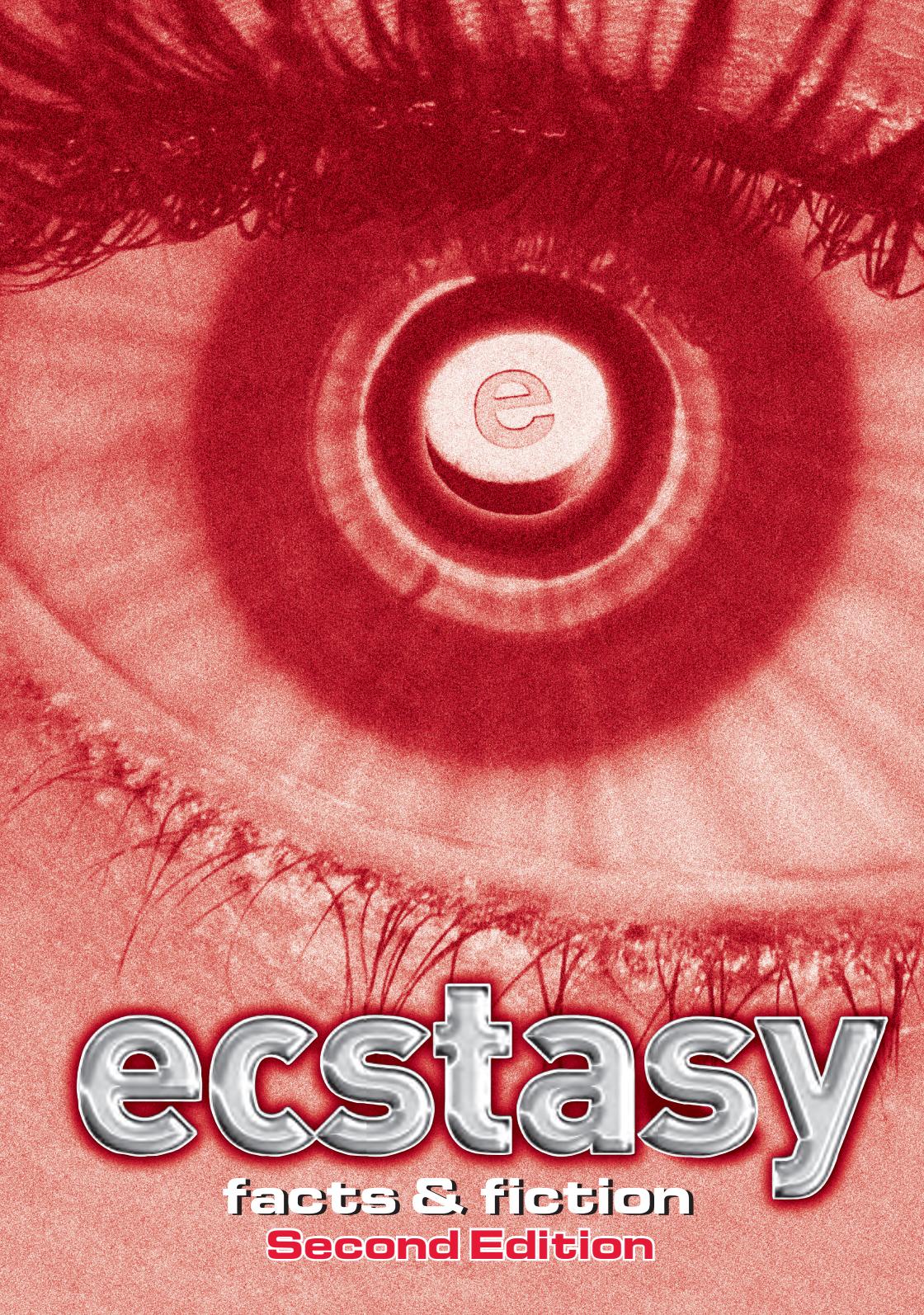
ecstasy
facts & fiction
Second Edition

Fast Find

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About this booklet

'Ecstasy', or MDMA (3,4-methylenedioxymethamphetamine), is an amphetamine-type stimulant with hallucinogenic properties. News stories about ecstasy usually receive a lot of media coverage and are often presented in a sensational way. Many ecstasy users react to this kind of sensationalism by completely and mistakenly rejecting the risks associated with ecstasy use. Often this can lead to misinformation about the health risks of ecstasy being circulated. This booklet has been designed to provide information to people who use ecstasy. It provides a brief overview of the main issues relating to ecstasy use.

