



**E.M.C.D.D.A.**

European Monitoring Centre  
for Drugs and Drug Addiction

# INSIGHTS

## **New Trends in Synthetic Drugs in the European Union**

INSIGHTS  
EMCDDA **1** SERIES





## New Trends in Synthetic Drugs in the European Union: Epidemiology and Demand Reduction Responses

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**EMCDDA, November 1997.**



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A great deal of additional information on the European Union is available on the Internet. It can be accessed through the Europa server (<http://europa.eu.int>).

Cataloguing data can be found at the end of this publication.

Luxembourg: Office for Official Publications of the European Communities, 1997.

ISBN 92-9168-030-3

© European Monitoring Centre for Drugs and Drug Addiction, 1997.

Printed in Portugal.

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# Foreword

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It is with great pleasure that I present the first edition in a new range of EMCDDA publications, which the Centre has christened the '*Insights*' series. This collection, which complements existing EMCDDA series, is designed to cover a wide range of issues and to convey the findings of studies, surveys and pilot projects carried out by the agency under its present and future work programmes.

This edition is particularly noteworthy, not only for being the first, but also for focusing on a topic that has been of key concern to the EMCDDA in the course of 1997: new trends in synthetic drugs. A special chapter of the *Annual Report - 1997* was dedicated to the theme and revealed that "in some EU countries, unprecedented numbers of increasingly young Europeans have adopted the use of synthetic drugs such as ecstasy, LSD and amphetamines in the context of a mass youth culture". Also in the course of the year, the Centre was assigned a major role in the detection and risk assessment of these drugs under the terms of a *Joint Action* adopted by the Council of the European Union on 16 June which established an early-warning system.

This publication reflects the efforts and reflections not only of its authors but also of a larger team of contributors who are mentioned overleaf. It remains for me here to thank each and every one involved in the process for having made these pages possible.

*Georges Estievenart*

Director,  
EMCDDA.

# Acknowledgements

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This publication is based on two EMCDDA-commissioned projects reporting on the epidemiology of synthetic drug use and demand reduction activities related to synthetic drug use in the European Union.

In the preparation of their final reports, the project-leaders (and authors of this publication) relied on the support of individuals, service-providers, project-organisers, researchers and representatives of the REITOX Focal Points, who contributed generously to their work or assisted them in their task.

The authors would like to acknowledge the following individuals who provided data and country reports, on which the epidemiological parts of this publication are based, and who made contributions to the demand reduction aspects of the book:

Joanne Airey, Bengt Andersson, Delphine Antoine, Fabrizia Bagozzi, Cas Barendregt, Peter Blanken, André Benezech, David Beukelmann, Claus Bindslev, Julio Bobes, Thomas Boss, Amador Calafat, Bill Campbell, Chloé Carpentier, Dave Carson, Thierry Charlois,



Ben Charnaud, Mathew Collin, Jean-Michel Costes, Jean-Michel Delile, Lee Fawcett, Cindy Fazey, Caron Forrest, Alasdair Forsyth, Nathalie Frydmann, Lasse Gaardsøe, Juan Gamella, Paz Gonzalez, Alison Grant, Ian Grant, Lennart Grube, Rolf Günther, Sabine Haas, Kim Hagar, Stephanie Hamer, Carol Handy, Vincent Hendriks, Graeme High, Rodolphe Ingold, Karl Jansen, Vincent Kint, Anna Kokkevi, Osmo Kontula, Angelika Kraus, Ludwig Kraus, Christoph Kröger, Leif Lenke, Siwan Lloyd-Hayward, Peter Märtens, Nathalie Melton, Anne Merta, Thérèse Michaelis, Maria Moureira, Saini Mustalampi, Josef Muster, Guido Nöcker, Nicolás Nuñez de la Torre, Börje Olsson, Alain Origer, Aileen O'Gorman, Howard Parker, Kathy Politikou, Manfred Rabes, Alayne Robin, Arturo Alvarez Roldán, Nick Ross, Fabrizio Schifano, Janine Scorthorne, David Shewan, Liz Skelton, Jürgen Töppich, Margriet van Laar, Belinda van de Ruit, Ari Virtanen, Gerd-Jan Voortman, Sarah Welsh, Sara Williamson, Jean-Paul Wydoodt.

The EMCDDA is also indebted to all those who assisted the *National Addiction Centre* and the *Centre for HIV/AIDS and Drugs Studies* in the preparation of their reviews. The staff of the REITOX Focal Points and participants at the 1996 Lisbon seminar on '*Ecstasy and other synthetic, amphetamine-based drugs*' did much to provide overviews and give direction to the work.

# Introduction

**"Ecstasy culture was no freak storm that burst miraculously from the ether; instead, it was part of an evolving narrative of the development and refinement of the technologies of pleasure that crossed continents and cultures before ultimately converging to establish a series of pirate utopias..." (Collin, 1997).**

In 1996, the European Monitoring Centre for Drugs and Drug Addiction (EMCDDA) commissioned a Europe-wide review on the subject of synthetic drugs. This consisted of two inter-related studies undertaken by the *National Addiction Centre* (NAC) in London and the *Centre for HIV/AIDS and Drug Studies* (CHADS) in Edinburgh<sup>1</sup>.

The final reports resulting from these studies detail the epidemiology of synthetic drug use and available information on the use of these drugs in each Member State of the European Union. They also contain an annotated bibliography of European scientific literature published over the last five years, review what is known about the health and social consequences of consuming these substances, and provide an inventory of the demand reduction activities occurring in each of the 15 countries. These reports, which

<sup>1</sup> The epidemiological study was entitled: "The use of amphetamines, ecstasy and LSD in the European Union: A review of data on consumption patterns and current epidemiological literature". Report for the EMCDDA by Paul Griffiths and Louisa Vingoe, National Addiction Centre, August 1997.

The study on demand reduction was entitled: "Demand reduction activities related to 'New Synthetic Drugs', MDMA (ecstasy), other amphetamines and LSD in the European Union Member States". Report for the EMCDDA by Roger Lewis and James Shervail, Centre for HIV/AIDS and Drug Studies (CHADS), May 1997.

constitute the basis of this publication, will serve as a useful resource in the future for all those interested in the topic.

The term 'synthetic drug' has been used in this exercise to refer to the amphetamines, the ring-substituted amphetamines (MDMA and its analogues) and LSD.

Increasing unease has been expressed in recent years about the rising popularity of synthetic drugs. In some countries, this concern has evolved over some time, while in others it has been a response to a relatively new phenomenon. In parallel, increasingly sophisticated demand reduction activities have been developed in some EU Member States, while, elsewhere, decisions are still being taken as to the most appropriate responses to new trends in drug consumption.

In such a context, there is much to be gained from sharing information and experiences between countries. Even in those areas where synthetic drug use is relatively well established, there remains a clear need to audit what is known of the phenomenon. Novel and unexpected patterns of drug consumption present a particular challenge to those whose task it is to monitor and report on drug use. The reasons for this are explored later in this publication.

Increasingly there is recognition of the need to maximise returns on resources invested in demand reduction by pooling knowledge. Such a strategy makes the most of what is already known, and what appears to work, and helps to gauge what more is required. The study on demand reduction activities sought to identify existing, on-going or planned European programmes and projects, as well as to address questions related to definitions, problems, interventions, methodologies, settings and target groups.

At present, a comprehensive knowledge base for informing policy, legislation and demand reduction initiatives is still under development. Such knowledge is critical for the evolution of effective interventions, be they legislative



control measures or practical harm reduction activities. An audit of currently available information and the identification of gaps where further information is required constituted the first step and main purpose of the EMCDDA's two-study review.

The three major concerns that prompted the Centre to commission the review were as follows:

- Synthetic drug use in Europe appears to be increasingly common and new patterns of consumption display many similar features from country to country. Notably, those using the drugs are not found predominantly among the marginalised or the socially deprived but among the young, studious, employed and relatively affluent. These patterns of consumption appear to have established themselves rapidly across the European Union.

- To date, epidemiological indicators have tended to focus on the use of opioids and similar drugs, primarily administered by injection, that induce physical dependence and for which treatment is available. The use of such drugs is considered to have the most deleterious consequences for the individual and for society. Thus far, no coherent Europe-wide knowledge base has existed to inform the planning and implementation of prevention, policy or legislative responses to new forms of synthetic drug use.

- If effective responses are to be made to this new phenomenon, there is an immediate need to audit: firstly, what is known about these substances; secondly, what the likely consequences are for the community of increased consumption; and thirdly, what prevention and other activities are underway.

By providing an overview of existing, on-going or planned European demand reduction programmes - placed in the context of a thorough investigative exploration of the current epidemiology - knowledge can be acquired that will help to address a variety of questions related to definitions, interventions, methodologies, settings and target groups.

As the EMCDDA's 1995 *Annual Report on the State of the Drugs Problem in the European Union* acknowledged, the collection of data on demand reduction activities is not easy. Initiatives aimed at drugs with a 'recreational' image tend to have been established only recently, and are often locally inspired and thus less likely than more 'traditional' services and agencies to be known to a central body.

While synthetic drug use appears to be increasing across the European Union, the scale of the problem differs from country to country and from region to region. Patterns of drug use have always varied greatly in Europe and, in the case of synthetic drug use, the phenomenon emerged earlier in some countries than in others. Prevalence estimates suggest that the numbers of young people using synthetic drugs may be significantly higher in those countries first affected. These countries have also developed some of the most innovative responses.

One advantage of the Europe-wide review undertaken by the EMCDDA was that it facilitated the sharing and exchange of information between countries with quite diverse experiences. The speed with which new trends in synthetic drug use transcend national boundaries has made communication of this kind especially important.

The review paid particular attention to three synthetic drug types: ecstasy (MDMA), amphetamines and LSD. These were selected not because of inherent similarities between the substances, although some exist, but because of correspondences in recent consumption patterns, including their set and setting. Even within this broad paradigm, links and parallels are not always consistent. For instance, certain forms of amphetamine use fit well within prevailing trends, whilst others, such as the repeated injection of methamphetamine, do not.

Widespread concern about the consumption of these drugs has been expressed within the context of rising prevalence

among a young age group in the 1990s. Ecstasy, amphetamines and LSD have all become popular within a population of predominantly young people who use these drugs in socio-recreational settings often, but not exclusively, at large dance events. Moreover, these new patterns of consumption appear to share common characteristics across the European Union. As noted earlier, most users do not display the same levels of marginalisation and social deprivation found typically among problem drug users attending most treatment facilities. This does not imply, however, that the new patterns of use are non-problematic or that consumption is always limited to highly restricted settings.

It is likely that the issues explored in the EMCDDA's review of synthetic drugs will also be relevant to other new drug trends. The manner in which drugs, such as MDMA, have rapidly established themselves across the European Union suggests that such use may both pre-figure and determine the nature of European drug problems in the future.

Recently, ketamine, 2CB (4-bromo-2,5-dimethoxyphenethylamine) and ICE (crystalline methyl amphetamine) have attracted attention, with anecdotal accounts of new forms of 'ecstasy' being cited to suggest increasing consumption. Whatever the case, the invocation of 'ecstasy' as the benchmark drug, against which other new drugs, trends and experiences are routinely compared, illustrates the influence and weight of meaning now ascribed to a substance whose existence was largely unknown before the late 1980s. Improved understanding of how the use of drugs such as ecstasy has developed will inform and enhance responses to new drug trends in the future.





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## ECSTASY

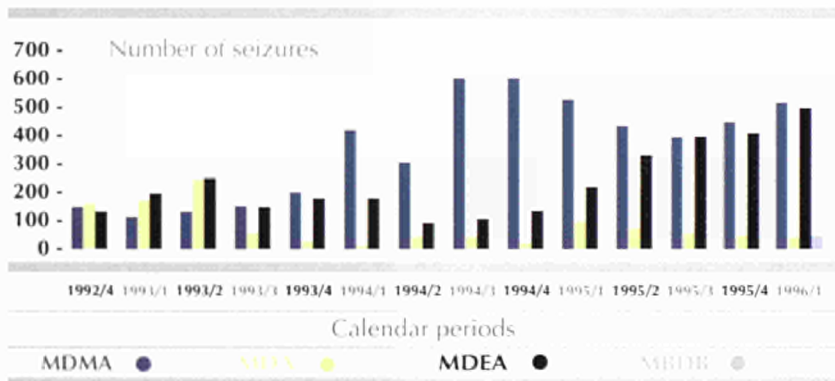
### *Definition and Classification*

'Ecstasy' has a similar molecular structure to amphetamine, mescaline and dopamine and is the common name referring to Methylene-dioxymethamphetamine (MDMA). Recently, the term has widened its meaning to embrace a whole family of drugs known as the ring-substituted amphetamines, a group which includes MDA, MBDB, MDE and MDEA<sup>2</sup>.

This group of substances shares a similar core molecular structure which may be modified to produce a large number of related drug types (analogues). Tablets sold as ecstasy on the illicit market in Europe may contain MDMA, another analogue of the group, or even a combination of these analogues. Seizures indicate that other drug mixtures, usually containing a stimulant and an hallucinogenic or pseudo hallucinogenic drug (such as LSD-amphetamine mixtures or

<sup>2</sup> A full explanation of terms may be found in the glossary at the end of this publication.

### SEIZURES OF MDA, MDMA, MDEA AND MBDB



Seizures of ecstasy type tablets may contain different members of the ring-substituted amphetamine group (UK data).

ephedrine-ketamine mixtures) are also sold occasionally as ecstasy on the illicit drugs market.

Anecdotal accounts suggest that toxic adulterants may also be found in ecstasy tablets. However, the forensic evidence reviewed so far rarely supports this contention. The term ecstasy is now used so widely that it may be considered to be virtually generic for any member of the ring-substituted amphetamine group. Subsequently, for clarity in this volume, except where otherwise stated, the term ‘ecstasy’ will be used for tablets containing MDMA or related analogues. The reader should be aware that this term may refer to MDMA, analogues of MDMA, or combinations of these.

**TABLE I:**  
**CONTEXT AND ROUTE SPECIFIC HARMS**

- The use of ecstasy in hot and crowded settings can result in dehydration and overheating.
- Pills sold as ecstasy may contain other substances, however, forensic evidence reviewed so far rarely supports the existence of toxic adulterants.
- Ecstasy can produce an unpleasant ‘come-down’ after use, in which other drugs may be consumed to alleviate symptoms.
- Ecstasy may be associated with an increased risk of accidents if used whilst driving motor vehicles or operating dangerous machinery.
- Whilst under the influence of ecstasy, individuals may expose themselves to heightened risk of unprotected sexual activity or increased risk of becoming the victim of violent or other crime.



<b>TABLE II:</b>
<b>PHYSICAL EFFECTS AND HARMS</b>

- The physical effects of ecstasy include: loss of appetite; dry mouth; increased blood pressure; increased heart rate; fluctuations in body temperature; increased respiratory rate and blood sugar level; pupillary dilation; increased levels of energy and talkativeness. High doses can result in headaches, nausea, vomiting and blurred vision.
- Use of ecstasy can result in dental damage, due to teeth grinding (bruxism), difficulty with jaw opening, due to muscle tension, and rapid side-ways eye movements.
- Sudden deaths can occur, however, this is a relatively rare phenomenon. There have been between 200 and 500 deaths probably related to ecstasy consumption across the EU in the last 10 years.
- Most fatalities are related to over-heating and exhaustion as a result of excessive dancing and the effect of ecstasy on the body's temperature control. A small number of deaths relate to individuals consuming excessive amounts of water, perhaps promoted by harm reduction advice to prevent dehydration.
- Rare complications have been reported, including liver inflammation and bone marrow problems.
- The amount of ecstasy required to kill an average person by overdose, as distinct from an idiosyncratic, allergic type response is unknown, but likely to be substantial.
- Animal studies suggest that repeated injection of MDMA lowers the level of serotonin in the brain and, to a lesser extent, dopamine. The drug also appears toxic to the nerve terminals where serotonin is produced. The issue of MDMA neurotoxicity in humans is unresolved. It

is unclear what damage is done, at what doses, and what the long-term consequences are. The issue of neurotoxicity is potentially one of the most worrying aspects of the widespread consumption of the drug and, in public health terms, probably more critical than the apparently small number of acute reactions to the substance.

<b>TABLE III:</b>
<b>DEPENDENCE AND PSYCHOLOGICAL HARMS</b>

- Whilst under the influence of ecstasy, the individual may experience confusion, disorientation, anxiety, panic attacks, depression, paranoia and rare psychotic phenomena. However, many users do not report negative experiences.
- At high doses, and with repeated administration, the effects of ecstasy resemble those of amphetamines (empathetic effect declining to leave stimulant action). High-dose ecstasy users may develop a dependence problem. Such patterns of use appear uncommon, and good data on this topic are limited. Ecstasy is not considered addictive within the common meaning of this term, although some users may develop chronic and compulsive patterns of use.
- Some case studies have suggested ecstasy use may be associated with long-term psychotic illnesses. However, data are poor in this area. There are difficulties in assuming causation based on small numbers of uncontrolled cases where: data has been collected retrospectively; where the individuals may have been consuming multiple substances; or where individuals may have pre-existing psychotic illness. No firm conclusions can be drawn from the available evidence.
- It has been suggested that ecstasy may be associated with a short-lived drug-induced psychosis, however, to date, this assertion remains speculative. There is more evidence of short-lived depression following the use of ecstasy.

## *Historical Perspectives*

MDMA was first synthesised in 1912 in Germany and patented by the *E. Merck Pharmaceutical Company*. However, there was little interest in ecstasy until the mid 1970s, when it was resurrected by the chemist Alexander Shulgin and made available to those with an interest in drug-assisted psychotherapy. The psychotherapists considered the drug to be mild to moderate in its effects, which were principally characterised by feelings of empathy. The physical effects were felt to be unremarkable when ecstasy was used in a controlled context.

By the early 1980s, ecstasy had moved 'off the couch and into the community' and was used as a recreational drug in uncontrolled circumstances. International travellers brought ecstasy to Ibiza (Spain) and Goa (India) where a culture was developing of all night dancing at beach parties to fast electronic music ('acid house music') fuelled by drugs. Ecstasy rapidly became a key drug in this new 'dance' culture, which also centred upon cannabis, low-dose LSD, 'magic mushrooms' (psilocybin) and amphetamines.

This sub-culture was imported into various European countries, became particularly prominent in the United Kingdom, and also became a significant force in Spain, the Netherlands, Italy and Germany. At present, the dance culture is growing elsewhere in Europe.

As the 1990s progressed, the price of a tablet of ecstasy fell substantially. In the UK in 1987, an ecstasy pill would cost approximately £25. Today these pills can sometimes be bought for as little as £5 or £10.

In the late 1980s, the media reported several unexplained deaths of persons who had taken MDMA, which led to the substance being described in the tabloid newspapers as the 'Killer Drug Ecstasy'. A range of adverse effects on a variety of organ systems were reported. More recently, the media



have been reporting speculations that use of MDMA may result in mental ill health, particularly depression.

## *Dosage and Route of Administration*

The effective dose range of ecstasy is 70-180 mg. The drug is usually taken as a pill or capsule, although powder is sometimes sold which can be taken via the nasal route. Injection of the powder is a very rare occurrence. The time elapsing before the onset of the drug depends on factors such as the amount of food in the stomach, but it is usually around 30-60 minutes. The dose is also important in determining the speed of onset, time to the peak effect, and duration of the total experience. In general, MDMA effects peak at about 1.5 hours and then fall away slightly to a plateau which is maintained for another three hours and is followed by a 'come-down'.

