

An ecstatic assault?

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ECSTASY, A COMMONLY understood noun, means "overpowering emotion, especially delight". It has recently acquired quite another meaning in this country. Of late, Ecstasy has come to be referred to as a kind of potent drug abused by a segment of the population. This is causing a great deal of concern.

Ecstasy refers to the street name of a chemical constituent - 3,4 methylene-dioxymeth amphetamine or MDMA for short. It has also been referred to among others by names such as XTC, ADAM, AKA or simply "E."

The pills so far identified are pinkish or off-white in colour. However, the names and appearances tend to change from time to time to avoid detection, thus complicating the situation further. In its pure form, it is a white crystalline powder.

Most of the illicit pills are manufactured clandestinely. The quality and quantity of the "pure" stuff may vary from batch to batch. They are often cut with other drugs such as amphetamine (another stimulant), LSD (a hallucinogenic drug) or medical drugs like anti-histamine, ketamine or caffeine.

As such, apart from the danger inherent in the drug itself, there is also the risk of the drug being contaminated by other substances.

The people involved in making them normally have no formal training in chemistry. Because of their secretive operation, the chemicals and equipment used are usually of poor quality and their procedures inefficient. Collectively, all these explain why the users of Ecstasy are exposed to greater risk.

Pharmaceutically, MDMA is now considered a useless substance, although at one time, it was used in psychotherapy. Despite this, it is surprising to know that it is still very much in demand today.

First synthesised in Germany about 80 years ago, it was patented as an appetite suppressant in 1914. But due to the lack of commercial interest, it made its way to the public domain. Soon, it became a recreational drug and was eventually banned in many countries, including Britain in 1977 and later the United States in 1985.

Now, it is beginning to rear its ugly head in Malaysia, adding to the long list of substance abuse prevalent in the country. There are reports that Ecstasy was smuggled in a large quantities into this country and neighbouring Singapore and Indonesia about seven months ago.

In Malaysia, it has been classified as a dangerous drug and listed under Part Three (Schedule II) of the Dangerous Drugs Act 1952 and the Poison Act 1951 (revised 1985). This places them in the same category as heroin, morphine and cannabis.

Like amphetamine, Ecstasy stimulates the brain to induce effects such as euphoria, feeling of well-being, benevolence, confidence and empathy, It causes several stimulatory actions similar to the fight-flight responses, as if someone is in an emergency or a stressful situation, seemingly giving the abuser boundless physical and emotional energy.

However, Ecstasy is said to be "less potent" than amphetamine, falsely leading to claims that it is a drug with no side-effects.

The most common side-effects experienced with moderate doses are reported to be increased heart rate, tremor, tightening of jaw muscles (trismus), grinding of teeth (bruxism), nausea, insomnia, headache and sweating.

The symptoms of acute reaction are said to be quite rare. These include numbness and extreme tingling, increased acuity to cold and colour, vomiting, visual hallucination, incoordinated movement (ataxia), blurred vision and rolling of the eyeball (nystagmus).

The drug is broken down in the liver and eliminated through urination, a process that may take up to 12 hours. Liver damage has been reported following the use of the drug.

Many of the more adverse effects of Ecstasy are believed to be linked to how it is used (see chart). The stimulant properties of the drug can lead individuals to over-exercise.

Depending on the level of activity, this can lead to three major consequences.

Firstly, dehydration or exhaustion at later stage. Secondly, an elevation in body temperature (hyperpyrexia). Finally, breaking down of skeletal muscles (rhabdomyolysis).

Rhabdomyolysis is not always easy to diagnose because although it often produces muscle pain, swelling and tenderness, many patients are without symptoms. All these effects are inter-related and can produce all the different adverse effects as shown in the chart.

For example, profuse sweating as a result of over-excretion causes the loss of water and minerals from the body, eventually leading to severe dehydration. At this stage, failure to replace water and mineral loss will cause the body to switch off the sweating mechanism as it tries to retain the remaining fluid. In other words, the body loses its main cooling mechanism, causing the body to overheat.

In addition, Ecstasy can also trigger the release of anti-diuretic hormone which further prevents the kidney from getting rid of excess water. Hyperpyrexia can result in death if it is not well controlled.

On the other hand, any attempt to counteract the effects of dehydration by drinking excessive water can also cause death due to water intoxication. Under the influence of Ecstasy, some abusers have been known to drink a large amount of water in a short period of time.

If the drinking water contains no minerals it can cause the blood to be further diluted. Minerals, especially sodium, are important to avoid this. Otherwise, body cells tend to swell up. This can be harmful to the brain because it causes the brain to expand and be crushed by the skull, leading to irreversible damage. If some vital centres in the brain that regulate the heart or lungs are affected, the victim may eventually die.

Thus, when dealing Ecstasy induced dehydration, one should drink, in moderate, mineral water, fruit juices or even isotonic drinks regularly to replace lost fluid and minerals.

The resulting hyperpyrexia too plays a role in the development of many direct severe effects of the brain. On entering the brain, Ecstasy, like all psychoactive substances, can affect the naturally occurring chemicals in the ambience therein.

In this case, it releases in excess two types of chemicals, namely serotonin (5-HT) and dopamine. The former is suspected to be involved in most of the mood enhancing effects, like euphoria. The increase in serotonin can also raise body temperature, which rises even higher after hectic physical activities such as dancing in a stuffy nightclub or disco.

To prevent hyperpyrexia, be sure not to over-exert, take frequent rest and cool off regularly, preferably in air-conditioned and well-ventilated areas.

As a result of chemical-related actions, long-term use of Ecstasy may cause depression, especially due to the depletion of serotonin supplied in the brain. It is also said to be potentially neurotoxic.

Like amphetamine, it can also trigger temporary or persistent psychosis (insanity). Other delayed reactions include jaundice, hepatotoxicity (liver poisoning) and "flashbacks." Deaths have been reported as well, either due to accidents or injuries while in an intoxicated state.

Ecstasy has been known to trigger convulsions or collapse, and further fuels the process of rhabdomyolysis.

This may in turn result in acute renal failure, either via muscle breakdown products accumulating in the kidney tubules or disseminated intravascular coagulation, i.e., the clotting of blood in vein and arteries.

The clotting of blood tends to take place once the body temperature reaches 40 degree Celsius. Since much of the clotting agent in the body has been used up, this can initiate unprovoked and uncontrolled bleeding. Death can also occur due to brain haemorrhages or heart attacks.

Immunosuppressant conditions have also been attributed to Ecstasy. Its abusers seem more likely to contract colds and other minor infections, depending on their lifestyles.

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