severe toxicity may also lead to coagulopathy, acute renal failure and fulminant hepatic failure. Treatment with benzodiazepines may help manage initial symptoms and can decrease heat production from muscle contraction and seizures. If significant hyperthermia develops, external methods of cooling should also be utilized (e.g. cooling blanket, fan, ice bath). Antipsychotics should generally be avoided when treating amphetamine toxicities due to increased risk of seizures and hyperthermia. Urine toxicology screens often fail to detect MDMA. Aggressive supportive care and continuous monitoring generally result in positive outcomes.

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### Did you know?

**There are many drugs that are added to ecstasy tablets or sold as ecstasy.**

Ecstasy tablets have been found to contain a wide variety of drugs including methamphetamine, ketamine, cocaine, dextromethorphan and caffeine. Synthetic and illegal drugs similar to MDMA, such as MDA, PMMA, PMA, and benzylpiperazine are sometimes sold as ecstasy. The purity of the tablets is unknown to the user with the color and logo having no association with the content. To complicate things even more, there are legal "herbal ecstasy" products that contain herbal stimulants and/or caffeine.

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