## *Effects of Ecstasy*

Since tablets sold as 'ecstasy' may contain a variety of substances (e.g. MDMA, MDEA, MDA, MBDB, MDE, 2CB, ketamine, amphetamine, LSD, pseudo-ephedrine and other pharmaceutical agents), it may be difficult to predict with accuracy the effects of any one particular tablet: different analogues will create different psychological and physical effects. Additionally, the psychological state of the individual consumer and the context in which the drug is taken (set and setting) are both likely to be important in influencing the subjective experience of the drug effects.

### **PHYSICAL EFFECTS**

As shown in Table II earlier, typical physical effects of ecstasy include: loss of appetite (perhaps leading to weight loss); dry mouth; diminished sleep; increased blood pressure, heart rate and body temperature (which can rise or fall within the same session); increased respiratory rate, blood sugar level

and use of energy; pupillary dilation, talkativeness and a sense of well-being.

Higher doses are more likely to produce additional effects such as headaches, nausea, vomiting and blurred vision. Very high doses may sometimes result in convulsions, high body temperature, coma and death. Use of ecstasy can result in dental damage, secondary to teeth grinding, difficulty with jaw opening, due to muscle tension, and rapid side-ways eye movements (nystagmus).

From a statistical perspective, serious adverse physical effects resulting from use of ecstasy are relatively rare, however, a range of complications have been reported, including liver inflammation and bone marrow problems. The full range is listed in McCann, Shiyoko and Riquarte (1996)<sup>1</sup>. It appears that most of the adverse effects associated with ecstasy use result from an interaction of the pharmacological properties of the drug with the context of use in hot nightclubs and at dance parties. These adverse effects are not generally seen when the drug is taken in a psychotherapeutic, monitored context, although impaired control of body temperature occurs in any environment.

There is no withdrawal syndrome associated with ecstasy use and the drug is not considered to be addictive within the common meaning of the term. However, any substance, or indeed any human behaviour trait, may become compulsive and excessive in some individuals and there are certainly those who have taken ecstasy on a daily basis for prolonged periods regardless of tolerance effects. Nevertheless, it is far more common for 'problem' ecstasy takers to consume the drug in 48-hour weekend binges with 4-5 days in between.

Indirect adverse effects may result from the taking of further doses of ecstasy or another drug while trying to avoid an unpleasant come-down. Temazepam has, to some extent,

<sup>1</sup> A references section may be found at the end of this publication.



replaced cannabis for this purpose in recent years and, in some countries, heroin has also become a significant player. Insomnia may last for several days following ecstasy consumption.

The adverse effect which has received the greatest degree of media attention is relatively sudden death. Many of these cases have been related to over-heating and exhaustion as a result of excessive dancing, or to dehydration in a rave context and the effect of ecstasy upon body temperature control. These processes can lead to the breakdown of muscle tissue (rhabdomyolysis) which can lead to renal failure and widespread clotting of the blood (disseminated intravascular coagulation) sometimes resulting in convulsions and death. There have also been deaths due to abnormal heart rhythms. The amount of ecstasy required to kill an average person by overdose, as distinct from an idiosyncratic, allergic type response, is unknown but would appear to be substantial. Several overdose attempts, in which at least 100 tablets were consumed, were unsuccessful with the user making an uneventful recovery.

Ecstasy-related deaths have been widely reported by the media resulting in a distortion in the public mind about the degree of risk associated with taking the drug. The relative risk of death should be determined by dividing the total number of deaths by the total number of doses consumed (risk exposures). By the end of 1995, a total of 42 deaths had been officially attributed to ecstasy in the UK. If we assume significant ecstasy consumption to have commenced in 1987, then these 42 deaths cover eight years, between 1987 and the beginning of 1996.

To place this figure in perspective, it is worth considering that, in 1996, there were approximately 115,000 deaths from smoking-related illnesses and 33,000 deaths from alcohol consumption in one year alone. This suggests that the media description of the 'Killer Drug Ecstasy' is misleading, although as indicated above, this does not imply that using it is without risks.

Returning to the issue of relative risk, a conservative estimate of the number of ecstasy doses taken per week in the UK is 500,000. Some have suggested that the figure is closer to a million. If we assume that ecstasy consumption built up steadily from zero in 1987 to 500,000 doses per week in 1992 and remained constant until the start of 1996, the total number of risk exposures is 143 million. The risk of death is then 1 in 3.4 million although, given the uncertainty of these data, this is only a rough estimate of the order of magnitude of the risk.

By way of comparison, the risk of dying while parachuting is 1 in 82,500 jumps (figures supplied by the *British Parachuting Association*) and, in general, the risk of mortality through ecstasy consumption is lower than that posed by many other activities in which young people engage. As use levels were certainly not zero in 1987, and there has been a very substantial increase in use levels since 1992, a mortality risk of 1 in 3.4 million is likely to be a conservative estimate. However, such 'guestimates' should be treated with caution.

### PSYCHOLOGICAL EFFECTS

The most typical psychological effect of ecstasy is an increase in empathy and an expression of positive feelings for others. However, the emotional enhancement may sometimes be of a negative nature, but this is uncommon. A reduction in aggressive urges is a consistent effect in all settings.

As is the case with all mind-altering drugs, the use of ecstasy has been associated with impaired mental health and impaired judgement. While under the influence of the drug, users may also experience confusion, disorientation, anxiety, panic attacks, depression, paranoia and rare psychotic phenomena. Some of these effects may continue for a period after cessation of use of the drug (a comprehensive review of adverse psychological reactions due to ecstasy has been presented by McCann *et al.*, 1995).

Current research evidence on adverse psychological effects of ecstasy is sparse, retrospective, generally uncontrolled, lacks toxicological confirmation of the drugs taken, lacks data on course and outcome, rarely relates mental state to toxicological results and depends heavily on single-case studies, but nevertheless frequently concludes cause-and-effect relationships from what may well be chance associations.

A question that is often asked is "Can ecstasy cause a true drug-induced psychosis?". A common error is to assume that chronic ecstasy use is necessarily causal in cases of mental illness, rather than symptomatic of mental illness, and to infer cause-and-effect relationships which are not justified by the data. Patients may try to 'medicate' themselves with illegal drugs if they are depressed or anxious or during the early stages of a psychosis or relapse. The drug use, therefore, would be symptomatic rather than causal.

Brabbins and Poole (1996) have argued that the term 'drug-induced psychosis' should be restricted to psychotic symptoms arising in the context of drug intoxication, but persisting beyond elimination of the drug and its metabolites from the body. Such a psychosis should only recur on re-exposure to the drug and must have a different course and outcome from the major functional psychoses (i.e. schizophrenia, manic-depression *et al*).

The drugs for which there is at least some scientific evidence of such a syndrome are amphetamines, cocaine and cannabis but, to date, ecstasy has not been included in this group.

## NEUROTOXICITY

In the 1980s, it was reported that large doses of MDMA repeatedly injected into laboratory animals lowered the levels of a chemical messenger in the brain called serotonin and, to a lesser extent, dopamine, and damaged the nerve terminals from which serotonin was released.

Animal studies suggest that persons taking large doses of the drug may be at some risk of lasting neuronal change, but definitive proof that human levels and patterns of use can be neurotoxic is still absent and the relevance of animal studies to humans consuming low doses of the drug is unclear.

The use of high doses of MDMA by humans (but not dramatically higher than typical consumption levels) would appear to be a cause for concern. It is unclear what are the functional consequences of such neuronal damage if it occurs, however, it has been suggested that, in the long term, depression and sleep disturbance may be associated with this loss. It has also been noted that a similarity exists between the serotonergic axons damaged by ecstasy and those seen in Alzheimer's disease. Many researchers have suggested that it is not relevant to assume animal studies can directly relate to man, but MDMA appears more toxic to monkeys than rats suggesting that higher primates may be particularly susceptible to this kind of damage.

MDMA, in the worse case scenario, may have a relatively small safety margin (damage may occur at approximately twice the commonly used dose). The issue of MDMA neurotoxicity remains unresolved as it is unclear what damage is done to man, at what doses, and what are the long-term consequences. However, this is potentially one of the most worrying aspects to the widespread consumption of the drug and, in public health terms, probably more critical than the small number of acute reactions to the substance. Research is currently underway on this topic, however, a cautious interpretation of the available data would suggest that the users should be strongly discouraged from consuming MDMA at high doses.

## AMPHETAMINES

### *Definition and Classification*

The term 'amphetamine' applies to a group of drugs which principally includes benzedrine, (l-amphetamine), dexedrine (d-amphetamine or dexamphetamine) and methyl amphetamine (also called methamphetamine and methedrine).

These drugs are classified as central nervous system stimulants and have a long history of use and abuse both in Europe and elsewhere.

Amphetamines found on the illicit market in Europe are often a mixture of 'l' and 'd' amphetamine. This is because the main precursor used to illicitly produce amphetamines (benzyl methyl ketone) results in a mixture of these two similar products. This synthesis produces a mixture of 'l' and 'd' amphetamine base, which is a sticky liquid unsuitable for commercial purposes. The base mixture is then reacted with sulphuric acid to produce a salt (amphetamine sulphate) which is the most commonly available version of the drug.

'Ice' is the common name for crystalline methyl amphetamine hydrochloride. This kind of amphetamine is highly smoking-efficient as it forms a vapour easily when heated and is usually of high purity. It is also suitable for injection.

Methamphetamine is far less commonly available at present within the European Union.



**TABLE I:**

**CONTEXT AND ROUTE SPECIFIC HARMS**

- Amphetamine users who inject, run the risk of contracting blood borne viruses (such as HIV, hepatitis B/C ) through the sharing of contaminated equipment.
- It has been argued that stimulant injectors may have elevated injecting risk profiles because the typical cumulative number of daily injections is often higher than found among the users of opiate drugs, and because stimulant drug use may be associated with more chaotic behaviour.
- Chronic intra-nasal use of amphetamines (snorting) may result in a perforated nasal septum, chronic rhinitis and loss of sense of smell.
- Amphetamines may be linked to a higher rate of accidents when used whilst driving motor vehicles or operating dangerous machinery.
- When used to facilitate long periods of physical activity, such as dancing, amphetamine users may be at risk of dehydration and overheating.
- It has been suggested that stimulant use may be more associated with violent crime than other types of drug use.
- Negative after-effects of using amphetamines (tiredness, insomnia, minor depression, etc.) may encourage users to consume other drug types (e.g. cannabis, benzodiazepines, alcohol or opiate drugs) to alleviate symptoms.
- Animal studies suggest that amphetamines may be more toxic when users are crowded together (aggregation toxicity) such as in a large dance event.

<b>TABLE II:</b>
<b>PHYSICAL EFFECTS AND HARMS</b>

- Amphetamine use may lead to ulcers and dental damage due to a tendency for teeth-grinding (bruxism).
- High doses may lead to headaches, nausea, vomiting, blurred vision and repetitive movements.
- Very high doses may lead to abnormal heart rhythm, salivation, convulsions, strokes, overheating, coma and death. However, mortality directly associated with non-injecting amphetamine consumption appears to be rare.
- High doses of amphetamines (particularly methamphetamine) are toxic to dopamine-containing neurons and, to a lesser extent, serotonergic neurons.

<b>TABLE III:</b>
<b>DEPENDENCE AND PSYCHOLOGICAL HARMS</b>

- Amphetamine use is associated with a dependence syndrome.
- Amphetamine use is associated with binge-crash behaviour. Chronic users may use the drugs for extended periods followed by a ‘crash’, characterised by anxiety, agitation and depression.
- A clinically identifiable drug-induced short-lived psychosis is associated with chronic amphetamine consumption.

## *Historical Perspectives*

Amphetamines were first synthesised in 1887 and stimulant properties were reported in 1933. In the late 1930s, the *American Medical Association* approved the use of amphetamines for a wide range of disorders and the pharmaceutical company *Smith, Kline and French* reassured physicians that “no serious reactions had been observed”. Between 1932 and 1946, the pharmaceutical industry found 39 licensed medical uses for amphetamines, including the treatment of schizophrenia and tobacco smoking. Whilst amphetamines are controlled drugs within the European Union, they may be prescribed in some countries for therapeutic purposes. Such purposes include narcolepsy, hyperactivity in children, appetite suppression, depression and fatigue. More rarely, in some countries, amphetamines may be prescribed to maintain those who are amphetamine dependent.

Amphetamines have been commonly used by illicit drug users in many European countries for a considerable period (Meltzer, 1994). Populations of amphetamine users have existed in Europe since at least the end of World War II, for example in Sweden. At times, the drug has been associated with distinct youth sub-cultures, such as the ‘Mods and Rockers’ in 1950s Britain or various ‘biker gangs’ across Europe.

Amphetamines have long been identified with musical trends and fashions such as ‘Punk Rock’ and ‘Northern Soul’ in the 1970s and 1980s. Anecdotal accounts suggest that amphetamines became popular within the dance scene at the beginning of the 1990s, partly because they were a reliable alternative to ecstasy which was relatively more expensive and often, at the time, of low quality. However, research data suggests that, in many countries, amphetamines are usually tried before ecstasy by young people and lifetime prevalence of amphetamine use is often higher. Thus amphetamines should not be seen merely as an ecstasy

substitute but, instead, these substances should be viewed as competing products that young people may, or may not, choose to consume.

Amphetamine use is not, however, always characterised by young people 'instrumentally' using the drug for social or recreational purposes. In simple terms, illicit amphetamine abuse in Europe can be characterised by three distinct populations. These are:

- *Chronic users:* This group will often consist of socially marginalised drug injectors, in some respects comparable to populations of chronic opiate users. In some European countries, such as Sweden, this group represents the major 'hard drug problem' in the country.
- *Instrumental users:* Historically and globally, this is probably the most common pattern of amphetamine use. Amphetamines may be consumed instrumentally to improve concentration and ward off fatigue by drivers, students or night workers. Additionally, they may be used to assist with weight loss, particularly among women. Amphetamine use by long-distance drivers and its relationship to traffic accidents is one of the major areas of concern expressed about the use of the drug in many areas of the world. Few data exist to allow comment on the extent of this problem among EU Member States.
- *Social/recreational users:* This pattern of use is found more often among young people who may also be using other substances such as cannabis, ecstasy or LSD. Consumption often takes place in social/recreational settings, such as parties or dance events, and the drug's stimulant properties are exploited to allow the user to remain active for longer periods than would otherwise be the case. Users may identify to a greater or lesser extent with a sub-cultural group identity characterised by music, fashion and shared value systems.



## *Dosage and Route of Administration*

Much of the amphetamine that is sold on the illicit market in Europe is supplied in powder form rather than tablets (the exception being amphetamines that have been diverted from the licit market. Dexedrine, for example, is often prescribed in 5 mg tablets).

Where illicit amphetamine has been produced, the variation in purity is such that generalisation is impossible. As such, it is difficult to talk with any accuracy about typical dose levels. As with other drugs, the actual dose consumed by an individual will vary greatly. For example, dependent amphetamine injectors are likely to be consuming far larger amounts of the drug than students who take a small amount of amphetamine to aid studying.

The widespread variation in the purity of amphetamines available across Europe also makes comparing consumption levels difficult. Whilst, in some countries, amphetamines available at street level may be only 5-10% pure, elsewhere amphetamine products that are 50-60% pure are not uncommon. One recent review on the topic carried out by the United Nations International Drug Control Programme (UNDCP) suggested that whilst typical UK seizures of amphetamine were around 5-10% pure, figures for Norway were 30-70% and for Finland 20-60%. Such data should be interpreted with caution as some countries do not distinguish between street level and production level seizures. In addition, it must also be remembered that different types of amphetamine (e.g. l-amphetamine, d-amphetamine, methamphetamine) have different potencies and thus direct comparisons are difficult.

Amphetamines may be snorted, swallowed, injected or smoked. The suitability of the drug for each of these routes of administration will vary according to the type and preparation of amphetamine that is considered. Not all amphetamine preparations are smoking efficient, for example.



## *Effects of Amphetamines*

The illicit use of amphetamines stems from such effects as a sense of increased energy, intelligence, talkativeness, confidence, endurance and well being, their ability to reduce appetite for slimming purposes, and a reduced need for sleep which usually lasts for about 4 hours depending on dose and route of administration.

Amphetamines acutely increase the quantities of the chemical messengers dopamine, noradrenaline and serotonin which are released into the gap between nerve endings. The increased dopamine release is in a part of the brain called the *nucleus accumbens*, possibly providing the pharmacological basis of reward and pleasure (Koob and Goeders, 1989).

Amphetamines are associated with a cyclical pattern of self-injection in animals (Lamb and Griffiths, 1987), resulting in changes in the dopamine system in the brain (see Henry and White, 1992). These changes suggest a basis for craving and for the link between chronic use of amphetamines and psychosis. However, the applicability of animal data to humans in this area has been challenged and it is possible that amphetamine-induced euphoria and amphetamine-induced paranoia do not have the same chemical basis (see Rothman, 1994).

### **PHYSICAL EFFECTS**

The physical effects of amphetamines include: anorexia (leading to weight loss and malnutrition); dry mouth (which may lead to ulcers); dental damage secondary to teeth grinding; increased blood pressure and heart rate (dose related); increased body temperature, respiratory rate, blood sugar level and use of energy; and pupillary dilation. High doses may result in headaches, nausea and vomiting, blurred vision, analgesia and repetitive movements. Very high doses may sometimes result in abnormal heart rhythms, salivation, convulsions, strokes, overheating, coma and death.

Intra-nasal use of amphetamines may result in perforated nasal septum, chronic rhinitis and loss of the sense of smell. Amphetamine injection carries the usual risks of vascular damage, endocarditis, hepatitis, HIV, abscesses and adulterants.

Amphetamine-related deaths do occur but are relatively rare. Between 1985 and the beginning of 1995, there were 97 recorded deaths associated with the use of amphetamines in the United Kingdom (Shapiro, 1996). During this period there were 42 ecstasy (MDMA) deaths, 67 cocaine deaths, 1,070 solvent deaths, 2,395 opiate deaths, 200,000 to 400,000 alcohol deaths and over 1 million tobacco-related deaths (Shapiro, 1996). Mortality among populations of injecting amphetamine users may be considerably higher.

## PSYCHOLOGICAL EFFECTS

Adverse psychological effects of amphetamine use may include: irritability and aggression (with possible violence and mood swings); low self-esteem; sleep disturbances; severe depression (which may result in suicide); anxiety disorders (including panic attacks); paranoid ideas; paranoid psychoses (involving compulsive, repetitive behaviours); and vivid hallucinations. Hallucinations are usually visual, auditory and tactile (e.g. a feeling of insects under the skin, which may result in picking at the skin). Repetitive behaviours include pacing and the continuous dismantling and re-assembly of objects. These adverse effects are quite common among chronic users and associated with high dose use and injection.

Amphetamines are associated with a dependence syndrome. Experience of pleasurable effects may be followed by an increase in dose frequency. Rapid dose increases may result in tolerance resulting in further increases in dose and frequency. This may develop into a binge lasting for some days, which is followed by a 'crash' when use stops, characterised by anxiety, agitation, and depression. The crash often lasts for about four days. Prolonged sleep is common. The intermediate withdrawal phase involves depression with

a marked loss of the ability to enjoy life, irritability, and exhaustion lasting days up to weeks. The withdrawal phase of use may encourage further amphetamine use. Even after prolonged periods of abstinence, if a user stopped in a state of paranoid psychosis, a return to amphetamine use may result in paranoid symptoms within minutes to hours, although these symptoms may originally have taken months of high dose use to appear. Long-term toxic changes may have occurred (see Ellinwood and Lee, 1989).