Issues around drug use and drug-related harm are complex. Every attempt has been made to provide up-to-date information, however our understanding of these issues may have changed since this booklet was published. If you need specific information on the issues covered here you should seek advice from professional sources such as those listed on the back cover. Ecstasy is not a benign drug. The best way to avoid problems with ecstasy is not to use it.

What is ecstasy?

'Ecstasy' is the popular street name for 3,4-methylenedioxymethamphetamine, or MDMA. Sometimes people also refer to it as 'E'. MDMA is classed as an hallucinogenic amphetamine because it possesses both hallucinogenic and stimulant properties. Most people who use ecstasy take it to experience the drug's euphoric and stimulant effects.

As tablets sold as ecstasy nowadays contain variable amounts of MDMA, and sometimes no MDMA at all, many people just refer to them as 'pills'.

Some History

MDMA was first made in Germany in 1912 by a pharmaceutical company. It was never commercially successful and there was little interest in the drug until the 1970s when a chemist called Alexander Shulgin 'rediscovered' it. Psychotherapists started using MDMA with their patients to help them get in touch with their feelings. In this carefully controlled environment under medical supervision, therapists observed that MDMA had only mild to moderate effects and appeared to be relatively safe.

By the 1980s, the term 'ecstasy' was coined and the drug was being used recreationally and in uncontrolled environments such as nightclubs. As international travellers brought ecstasy to the Spanish island of Ibiza and the beaches of Goa in India, a new youth culture emerged. Ecstasy rapidly became a big part of the dance music scene across Europe, the United Kingdom and the United States. Around this time ecstasy became scheduled as a prohibited substance. As the setting in which the drug was used began to change, reports of ecstasy-related harm also started to emerge.

Presently several pilot studies are investigating the effectiveness of MDMA as a potential treatment for PTSD (post-traumatic stress disorder).

What's in it?

'Ecstasy' is a street term for a range of drugs that are sold supposedly containing MDMA. In the manufacture of MDMA, quality control is difficult to achieve which can result in the final product containing chemicals other than MDMA.

In Australia, ecstasy pills do not always contain MDMA. Sometimes they contain methamphetamine mixed with other amphetamine-type substances like MDA, MDEA and occasionally PMA. Ketamine is another drug which may be found in pills sold as ecstasy. Other substances which have been identified in ecstasy pills include pseudoephedrine, caffeine, glucose and household chemicals. Small amounts of cocaine, LSD and heroin have also been found in pills, although this is rare.

There's no way of really knowing what's in an ecstasy pill. Pill testing kits, which contain reagents that react with particular chemicals in ecstasy pills, may not necessarily identify all active substances and produce results which can be difficult to interpret accurately. Pill testing kits can not determine the purity and quantity of substances present.

PMA (paramethoxyamphetamine) is a substance which has stimulant and hallucinogenic properties similar to MDMA, but it is far more toxic. The immediate effects of PMA are difficult to distinguish from MDMA. Deaths have occurred after taking ecstasy pills which contained PMA. MDEA (methylenedioxyethylamphetamine) and MDA (methylenedioxy-amphetamine) are substances which have stimulant and hallucinogenic properties similar to MDMA.

What does it look like?

Ecstasy most often comes in tablet or 'pill' form. An ecstasy pill can vary in size and colour and usually has a logo stamped on it. Sometimes ecstasy can also come in capsules or be sold in powder form.

Just because two pills have the same logo or are the same colour doesn't mean they will have the same effect. Pills which look the same can come from different sources and contain a different mix of drugs.

Who uses it?

Ecstasy is a widely used illicit drug. The proportion of Australians who have used ecstasy has increased over the last few years. According to recent surveys, just less than 9% of Australians said they had tried the drug and about 3.5% had used ecstasy recently (i.e., in the past year). Ecstasy is the second-most popular illicit drug after cannabis. Ecstasy use is more common among people aged between 20-29 years and tends to be used more by males than females.

Ecstasy users come from all walks of life. Although ecstasy use is often associated with raves and nightclubs, it is also used in other settings such as pubs, music gigs, out-door areas or in homes.

How is it used?

The vast majority of users swallow ecstasy. Swallowing ecstasy is the least harmful way to use the drug because it is absorbed slowly by the body. If you swallow ecstasy, the effects tend to last longer than if you snort or inject the drug.

