WHAT IS ECSTASY?

“Ecstasy” is one of the street names for a synthetic chemical, known as MDMA (3,4-methylenedioxymethamphetamine). MDMA is classed as a “psychedelic amphetamine”, as it combines some of the effects of hallucinogens (such as LSD) with the stimulant effects of amphetamines (speed).

However, tablets sold as ecstasy could contain anything at all, making use of the drug particularly risky. In an American study, over one third of ‘ecstasy’ pills contained no MDMA at all, and five other active substances were identified.

Seven deaths in South Australia in the late 1990s were found to be related to paramethoxyamphetamine (PMA, known as ‘death’), the victims having taken what they thought was ecstasy.

Ecstasy is usually taken in the form of a tablet or “pill” which can be any size or colour. It can also come in the form of a capsule, or powder which is snorted. A very small number of users inject ecstasy, which is particularly dangerous because the tablets are not designed for injecting and can block veins.

Trendy brand names are often used to cleverly market ecstasy to young people or fashion-conscious older users. Pills may come branded with the names of respected companies, such as Calvin Klein or Mercedes, or stamped with the images of characters such as Bart Simpson or Superman.

IMMEDIATE EFFECTS

The effects of ecstasy depend on the purity and strength of the tablet, an unknown quantity.
Immediate effects can include elevated mood, a sense of closeness to others, euphoria, teeth grinding, jaw clenching, sweating, dehydration, nausea and anxiety. Higher doses can produce hallucinations, irrational behaviour, panic, vomiting and convulsions. Another potentially serious side effect is hyperthermia, especially if factors include a hot environment, vigorous activity, dehydration and inability to perspire. Symptoms include flushed skin, increased breathing and heartbeat. Seizures and convulsions may also occur. Hyperthermia may drive a person to consume extraordinary amounts of water, which in itself can cause death. In a case recorded in Britain an ecstasy user consumed 14 litres of water which caused fatal swelling of the brain.

**SHORT-TERM EFFECTS**

Short term emotional and physical health problems are common. Ecstasy affects chemicals in the brain called neurotransmitters, one of the main ones being serotonin, another is dopamine. Serotonin is involved in regulating moods, sleep, pain, appetite and sex drive. After the immediate effects of ecstasy wear off, the serotonin levels are drained, and users may feel depressed, anxious, irritable, or tired. Regular use may lead to such low levels of serotonin that the user only feels good when they’re on ecstasy. Continued use only reduces serotonin further, creating a vicious cycle.

Dopamine is involved in movement. When brain dopamine is severely depleted, movement becomes slow and unsteady. Shaking at rest can occur. Users frequently report the following effects:

- Loss of energy/ exhaustion
- Irritability
- Depression
- Trouble sleeping/ insomnia
- Confusion & difficulty concentrating
- Sweating & hot and cold flushes
- Trouble urinating
- Weight loss, poor appetite & vomiting
- Joint pains & muscle aches
- Headaches
- Blurred vision
- Anxiety & paranoia.
Some also experience more extreme symptoms like:
• Suicidal thoughts, panic attacks, fainting
• Brain damage.

**BRAIN DAMAGE**

Disturbing evidence continues to emerge that ecstasy use could be linked to long-term damage to parts of the brain. This could lead to long-term depression and negative effects on memory, mental processing and, potentially, problems with movement.

Research in rats and monkeys shows that ecstasy destroys parts of the brain cells that produce serotonin (serotonin is involved in regulating moods, sleep, pain, appetite and sex drive) and/or dopamine (dopamine is involved in movement). In animals, this damage is long-lasting, and may, in some areas of the brain, be permanent.

More recent studies in human ecstasy users support findings that serotonin nerve endings in the brain might be damaged by ecstasy.

University of Adelaide research obtained from brain scans and psychological assessment of users found that ecstasy taken on a few occasions could cause severe damage to brain cells, with potential to cause future memory loss or psychological problems.

This is supported by other studies, however more information is needed.

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**PARKINSON’S SYMPTOMS**

Taking several doses of ecstasy over short periods may put people at risk of developing a Parkinson’s-like condition and other disorders.