As regards psychosis associated with amphetamine use, a short drug-induced psychosis may result from chronic amphetamine consumption. Distinguishing drug-induced psychosis from other forms of psychiatric illness is not always easy. Psychosis wholly due to amphetamines tends to resolve as the urine clears and the drug effects wear off. Where the psychosis does not resolve, long-term follow-up studies usually find a functional psychosis rather than a condition caused by amphetamines.

However, Sato (1992) has reported that chronic use of methamphetamine produces a lasting vulnerability to a paranoid delusional psychosis with schizophrenia-like hallucinations, which *does* extend beyond the excretion of the drug in the urine. Furthermore, stressors or the re-use of methamphetamine or alcohol lead to recurrence of a psychosis with clinical features matching the previous methamphetamine-linked episodes. Animal studies have also reported on enduring changes in brain and behaviour patterns and have linked these with psychosis (see Robinson and Becker, 1986).

## NEUROTOXICITY

These drugs, particularly methamphetamine, are toxic to dopamine-containing neurons and, to a lesser extent, serotonergic neurons, leading to prolonged depletions of dopamine and serotonin, reductions in high-affinity uptake sites and reduced activities of synthetic enzymes (see Kleven and Seiden, 1992; Wilson *et al.*, 1996).

## LSD

### *Definition and Classification*

LSD comes from a family of molecules called the indolealkylamines and should strictly be referred to as LSD-25 (d-lysergic acid diethylamide). LSD shares a basic structure which is common to the short-acting tryptamines such as ibogaine and psilocybin.

The structure of LSD also bears considerable resemblance to the chemical structure of the neurotransmitters serotonin and dopamine. LSD and its analogues are not as easily manipulated chemically as some of the other drugs considered in this review (such as the ring-substituted amphetamines), resulting in the drug being more difficult to synthesise and less easy to alter.

LSD is a metabolic product of the fungus *Claviceps purpurea* which grows on rye and barley and causes the fungal disease 'ergot'. Historically, ergot caused the medieval affliction of 'St. Anthony's Fire' which periodically struck medieval European villages where rye bread formed part of the staple diet.

As with MDMA, analogues of LSD also exist, for instance N-acetyl-d-lysergic acid diethylamide (ALD-52), which has about 90% of the potency of LSD and is sometimes sold as LSD on the illicit market.

<b>TABLE I:</b>
<b>CONTEXT AND ROUTE SPECIFIC HARMS</b>

- LSD may be associated with increased risk of accidents if driving motor vehicles or operating dangerous machinery.
- The nature of the LSD experience is likely to be highly influenced by the context in which the drug is consumed.
- Whilst under the influence of LSD, individuals may expose themselves to heightened risk of unprotected sexual activity or increased risk of becoming the victim of violent or other crime.

<b>TABLE II:</b>
<b>PHYSICAL EFFECTS AND HARMS</b>

- Physiological effects vary widely between individuals. They may include: pupillary dilation; increase in heart rate, blood pressure, body temperature and blood sugar level; sweating; chills; tremors; weakness; ataxia; numbness; or muscle twitching.
- Most reported physical harms associated with LSD use are accidents where people become confused with their surroundings, such as jumping off high buildings believing they could fly. Although some such cases have been documented, they appear to be an exceedingly rare phenomenon.



- Overdose is very rare. Only one case has been recorded and the user was injecting an exceedingly high dose. Very rare cases of convulsions and hyperpyrexia have been reported.
- LSD does not appear to be neurotoxic and earlier studies suggesting chromosome damage have not been substantiated by more recent work.

**TABLE III:****DEPENDENCE AND PSYCHOLOGICAL HARMS**

- Panic attacks ('bad trips') after consuming LSD are quite commonly reported. This may be a rarer phenomenon now than previously, as typical dose levels have fallen. Most panic attacks are not associated with the development of significant long-term problems, but it has been argued that such events may occasionally result in a form of traumatic stress disorder in some individuals.
- Chronic LSD use is sometimes followed by severe depression and suicidal intent. However, it may be that, in such cases, pre-existing psychiatric disorder is also present.
- 'Flashbacks' in which short-lived LSD effects occur some time after consuming the drug are occasionally reported.

## *Historical Perspectives*

LSD (lysergic acid diethylamide) was discovered by the Swiss chemist Albert Hoffman in 1943, while exploring the properties of ergot derivatives for the *Sandoz Pharmaceutical Company*. He accidentally ingested a tiny quantity of the drug and experienced a profoundly altered state of consciousness. Hoffman's experiences with LSD were of considerable interest to psychiatrists, psychologists and neuroscientists, who were looking for new tools to explore the brain and mind, and also to branches of the military with an interest in non-consenting behaviour change ('brain washing'), who were looking for tools with which to control and change the mind.

A substantial international research effort followed throughout the 1950s and 1960s. It was established that LSD probably affects consciousness via an effect upon serotonin (the messenger chemical in the brain) and its receptor sites.

The importance of 'set and setting' to the research outcome soon became apparent. This expression refers to the personality, past experiences (including previous drug experiences), mood, motivations, attitudes and expectations of the individual (set) along with the conditions of use, including the physical environment and other people present (setting). The effects of LSD appeared to depend at least as much upon these factors as upon inherent qualities of the drug itself. For example, a pleasant setting might be more likely to have a positive outcome, while an unpleasant setting could lead to a negative outcome.

In the past, LSD was sometimes reported to have accelerated psychotherapeutic processes by removing the usual psychic defences and allowing enhanced insight. There were also indications that some forms of behaviour change might be possible in certain circumstances, particularly the alleviation

of alcohol dependence. Where no attention was given to set and setting and patients were simply injected with LSD in hospital rooms and then interviewed by doctors in white coats, the results were generally unfavourable. This surprisingly large research enterprise, which resulted in several thousand scientific publications, came to an abrupt halt in 1966-1967 as a result of severe medical and political reactions.

The eventual prohibition of LSD came about for several reasons. In the early 1960s, LSD was given to volunteers who then proceeded to obtain their own supply and spread the drug throughout the community. The inevitable result was that LSD was sometimes taken in wholly inappropriate circumstances with occasionally disastrous consequences. The dissemination of LSD into the community was accelerated by a group of researchers at Harvard University, led by Timothy Leary, the members of which took large quantities of the drug themselves and became overly optimistic about its potential to heal the world's ills. The group set off into the community to preach the virtues of LSD. The drug rapidly became associated with 'anti-establishment' ideologies, the anti-Vietnam war movement, and certain styles of dress, music and appearance which were seen as a threat to the established order of the day.

The taking of LSD in inappropriate circumstances resulted in a series of incidents which were widely reported in the media, such as persons jumping out of windows believing that they could fly. A single incident of this nature could attract widespread media attention. Public perception of the risk of LSD use probably did not reflect the reality of the situation: if the number of serious incidents is divided by the actual number of doses consumed, such a calculation would suggest that the overwhelming majority of LSD doses taken did not have serious consequences.

The 1990s have seen a reappraisal of LSD in both Europe and the United States. A 1993 Symposium held in

Switzerland entitled '*Fifty Years of LSD*' was sponsored by the *Swiss Academy of Medical Sciences* and was attended by many prominent scientists and clinicians. The conclusion of this conference was that research with LSD in humans should resume and that negative findings had often resulted from a 'white coat, hospital room' approach which ignored the importance of set and setting and sometimes even ignored the importance of informed consent. It was felt that, where due attention had been paid to these crucial factors, results obtained were sufficiently promising in some areas to justify a cautious resumption of research.

In the mid 1990s, psychiatrist Rick Strassman was licensed to administer LSD as an aid to psychotherapy at the University of New Mexico and was appointed as the Federal Drug Administration (FDA) advisor on psychedelic studies. Research with hallucinogens also resumed in Europe. In Switzerland, Franz Vollenweider has recently administered psilocybin to humans, the active ingredient in 'magic mushrooms' and very similar to LSD in its effects.

These developments were recently documented in a film made by the British Broadcasting Corporation's documentary programme *Horizon* entitled '*The New Psychedelic Science*', which was broadcast in February 1997. The film argued that, from a 1997 perspective, it seems that LSD is unlikely to destroy the fabric of our society, that LSD casualties are rare - despite the considerable increase in *per capita* consumption since 1967 - and that research with psychedelic drugs can be conducted in an ethical and responsible way. The Head of the Addictive Drugs section at the FDA, Curtis Wright, appeared at key points in the narrative, supporting further research with psychedelic drugs in humans, hopefully to result in new approaches to the treatment of addiction. English psychiatrist, Humphrey Osmond, who coined the term 'psychedelic', was interviewed on the subject of his early work with persons suffering from alcohol dependence, an avenue which he still considered to be worth pursuing.

The major illicit use of LSD in Europe at present is in the 'dance culture', a socio-cultural phenomenon revolving around computer-generated music ('acid house music') and parties or raves involving hundreds and sometimes thousands of people. Raves borrow many images from the psychedelic culture of the 1960s.

### *Dosage and Route of Administration*

In Europe, illicit LSD is now generally taken by mouth in the form of a small square of paper bearing a printed design, which has been soaked in an LSD solution. This is called a 'trip' or 'blotter acid'. The term 'trip' is also used for the experience itself, which can often seem like a journey with a definite beginning, middle and end. The practice of soaking sheets of blotter paper in solutions of LSD and then hanging them up to dry results in large fluctuations in dose levels across a sheet. The bottom edge will generally have a higher concentration of LSD than the middle of such a sheet. This acts to make the experience even more unpredictable.

The time taken before the onset of the drug depends on factors such as the amount of food in the stomach and can vary from 30 minutes to two hours or more. The dose is also important in determining speed of onset, time to peak effect and duration of the total experience. In general, LSD effects come in waves, with each wave having a higher peak than the last. The maximal effect is usually seen at 4-6 hours, with the total duration being 8-12 hours.

With respect to the issue of dose levels, LSD effects which have been commonly associated with harm are very unlikely to commence below 100 microgrammes (a microgramme is a millionth of a gramme). The above-mentioned 1960s newspaper stories of persons jumping out of windows believing that they could fly, generally involved much higher doses of LSD, often in excess of 200-300 microgrammes.



These high doses were relatively common when LSD was made illegal in 1966-1967.

LSD does have effects at very low doses, but the effects are not profound. The effect of consuming 20-30 microgrammes is unlikely to exceed that of drinking strong coffee, and is not hallucinogenic in the overwhelming majority of cases. Psychedelic effects commence between 50 and 100 microgrammes, and the intensity of the effects increases up to around 400-500 microgrammes, in which range effects tend to plateau. Around 50-100 microgrammes of LSD represents a zone of transition to the hallucinogenic state. It is safe to assume that the majority of persons who take 100 microgrammes of LSD will enter this state, while it is unlikely that the majority who take only 50 microgrammes will do so.

Higher doses may prolong the experience but do not alter its character. One person is said to have taken 40 milligrammes and survived (Barron *et al.*, 1970). In the only reported case of death possibly caused by overdose, the quantity of LSD in the blood suggested that 320 milligrammes had been injected intravenously (Griggs and Ward, 1977).

The extensive literature on LSD and mental health is almost universally concerned with the effects of full 'psychedelic' doses, almost invariably of 100-250 microgrammes and over. However, the average dose per square has fallen dramatically since the 1960s. London forensic science services now report that the average dose is 50-70 microgrammes. Hence a drug user in the 1960s who said they had taken LSD may have been referring to a 250 microgramme dose, while a drug user in Europe in the 1990s is more likely to be referring to a 60 microgramme dose. This reduction in the average dose may also contribute to our current perception of LSD as rather less harmful than was believed in the 1960s, and the relative cessation of disturbing newspaper reports. However, it is not uncommon for drug users to report using multiple 'LSD papers' and, as such, dose levels may be higher.

## *Effects of LSD*

Whether licit or illicit, LSD is probably one of the most unpredictable of drugs in its effects. The importance of set and setting has been discussed above. Since these elements vary greatly, so too do the effects of LSD.

### **PHYSICAL EFFECTS**

Physiological effects vary widely between individuals with opposite effects seen in different persons, or within the same individual on different occasions, or even within a single session. Some of the effects which may be seen are: pupillary dilation; increase in heart rate, blood pressure, body temperature and blood sugar level. There may also be sweating or chills, goose pimples, nausea and vomiting. Tremors, weakness, ataxia, numbness and muscle twitching are also possibilities. It is unclear if the reactions are psychological or physiological in nature. Many users report no adverse physical reactions to the drug.

Serious physical adverse effects caused by LSD are extremely rare, although a perception on the part of the consumer that they are experiencing such effects is quite common, hence stories of consumers appearing at hospital casualty departments with odd complaints such as "my heart has stopped".

Very few deaths have been directly attributable to LSD in the last 10 years. In the UK, the number does not exceed one per year at most and even in these cases careful investigation often reveals that while the death is associated with LSD use, the drug itself may not have been directly responsible. Injuries or fatal accidents may be associated with LSD use, yet these tend to be linked to the context in which the drug is consumed.

The amount of LSD required to kill an average person by overdose, as distinct from an idiosyncratic, allergic-type response, is so vastly in excess of the hallucinogenic dose

that only one such death has ever been recorded. Very rare cases of convulsions and hyperpyrexia have been reported.

A 1960s theme which was subsequently disproved was that LSD could damage chromosomes. This belief was principally laid to rest via a study conducted by Dishotsky *et al* (1971) and published in the prestigious journal, *Science*. Further work suggested that the potential of LSD to damage chromosomes was far lower than many other products typically consumed. For example, coffee was shown to have a much greater effect on chromosomes than LSD.

Tolerance to LSD develops after a single substantial dose. This means that if a second dose is taken the following day, it may have little effect. Tolerance may take up to 7 days to fully resolve. There is no withdrawal syndrome and LSD is not considered to be addictive within the common meaning of this term, although any substance, or indeed any human behaviour, may become compulsive and excessive in some individuals. Indeed, there are certainly those who have taken LSD on a daily basis, regardless of tolerance effects, for prolonged periods.

## PSYCHOLOGICAL EFFECTS

The initial effects of LSD are a stimulation of the autonomic nervous system causing physical effects such as mild tremors and nausea. There is then a gradual change in perception, frequently involving a dramatic intensification of colour, swirling patterns, motion of objects which are actually stationary, illusions and pseudo-hallucinations. These sometimes assume a mythical quality. Genuine hallucinations, where the person believes that what they are seeing is real and loses insight into the fact that this is a drug effect, are uncommon.

Higher doses can produce synaesthesia, where one sense is perceived as another (e.g. music may be seen as colour). LSD does not generally produce auditory hallucinations or

persistent delusions. Profound time distortion may occur, usually in the form of an objectively brief period of time being perceived as very lengthy. The perception of time may cease all together. Loss of boundaries may occur, resulting in a degree of perceived merging with the environment and other persons present.

A key feature of LSD experiences is a sense of intense meaningfulness which may develop further into a mystical or religious experience where the user feels that he or she has discovered a fundamental secret of Life or the Universe. Grandiosity is common, sometimes accompanied by a belief that one has superhuman abilities which can have serious consequences.

Insights into the self and others may be enhanced. The person can become highly suggestible, but may also laugh at attempts to control him or her and may view the would-be manipulator with amusement. The prevailing mood is labile and may vary from ecstatic bliss to deep depression to extremely unpleasant panic attacks ('a bad trip').

The harm with which LSD has been principally associated takes the form of impaired mental health and impaired judgement. While under the influence of the drug, users may experience confusion, disorientation, anxiety, panic, depression, paranoia and grandiosity. Unpleasant effects are far more likely if the set and setting are unsuitable.

Chronic LSD use is sometimes followed by severe depression with suicidal ideation. However, it is unclear whether the chronic use of LSD might not have been a form of self-medication of a pre-existing depression or latent depression, rather than actually causative of depression.

An issue which has attracted a considerable degree of public attention is that of 'flash-backs' and chronic hallucinosis following LSD, persisting through periods of abstinence from

the drug. While precise figures are difficult to calculate, these appear to be rare conditions in the 1990s, despite the high level of media interest in them in the past. Despite the currently high levels of LSD use, most psychiatrists in Europe in 1997 are unlikely to see cases of true LSD-induced chronic hallucinosis attributable to LSD use alone. It is more likely that such cases in fact occur in conjunction with the far more common alcoholic hallucinosis (itself a matter of controversy) or with other pre-existing mental disorders such as schizophrenia.

As for whether LSD causes a true drug-induced psychosis, Brabbins and Poole (1996), as explained earlier, have argued that this term should be restricted to psychotic symptoms arising in the context of drug intoxication, but persisting beyond elimination of the drug and its metabolites from the body.

Such a psychosis should only recur on re-exposure to the drug, and must have a different course and outcome from the major functional psychoses (i.e. schizophrenia, manic-depression *et al*). The drugs for which there is scientific evidence of such a syndrome are amphetamines, cocaine and cannabis, and even this evidence is highly controversial, particularly in the case of cannabis where recent studies have tended to argue against the existence of such a syndrome.

It is difficult to produce accurate statistics in this area. However, Brabbins and Poole (1996) have recently reviewed the highly controversial issue of drug-induced psychosis in *The British Journal of Psychiatry*. To summarise the findings, a careful examination of the evidence (using contemporary research standards for establishing cause and effect) indicates that while LSD can produce very dramatic, alarming and acute changes in the psyche, evidence that a single dose can of itself produce lasting, serious psychiatric changes *de novo* in previously normal individual, is not particularly



strong. LSD may produce a state of intoxication which mimics a psychosis, but this does not last for more than a few days and appears to be relatively rare. However, LSD may sometimes alter the clinical picture in a pre-existing psychosis.

### NEUROTOXICITY

It is now generally accepted by most medical specialists that, despite the dramatic effects of LSD on the psyche, the drug is relatively unremarkable in terms of its physical effects on the body and does not cause gross neuronal damage. Even at very high doses, no acceptable scientific evidence exists that LSD causes gross neuronal damage.



# New Trends

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## THE SOCIAL AND CULTURAL DEVELOPMENT OF A NEW DRUG TREND

### *The Emergence of Ecstasy*

Of the synthetic drugs that are considered in this publication, it is the use of ecstasy which has attracted the most media attention and has served to highlight concerns about changing patterns of drug consumption among young people. To understand how ecstasy emerged from relative obscurity to become the most 'discussed' drug in Europe, it is useful to consider in more detail the establishment of this new trend in drug consumption.

The increase in popularity of ecstasy is closely associated with the emergence in the 1980s of a new style of music known as 'acid house', 'rave', or 'techno' (a form of fast electronic dance music). This is not the first time that new drug trends have become interwoven with a style of music and related youth culture. The spread of recreational, psychoactive drug use (primarily cannabis, amphetamines and LSD) in Europe in the 1960s and 1970s was closely associated with the evolution of rock music.

The large music festivals of the 1970s may also, in retrospect, be seen as partial expressions of a youth drug culture, in the same way as large dance parties do today. It has been argued that the early and swift use of house music and dance drugs in the UK was partly due to the historical links between dance-driven sub-cultures and amphetamines going back to the Flappers of the 1920s. Similarly, the use of amphetamine sulphate, and to a certain degree heroin, were associated with punk rock in the 1970s.

