MDMA in perspective

THE SPEED TRIP

'ECSTASY', otherwise known as 'E', 'Adam', or 'XTC', is 3,4, methylenedioxymethamphetamine, or MDMA for short. It is classed as an hallucinogenic amphetamine, a group of drugs with effects that combine those of amphetamine and LSD, although, as will be seen below, MDMA is not strictly hallucinogenic at normal dose levels.

In the general category of hallucinogenic amphetamines there are over a thousand compounds; those in the MDA (3, 4, methylenedioxyamphetamine) family include MDMA, MMDA, MBDB and MEDA, and are mainly derived from the oils of natural products such as nutmeg, sassafras, dill, calamus, crocus, parsley and saffron.

The structure of each compound determines whether the effects are more like amphetamine or more like LSD. They vary widely in their potency — those listed above are at the relatively mild end of the spectrum, while others in the MDA family, like PMA and hallucinogenic amphetamines such as DOM, are very much stronger. These strong compounds are usually not derived from natural sources, but are entirely synthetic.

One researcher in America has argued that the effects of the milder hallucinogenic amphetamines are sufficiently different from those of their stronger cousins and from amphetamine and LSD in general, to warrant being put in a class by themselves. The name 'entactogen' has been proposed, indicating the reported potential of MDMA in particular to allow those in psychotherapy to 'make contact' with their own and others' feelings in counselling sessions.[1]

This call for a new class of drugs is partly an attempt by a group of therapists and researchers to dissociate MDMA from other, more 'disreputable' drugs. However, their representations to the US government on the value of MDMA as a therapeutic tool in counselling did not prevent the banning of the drug in May 1985 under schedule one of the US drug laws. This means that nobody in the USA can legally manufacture, sell, or use the drug for any purpose.

However, it would appear that the Drug Enforcement Agency's invocation of emergency powers to ban the drug was triggered by a report that MDA (as opposed to MDMA) had caused brain damage in rats, at a time when there was much media coverage about the sudden upsurge in MDMA use among young people.

Acid House at the Fridge in Brixton — Mark Pepper, Times

1988 was the summer of louts and love. The louts drank lager; fun and love came in tablets of MDMA — 'Ecstasy'. Reality and fantasy mixed in a crescendo of press reports about MDMA and Acid House music. Feet on the ground, Harry Shapiro gives us the basic facts on a new variant in Britain's illegal pharmacopoeia.

Harry Shapiro

Therapy, war and love

The history of MDMA starts with the synthesis of MDA, the parent drug of the group, by two German chemists in 1910. Little interest was shown in the new drug; it was largely forgotten until 1939 when it was tested on animals during research on adrenaline. In 1941, MDA was tested as a relief for Parkinson's disease, but rejected when the trial subject experienced increased rigidity. About the same time, side effects led the US pharmaceutical manufacturer, Smith, Kline and French, to drop plans to market the drug as an appetite suppressant.

The story of MDA then follows a similar pattern to that of LSD. In 1943, a Swiss chemist, Albert Hofmann, accidentally discovered the hallucinogenic properties of LSD and carried out further experiments on himself. The drug was then used by the military and by psychiatrists for very different purposes, before ending up 'on the streets' and thence onto the statute books as a banned substance.

MDA's 'Hofmann' was Gordon Alles, an American researcher who had discovered amphetamine in 1927. Alles experimented with the drug several times and described his experiences of heightened perception and (unusual for MDA in small doses) visual imagery to a scientific meeting in 1957. At that time the US military were trying a whole range of drugs for use in chemical warfare, to extract information from prisoners and to immobilise armies. MDA was coded EA1299 by scientists at the Edgewood Chemical Warfare Service (ECWS).

The general consensus is that MDMA was first synthesised in 1914 by the German pharmaceutical company E. Merck, although one source maintains that the drug was first synthesised by two Polish chemists, Biniecki and Krajewski, as late as 1960. However, ECWS records from the 1950s show MDMA

Not a 'designer drug'

Designer drugs have been defined as "substances wherein the psychoactive properties of a scheduled drug have been retained, but the molecular structure has been altered in order to avoid prosecution...".[2] To that extent MDMA is not a designer drug, even though it is only produced in illicit drug factories and laboratories. The drug laws in the USA and this country are now 'designed' to outlaw all versions of MDA and its related compounds, including one called MDE ('Eve') which appears to be a wholly synthetic analogue of MDMA ('Adam').