Research has for some time suggested ecstasy injures the nerve endings in the brain which regulate mood and behaviour (serotonin). Results of a study released in September 2002 found, in animals, that taking several sequential doses of ecstasy can destroy endings of a second type of neuron, the dopamine neuron. Dopamine controls movement, emotional and cognitive (learning) responses, and the ability to feel pleasure and pain. When these neurons are sufficiently damaged, a condition with symptoms similar to Parkinson’s disease, known as Parkinsonism, emerges.

The results indicate that “even individuals who use MDMA [ecstasy] on one occasion may be at risk for substantial brain injury.

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a Parkinson’s Disease is a progressive disease marked by trembling, stiffness of resting muscles and a shuffling style of walking.
if they use two or three sequential doses, hours apart, as is often the case in recreational settings. This assumes that findings in animal’s generalise to humans and that the damage is permanent. Both assumptions have yet to be fully validated.

LEARNING & MEMORY PROBLEMS

Australian National University research published in December 2001 indicated that ecstasy can cause long-term damage to memory as it relates to learning.

Two studies, which involved present and former ecstasy users undergoing a series of clinical memory assessments, found that although users had little difficulty recalling memories compared with non-ecstasy users, they had trouble storing new information. It took them much longer to learn new things, to get the brain to store new information.

The damage did not appear to improve or correct itself over time. There was some regrowth in the nerve fibres damaged through ecstasy use, but not full recovery.

Memory tests and brain scans performed by Dutch researchers on subjects who had recently used ecstasy also revealed memory deficiencies that persisted long-term.

BIRTH DEFECTS

Follow up of 136 babies exposed to ecstasy while in the womb indicated that the drug may be associated with a significantly increased risk of birth defects (15.4% compared to the expected rate of 2-3%). The main problems included abnormalities of the heart and blood vessels and club foot.

IMMUNITY

Regular users of ecstasy often become physically run-down. They may experience reduced energy levels and be more open to infections, cold, flu and other bugs.
DEATHS

Overdose of ecstasy can occur and some deaths have been related to overheating and dehydration. Over 50 ecstasy-related deaths in the UK and several in Australia have been reported.

Long-term use of ecstasy can cause serious physical damage. In 1996, a British study of the deaths of seven male ecstasy users 20-25 years old reported that their livers, brains and hearts had severely degenerated.

ECSTASY PSYCHOSIS

Reports from Europe reveal instances of psychosis triggered by use of ecstasy. This is a temporary condition resulting from use of the drug. The main symptom is paranoia (irrational thoughts, feeling like you’re being followed or talked about, thinking people are plotting against you), as well as hallucinations (hearing voices and seeing things that are not there).

Many ecstasy users experience problems financially, with work and study, and with relationships. People suffering from this condition would obviously be more prone to hurting themselves and others.

HEALTH PROBLEMS ARE NOT THE ONLY RISKS!

Because ecstasy makes people feel warm and loving and open, it can lead to dangers in terms of users being taken advantage of emotionally, financially, or physically/sexually.

In research conducted by the National Drug and Alcohol Research Centre (NDARC), many of those users interviewed had experienced financial problems related to their ecstasy use, some of which included not being able to pay rent or buy food. Half of all users were dealing to help pay for their own drugs, and others were involved in stealing or shoplifting, or stealing from their parents.

Half of the people interviewed by NDARC who used ecstasy had work or study problems connected with their ecstasy use. This included sick leave, skipping classes, trouble concentrating, lack of motivation, reduced work performance or even quitting or being sacked.

Half also had relationship or social problems like arguments, jealousy, break-ups or getting kicked out of home, which they connected to their ecstasy use.
Endnotes

1 Topp L, Dillon P, Hando J, Ecstasy, Facts & Fiction, National Drug and Alcohol Research Centre (NDARC), University of NSW, Sydney, (Obtained 2002)


8 Topp, Dillon, Hando, op.cit.

9 The University of Adelaide 2002, ‘Ecstasy link to long-term brain damage’ (media release), Marketing & Public Relations Office, 4 March 2002

10 Topp, Dillon, Hando, op.cit. (See also, Newsweek Inc 2002 Oct 7 by Mary Carmichael, A Worry for Ravers)


12 The University of Adelaide, op.cit.

13 Moffitt, Malouf, Thompson, loc.cit.


18 Topp, Dillon, Hando, op.cit.

19 CEIDA, op.cit.

20 Moffitt, Malouf, Thompson, loc.cit.

21 Ibid

22 Topp, Dillon, Hando, op.cit.