One of the most significant features of the new trend in ecstasy use was the way it rapidly came to transcend national borders. Patterns of drug use have always varied in Europe and convergence in patterns of use has tended to occur relatively slowly. What is surprising about ecstasy is how

quickly the drug has become established across the European Union. This is not to say that the prevalence or incidence of ecstasy use occurs on the same scale across the EU. Rather, that changes occurring in communication and information technology industries and leisure patterns have resulted in young people across Europe becoming directly aware of 'rave culture', and indirectly aware of ecstasy use, far more quickly than previously the case with other youth cultures.

The rapidity of communication across national borders means that young people have access to new youth trends through the record industry, satellite television, fashion, and style and underground magazines. Advertisers responsive to young consumer markets have become adept at appropriating the sounds and images associated with dance drugs and dance culture. These images are now used to market products from soft drinks to sportswear across Europe. As with acid rock in the 1960s, the drug experience is associated directly or indirectly with much of the music. The stimulant and entactogenic effects of the drug contribute to the inclusive, bonding atmosphere of the environment and to the drive to dance.

Ecstasy use became established in the 1980s amongst groups of Americans who valued the 'consciousness-expanding' properties of the drug. In many ways, this can be seen as analogous to the interest in LSD in the 1960s mentioned earlier. These groups consisted of both those interested in the therapeutic uses of the drug and those more concerned with its 'mystical' properties. It is reported, for instance, that the followers of *Bhagwan Shree Rajneesh* became keen ecstasy consumers. The North American 'therapeutic' community involved with MDMA in the 1980s feared that the popularisation of the drug would result in regulation, just as Timothy Leary's activities in the US had curtailed scientific experimentation with LSD. One American manufacturing group issued 'flight manuals' on how to negotiate the effects, displaying a concern for health and safety that anticipated some of the European harm-reduction interventions in the 1990s.

It was not, however, in these communities that the seeds of a European ecstasy culture were sown. The future emergence of an ecstasy-focused dance culture was potentiated by the congruence of MDMA use and house and soul music in a limited number of black, gay and elite discos and clubs in New York, Chicago and Detroit in the late 1970s and early 1980s. The music that was to develop from these clubs was influenced by European electronic experimentation with computers and black American dance music. The clubs were visited by fashionable Europeans, notably prominent members of the music and fashion industry. By the early 1980s, ecstasy, although not widely available, was beginning to be used by this same elite in a number of exclusive London clubs.

By 1985 and 1986, the first ecstasy parties were occurring in London. In 1986 and 1987, young people holidaying on the Spanish island of Ibiza discovered an emerging 'Balearic sound'. The Balearic experience soon began to influence the development of new musical fashions across many European countries. Dutch and German DJs took home the sounds and associated drug experiences. Ibiza was a watershed for the emergence of a mass rave culture and clubs were soon to be found operating in many European capitals playing this new kind of music.

The year 1988 was hailed as the 'Second Summer of Love'. In the UK at first, but increasingly among young people elsewhere, the fashions, symbols and music associated with the new 'dance culture' were beginning to become ubiquitous. Mass involvement in the dance-drug phenomenon in Europe in the late 1980s was encouraged by the popularity of the music, the ease with which it could be mixed and developed, and the promotion of legal and illegal mass social events. Nevertheless, despite the speed of transmission and transformation displayed between and within European youth cultures, changes in musical taste and drug consumption occurred far more rapidly in some countries than in others.



With hindsight, it is remarkable that it took so long for this new youth sub-culture to become associated with ecstasy consumption in the minds of those not involved with the phenomenon. The music emerging from the 'rave scene' in the early 1990s was increasingly characterised by blatant lyrical references to ecstasy and by young people content to dance for long periods of time at events where only soft drinks were available.

As the decade continued, those countries first affected by dance drugs saw a fragmentation of the rave culture. At the same time, many clubs and events became increasingly mainstream and commercial. For those countries with an established pattern of ecstasy use, it appears that the consumption of the drug is no longer linked to any particular musical fashion, but rather associated with nightclubs and dance parties in general. Parker and colleagues (1995) suggest that for many young people "the availability of drugs is a normal part of the leisure-pleasure landscape". Alongside this development, the range of drugs that are consumed, especially by regular drug users, extends beyond ecstasy and includes cannabis, amphetamines, LSD, cocaine and, to a lesser extent heroin, as well as alcohol. It is rare now to encounter a 'pure' ecstasy user.

Comments by pop stars concerning the place of drugs as an everyday component in young people's lives have echoed an emerging academic debate about the 'normalisation' of drugs. For instance, Parker (1995) predicts that "over the next few years, and certainly in urban areas, non-drug trying adolescents will be a minority group. In one sense they will be the deviants." On the other hand, Shiner and Newburn (1997) criticise talk of normalisation as an exaggeration of quantitative data that plays little attention to the meaning that drug use has for young people. While they accept that the proportion of young people using drugs at some point in their lives is growing, they feel there is little evidence as yet that drug use has become widely accepted as normal.

## GENDER ISSUES

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The emergence of the dance drug phenomenon in the post-AIDS era made sex-related interventions as important as drug-related interventions within a population that largely does not engage in injecting drug use. In the past, the atmosphere associated with rave events meant that young women and young gay men felt less vulnerable to predatory males. A sense of safety and the expression of diffuse, non-penetrative physical affection made venues attractive to those who otherwise might prefer to stay at home rather than face the 'cattle market' rituals of mainstream nightlife.

While clubbing and partying have always carried a strongly sexual element, the rave scene entailed less pressure on young women and young gay men to engage in sexual negotiation against their will or against their better judgement. Being 'loved up' in an ecstasy/rave setting denoted participation in an all-inclusive sense of loving and being loved rather than availability for a sexual encounter. This positive empathy in a group setting may have as much to do with expectation and predisposition as with the drugs consumed.

Henderson's investigation (1993) of young women, sexuality and recreational drug use mapped the broad contours of a specific culture of drug use. Young women from cultures in which young men traditionally engaged in binge-drinking welcomed the frequent antipathy to alcohol at many early rave events. Young female respondents felt recreational drug use was less risky and more interesting than recreational or casual sex. The absence of 'beer monsters' received positive comment. Paradoxically, a recent Scottish prevention campaign targeted at ecstasy featured a young woman waking up in a squalid bed with an undesirable young man. The irony is that such an event is far more likely to occur following the ingestion of alcohol. Nevertheless, by 1997, it seemed that clubbing had begun to revert to the traditional formula of going out on a Saturday night, finding a partner and taking him or her home.

## GAY ISSUES

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The influence of gay clubs and music on the dance scene has been enormous. The drug preferences of gay-oriented fashion and artistic elites, and clubs in New York, Chicago and Detroit, directly influenced the evolution of dance and the use of ecstasy, amyl nitrate and other drugs in Europe.

A simplistic separation of ecstasy use into categories of North American introspection and European hedonism is unsatisfactory in a gay context where it has consistently been a 'good time' and 'party' drug.

The importance of HIV prevention work among gay, and straight, drug users should not be underestimated in contexts where new relationships may be formed and subsequently consummated in a situation where inhibitions are lowered.

While Henderson's sample of young women tended to find recreational drug use more interesting and less risky than casual sex, interviews with a small number of gay men on a dance/party scene associated ecstasy, speed, LSD, alcohol and marijuana with wilder sex and impaired judgement (Lewis, 1991).

The dance drug scene has blurred the gap between gay and straight clubs. Some sectors of the music scene were more sexualised than others in the early 1990s and, as has been the case with alcohol use, there has been a tendency to shift back to former behaviour patterns as the dance scene becomes increasingly normalised within mainstream leisure culture.

## COMMERCE AND THE MEDIA

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The sounds, images and argot of the dance-drug culture permeate the media across the European Union. A range of specialist magazines and publications have also emerged that have been both profoundly influenced by, and influential on, the developing fashionable youth market. The advertising industry has also become quick at simultaneously absorbing and utilising the overt and subliminal language of new youth trends.

The dance scene is of particular interest in this context as it is widely established and its members are often affluent consumers. Today, products from computers to sports shoes are sold using the images of dance music. Much of this material is implicitly or explicitly drug-related. In specialist publications aimed at young people, international corporations appear to have become increasingly blasé about using advertising that features explicit drug imagery. The competition that public health education messages face in such an arena is, consequently, enormous.

The speed with which this new drug trend has transcended national borders must be related in part to its association with fashions and styles that have been promoted by advertisers across the European Union. Ecstasy use emerged in a decade when the information technology and media industry were experiencing profound changes.

Increasingly, young people across Europe have access to the same information sources. It is hardly surprising, therefore, that youth fashions are becoming more homogenous. The dance culture itself has become increasingly integrated into the mainstream entertainment industry. It has been estimated

that, in the United Kingdom alone, one million people attend licensed rave-style events every week. Using this figure as a baseline, futures analysts at the *Henley Centre*, an economic forecasting consultancy in the UK, estimate that when all licit and illicit receipts (admission, drugs, bottled water and cigarettes) are taken into consideration, 2.16 billion ECU is generated on an annual basis (Kane, 1997).

Such broad estimates are never satisfactory. However, if spin-off fashion, music and other products are included, the financial dimensions of the European dance/rave economy are likely to be considerable.

## ALCOHOL

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While many recreational drug users have claimed over the years that cannabis is far less harmful, alcohol remained a major option for most of them. However, in the late 1980s, many ecstasy users displayed a marked antipathy to alcohol, reminiscent of the position some cannabis smokers adopted in the 1960s.

This was particularly marked in northern European countries with traditions of binge-drinking. Ecstasy provided a positive image of drug use and was seen as far less aggressive and incapacitating than alcohol. The sunny smiles and openness associated with the drug ran counter to drug and alcohol user stereotypes. Consequently, Swedish observers have reported difficulties encountered by police in detecting problems at raves because of an absence of obvious drunkenness and violence.

Alcohol companies may have responded to the anti-alcohol culture often found among rave attenders by developing



brands specifically aimed at this market. 'Alco-pops'<sup>4</sup> were designed to appeal to young people and some beverages are now marketed in a way that exploits the imagery and associations of dance cultures.

It did not take long for alcohol to be reintegrated into the drug 'menus' of 1990s ecstasy ravers. There has been a distinct convergence between alcohol and drug use since 1990. In countries such as Italy, where binge-drinking rarely occurs, alcohol has never involved issues of principle as it has in northern Europe where early ravers pointedly did not drink.

Today, the alcohol industry advertises heavily in the music press, seeding the references in text and image in an attempt to achieve credibility through association. Public criticism of alco-pop brands has been presented by the industry as an unwanted intrusion into matters of personal choice. The more mainstream clubs are an obvious target and part of a wider campaign to draw women and young people into 'style' pubs, bars and licensed premises. Alcoholic life-style drinks are marketed in the image of 'club' bottled water and are proving popular with adolescents.

<sup>4</sup> A common term applied to alcoholic versions of soft drinks e.g. cola plus alcohol or orangeade plus alcohol. They are often given distinctive brand names and packaging designed to appeal to the young fashion-conscious consumer.

## ECSTASY AND POLY-DRUG USE

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In this publication different drug types have been considered in isolation. Although necessary for the purpose of clarity, such a view does not reflect the typical patterns of drug consumption found across the EU.

Typically, young people who are using ecstasy will also have had experience of using a range of other drugs. Cannabis is the drug that is found universally to have the highest prevalence of use and, as stated elsewhere, amphetamines and LSD will often commonly have been consumed by ecstasy users. It is also a mistake to see ecstasy as the only drug used in nightclub or rave settings. In a recent survey of drug use at dance events in London and south-east England (Release, 1997) cannabis had been consumed by 95% of club attenders, amphetamines by 86%, ecstasy by 85% and LSD by 83%. However, a range of other drugs had also been consumed: amyl nitrate by 66%, 'magic mushrooms' (an hallucinogen) by 65%, cocaine by 62%, benzodiazepines by 35% and ketamine by 34%.

Tossman and Heckmann (1997) conducted a study of 1,674 youths participating in 'techno' events in Berlin. Of those interviewed, 69% had ever used cannabis, 49% ecstasy, 44% amphetamines, 37% hallucinogens and 31% cocaine. Both the UK and German data must be seen in the context of a high risk group not representative of the general population, however, it does illustrate the complex poly-drug using patterns that are found among ecstasy consumers. Similarly, work by Gamella and his colleagues in Spain suggests that ecstasy use is often used in combination with other psychoactive drugs. Amongst Gamella's sample of ecstasy users, 33% regularly combined ecstasy use with amphetamines and 34% with cocaine. Alcohol was also often consumed at the same time as ecstasy.

## SUPPLY ISSUES

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One factor of importance when considering synthetic drugs is the ease with which they can be produced, compared to natural plant-based products. It is possible that, in time, more effective interdiction, supported by technological innovations or political developments, may mean that it will become increasingly difficult to find countries where the large-scale agricultural production of illicit plant-based drugs is feasible and economic. In such a scenario, it is likely that substances that can be produced easily and near to their intended market will become more available.

Questions respecting the relative importance of demand and supply issues with regard to illicit drug consumption are complex and are not addressed here. However, it is a truism to state that a drug can only be consumed if it is available to those wishing to purchase it.

Factors that can be seen to aid those wishing to produce amphetamine-type drugs include: the many ways in which the product may be synthesised (several of which are very simple); easy access to a wide variety of potential starting materials (precursors); and the possibility for production and consumption to take place in close proximity thus shortening trafficking routes (UNDCP, 1996; UNDCP, 1997).

If the illicit preparation of ecstasy is compared to the manufacture of plant-based substances, such as heroin or cocaine, a number of differences are apparent. For example, the relative amount of precursors necessary is likely to be far less. This facilitates 'kitchen' technology and, even if the precursors are monitored and controlled, it is more likely that sufficient quantities can be obtained without detection.

The illicit manufacture of heroin or cocaine is essentially an extraction process (the end products being in the product from the beginning) in which all the substances involved, from the starting botanical material to the finished product, are controlled. With ecstasy production however, the creation of the drug only occurs at the final stages in the synthesis. A heterogeneous group of chemicals can act as precursors to produce a range of amphetamine-type stimulants.

The number of different possible precursors make control efforts difficult. Oils such as Sassafras oil, Camphor oil or Ocotea oil can be used to produce Safrole, which is a direct precursor to MDMA. Alternatively, piperonylic acid, or piperonyl alcohol can be used to produce Piperonal, which is also a direct precursor to MDMA.

To complicate, or simplify, matters further (depending on whose perspective is taken), there are a number of pathways (depending on the other chemicals available for synthesis) by which these direct precursors can be synthesised into MDMA and it is possible to synthesise the precursors from one another (i.e. Safrole can be used to synthesise Piperonal or a range of other direct precursors). Finally, one precursor can be used to synthesise various members of the ring-substituted amphetamine family (e.g. Safrole can be used to produce MDMA, MDA, MDE, etc.).

This flexibility allows for a number of alternative chemicals available on the legitimate market to be used to produce direct precursors which can themselves be used to synthesise a range of drugs. The relative ease with which ecstasy-type tablets can be produced (often by mobile laboratories using a wide range of precursors that are only required in relatively small quantities and are both easy to obtain and difficult to control) is likely to sustain the development of a mass market for the drug.

It may well have been that many of those purchasing ecstasy in the early 1990s may have regarded the drug as both expensive and of questionable quality or authenticity.

As the 1990s have progressed, at least in those countries where established markets for the drug have developed, the price has fallen and seizures suggest that much of what is sold is of relatively high quality and, if not always exclusively MDMA, contains at least one of the analogues of the drug.





# The Epidemiology of Synthetic Drugs

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## DRUG MONITORING SYSTEMS

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Historically, the focus of drug epidemiological monitoring systems within most European countries has been the opiate drugs, cocaine use, and/or the use of drugs by injection. These behaviour patterns, even at low prevalence, are associated with high levels of social harm and are, therefore, priority areas for research and development.

Methodological advances have been made in the evolution of reporting systems which have become increasingly more sophisticated. However, there still remains great variation across the European Union in the relative development of these systems. Therefore, much of the current work in this area is focused on improving the comparability of reporting systems between countries.

What is less clear is how well epidemiological systems do report on the use of drugs such as ecstasy, amphetamines and LSD since the users of these drugs are less likely to be present in the populations typically covered by existing indicators. Drug treatment attenders are, in general, unlikely to represent the 'typical' user of these substances, although this may be untrue of patterns of amphetamine use in some countries. It may also be that they are less likely to come to the attention of the criminal justice system or other control organisations, and the difficulties in conducting convincing surveys of drug prevalence are well known.

However, despite these problems, data are available that can inform the debate on changing consumption patterns of these drugs. Some data from each of the EU Member States covering surveys of general and special populations (such as school children or conscripts), treatment reporting systems, seizures, arrests,

drug-related deaths, and qualitative or quantitative research studies are presented later in this report. What information is available for each country varies greatly according to the current development of their drug epidemiological systems. That so much useful information is available on these drug types is encouraging. However, inadequacies are also evident.

A discussion of how the research agenda may be developed to improve reporting systems in this area is therefore necessary. These issues are considered in more detail in the following pages.

## THE PREVALENCE OF SYNTHETIC DRUG USE IN EUROPE

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Estimating the use of any illicit substance is a complicated endeavour. Thus developing efficient and reliable methodologies for prevalence estimation has been a key task of the EMCDDA. In addition to the usual problems associated with estimating drug prevalence, the rapidly-changing nature of synthetic drug use, and the inability of existing indicator methods to convincingly register use, pose particular problems. Reported here are: prevalence data from surveys of both the general population and special populations; data on seizures and arrests; the use of these drugs by those attending drug treatment facilities; and reported deaths due to synthetic drug consumption. The availability and quality of these data sets varies greatly across the EU. However, within these limitations, it is still possible to produce a general overview of synthetic drug use in the EU, which may prove helpful in informing discussions on this topic.

Data suggest that ecstasy use exists in virtually all EU countries, although, both the chronology and scale of use

varies greatly. Some countries, such as the UK, Spain and the Netherlands, have relatively long-established populations of ecstasy users and prevalence is comparatively high.

The first significant use of ecstasy occurred in Europe around 1986 and 1987, although the drug had been available in restricted circles from the early 1980s. In other European countries, ecstasy use appears to have arrived somewhat later and prevalence is correspondingly lower.

For example, in the Nordic countries and Greece, ecstasy use appears to be a relatively new phenomenon. During the 1970s, LSD was a popular drug in some countries, such as the UK, Ireland and the Netherlands, while use appears to have declined during the early to mid 1980s. LSD subsequently appears to have experienced a renaissance, with use again increasing in the late 1980s and the 1990s.

The LSD available in the 1990s is generally supplied in lower dose units than was the case in the 1970s. It is possible to speculate that this allows the consumer more control over the drug effects and reduces the likelihood of a bad experience, this perhaps explaining the renewed popularity of the substance. LSD use is now found in countries whose previous exposure to the drug was limited. This trend reflects the increased popularity of a range of drugs, including ecstasy and amphetamines, which are being used by a new group of young consumers usually in dance-related settings.