1. Nicholas D. "Differences between the mechanism of action of MDMA, MBDB, and the classic hallucinogens. Identification of a new therapeutic class: entactogens." *Journal of Psychedelic Drugs*: 1986, *18* (4), p.305-313.
2. Beck J. and Morgan P.A. "Designer drug confusion: a focus on MDMA." *Journal of Drug Education*: 1986, *16* (3), p.288.
3. Bigwood J. "STP and MDA: the love drug and other psychedelic amphetamines." *Head*: December 1977, p.92.
4. Weil A.T. "The love drug.": *Journal of Psychedelic Drugs*: 1976, *8* (4), p.336.

The author is joint head of ISDD's publications unit and also wrote Waiting for the Man *(Quartet, 1988), a study of the relationship between drugs and popular music*

listed as 'experimental agent' EA1475.

MDA, dubbed the 'love drug', first leaked onto the streets of West Coast America in 1968, to be controlled under US drug laws in 1970. MDMA appeared as a legal alternative around 1972. It was used by some therapists, particularly those dealing with marital problems, as the drug encouraged empathy between users and dissipated hostility and anger. However, as noted above, recreational use reached proportions significant enough to cause the drug to be banned in America in 1985.

Law and use in Britain

In the late sixties, concern in this country about the proliferation of hallucinogenic amphetamines in America prompted the precautionary controlling of specific drugs such as MDA and TMA. However, in the mid-seventies, after an illicit drug laboratory was raided in the Midlands, it was discovered that the chemist had prepared an hallucinogenic amphetamine not controlled at that time and was in possession of the formulae for other drugs of this type.

As a result, in 1977 — to stay 'one jump ahead' of the underground chemists — the Government introduced an amendment to the Misuse of Drugs Act designed to control all amphetamine-like compounds, including MDMA. The amendment put these drugs in class A, the category for drugs deemed to be the most harmful, where the penalties for possession (up to seven years in prison plus an unlimited fine) and dealing (up to life in prison and an unlimited fine) are consequently the most severe.

MDMA is also in schedule 1 of the act's regulations. This prohibits doctors from prescribing it and means a licence from the Home Office is required to use the drug for research.

Control of MDMA in the UK occurred before there was any evidence that it was being used to any significant degree. However, in October 1985 an article in the *The Face* magazine suggested that MDMA had been coming into Britain in small quantities for a few years. There were four seizures of the drug in this country in 1985 and 16 in 1986. Early in 1987 came the first evidence that Ecstasy was being manufactured here after a raid on an illicit laboratory in West London. In April that year, 1000 tablets were seized followed in July 1988 by 2500 tablets, the biggest seizure of MDMA to date.

Currently the drug is associated with clubs in various parts of the country that play host to music known as 'Acid House' and 'Balearic' — the first derived from heavy American dance music known as 'House', the second, a lighter dance music allegedly first heard by two DJs on holiday in Ibiza.

The appearance of the drug varies depending on purity. Seizures in this country have ranged from off-white tablets about the size of Disprin to pink, yellow or clear capsules. Various prices have been quoted by police, drug agencies and journalists, ranging from £5-£25 a tablet.

The immediate effects

MDMA is effective at the moderate single dose level of 75-100mg; effects are experienced after 20-60 minutes and can last several hours. Pupils become dilated, the jaw tightens and there is usually brief nausea, sweating, dry mouth and throat, some rise in blood pressure and heart rate and loss of appetite. There can be some difficulty with bodily coordination making it potentially dangerous to drive or operate machinery under the influence of MDMA. At doses above 200mg or if the drug is being used repeatedly over a few days, all these effects may be more severe.

Once the drug is stopped, there may be some residual effects similar to those experienced by amphetamine users, including fatigue and depression which can last several days.

No overdose deaths from MDMA have been recorded. Where the drug was initially suspected, it has been found that more potent drugs in the MDA family, primarily PMA, were involved. Animal studies would suggest that the lethal dose for MDMA taken by mouth would be in the region of 150 times the 'normal' dose of around 100mg.