If you snort ecstasy, the effects come on more quickly than if you swallow the drug, the 'high' doesn't last as long and you'll come down sooner. People who snort ecstasy a lot often develop nose bleeds and other nasal problems.

Some people insert ecstasy into the anus or vagina from where it is rapidly absorbed into the blood stream. This is called 'shafting' or 'shelving'. Ecstasy used in this way can burn the linings of the anus or vagina. Shafting can also have a strong laxative effect.

Although it is not very common, some users inject ecstasy. Injecting is the riskiest way of using ecstasy. When injecting, the effects come on more quickly, are stronger and they wear off faster. Compared to people who swallow or snort, people who inject tend to spend more money on drugs, find it more difficult to reduce drug use and can permanently damage their veins. Injecting impurities, such as chalking agents used in pills, can thicken blood vessels and cause blood clots which lead to thrombosis.

Effects of ecstasy

When you use ecstasy, the drug is absorbed into the bloodstream, travels to the brain and activates chemical neurotransmitters. The main neurotransmitter which ecstasy affects is called serotonin. Serotonin is involved in the regulation of mood, sleep, pain perception, body temperature, appetite and sex drive. Ecstasy increases the amount of serotonin released in the brain. The primary effects of ecstasy usually last about 4 hours and the residual effects can last for several days.

Ecstasy users generally say they experience an overall sense of well-being, feelings of closeness to others, euphoria and increased energy. Other common short-term effects include pupil dilation, jaw tension, teeth grinding, hot and cold flushes and loss of appetite.

After using ecstasy, levels of serotonin are depleted and this can lead to depressed mood, energy loss, irritability, trouble sleeping and poor concentration. Serotonin levels generally return to normal within a few days after stopping ecstasy use.

A number of factors can influence the effects of ecstasy. These include the amount of drug used, physical environment, social setting and individual expectations about the experience. Females also tend to be more susceptible to the physical and psychological effects of ecstasy than males.

Typically, there are 3 stages:

1. Coming up:

The drug starts to take effect

- lasts for about 5-20 minutes
- users typically describe this stage as a 'rush'. They will start to feel hot and sweaty, their heart rate will increase and their pupils will dilate. Their muscles will tighten, especially the jaw, and it might become difficult to focus. It's also common to feel anxious or nauseous, and some people may even vomit

2. The plateau:

The effects of ecstasy level off

- lasts for about 4 hours
- users tend to feel an overall sense of well-being, a closeness to others, euphoria and increased energy. Sensations such as sight, sound and touch are heightened

3. Coming down:

The effects of ecstasy wear off

- lasts for several days
- it is relatively common to feel depressed in mood, and have energy loss (especially if dancing all night). Users may also experience muscle aches, irritability, trouble sleeping and poor concentration. Some people feel anxious or can experience feelings of paranoia

Coming down

The worst part about using ecstasy for most people is the come-down. This is the period where people feel the residual effects of the drug. Typically, the more undesirable effects are associated with coming down. Different people experience the come-down in different ways. Feeling irritable, down and lethargic are common complaints.

A lot of people try to self-medicate the come-down by taking pharmaceutical drugs such as sleeping pills, smoking cannabis or drinking alcohol. Although using other drugs to mask the symptoms may seem like a good idea at the time, the best strategy is to simply rest and give the body and mind time to recover.

Overheating & dehydration

Ecstasy is usually used in hot, crowded environments and by people who are dancing for long periods of time. Because of this, overheating and dehydration are potential problems of ecstasy use.

The signs of overheating and dehydration are:

- feeling very hot, unwell or confused
- feeling thirsty
- dark urine or inability to urinate
- headache
- not sweating at all (even if active)
- rapid heart rate
- vomiting
- fainting

If you start to notice the signs of overheating then it is important to take steps to cool down and rehydrate:

- stop dancing
- get some water and sip it slowly
- rest in a quiet, cool area (e.g., chill-out area)
- fan yourself or splash yourself down with cold water
- stay with friends until you feel better

If the signs persist or become more serious then get medical attention. Overheating (i.e., hyperthermia) can lead to other potentially fatal medical conditions if left untreated, and deaths due to hyperthermia after ecstasy use have occurred. If in doubt, call an ambulance. It is important to tell the ambulance officers exactly what drugs the person has taken if you know.

If you are out with friends, a good way to avoid problems is to keep an eye on each other throughout the night. Be ready to get medical help if necessary.