A broadly similar trend can be found with regard to amphetamine use, although there are some important differences. For example, prevalence data for amphetamine use indicate the existence of older, chronic, injecting populations (in the Nordic countries and, to some extent, the UK). In addition, amphetamines have been used by some sub-cultural groups fairly consistently (e.g. biker gangs) throughout this period.

## SURVEY DATA

Information on the prevalence of synthetic drug use is available from surveys of the general and special populations, such as school children or military conscripts. In some countries, surveys including questions on illicit drug consumption have been running for a number of years whereas, in others, they have not yet, or only recently, been introduced.

### NATIONAL SURVEY DATA ON PREVALENCE OF SYNTHETIC DRUG USE WITHIN THE GENERAL POPULATION

COUNTRY	YEAR	SAMPLE AGE	LIFETIME PREVALENCE %			PAST YEAR %		
			AMPHETAMINE	ECSTASY	LSD	AMPHETAMINE	ECSTASY	LSD
BELGIUM	1995	18-65	0.9	0.5	-	-	-	-
(FLEMISH)		18-39	1.7	1.1	-	-	-	-
DENMARK	1994	18-69	4.0	-	-	-	-	-
FINLAND	1996	16-74	0.7	0.2	0.3	-	-	-
FRANCE	1995	18-75	0.7 <sup>1</sup>	-	1.5 <sup>1</sup>	0.3 <sup>1</sup>	-	0.2 <sup>1</sup>
GERMANY W.	1995	18-59	2.8	1.6	-	0.8	0.9	-
		18-39	4.2	2.8	-	1.4	1.6	-
GERMANY E.	1995	18-59	0.7	0.7	-	0.2	0.6	-
		18-39	1.3	1.4	-	0.4	1.2	-
SPAIN	1995	15-70	2.3	1.8 <sup>2</sup>	-	1.0	1.2 <sup>2</sup>	-
		15-39	3.8	3.1 <sup>2</sup>	-	1.7	2.2 <sup>2</sup>	-
SWEDEN	1996	15-75	2.0	0.0	-	-	-	-
		15-39	3.0	1.0	-	-	-	-
UK	1996	16-59	9	3	5	3	1	1
		16-29	16	9	10	8	4	3

- DATA NOT AVAILABLE

<sup>1</sup> HALLUCINOGENS

<sup>2</sup> DESIGNER DRUGS

<sup>3</sup> ECSTASY AND AMPHETAMINES



In general, the expense and difficulties associated with large-scale general population surveys has meant that data from this kind of exercise are less commonly available than from surveys of special populations. Surveys of school children are, therefore, the most comprehensive available data set for comparing prevalence rates across countries. However, this can only provide an indirect indicator of prevalence among the general population. Even where general population survey data do exist, caution must be exercised when comparing data from different countries. Often the age range included in the sample varies or other methodological differences exist that make direct comparison difficult. Grouping individuals by age can dramatically influence the overall prevalence rate. The absence of a uniform methodology and repeat measures also hinders those wishing to make cross-country comparisons or analyse trends. Data are not uniformly available across the European Union and, in some countries, little or no survey data are available.

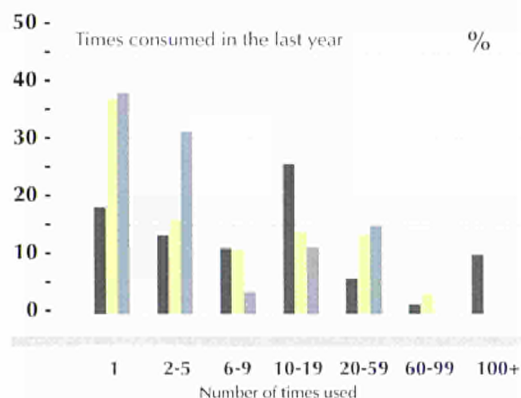
When looking at prevalence statistics, it is vital to bear in mind that 'ever use' or 'life time prevalence figures' may not necessarily be the most helpful way of looking at patterns of drug consumption. Such figures may be alarmist if they are assumed to represent regular consumption patterns. Chronic use, repeated use, or current use of synthetic drugs are likely to be at far lower levels and may vary across drug type.

For example, the 'ever use' of LSD may be higher than that of ecstasy, but the number of repeat long-term consumers may still be lower. Of the three synthetic drugs discussed here, lifetime prevalence of ecstasy use is generally lower than that of amphetamines and LSD. This may be accounted for, in part, by the fact that the use of ecstasy only emerged in recent years.

In addition, evidence exists to suggest that, in some countries, although ecstasy may have lower lifetime prevalence than either amphetamines or LSD, the number of regular users may be higher. Elsewhere this appears not to be

## PATTERNS OF USE: LIFETIME PREVALENCE OFTEN POORLY REFLECTS THE NUMBER OF REGULAR DRUG CONSUMERS

Synthetic drug use: frequency of use among consumers in Germany (W).



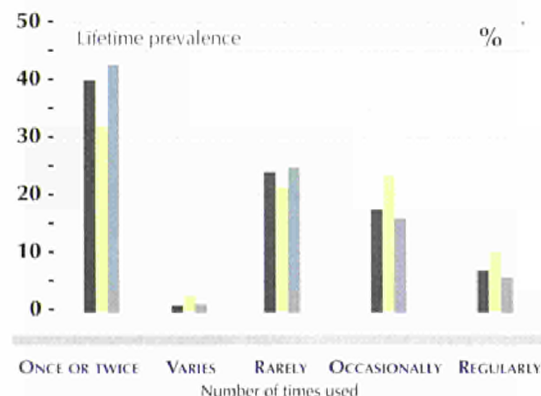
Data from the 1995 German Ministry of Health Survey

● AMPHETAMINE

● ECSTASY

● LSD

Synthetic drug use: frequency of use among consumers in the UK.



Drug Use in England - Results of the 1995 National Drugs Campaign Survey, Health Education Authority

● AMPHETAMINE

● ECSTASY

● LSD

the case. In general, however, there is a paucity of data exploring in detail consumption patterns of these substances. Prevalence figures reported here can give a picture of relative

drug exposure for different Member States of the EU, but are less illuminating in assessing the number of individuals who go on to use these drugs repeatedly for sustained periods.

In general, across the EU, amphetamines appear to be the second most commonly used illicit drug after cannabis. However, despite this, considerable variation in amphetamine consumption can be found. To understand such variation, two distinct factors have to be taken into account: firstly, the existence in some countries of a long-established population of often chronic amphetamine users and the virtual absence of this phenomenon elsewhere; and secondly, the general increase in the popularity of the drug which has occurred since the early 1990s.

The Nordic countries, in particular, have a long history of experiencing problems associated with the illicit use of amphetamines. For example, in contrast to most European countries, amphetamines have dominated Swedish drug problems. In 1943, it was estimated that 35% of the adult population in Sweden had used amphetamines during the previous year.

Amphetamine use in Sweden is not a new phenomenon. In the early 1950s, injecting amphetamines became popular and has been a distinctive feature of the Swedish drug problem ever since. Estimates suggest that about 81% of 'heavy' drug addicts (estimated at 17,000 persons in 1992) are amphetamine users, nearly all of whom inject the drug. For approximately 44% of these abusers, amphetamines are reported to be the dominating drug. In 1996, in the nationwide study among school pupils aged 15-16, 7.2% admitted to having used cannabis, while use of other drugs was insignificant.

Similarly, populations of amphetamine users have existed in Denmark since at least the 1970s. In 1971, a survey of military conscripts, aged 18-22, reported that 11% of the sample had tried the drug. However, use declined amongst the general population throughout the 1970s and it was not

until the late 1980s that the 'recreational' use of amphetamines began to increase again. Current general population surveys suggest an 'ever use' prevalence rate of around 4% for Denmark, whilst use in the past year is lower (approximately 1%). Even in Finland, where the prevalence of synthetic drug use is low in comparison to other EU countries, amphetamines are the most frequently used drug after cannabis. Survey data also suggest a small increase in prevalence of use amongst the general population rising from 0.2% in 1992 to 0.7% in 1996.

Elsewhere, the historical availability of amphetamines has not resulted in large-scale problem drug use. For example, in Germany, despite a long history of amphetamine use dating back to World War II, consumption has never been extensive. It was not until recently that prevalence began to rise and this increase was associated with the new 'dance drug culture'. Survey data suggests a prevalence of 2.8% for amphetamine use among the general population. However, this figure rises to about 7% for those aged 18-20 years and living in the western part of the country. This is a dramatic increase from the 0.8% rate found amongst this age group when interviewed in 1990. Prevalence of all drug use is lower in the east of Germany, reflecting the previous political divide. In 1995, lifetime prevalence of amphetamine use was estimated to be 0.7% for the general population. This difference now appears to be narrowing.

Similarly in France, despite some limited historic availability of amphetamine, the drug has never been considered popular and no long-term, chronic amphetamine using population exists. This may now be changing, at least in terms of overall prevalence, as the drug has become more popular with young people, again largely orientated around the dance music scene. In 1993, a survey of school children aged 11-19 suggested that lifetime prevalence of amphetamine use (including ecstasy) was 2.8% for boys and 1.3% for girls. These figures were slightly higher than those for hallucinogens (including LSD) which were 2.7% and 0.9% respectively.

A similar picture appears true for Ireland, where significant amphetamine use only began to occur in recent years.

Not all amphetamine use can be seen as related to either chronic abuse or new dance drug trends. In Greece, data from the general population suggest that, in 1993, lifetime prevalence of amphetamine use was 1%. This was slightly higher for women than men (1.2% compared with 0.7%). Lifetime prevalence of amphetamine use was highest among women aged 25-35 (2.2%). Amongst the student population, 4.4% had used amphetamines. This was higher for boys (5%) than girls (3.8%) and for those aged 17 and over (5.3%). It suggests that, amongst the young, amphetamine use may be increasing in much the same way as it is elsewhere in Europe, albeit from a lower base. However, the elevated use by women in the general population survey may indicate that the drug may sometimes also be used for weight control purposes.

A slightly different picture is found regarding Spain and the UK. In both countries, amphetamine consumption appears to have risen consistently over the 1990s. However, in the UK, smaller populations of chronic amphetamine injectors have existed for some time and, during the 1970s and 1980s, the drug was also popular among some groups of young people. Amphetamines were associated in the UK with the 'punk rock' youth sub-culture of the late 1970s and early 1980s and, before this, with the 'mods and rockers' of the 1960s. In fact, the consumption of amphetamine tablets by 'the mods' in the 1960s echoes, in some ways, the consumption of synthetic drugs in the 1990s.

This young and relatively affluent group consumed the drug at the weekends at parties and other music events. Students in both countries have a history of consuming the drug to aid studying and it has also been used to some limited extent by other groups, such as night workers, who have valued its stimulant effects. In both the UK and Spain, amphetamines appear to have declined slightly in popularity during the mid



1980s and then become more popular as the dance drug sub-culture began to develop and spread later.

However, the use, if not availability, of amphetamines has always been more limited in Spain as compared to the UK. A national survey of those aged 15 or over conducted in 1995 suggested that 2.3% of the Spanish general population had used amphetamines, whilst, in 1996, this figure was 9% for the UK population. In both countries, prevalence among young people was far higher. Five percent of those aged 19-24 reported having used amphetamines in Spain as compared to 16% of those aged 16-29 in the UK.

A broadly similar picture is found in the Netherlands, where prevalence data suggest that amphetamine consumption in Amsterdam has remained fairly constant at about 4% throughout the 1990s. During this period, consumption of other synthetic drugs rose. However, prevalence figures for the general population of the Netherlands, outside Amsterdam, are likely to be lower.

In Europe, the use of LSD does not have as long a history as the use of amphetamines, although, the drug was popular in a number of countries during the late 1960s and early 1970s. Popularity declined during the 1980s and it was not until the latter part of the decade and the early 1990s that consumption increased. In some countries, such as Spain, where, historically, the use of LSD was insignificant, it has now caught up with other countries which have had a longer association with the drug.

Again, this increase in use in the 1990s is associated with the new dance drug scene. The term 'acid house', used to describe much of the early dance music, takes its name from the slang term for LSD (acid). In some respects, the hallucinogenic nature of LSD makes it a slightly strange bedfellow for inclusion with ecstasy and amphetamines as 'dance-drugs'. However, the lower active doses of 1990s' LSD compared to the LSD available in the 1970s, the

relatively low prices, and an association with 1960s psychedelia, go some way to explain its current popularity.

Data suggest that LSD may not be used as intensively as either amphetamines or ecstasy and data from some countries indicate that experimentation, not leading to regular consumption, is the norm for many users of this drug. It is possible that LSD may also be used more at home than amphetamines or ecstasy as it lacks the stimulant properties that facilitate long hours of dancing. Some recent studies have suggested a decline in popularity over the last few years, although, good data to draw any firm conclusions in this area are lacking.

Lifetime prevalence figures for LSD are usually greater than for ecstasy, but less than for amphetamines across Europe. However, it must be remembered that LSD has been available for longer than ecstasy and that studies suggest more people may go on to use ecstasy repeatedly. Lifetime prevalence among the general population was around 5% for the UK (1996) and 4% in the Netherlands (1994 - Amsterdam only), 2% for Germany (western regions) and slightly less in France (1.5%). Ireland, Spain and Italy probably have similar prevalence rates to these countries, whilst elsewhere use is less common. Data from Finland suggest a 0.3% prevalence figure and for Sweden, Denmark and Greece the figure is probably only slightly higher. For example, a conscript survey in 1995 suggested a lifetime prevalence of about 1% in Sweden.

Ecstasy only emerged as a significant drug of use in Europe in the late 1980s. Initially, the drug appears to have become popular in the UK, the Netherlands, Germany and Spain. It is difficult to be exact with this chronology as the drug was available to a 'fashionable elite' who attended nightclubs in various European countries, before its use filtered down to a larger population of young people.

Elsewhere, the emergence of ecstasy is a relatively new development and prevalence remains correspondingly low.

All countries in the EU report ecstasy use as a new drug trend but in some countries, the use of the drug at present may be negligible. As such, until recently, many surveys did not ask about the drug or would include it in the category of 'hallucinogens'. Data that do exist suggest that, in general, a similar picture emerges as may be found with LSD, although lifetime prevalence is slightly lower. As mentioned earlier, this may be misleading as the more recent availability of ecstasy means that lifetime prevalence may not reflect current incidence.

The rise in ecstasy consumption is illustrated in data obtained from a number of countries. Surveys of the general population in Amsterdam show an increase from 1.2% in 1990 to 3.4% in 1994. If use in the last year is considered, ecstasy was reportedly used by 1.4%, a higher figure than the figures for LSD or amphetamines (both at 0.5%). Other studies support the finding that, whilst lifetime prevalence is lower for ecstasy than for either amphetamines or LSD, recent use is often higher. Similarly, data from the UK in 1996 suggests a lifetime prevalence of ecstasy use of 3% for the general population. This figure rose to 9% for those aged 16-29. Two percent of this age group reported using the drug in the last month and, again, this figure was higher than for LSD (1%) but lower than for amphetamines (4%).

Other UK survey data report that ecstasy was more commonly used 'regularly' than either LSD or amphetamines. However, the majority of users of all three substances had only used them 'occasionally', rarely or less. Ecstasy was almost exclusively reported to be used at 'clubs', 'parties' and 'raves'. General population data from Germany suggest that, in 1995, lifetime prevalence of ecstasy use was 1.6%. This again was less than for amphetamines or LSD, but use in the last year (0.9%) was slightly higher for ecstasy than either of the other substances. Of those who had used ecstasy, 50% had used it over five times.

Data from Spain suggest that the use of ecstasy in the 1990s has increased more than any other drug. It is estimated that

between 5% and 10% of 18-25 year olds have used the drug. The figure for the general population is lower at about 1.5% in 1994. When age cohorts were considered separately, more variation was found. Among those aged 19-24, 4.9% had tried ecstasy, as compared to 5% reporting amphetamine use and 4.6% LSD. Data from a number of countries support the contention that, increasingly, young people who use any of the synthetic drugs are also likely to experiment with other substances in this category. In other countries, ecstasy prevalence is far lower. For example, data from Finland suggest a lifetime prevalence rate of 0.2% and figures are probably similarly low in Sweden and Denmark.

Surveys of ecstasy use among school children broadly support studies of drug use among the general population and also provide data for countries where general population data are missing. In Austria, provincial surveys suggest about 3% of 18-20 year olds have tried ecstasy, but this figure is higher for city regions as 6% of 15-18 year olds have reported using the drug in Vienna. In Ireland, data from school surveys suggest similar rates of use of ecstasy to those found in the UK. Also in the UK, trend data can be collated from school surveys that suggest drug use has increased significantly during the 1990s. Among a large representative sample of 15-16 year olds collected in 1996, 17% of boys reported ever using LSD, 14.5% amphetamines and 9.2% ecstasy. The figures for girls were slightly lower, 12.2%, 12.3% and 7.3% respectively. A survey of school children conducted in 1991 found negligible evidence of ecstasy use and far lower prevalence of LSD and amphetamine use.

Surveys of 'at risk populations' suggest far higher levels of ecstasy consumption, but are difficult to interpret as it is often unclear how the target sample relates to either the wider population of drug consumers or the general population *per se*. However, even if such surveys tell us little about prevalence of use at the general population level, they do suggest that, in certain contexts, the use of ecstasy may have become normalised.

A 1995 study of 'disco' attenders in Amsterdam reported a lifetime prevalence of 52% and a last-year figure of 41%. Studies in north-east Italy suggest between 9% and 65% of nightclub attenders report using the drug, depending on the nightclub sampled.

In Italy, as elsewhere, concern has been expressed about nightclub goers consuming ecstasy and then driving home from rural discotheques. Some evidence exists to support this fear.