As with LSD, whether the MDMA experience is 'good' or 'bad' often depends on what mood the user is in before the drug is taken, what they expect to happen, and the friendliness or otherwise of the immediate surroundings. At moderate dose levels most users report a mild euphoric 'rush' followed by feelings of serenity and calm and the dissipation of anger and hostility.

The drug appears to stimulate empathy between users, but there is no proof that Ecstasy is an aphrodisiac; it tends to enhance the sensual experience of sex rather than to stimulate the desire for sexual activity or increase sexual excitement. MDMA also inhibits orgasm in men and women and may inhibit male erection. Even so, there may be some substance to recent concerns that the use of the drug could undermine 'safe sex' practices with implications for the spread of HIV.

At moderate dose levels there is heightened perception of surroundings without the visual distortions and illusions associated with LSD. Thus MDMA is to some extent 'psychedelic' ('mind expanding') without being hallucinogenic. However, some particulary sensitive individuals may experience visual imagery, particularly in 'the mind's eye' when the eyes are closed, and hallucinations have been reported at higher dose levels.

After a 'run' of using MDMA for a few days, one residual effect may be 'flashbacks'. This is a well-documented after-effect of using LSD, where the LSD 'trip' is briefly relived some time after the event, often causing anxiety and confusion.

Most of the bad experiences with the drug have been reported by those using higher doses over a period of time. These include anxiety, panic, confusion, insomnia, psychosis, and visual and auditory hallucinations. Adverse effects generally remit once the drug is stopped, but they can leave the user in a weakened mental and physical condition for a while.

Some of these effects have been experienced by those who have tried the drug for 'self therapy' and have then been unable to deal with the emotions that using MDMA has brought to the surface.

After long-term use

Some long-term users have reported increased susceptibility to minor ailments such as cold, flu, sore throats, etc. One researcher has observed that for unknown reasons MDA "seems to be especially hard on women and will activate any latent infections or problems in the female genito-urinary tract".[4] Although the evidence is highly circumstantial, it may be that the MDA group of drugs adversely affects the immune system.

Tolerance develops to the effects of MDMA, but there is no physical dependence, no heroin-like withdrawal symptoms, nor any evidence that MDMA is used compulsively on a long-term basis.

Research published in America in 1988 demonstrated that there was a degree of brain damage in monkeys who were injected with MDMA twice a day for two weeks. However, the researchers themselves pointed out that the significance for human users is unclear, particularly as the way in which the drug was given in this experiment is very different from the way people usually take it.

Overall, the literature suggests that people should not take MDMA if they suffer from heart disease, high blood pressure, glaucoma, epilepsy, or are in poor physical or mental condition. Women with a history of genito-urinary tract infection should not use the drug. There is no evidence that the drug has any effect on the foetus or causes problems in the newborn.

To extend a metaphor — it isn't that the jury is still out on the effects of MDMA, it's that there isn't much evidence for it to consider in the first place. To date, it would seem that used irregularly in moderate doses, the drug is likely to cause no greater problems than amphetamine or LSD at the same level of use. Potentially greater problems may arise due to related chemicals present as impurities in MDMA or sold instead of the drug (see panel). ■

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Is it MDMA? The problem of impurities and substitutes

MDMA is only one of a large number of drugs in the MDA family, including much more powerful compounds like DOM, which produces extremely vivid LSD-like hallucinations, and PMA, which can be lethal even in moderate doses.

All these drugs have very similar chemical structures and are being produced in clandestine laboratories where chemical expertise and quality control may be of a low order. Either by accident or design, it is likely that far more potent compounds will be offered as MDMA on the street.

Ever since MDMA hit the front pages last summer, drugs have been in circulation under such names as 'Fantasy' or 'Phantasia', allegedly combining MDMA with other hallucinogens such as LSD or mescaline.

As far back as 1986, samples of MDMA obtained by *The Face* magazine included DOB, one of the most powerful of the hallucinogenic amphetamines. Two milligrams of DOB is equivalent to 120-150mg of MDA, which itself is stronger than MDMA. At higher doses, DOB has been implicated in at least one death plus a number of severe reactions, including seizures and prolonged coma.