The best way to prevent overheating and dehydration is to take regular breaks from dancing and to drink enough water, fruit juice or soft drink. Drinking alcoholic or caffeinated beverages (i.e., energy drinks) is not a good idea because they increase the risk of dehydration.

How much water is enough?

Making sure you drink enough water while you are using ecstasy is a good way to prevent overheating and dehydration. But how much water is enough?

- if you're active (i.e., dancing) then you should aim to drink about 500ml of water per hour
- if you're inactive (i.e., chilling out) then you should aim to drink about 250ml of water per hour

Drinking too much water can dilute the salt levels in blood which can cause the brain to swell. Some people have died from drinking too much water after using ecstasy but this is extremely rare.

Alcohol & ecstasy

Many people who take ecstasy use the drug in combination with alcohol. This can have serious health consequences.

Drinking alcohol while using ecstasy greatly increases the risk of dehydration. Another effect of this combination is that the stimulant effect of ecstasy masks the intoxicating effect of alcohol, so people actually may be far more drunk than they feel. This means that people might drink alcohol for longer periods than they usually would, possibly resulting in greater alcohol-related harm.

Sex & ecstasy

Many users describe ecstasy as providing a sensual rather than a sexual experience. Some people say that ecstasy makes you horny, but the drug can also stop men getting a hard-on, and make it difficult for both men and women to orgasm.

Ecstasy, like other drugs, can lower inhibitions. This means that some people using ecstasy could be more likely to engage in risky sexual behaviour such as unsafe sex. With sexually transmitted infections (STI's) on the rise in Australia, it is especially important to remember safe-sex practices. Always carry and use condoms.

Pregnancy & ecstasy

Studies of foetal development in animals exposed to ecstasy have found lasting changes in brain chemistry and behaviour. Very little research has examined the effects of ecstasy on the human foetus but some studies have reported birth defects among women who used ecstasy. The limited data that exist suggest that women who use ecstasy stop taking it when they learn they are pregnant.

Driving & ecstasy

There is very little information on the effect of stimulants like ecstasy on driving performance. However, ecstasy is known to affect concentration, perception and memory. A recent study which assessed driving performance after people had used MDMA found that vehicle control was affected and became even worse after using multiple drugs. There was also a tendency for people to engage in risky and unsafe driving practices.

Unlike alcohol, where people can roughly estimate their blood alcohol content based on the number of standard drinks consumed per hour, there is no such formula for determining if it will be safe to drive after using ecstasy. If you are going to be using drugs, plan ahead - sharing a taxi could be an option. Remember, other people are affected by your driving, not just you.

In all states and territories in Australia it is illegal to drive when under the influence of drugs, including ecstasy, and penalties can be severe. Roadside drug tests, which can detect ecstasy and other illicit drugs in saliva, have been implemented in almost all jurisdictions.

Pharmaceutical drugs & ecstasy

Some people who use ecstasy might regularly take pharmaceutical drugs prescribed by a doctor for a medical condition such as depression, or use prescription drugs such as dexamphetamine ('dexies') or methylphenidate (e.g., Ritalin) recreationally.

Pharmaceutical drugs can interact with ecstasy and lead to serious problems. Antidepressant drugs (e.g., Prozac, Aropax, Zoloft, Aurorix, Efexor, Nardil, Parnate) work by regulating serotonin levels and therefore can be dangerous if combined with ecstasy. Combining stimulant drugs such as dexamphetamine or methylphenidate with ecstasy can increase the likelihood of experiencing serious negative health effects.

A potential harm of combining these pharmaceutical drugs with ecstasy is 'serotonin syndrome'. Serotonin syndrome is caused by too much serotonin in the central nervous system. Not everyone experiences serious symptoms, but the effects can be unpredictable, and in extreme cases, life-threatening. Serious symptoms include fever, agitation, confusion and muscle spasms. If you see someone with these symptoms you should seek medical help.

Combining ecstasy with the following pharmaceutical drugs can be risky:

- **anti-depressants (e.g., Prozac, Aropax, Zoloft, Aurorix, Efexor, Nardil, Parnate)**
- **dexamphetamine ('dexies')**
- **methylphenidate (e.g., Ritalin)**

If you are using these pharmaceutical drugs and taking ecstasy you should discuss the potential risks with a general practitioner.

Depression

Depression, or low mood, is relatively common in the week after ecstasy use. These feelings usually resolve within a few days after serotonin levels return to normal.