## PREVALENCE OF SYNTHETIC DRUG USE WITHIN SCHOOL POPULATION SAMPLES

COUNTRY	YEAR	SAMPLE SIZE	SAMPLE CHARACTERISTICS	SAMPLE AGE	LIFETIME PREVALENCE %		
					AMPHETAMINE	ECSTASY	LSD
BELGIUM (FLEMISH)	1994	10,414	School pupils	15-16	4 <sup>1</sup>	4-5 <sup>1</sup>	2-3 <sup>1</sup>
DENMARK	1995	2,571	School pupils	15-16	2	1.5	1.4
FINLAND	1995	2,300	School pupils	15-16	0.5 <sup>1</sup>	0.2 <sup>1</sup>	0.3 <sup>1,2</sup>
FRANCE	1993	12,391	School pupils	15-16	2.5 <sup>1</sup>	-	1.5 <sup>2</sup>
GREECE	1993	10,543	School pupils	15-16	4	-	1.2
IRELAND	1991	-	School pupils	-	2.9	-	5.9 <sup>2</sup>
LUXEMBOURG	1992	1,341	School pupils	15-16	10.6	0.9	0.9
NETHERLANDS	1992	7,591	School pupils	15-16	3.3 <sup>1</sup>	5.2 <sup>1</sup>	-
PORTUGAL	1995	9,774	School pupils	15-16	1.97	0.54	0.4
SPAIN	1994	21,094	School pupils	15-16	3.5 <sup>1</sup>	2.9 <sup>1,4</sup>	4.5 <sup>1,2</sup>
SWEDEN	1996	6,027	School pupils	15-16	0.6	0.5	0.7
UK	1996	7,722	School pupils	15-16	13.4 <sup>5</sup>	8.3 <sup>5</sup>	14.6 <sup>5</sup>

- DATA NOT AVAILABLE

<sup>2</sup> HALLUCINOGENS

<sup>4</sup> PLUS OTHER SYNTHETIC DRUGS

<sup>1</sup> ESTIMATED

<sup>3</sup> ECSTASY AND STIMULANTS

<sup>5</sup> AVERAGE OF RESULTS FROM BOYS AND GIRLS

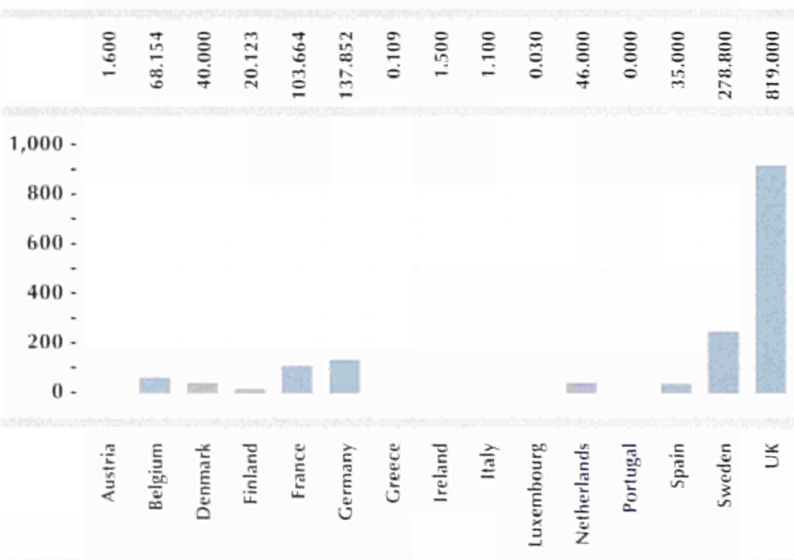


A sample of Italian motorists stopped for driving offences in 1994 found that 9% had been consuming ecstasy. The sample was small, but does indicate that the issue of the consumption of synthetic drugs and driving deserves serious consideration. This issue may be particularly important in those countries in which nightclubs are typically located outside urban areas.

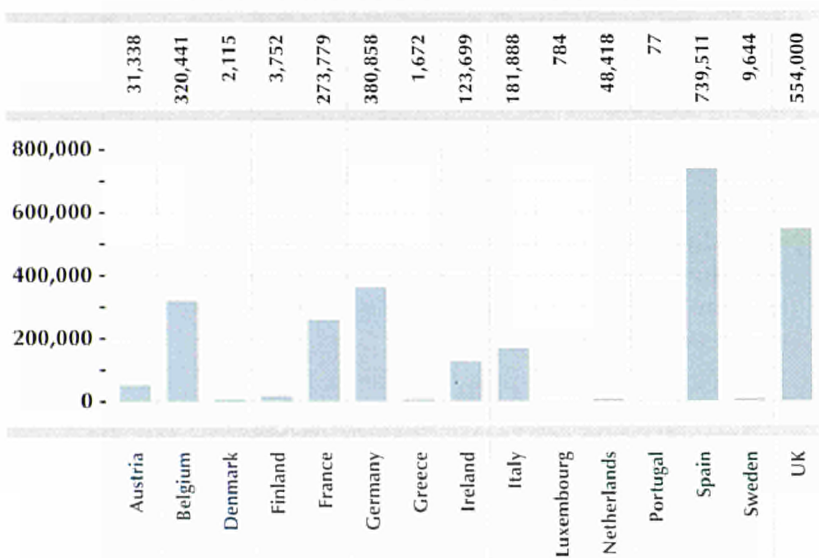
## DRUG SEIZURES

European seizure data generally reflect the trends indicated by prevalence statistics. However, it must be remembered that seizure data reflect police and customs activities and priorities as well as underlying changes in drug availability. It should also be borne in mind that a small number of large seizures, such as when a production site is successfully raided, can dramatically influence the quantity of drugs seized in any one year. Some of the fluctuations in quantity that are evident in European seizure data are likely to be the result of such random fluctuations, rather than changes in an underlying trend. When European seizure data are compared, the most striking feature evident is the dramatic variation in scale

AMPHETAMINE (KG) SEIZED IN THE EU IN 1995

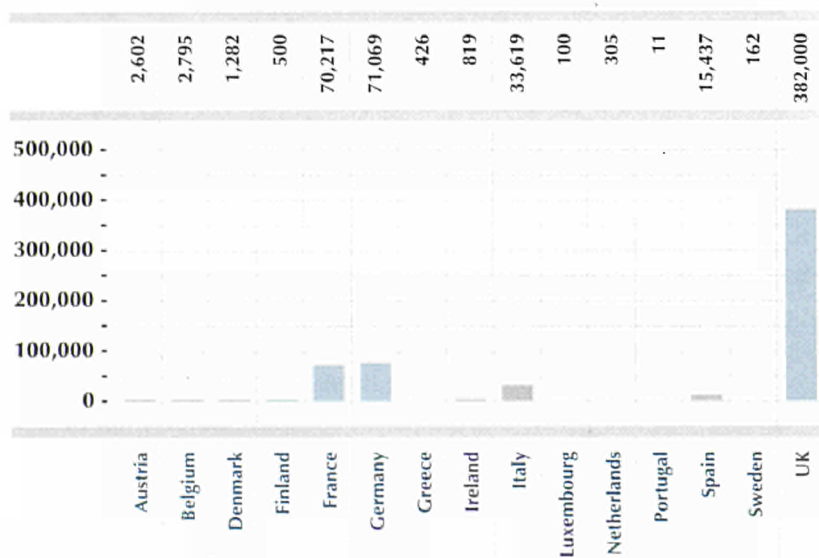


### ECSTASY DOSES SEIZED IN THE EU IN 1995



*Synthetic Drug Seizures:* great variation is found between the quality of synthetic drugs seized by the different Member States of the European Union.

### LSD DOSES SEIZED IN THE EU IN 1995

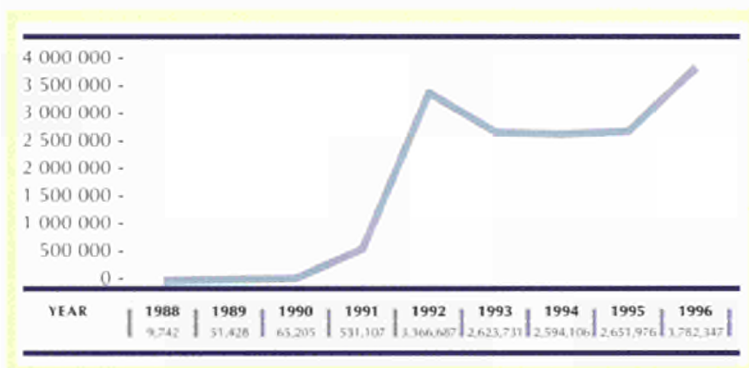


of seizures between countries. For example, the dramatic increase in amphetamine seizures seen between 1993 and 1994 is almost entirely due to seizures occurring within the UK.

Ecstasy seizures can give some indication of when the drug began to appear widely on the illicit drug market in a country. Although it must be remembered that, in some places, interdiction activities occurred later than elsewhere and that ecstasy (or MDMA) was not reported separately in data from many countries until seizures reached significant levels.

### QUANTITY OF ECSTASY SEIZURES (DOSES) IN THE EU

1988-1996



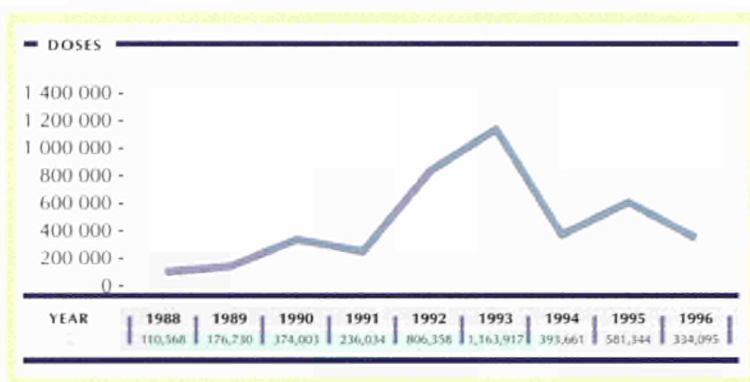
Spain first reports seizing ecstasy in 1987 when 187 tablets were confiscated. Italy also reports its first seizures in that year when 1,000 tablets were confiscated. In the UK, ecstasy has only been identified separately since 1989 when numbers of seizures reached significant levels for the first time (smaller number of seizures had been made for a number of years before this). Ireland's first reported seizure of ecstasy was 1991 with the confiscation of 429 tablets, and in Sweden seizures were first reported in 1991 when two seizures took place.

In some countries, seizures still remain rare. For instance, only 9 seizures of ecstasy were made in Denmark in 1995 and, in Austria, the first report of an ecstasy seizure was in 1994 when 51 seizures were made totalling 3,003 doses. Luxembourg first reports seizures of ecstasy in 1994 (8 seizures, 172 tablets). Data on ecstasy seizures are only available from Germany from 1993 onwards. In 1993, 77,292 doses were seized, this relatively high number suggesting that ecstasy consumption in Germany had already become established by this time.

If the total quantity of seizures is considered, a few countries (Spain, the UK, the Netherlands, Germany, and France) account for the bulk of seizures. In these countries, hundreds of thousands of ecstasy doses have been seized in a single year, whilst far smaller figures may occur elsewhere. However, for many countries, regardless of the relative quantity of ecstasy seized, the trend is upwards. Thus, in Italy, seizures have risen from 1,000 tablets in 1987, to 5,426 in 1991 and to 20,909 in 1992. In 1995, 159,689 tablets were confiscated.

A similar picture is found elsewhere. For example, in 1987, 187 ecstasy tablets were seized in Spain. In 1995, this figure had increased to almost 739,000. The UK regularly seizes more synthetic drugs than other countries in the EU. Seizures in terms of doses rose consistently from 44,000 in 1990, to 365,000 in 1991 and 554,000 in 1992. Quantities seized then fell to 302,000 in 1993, rose and peaked at 1,564,000 doses in 1994 and fell to 554,000 doses in 1995. In Ireland, seizures have risen dramatically from 429 tablets in 1991 to 2,014 in 1993, 28,671 in 1994 and 123,699 in 1995. In Austria, despite a relatively recent exposure to the drug, seizures increased from 3,003 in 1994 to 31,338 in 1995. In Finland, no seizures of ecstasy were made in 1994, but 3,752 doses were seized in 1995. This figure exceeded the quantity of ecstasy seized in Greece for this year (1,672 doses) and Luxembourg (784 doses).

## QUANTITY OF LSD SEIZURES (DOSES) IN THE EU 1988-1996

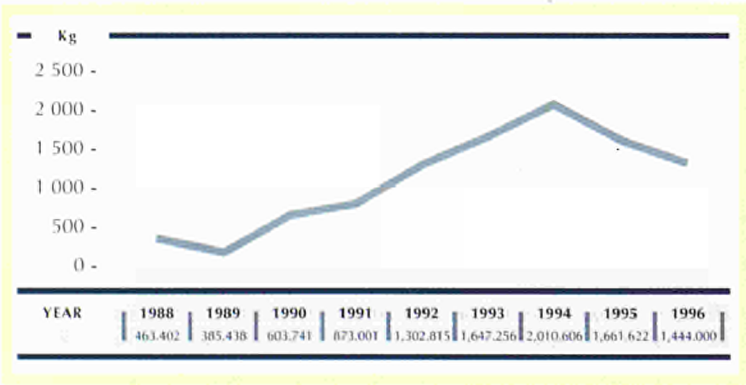


Recent LSD seizures are rather more difficult to interpret. A fairly consistent pattern is historically found with prevalence peaking during the 1970s and then falling, often quite dramatically, during the 1980s. Seizures then began to increase again in the late 1980s and early 1990s. As the 1990s have progressed, the picture has become less clear. In some countries, LSD seizures are declining after having peaked in the early 1990s. For example, in France, LSD seizures increased in 1993 to 430,617 doses then fell in 1994 to 74,004 doses and in 1995 to 70,217 doses. In the Netherlands, doses seized also peaked in 1993 (187,082) and then fell to 15,850 in 1994. However, in other countries, seizures appear to be increasing. Seizures of LSD more than doubled in Germany in 1995 (71,069 doses) compared with the previous year. Care must be exercised when drawing conclusions from seizure data, especially for LSD, as one or two big seizures may dramatically determine the overall quantity of LSD seized. In terms of the relative scale of seizures of LSD in the EU, large differences are witnessed. In 1995, 100 tablets of LSD were seized in Luxembourg, 500 in Finland, 70,217 in France and 382,000 in the UK.



If amphetamine seizures are considered, the most striking feature is that the UK is responsible for the bulk of the amphetamines seized in the EU. In fact, in most years, seizures of amphetamines made in the UK exceed the sum total of all other members of the European Union. Seizures of amphetamines peaked in the UK in 1994 when 1,305 kg were confiscated. Prior to this, the quantity of amphetamines seized had risen consistently (1990 - 304 kg seized, 1991 - 421 kg, 1992 - 569 kg, 1993 - 975 kg). However, in 1995, seizures fell to 819 kg. In 1994, the next biggest seizure was made by the Netherlands (215 kg), followed by Sweden (210 kg), Germany (120 kg), France (80 kg), Spain (32 kg) and Denmark (13 kg). Seizures of amphetamines also fell in the Netherlands in 1995 (46 kg) and were exceeded in this year by Sweden (279 kg), Germany (136 kg) and France (103 kg). However, it must be remembered that the purity of amphetamines varies greatly across the EU: in the UK and Ireland it is typically low (between 5-10%) whereas in Sweden and Denmark it is considerably higher.

**QUANTITY OF AMPHETAMINE SEIZURES (KG) IN THE EU**  
1988-1996



## DATA FROM TREATMENT ATTENDERS

With the exception of chronic amphetamine users, synthetic drug users do not appear to access European treatment facilities to any great degree. Amphetamine treatment attendance is found only in a few countries, such as Sweden, Denmark and Finland and, to a lesser extent, the UK. It must be remembered that treatment data reflect the services available for treatment attenders as much as the underlying need for treatment of drug consumers. These services vary greatly between countries, although there is still a tendency for treatment services in many countries to be configured to meet the needs of opiate users. This has led some commentators to suggest that more amphetamine users would seek help from treatment services if services were available that addressed their needs.

The needs of amphetamine users are poorly understood and this is an area that requires further attention. However, not all countries have drug services geared only to the needs of opiate users. In some countries, amphetamine users represent a large proportion of treatment attenders. In Finland, in 1995, there were 318 treatment episodes for amphetamine dependence. This represented 42.1% of all treatment episodes for drug dependence. From 1989-1992, amphetamine treatment attendance represented about 25% of all drug treatment attendance. Since 1993, this figure has been about 50%.

Good data describing overall drug treatment attendance on an aggregate level does not exist in Sweden. However, data from hospitals suggest that about 22.2% of those diagnosed under ICD 9 (International Classification of Diseases, ninth edition) were classified as amphetamine addicts in 1995. This figure has remained static since the 1980s. However, it must be borne in mind that these data may over-represent heroin users who seek treatment more often than other drug users due to abstinence and other problems. As such, these data are unlikely to reflect the true proportion of amphetamine dependent drug users in Sweden.

In England, of the 20,733 new treatment episodes recorded between 1 October 1994 and 31 March 1995, 8.7% were recorded as having a primary problem with amphetamines. However, 18% of treatment attenders had consumed the drug in the month prior to entering treatment. There is some limited prescribing of amphetamines to drug treatment attenders in the UK. This is mostly conducted on an experimental basis and largely consists of prescription of oral tablets of dexamphetamine. Of those starting new treatment episodes, 0.8% had a primary hallucinogen problem and 1.2% had a primary ecstasy problem. In terms of secondary drug use, 5% reported using 'hallucinogens' in the month prior to entering treatment.

Despite the general absence of synthetic drug consumers in drug treatment facilities, treatment data can still be of use in accessing the availability of synthetic drugs on the illicit market. Drug users in treatment are often using other available drugs and treatment data may, therefore, provide an indirect indicator of the range of substances on offer on the illicit drug market.

Most drug treatment reporting systems have adopted a model of recording drug consumption data in terms of primary and secondary classification. 'Primary drug' or 'primary problem drug' refers to the substance which has caused the individual to request help from the treatment agency. Secondary drugs are those substances that the individual has also consumed prior to entering treatment and usually this information is only collected for the last month. Thus, a heroin addict who has recently used cannabis, methadone and heroin will have heroin recorded as his or her primary drug and cannabis and methadone as secondary drugs. Synthetic drugs are not commonly recorded in the 'primary drug' category, but are more frequently found when secondary drug consumption patterns are analysed.

In Finland, in 1996, a study of treatment attendance suggested that 2% of treatment attendance was related to ecstasy and just over 1% hallucinogens. In Germany, 4.9% of

outpatient treatment demands are related to hallucinogens and 1.8% to stimulants. In Greece, of 1,130 drug users requesting treatment in 1995, 0.4% used amphetamines as a secondary drug, 0.4% used MDMA as a secondary drug and 1.1% used LSD as secondary drug. No female treatment attenders reported having used amphetamines or MDMA. In Ireland, treatment attendance was mainly focused upon Dublin-based opiate users. Figures for stimulant use (including MDMA) as primary drug of use vary between 0.6% and 1% for 1990-1995. Synthetic drugs mostly turn up as secondary drugs of use. Figures for stimulant use (including MDMA) as secondary drug of use are around 2%. Separate figures are available for the greater Dublin area on MDMA use suggesting that, in 1995, 3% of treatment attenders and 6% of first contacts were primary MDMA users.

Between 1990 and 1995, figures for LSD as a primary drug of use for the greater Dublin area were always less than 2%. In Italy in 1991 and 1992, heroin accounted for up to 91% of treatment attendance. Amphetamines and MDMA were the main drugs of abuse for less than 1%. In Luxembourg, in 1995, 1% of treatment attenders reported MDMA as their primary drug of use and 8% said that they consumed it occasionally. No treatment attenders reported LSD or amphetamines as a primary drug, however 6% and 8% respectively reported occasional use.

In 1996 in the Netherlands, only 2.6% of all drug clients registered at outpatient services reported amphetamines as their primary drug. Treatment attendance as a result of primary use of amphetamines has increased from 271 individuals in 1991 to 649 in 1995 in the Netherlands. For 1.5%, ecstasy was their primary drug problem. Under 1% of all client registrations involved LSD as a primary drug.

In 1996, the SEIT drug treatment database in Spain indicated that only 0.6% of those admitted to drug treatment stated amphetamines as their primary drug and 0.1% hallucinogens.

## DATA ON DRUG-RELATED DEATHS

The arguments regarding interpretation of data on drug-related deaths are well known. These include the problem of attributing cause of death to a specific substance, when several different drugs have been combined, and the possibility that some deaths may go unrecorded. Improving the quality and comparability of data on drug-related deaths is another area in which the EMCDDA is currently active. However, even given the difficulties in interpreting data on drug-related deaths (including the possibility for serious over- or under-reporting), the evidence suggests that mortality associated with the consumption of synthetic drugs is low in comparison to deaths caused by the consumption of other illicit drugs (in particular the opiates). For example, from 1990 and 1995, drug-related deaths in Germany fluctuated between around 1,500 and 2,000 cases per year. Recorded deaths due to amphetamines and ecstasy account for only a small proportion of this total. In 1995, 0.8% (13) of the 1,565 drug-related deaths were recorded as being related to amphetamines and 0.6% (9) were recorded as being related to ecstasy.