Some people who are prone to mental health problems may find that they experience low mood more intensely after using ecstasy, or that the use of ecstasy triggers episodes of depression which last for very long periods.

It is not clear why some people might experience severe and long-lasting depression after ecstasy use, but a known history of mental health problems could be a factor. If you already have a serious mental health problem like depression, using ecstasy might make your symptoms worse.

The best way to reduce the risk of these sorts of problems is to cut-down or stop ecstasy and other drug use.

Psychosis

There have been reports of psychosis triggered by ecstasy use. You may be more prone to experiencing psychotic symptoms if you have a known history of mental health problems. The main symptoms of psychosis are paranoia (e.g., feeling like you're being followed or talked about) and hallucinations (e.g., seeing or hearing things that aren't really there). If you start to experience symptoms of psychosis you should:

- stop using - If you keep using the psychosis will get worse
- try to rest or sleep
- cut back on your use of ecstasy

If someone experiences ecstasy psychosis, try to be calm and supportive and give them peace and quiet. Their symptoms will usually go away after stopping drug use. If you are worried that they might hurt someone or hurt themselves, then call an ambulance and get them to hospital.

Heart attack & stroke

Although it is rare, ecstasy-related cardiac problems have been reported. People with pre-existing heart conditions may be at increased risk of heart problems, such as heart attack, when using ecstasy. In some cases, the stimulant effects of ecstasy have also been linked to cerebral haemorrhage (e.g., stroke).

Tolerance

A person who develops drug tolerance requires a larger dose of a drug to achieve the same effect which was originally experienced using smaller doses. With repeated use, ecstasy users build up tolerance, and need more of the drug to experience the same effects.

Often ecstasy users report that the desirable effects of the drug decrease with repeated use, despite increasing the amount used. As tolerance to ecstasy increases, people start to use more of the drug to experience the same effect. This not only increases the risk of ecstasy-related harm, but also the financial cost of using.

Regular users tend to develop tolerance to the empathic effects of ecstasy over a relatively short period of time. This can often lead to the misconception that drug purity is generally decreasing.

If you notice that your tolerance to ecstasy is increasing, it could be time to stop or take a break from using for a while.

The rate at which tolerance to ecstasy develops varies depending on how often and how much ecstasy you use.

Dependence

Most users are able to regulate their use of ecstasy. As a result, people rarely become dependent or addicted to the drug. For a small proportion of users, dependence on ecstasy can be a problem. Whenever drug use starts occupying larger and larger amounts of your time, it means other aspects of your life are developing less. If ecstasy use has become a problem, you may be experiencing some of the following:

- frequent ecstasy use
- high tolerance to ecstasy
- continued use despite persistent or recurrent physical or psychological problems
- inability to cut-down or stop using ecstasy
- problems with work or study
- financial hardship
- relationship and social problems
- anxieties about drug use
- criminal behaviour

If you are experiencing any of these problems then your drug use could be getting out of control. It might be time to take a break, stop, or get help to stop using ecstasy. On the back page of this booklet is a list of agencies which can help.

What are the long-term effects?

Little is known about the long-term effects of ecstasy use, but more is being learnt all the time. Much of the research so far into the long-term effects of ecstasy has related to its potential to cause neurotoxicity (i.e., brain damage). Research in animals, and brain imaging studies in humans, suggests that ecstasy can permanently damage brain cells which produce serotonin.

It is uncertain whether this damage leads to any actual problems with memory and thought processes in humans in day-to-day life. Some research is beginning to find that people who have been regular and heavy ecstasy users, and used over many years, are more likely to experience memory problems.

There is also some evidence that heavy and regular ecstasy users can experience long-term symptoms of depression which could last even after they stop using. People who have a known history of mental health problems could be particularly susceptible. The long-term effects of ecstasy use are still largely unknown.

It can be difficult to accurately determine the long-term effects of ecstasy use because ecstasy users also tend to use other drugs, the content of ecstasy pills is highly variable and only a handful of research studies have investigated large groups of ecstasy users over time. More research is still needed

Copies of this booklet can be purchased from the National Drug and Alcohol Research Centre Education Trust, University of New South Wales, Sydney, NSW, 2052.
Ph: (02) 9385 0333 Fax: (02) 9385 0222 Email: ndarc21@unsw.edu.au

This booklet was written by Edmund Silins, Annie Bleeker and Greg Martin, and is based on an earlier edition by Libby Topp, Paul Dillon and Julie Hando.

NDARC

ISBN: 07 334 1793 0