Similarly, in the first six months of 1996, 572 people died in Italy of causes directly attributable to drug overdose. No deaths were related to amphetamines, ecstasy or LSD. However, it has been estimated that, over the last 5 years, ecstasy has been associated with at least six deaths in Italy although only two were confirmed by toxicological analysis. Other countries have similar estimates of the number of ecstasy-related deaths. In Ireland, it has been widely reported in the media that there have been 17 ecstasy-related deaths to date, however this figure is a 'guestimate' and it is not known how it has been calculated. In the UK, it has been suggested that, in total, there have been between 50 and 100 deaths attributable to ecstasy consumption. Ring-substituted amphetamines were found in the post mortems of 14 drug users in Spain from 1989-1995. In most cases, however, other drugs were also present.



There is some evidence to suggest that the number of ecstasy-related deaths is rising. In the UK, the first recorded death due to MDMA poisoning was reported in 1988. Two further deaths were recorded in 1989, but none in 1990. In 1993, 12 deaths were recorded and, in 1994, the figure was 19. This was the first year in which deaths attributed to MDMA poisoning exceeded those attributed to amphetamine poisoning (14 deaths). However, this increase has to be placed in the context of increased prevalence levels. It may be that the relative risk to the individual has been reduced in some areas due to the introduction of measures designed to combat some of the context-related problems of MDMA use (such as dehydration) and to increase knowledge about these problems in those who consume the substance.

Chronic amphetamine injectors are more likely to suffer mortality resulting from their drug use, both from direct drug effects and from other health problems associated with injecting. Illicit drug injection is associated with HIV, HBV and HCV infection as well as a range of other comorbidities directly related to this mode of drug administration. However, amphetamine injection has less of an association with fatal overdose than the injection of the opiate drugs.

In countries with amphetamine injecting populations, deaths are reported. In Finland, recent research suggests that, of the 16 drug-related deaths in men aged 16-34 in Helsinki in 1995, evidence of amphetamine use was found in half of the cases. In Sweden, cohort studies suggest an annual death rate of 1.1-2% for amphetamine addicts. Spanish data suggest some evidence of a limited, but increasing, role of amphetamines in drug-related deaths and road accident deaths, although often other substances (including alcohol) had been consumed in conjunction with amphetamines.

LSD use does not appear to carry a significant risk of mortality in any country in the EU. A few cases of deaths where LSD has been involved have been reported, but this data is difficult to interpret and other substances may also

have been consumed. LSD may be related to some morbidity due to accidents or road traffic deaths. Again, attributing causation in such circumstances is often difficult. The association between the consumption of synthetic drugs, driving and other accidents is poorly understood and there is an absence of reliable information to allow informed comment on this topic.

## CONCLUSION: RAPID REPORTING SYSTEMS

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This publication has focused on new trends in drug use, namely the emergence of the widespread use of synthetic drugs in many countries in Europe. These 'new trends' may be recent in terms of the ability of traditional epidemiological surveillance systems to report on changes in patterns of drug use, but, with hindsight, it can be argued that it has been at least 10 years since the beginnings of this new phenomenon became apparent. This raises the question of whether rapid reporting systems can be developed that detect such changes at an earlier stage.

Two issues are critical to any consideration of rapid-reporting systems. Firstly, patterns of drug consumption in Europe are constantly evolving. The development of appropriate responses to new patterns of drug use require reliable information. When new drug trends are considered, existing indicators on drug consumption perform poorly in providing this knowledge base. In particular, they lack the ability to rapidly report on changes in consumption patterns. The lack of such 'early-warning' information hampers the development of prevention, public health, or legislative responses. Secondly, information without interpretation is of little value. Early-warning systems are likely to be particularly dependent on good critical analysis. Developments in rapid-reporting methodology must, therefore, be accompanied by the development of systems for analysing, tracking and validating the information collected. Such a system is likely to rely on

human networks of key experts. The establishment of a rapid reporting system will, therefore, require both methodological and organisational developments if it is to fulfil the goal of improving policy responses to changing patterns of drug consumption.

Such a system must be accompanied by the development of an infrastructure that is capable of critically interpreting the information gathered. Without this level of intelligent processing, information is likely to result in unnecessary alarms and the development of inappropriate responses.

In the medium to long term, a rapid-reporting system will need to be located at the European and international level. The ability to learn from the experiences of one country and to observe trends across European borders is a critical aspect of much of the work now occurring in European drugs epidemiology. It will be important that any development activity in this area, be it at city, national or international level, complements other activities seeking to achieve the same ends. This will require co-ordination between those organisations entrusted with developing epidemiological systems in this area.



# Demand Reduction and Synthetic Drugs

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## DEMAND REDUCTION RESPONSES

A recent EMCDDA-commissioned Delphi study on concepts and terminology (ISDD, 1996) emphasised the importance of a clear concept of demand reduction for facilitating communication. Defining such a concept is no easy matter, but is particularly complex in the sphere of synthetic, entactogenic and amphetamine-based stimulant drugs.

Demand reduction, "as the concept is presently being used across Europe, has rather loose and often contested boundaries" and is implemented variously as a policy concept, a sectorial concept and a practice concept (ISDD, 1996). The Delphi study showed that it was not easy to fit diverging concepts of demand reduction into a tight theoretical framework. Consequently, the study on demand reduction and synthetic drugs, forming the basis of this report, took an empirical approach by identifying and describing interventions and initiatives developed in a variety of European countries.

Most Member States run, or are planning to run, activities specifically related to synthetic drugs. In general, the number of activities organised follows the rough prevalence of synthetic drug use. Hence countries with the largest number of projects include the UK, Spain, the Netherlands and Germany which have long-established populations of ecstasy users, comparatively high prevalence rates and large dance scenes. In Greece and Ireland, however, where prevalence is low, there are no specific projects or activities currently under development, although there appears to be some informal activity in Ireland. In the case of Finland, existing services are dealing with a limited amount of work in this area, while Portugal is planning to encourage the growth of projects in this field in the near future.

The education of legislators, policy-makers and planners about the complexities of recreational and dance drugs will



become an increasing priority in the future (POST, 1996). Historically, policy-makers have found it easier to deal with 'problem' drug use where the options might be crudely portrayed as a choice between treatment or prison, with drug users frequently presenting themselves as victims of their own addiction. In contrast, the vast majority of dance drug users do not fit easily into this model. Thus, in public debate, calls to clamp down on events and make mass arrests have been counter-balanced by demands for measures to minimise the likelihood of harm being caused to actual or potential drug users and the wider society.

## PREVENTION

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The prevention of the use of ecstasy and other synthetic drugs in Europe has tended, to date, to fall into four main areas of endeavour:

- *The provision of information and advice for a general audience.* Some media have assisted with this, compensating to a certain extent for the approach employed by some newspapers which has simultaneously alarmed the public and heightened the interest of many young people.
- *The integration of materials on ecstasy and synthetic drugs into school teaching programmes and more informal youth contexts.* Some interventions have involved outside visitors or experts, while others have been based on the premise that all teaching about psychoactive substances should be a formal part of a school curriculum. *Mixmusic*, a group in Italy that visits schools accompanied by clinical experts, conducts sessions specifically on dance drugs and the rave culture, while the *Youth Awareness Programme* (YAP) in Newham, East London, talks more generally to pupils and young people about drugs, including ecstasy, LSD and amphetamines.

- *The targeting of interventions aimed at young people who have experimented with dance drugs, or who are at high risk of doing so.* These activities are conducted by drug services, youth workers and health promotion agencies. In many parts of Europe, drug services specifically targeted at dance drugs have been developed, often by individuals and networks with experience of the dance drug scene. Alternative activities have also been organised such as the 'drug-free raves' developed in Germany and Sweden.
- *The provision of on-site support, advice, information and counselling at large rave events.* This is less easy in cities where there may be a large number of clubs where young people gather. In some Italian towns, workers may visit four or more clubs on a particular evening. Increasingly, local authorities, the police, health professionals, promoters, club owners and voluntary drug agencies are jointly implementing protocols and guidelines that stipulate the presence of advisers and drug experts at staff 'chill-out' areas.

Such interventions are usually part of a wider harm-reduction policy that has been endorsed at a local level. Leaflets, flyers, posters, booklets and 'safer drug use' materials are distributed in clubs, venues, record shops and other relevant outlets. They are targeted at individuals who may already have taken drugs as well as at potential users, their partners and friends. Generally they are written in accessible language, utilise designs associated with dance, drugs and music, or are in illustrated comic format.

## PUBLIC PREVENTION ACTIVITIES

Materials specifically covering synthetic drugs and their consumption have been developed in many countries at both national and local level. Resources outlining the effects of individual drugs also exist, independently of consumption trends, as do general booklets encompassing all types of drug, such as guides for parents.

## NATIONAL CAMPAIGNS

The *Health Education Authority* (HEA) in England focused its part of a '*Know the Score*' advertising campaign on the health risks associated with ecstasy, speed, LSD and the particular dangers of 'mixing' different types of drug. Advertisements were run over the Christmas and New Year 'party season' in women's magazines, the youth and style press and on the radio. A postcard on the dangers of mixing was also produced.

The *Federal Centre for Health Education* (BZgA) is currently developing a national campaign in Germany thanks to funding from the Federal Minister. In the Netherlands, the *Trimbos-Instituut* is planning to launch a campaign on XTC (ecstasy) in 1998 aimed at encouraging individuals (both educators and young people) to seek information.

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## INFORMATION, EDUCATION AND HARM REDUCTION

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The majority of projects identified as specific to synthetic drug use pursue a harm reduction approach. Many try to maintain a non-judgmental position, arguing that while there is no such thing as a safe drug, people are still consuming drugs apparently in ever increasing numbers and regardless of numerous enforcement and educational campaigns.

Differences between projects are often simply a matter of degree. Some projects are more proactive in stressing the risks of use, while others may stress that drugs are unnecessary for enjoyment and promote the organisation of events and activities that favour a drug-free lifestyle.

Efforts to shift consumption towards a moderate, less risky mode is considered the most practically helpful policy. Thus the '*Just say no*' approach imported from the USA is turned

into 'Just say know'. This means that project organisers are rejecting educational strategies based on a simplistic 'Don't take drugs' theme since they find it is ignored by their audiences. Instead they are looking to a more targeted, sophisticated approach that provides information for both users and potential users.

Particularly important messages are translated into 'golden rules' always to be kept in mind. For instance, in Hannover, projects organised by the NGO *DROBS* aim to reduce ecstasy-related accidents to a minimum by informing consumers about the drug, its actions, dangers and risks. Their five most important rules are:

- No drug makes you happy if you are unhappy.
- Less is more ("Weniger ist mehr").
- Mixing is crap ("Mischkonsum ist Mist").
- Don't push yourself into continuous drug taking.
- Don't take anything about which you know nothing or have anxieties. (Märtens, 1996).

There is a tendency to emphasise the importance of personal responsibility. Many projects see themselves as providing essential, accurate and non-judgmental information and advice on which individuals can make their own decisions (see Fromberg, 1992).

The City Council of Barcelona (*Ajuntament de Barcelona*) has initiated a project to design materials addressing the synthetic drugs problem as part of its *Municipal Plan of Action Against Drug Dependency*. Venues targeted are discos and music bars. The promoters' organisation, *Barna Ocio*, has actively collaborated with the authorities, contributing suggestions for design and distribution. A particular effort is being made to offer readers objective information on the risks of use in order to encourage them to make an informed choice. The slogan used: 'You are the only one responsible for your life, value it and decide'. The campaign emphasises that all



consumption involves risk, and provides recommendations should the reader decide to use drugs. The positive reception of this initiative encouraged wider distribution in an area with a high concentration of nightclubs. An association of local businessmen also became actively involved in the extension of the campaign.

## REGULATION, COLLABORATION AND CONFLICT

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*“...the rave scene was, from the police viewpoint, a new and ‘unpredictable’ public order problem...” (Fraser and George, 1996).*

As with any large social movement, major issues arise concerning social order and the community. Synthetic drug use in a dance setting is a public act and occupies a grey middle ground where liberal and more repressive policies meet. As Dorn *et al* (1996) put it in relation to open drug scenes: “Sitting very awkwardly between the anti-trafficking and the user-integration measures is the unresolved question of how to respond when trafficker meets user - when tidy distinctions between two worlds may often be hard to maintain”.

The trend away from targeting users and towards reducing supply through targeting dealers easily fits a pattern of consumption based on homes and small private parties. Yet much synthetic drug use is at large, very public, events and clubs. These facets of synthetic drug use present particular challenges to public authorities, particularly the police and those charged with the licensing of entertainment premises.

Initially, most countries reacted to raves with repressive responses. Some countries, or regions, still maintain this repressive stance while others oscillate between tolerance and repression. In some Member States, local police faced by a difficult and sometimes impossible task of control, may select a variety of options, pragmatic and otherwise.



Choices may vary; from close collaboration with local institutions, health and social care professionals, self-help groups and rave promoters on the one hand (to ensure a safe and incident-free event), to strict enforcement of public order and drug legislation, on the other, with termination of the event as a likely possibility. The political and cultural context within each Member State is likely to colour the outcome.

A senior British police officer was recently criticised by a government minister for suggesting that Dutch on-site drug testing might be considered as part of a wider harm-reduction strategy for parties and raves in Britain (*Mixmag*, 1997). Such differences may reflect disputes or alliances between Member States, between regions within Member States, and between local administrations and central governments.

It has been argued that police operations directed at closing or restricting socialisation/drug dealing areas are more effective than those directed at individuals in dealing networks (Fraser and George, 1996). Thus, the police may see the repression of raves as a cost effective way of disrupting drug dealing and consumption.

However, many police forces operate informal rules on quantities of drugs that can be considered as for personal possession. For instance, one force had an informal '3 Es rule'. Yet it has been reported that, at different times, up to 20 pills have been regarded as personal possession in some areas of the UK, Germany and the Netherlands. Police forces are obviously making pragmatic decisions based on the cost effectiveness of processing arrests. These limits vary between countries, regions and local forces. A further dilemma centres around the displacement of illegal activity to other areas.

There is a widespread view in Sweden that law enforcement is an integral part of prevention and demand reduction, hence the '*Rave Commission*' was established by the police in the greater Stockholm area in November 1996. Its main purpose is to prevent synthetic drug use, by identifying users

at an early stage, and to reduce the likelihood of a move to more addictive drugs. Officers visit parties and clubs in order to be present when and where consumption occurs. Internal, like external, possession is prohibited in Sweden. A fine can also be imposed if drugs are detected through blood or urine testing. The Commission has not found it hard to find synthetic drug users at events. One of the main indicators for evaluation will be the number of young people identified.

Three-quarters of the young people detected by the *Rave Commission* have never been involved previously with the police or social authorities, and the majority do not come from socially-deprived backgrounds. Dealers, most of whom use synthetic drugs themselves, are arrested, although the Commission does not see this as its primary function. The Commission aims to establish good co-operation with managers, club owners and organisers of events so that it can participate in planning from the start. In particular, it feels that it is important to shut down illegal parties. Many occur in large disused buildings and in woods outside Stockholm and are rarely licensed. Summer is the peak season.

The Swedish authorities are concerned that young people appear to have a more liberal attitude towards drugs. Often police officers unfamiliar with drugs see young people having fun at events in the absence of alcohol, and because there is no fighting or public disorder, do not recognise that many of them may be using drugs (*Rave Commission*, personal communication).

In France, there appear to be few examples of co-operation between authorities and organisers compared to some of its near neighbours. Powers introduced by former Interior Minister, Jean-Louis Debré, however, mean that if the police or local authorities so choose, they have the means to stop an event (Davet, 1997a). The French police have been intervening during the progress of raves with implications for the personal safety of those attending the event. Currently, organisers are held responsible for any possession or use of

drugs that is observed at their events. Some organisers have already been imprisoned on these grounds (*Techno Plus*, undated). However, *Boréalis*, a recent event in Montpellier organised by rave promoters *La Tribu des Pingouins*, and which attracted 20,000 people, may mark something of a watershed. Public health considerations were much to the fore and, as a result, groups involved in demand reduction and public health activities are keen to work more with the police. *Boréalis* proved that large events can take place safely in France (Davet, 1997b) with proper medical back-up and without state interference.

In the Netherlands, measures have been introduced by the Justice Minister that have increased controls on nightclubs and made penalties harsher. For instance, if drug dealing is now discovered, the club is closed down for six months, a second offence entailing permanent closure. A very popular Amsterdam club was closed under these new measures in December 1996. Some city councils have taken the matter a step further by simply banning raves and house parties (*Geopolitical Drug Dispatch*, 1997). There is now an agreement between the City of Amsterdam, police and owners of discotheques to join together to reduce the dealing of hard drugs on the entertainment circuit.

In the United Kingdom, the late 1980s were characterised by a 'cat and mouse' game between the police and organisers of unlicensed raves. A compromise was eventually reached as policing the phenomenon, while increasingly effective, proved extremely costly. As part of an explicit strategy, licensing laws began to be relaxed and nightclubs were allowed to open longer, while a number of powers were introduced into law and rave organisers started legitimate companies to put on licensed events (Collin, 1997).

Legislation passed in March 1997 in the UK has the potential to make it easier for local authorities and the courts in England and Wales to secure the closure of an establishment where there is a serious problem with controlled drugs (HMSO, 1997).

The act gives local authorities the power to “revoke a public entertainments licence if they are informed by the police that there is a serious problem relating to the supply or use of controlled drugs...”. (The law does not apply in Scotland which has a separate legal system). Previously, entertainment licenses could only be revoked at annual hearings and a lengthy appeal process meant the club could remain open despite the concerns of the police and local authority.

Legislation is often a blunt tool. Much depends on the interpretation that is given at local operational level to any new statute. Thus, there can be a sharp difference in opinion even among actors with generally similar perspectives. The debate hinges on whether the proposed law is used to tackle systematic, large-scale club-based dealing, or simply drug use in a club. Tackling the former is seen as beneficial. However some believe the latter could be detrimental since it would make it more difficult for services to gain access to club premises and would cause facilities such as ‘chill-out’ rooms to be discontinued, as owners become wary of any association with drug use. For instance, in Rotterdam, the long-established NGO, *Boumanhuis* reports an increase in the difficulty of gaining access to some clubs for its workers (*Boumanhuis* communication). As one drug worker put it: “If drug use in clubs is forced underground then all the benefits gained in forcing clubs to take responsible attitudes towards drug use could be lost” (M8, 1997).

Two conclusions seem particularly apposite. Firstly, “displacement activities can open up a whole new can of worms for both police and policed” (Fraser and George, 1996). As *Techno Plus*, the French NGO started by ravers in 1995, points out, police action to stop raves after they have commenced presents many problems for those attending, particularly those who are ‘high’. *Techno Plus* confirms the view, as do other informants, that the repression of raves and club events forces them ‘underground’ (for example into disused buildings) with all the accompanying difficulties of access for prevention and paramedical interventions.

Secondly, "Police operations, their outcomes and the use of media alter public perception of both the nature and extent of the local 'drug problem'" (Fraser and George, 1996). How successful are the police actually being? In exaggerating success concerning a large number of small possession offences, an occasional club closure or withdrawal of a licence, these activities are given a prominence that exacerbates a community perception of being surrounded by drug use which, in fact, has no epidemiological basis.

Finally, there is a point to be made about containment. The activities at raves and clubs form an infrastructure that can be extremely stable. Henderson (1993) found that 93% of her sample had first taken ecstasy at a rave, party, club or festival. Only 4% had first tried the drug at home. If sensitively regulated in a spirit of collaboration, the techno scene presents an opportunity for far more demand reduction activities to take place than if events were forced to take place illegally or consumption was driven elsewhere.

## GUIDELINES AND SAFER DANCING

The competition that public health education messages face is enormous. The sounds and images of dance drug culture are unavoidable in visual, sound and print media, as the advertising industry appropriates the overt and subliminal language of each new youth trend. In promoting this language, the leisure industry has, quite knowingly, contributed significantly to the drug content of popular culture.

After the excitement of illegal mass raves in the 1980s and the mushrooming of semi-underground clubs, the problem with the mainstream scene, suggests Collin, "is that it's over-regulated, with strict door and music policies... People want a bit more anarchy. They want to live a fantasy. If only for one night". The centrality of fantasy in the weekend escape from a treadmill of employment or study or, for a minority,



the tedium of joblessness, should not be underestimated. Italian sources draw very similar conclusions (Bagozzi, 1996). This may raise concerns that guidelines, protocols and the responsible regulation of events might be perceived as over regulation and drive clients elsewhere.

However, some of the most popular event promoters in London (*Ministry of Sound, Camden Palace*) and in Scotland (*Rezerection*) have been the keenest to collaborate in the drafting and implementation of guidelines and the promotion of harm-reduction interventions. Denial of drug use within their venues and opposition to initiatives has tended to come from the marginal operators and club owners who fear closure. Large chains, sometimes quoted on the stock market, find themselves in a difficult position protecting both the consumer and the share-holders' interests. Progress at a local level also depends on the attitudes of the licensing authorities and local government.

Interestingly, user-oriented groups such as *Release* and *Crew 2000* (UK), *Eve and Rave* (Germany) and *Gruppo Abele* (Italy), whose philosophies tend to emphasise personal choice and responsibility, favour enforceable guidelines and protocols for dance music events. Commercial promoters with little interest in dance culture, except for profits, often deny their necessity. Rave and dance activities certainly produce unlikely alliances. Some of the most spectacular illegal events in the late 1980s were staged by young men close to the finance sector who took their free-market principles as far as they could push them. At the other end of the spectrum, *Spiral Tribe*, *Exodus* and other militant sound crews<sup>5</sup> frequently perceived protocols and local authority regulations to be as much of a threat as central government legislation aimed at dance events.

A facet of the response from authorities in Member States has been to sponsor the introduction of guidelines and protocols

<sup>5</sup> Travelling sound systems with varying degrees of political consciousness and adherence to anarchist or counter culture values.

that seek to help in the licensing and regulation of events. Examples presented here are from the Netherlands and the United Kingdom but their existence spreads wider. In France, a national charter for rave organisers is seen by some as an idea to be developed further in order to foster co-operation between organisers and authorities (Davet, 1997b). The *Nuove Droghe* project in the Emilia-Romagna region of Italy, which focuses on both wider information campaigns and the commercial dance scene, has also developed detailed guidelines.

In the Netherlands, the Ministry of Health, Welfare and Sports has advised local authorities on regulations for large scale events such as 'house parties'. The advice came from a working group consisting of representatives of a number of ministries (Health, Welfare and Sport, Justice and Internal Affairs), the *Trimbos-Instituut* (National Institute for Mental Health and Addiction), umbrella organisations and various experts. Organisers are required to provide free drinking water, experienced first aid staff, adequate ventilation and chill-out rooms. They must also ensure that transport links are easily accessible, must check for weapons and drugs at the entrance, and must provide access routes for the emergency services. These conditions can be imposed on licensees (NIAD, 1996).

In the United Kingdom, guidelines specifically for safer dance events were originally developed in Manchester in the early 1990s. In 1993, a central government working group published a '*Guide to Health, Safety and Welfare at Pop Concerts and Similar Events*' which has proved extremely useful to licensing authorities and event planners organising large raves. In 1995, the *Scottish Drugs Forum* produced '*Guidelines for Good Practice at Dance Events*' on behalf of the government's Scottish Office. Recently, the *London Drug Policy Forum* produced its own guidelines entitled '*Dance till dawn safely: a Code of Practice on Health and Safety at*

*Dance Venues'*. Both of these documents focus on the club-based event rather than the full-scale rave.

The *London Drug Policy Forum* (1996) summarises where it sees guidelines can have an impact, as follows:

- *Security*: do as much as possible to ensure that drugs are not available at dance events.
- *Environmental factors*: ensure that venues are adequately ventilated, that there is an unrestricted and free supply of cold drinking water, and provide an area in which club-goers can cool down and receive advice and information on safer drug use.
- *Staff training*: ensure that all staff are adequately trained to distinguish between drunkenness, paranoia and general illness and to recognise the signs of drug use, in particular heat stroke, so that they may be able to take prompt action and alert properly trained professionals.
- *Multi-agency liaison*: encourage all agencies, in particular the police, local authorities, club owners, managers and drug agencies, wherever possible, to work together to provide club-goers with a safe environment.
- *Drug information and advice*: provide club-goers with clear and accurate information and advice on the steps they can take to keep themselves safe. This information should be given by trained staff from drug agencies. Whatever measures licensing authorities and club owners take to reduce drugs in clubs, some club-goers will nevertheless take drugs.

The idea of 'safer dancing' was developed fully in the early 1990s. Newcombe (1992b) outlined a strategy for regulating raves that is an alternative to repression and imposed by withholding licenses from organisers or raiding events when in progress.

The strategy described in Newcombe (1992b) “the use of ecstasy and dance drugs at rave parties and clubs: some problems and solutions” has five components:

- Develop detailed guidelines for the regulation of raves, involving all relevant authorities (police, fire, health) and interested parties (e.g. promoters/club managers, community groups).
- Reconsider the routine revocation of entertainment and liquor licenses on the grounds of drug use or other problems if the rave management/promoters agree to co-operate with the police and local authorities in attempting to resolve or reduce problems.
- Develop a system for regulating security staff, involving registration, training and monitoring, with the police playing a central role.
- Consider focusing police resources for detecting and prosecuting drug offenders from the rave scene on the retail specialist level of distribution (i.e. drug dealing gangs).
- Help reduce the harmful effects of dance drugs substantially by employing properly tailored health care interventions.

In the foreword to the *Scottish Drugs Forum's 'Guidelines for Good Practice at Dance Events'*, the British Government Minister who commissioned the document summed up the rationale behind ‘safer dancing’ very well, saying “..we must be realistic about the lives led by young people and alert organisers of dance events, and those who attend them, to the dangers of drug-taking and how to reduce the risks. We do not want to deprive young people of a source of entertainment but we want them to enjoy themselves safely. This is their right and I am sure that young people will increasingly demand high standards of safety in the venues they use. Providing a safe venue is therefore not only essential and responsible, but good business for promoters.” (*Scottish Drugs Forum*, 1995).



The following elements are part of a typical service:

- Information and advice about drugs, effects, risks.
- Information and advice about safer sex.
- Provision of information leaflets.
- Provision of condoms.
- Support to individuals experiencing mental or physical health problems.
- Liaison with organisers and licensing authorities over health and safety.

Some also provide:

- A total 'chill-out' environment (e.g. decor, lighting, music).
- Free massage.
- Free chilled fruit and ice pops.
- Free water at parties/festivals.
- Information on the current availability of drugs within the scene.
- On-site testing and pill identification.

Clubs are increasingly taking responsibility for providing services either on their own initiative or through the encouragement of local agencies. This is essential as no service, however good, can cover all the clubs each night in a given locality. The recognition by owners and managers of clubs of their responsibility for their clients is an encouraging development. Owners and managers, individually and in association, are becoming involved in prevention and harm reduction activities. *Barna Ocio*, the association of clubs and discos in Barcelona mentioned earlier, is one such example.

Most safer dancing projects engage in other activities and some are part of larger agencies, although size varies considerably. The latter have more on offer, some having premises in shopping areas with drop-in times and facilities for counselling. The range of advice can be quite extensive, incorporating legal information.



## OUTREACH, PEER EDUCATION AND SELF-HELP

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The EMCDDA-commissioned Delphi study mentioned earlier in this report cites alternatives to outreach initiatives that provide health education through campaigns informing young people on how to limit potential risks when using ecstasy at raves.

It has been argued by McDermott, Rhodes and others that traditional outreach and detached work are inappropriate in noisy clubs where the target group is seeking pleasure not counselling (McDermott *et al.*, 1993; Rhodes, 1991). This is not a universal view and is based on a relatively narrow concept of what is meant by detached work. 'Outreach' and 'detached work' require almost as much definitional study as 'demand reduction', a task that has been recently commissioned by the EMCDDA. There has certainly been dissatisfaction at the inability or failure of historic drug services to understand and respond more rapidly to the 'rave culture'. Some notable exceptions include the Manchester-based non-governmental drug agency's *Lifeline* project and the *SERT* community drug team and drug dependency unit in Padova, which has become an Italian centre of expertise.

### PEER EDUCATION

Many services use a peer education approach confirming the continued rise in popularity of this methodology. Outreach work alone is not seen as sufficient. The increasingly sophisticated treatment of young people demands that messages also need to be sophisticated and credible to have any chance of being accepted by this group (Shiner and Newburn, 1996).

The association *Techno Plus*, mentioned earlier, is based in Paris and Lille and consists of ravers who are seeking to inform other ravers about the risks of drug use and to prevent harm and accidents associated with this use. *Crew 2000* in Edinburgh, a coalition of volunteers, drug workers and others, has a similar philosophy. Volunteers distribute information they have designed themselves at events and clubs.

Since June 1996, the EU has been funding a collaborative project between the *Büro für Suchtprävention* in Hamburg, *Lifeline* in Manchester and the *Jellinek Centre* in Amsterdam. Officially, it is called the '*Model project for ecstasy prevention with special emphasis on a peer educational and gender specific approach*'. At Jellinek it is known as the 'Unity project' while in Hamburg it is called the 'Ecstasy Project'. Clubs are visited and information about drugs is provided although the mix of project workers and peer educators varies between projects. In Amsterdam, advice is offered and places for referral are suggested where appropriate.

The three agencies also aim to collect, examine and exchange all existing research data on the use of ecstasy in the participating cities in order to develop guidelines for the production of prevention and intervention materials.

The project has developed materials that are distributed by peers at weekends as part of a framework to offer on-the-spot advice at clubs. A postcard format has been agreed and two sets have been created for each city covering male and female clubbers separately. The information contained in the cards is as similar as translation allows, while the images on the front of the cards are designed to fit local aesthetics.

The *Youth Awareness Project* in Newham, London, which engages in peer education around drug use (including ecstasy) in school and youth work locations, aims to:

- Provide definitive, factual, accurate information.
- Improve knowledge.
- Improve attitudes, skills and abilities.
- Facilitate and monitor the implementation of guidelines in clubs.
- Improve working relationships between relevant statutory, non-statutory and commercial organisations.

### SELF-HELP

A large number of interventions has been initiated by users, promoting self-mobilisation and formal and informal peer education. To some extent, informal policing mechanisms evolve among groups of friends who may be using drugs: members of the group try to monitor each others' behaviour and provide reassurance and support when difficulties emerge.

In a pilot study aimed at predicting risk-taking behaviour amongst ecstasy users, Dalgarno and Shewan reported that social support networks were particularly important in dealing with adverse consequences of drug use (Dalgarno and Shewan, 1996). A number of services evolved in this fashion in the Netherlands, Germany, France, Italy and the United Kingdom.

Self-organisation has been strongest among 'recreational' or 'ideologically motivated' drug users. In a number of European cities, this has resulted in practical responses. Consumer and service user groups are being heeded by health and social planners in various cities and regions, and appropriate interventions are being designed accordingly.

## WORKING WITH THE SCENE

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Some projects are attempting to use the rave scene to promote their messages. *Mind Zone* is a youth project trying to promote a drug-free rave and techno culture in Bavarian dance events. The project does not wish to stigmatise or criminalise their target group of 16-22 year olds, but intends to create, together with an already identified non-drug consuming youth group of ravers, a new drug-free and healthy image.

A group of young people calling themselves *Natural High*, supported by the *Edinburgh Streetwork Project*, sets up and runs rave music roadshows for youth clubs and venues mainly in government-funded deprived areas. They use publicity materials, DJ skills, lyric writing, discussion sessions and drugs information displays to convey their messages.

Another means of communication is the use of space in music magazines. The NGO *DROBS* in Hannover has space in a northern German monthly techno magazine (*Mushroom*) where it publishes information about dangerous substances (*Böse Pillen*). It also answers readers' letters under the guise of 'Dr. Obs'. In Northern Ireland the *Lookout* project is also using space in a music magazine (*Baseline*) to communicate messages to its target audience.

### PILL TESTING AND IDENTIFICATION

In the Netherlands, government-sponsored laboratory analysis is systematically used to inform a network of organisations about the quality and purity of what is currently available under the ecstasy umbrella, enabling them to take preventive action where required. The *Trimbos-Instituut* runs the *Drugs Information and Monitoring System* (DIMS) project which is funded by the Ministry of Health, Welfare and Sports. Since it began in 1992, the project has provided

timely information on drug trends and drug quality, particularly in the ecstasy market. Its main purpose is "to protect public health by means of preventive and educational activities". The discovery of a pill with a dangerous composition results in a swift response in the form of warning campaigns aimed at potential users. In other countries, government-sponsored laboratory testing consists of *ad hoc* studies connected with police or medical investigation, university researchers (e.g. Gamella *et al.*, 1996), or instigated by NGOs (*Eve and Rave* in Berlin; *DROBS* in Hannover; *Lifeline* in Manchester) and private individuals (Saunders, 1995).

On-site pill testing at raves and clubs is practised far less than laboratory testing. In the Netherlands, it is much more formalised than elsewhere, although its use has decreased. Established in projects in different towns across the Netherlands is an office-based system where consumers can take their pill at specific times to get it checked against the database of laboratory tested pills. For instance the *Safe House* campaign of the *Amsterdam Drugs Advisory Bureau* co-operates closely with the DIMS project. As well as providing on-the-spot evaluation of the general composition of pills, it distributes information about drugs and warning leaflets at most large events. The *Boumanhuis* in Rotterdam is also part of this system. German groups have been enthusiastic in the use of testing (e.g. *Eve and Rave*, *DROBS*). In other Member States (Austria, United Kingdom, France) much interest has been expressed by groups in this intervention and its potential to reduce harm.

### BUSES AND SHOPS

For some time, *DROBS* has been running a double-decker bus as a mobile drugs information centre and chill-out room. It is a drug-free zone with no alcohol or drugs allowed. Similarly, in Belgium, two buses are used to deliver information and advice to club-goers and ravers. One contains a simulator that demonstrates what it is like to drive under the influence of drink and drugs where people are



invited to take a ride. In the other bus, information and advice is given on various topics related to drug use and those with problems can talk them over on a one-to-one basis with a worker. Both buses are drug-free zones.

*Crew 2000* has a shop in the centre of Edinburgh which was set up in recognition of the need for a centralised place that was not a traditional 'drugs agency' but where young people could go for information about drugs, about sex and the dance scene. Counselling is not provided but there is a referral system in place if required. The shop has become a resource centre for information on the dance scene and recreational drugs. It is used not only by young people but also by the media, parents, teachers, club managers and security staff. A similar project has been set up on a temporary basis by *Enhance*, a Glasgow-based non-statutory drugs project.

### LEAFLETS/FLYERS/ BOOKLETS

A leaflet, while an important first step, is only a tool. There is a professional consensus that the most important activity is based on personal contact. One outreach worker observed, "When people are interested they come to ask things. Having a brochure or flyer is good but its better to talk."

Materials take three main formats: posters, leaflets/booklets, and postcards. There are also lesser used categories which include videos, T-shirts and logos. They are developed by non-governmental organisations (NGOs) and central, regional and local government departments, often collaboratively with promoters, organisers of events and club owners.

Leaflets tend to be of two types. The first type are colourful and employ sophisticated graphics and/or imagery from the scene, while the second type are more functional in appearance. It has been suggested that stylishly produced publications about drugs will only encourage people to take them. However, there is widespread agreement about the need for materials to be seen to be relevant to the culture that

they are trying to inform (McDermott *et al*, 1993). Longer information leaflets and booklets dwell more on the medium- and long-term problematic potential of synthetic drug use, while shorter leaflets transmit 'golden rules' to follow, often after immediate ingestion in particular settings.

Perhaps the most widely known set of materials in Europe are those produced by *Lifeline* in Manchester which feature the cartoon adventures of 'Peanut Pete' and 'Claire and Josie'. *Lifeline* has been developing the use of comics and characters as a tool in reducing drug-related harm since 1987. Originally aimed at educating about HIV and injection practices, these materials have come to cover many subjects including safer dancing, safer sex and alcohol use. Part of their motivation was to "win back the confidence of drug users who have been socialised into a sub-culture used to discounting warnings of danger from well-intentioned but ill-informed professionals" (Gilman, 1989).

The *Andalusian Regional Council (Junta de Andalucía)* has produced two leaflets entitled '*Atención Pastillas*'. The message is to 'pass up the pills' with points to remember if the reader chooses otherwise. Meanwhile in Portugal, the National Drug Prevention Plan, *Projecto VIDA*, has produced a brochure entitled '*Atenção Pastilhas*' for distribution at discos and nightclubs. It gives advice on why the reader should not take synthetic drugs and what they should do if they do decide to take them.

The *Mission interministérielle de lutte contre la drogue et la toxicomanie* in France has produced a text-based leaflet which outlines some reasons for taking ecstasy and the risks and possible consequences that are involved in its consumption. It tries to convey the message that ecstasy's reputation for being 'innocuous' is erroneous and that the experience is not always 'inoffensive'. The leaflet also gives other reasons for refusing ecstasy: that one never knows what

one is taking; that there are risks to brain function; and that there are severe legal penalties. Other bodies in France have produced leaflets including the Prefecture of Police in the Ministry of the Interior. The Ministry of Youth and Sport has also co-sponsored the production of leaflets including one for distribution in Aquitaine-Bordeaux providing addresses for contact agencies in various areas.

The *Danish National Board of Health* has encouraged a 'promoters forum' to create materials based on precise information to prevent drug-related harm. It is then left to individual promoters to use the materials at local level. Materials include a 'safe rave' leaflet, T-shirts for bouncers, and a logo for flyers. In Austria, a leaflet containing information on the long-term risks and consequences of taking ecstasy has been developed through a collaborative venture between the Federal Ministry of Health and Consumer Protection, Vienna and promoters of raves. In Germany, Bremen's *Senator für Bildung, Wissenschaft, Kunst und Sport* has produced a set of posters intended for entrances to events, chill-out areas and the inside of toilet doors. The set is linked by the slogan, in English 'Enjoy the Rave, but Rave Safe'. The Berlin-based NGO *Eve and Rave* has developed a full colour booklet called 'Partydrogen. Safer-use-info zu: Ecstasy, Speed, LSD, Kokain'.

Inspired by the *Eve and Rave* publication, the *Scottish Drugs Forum* and the project *Enhance* have produced 'The Survivors Guide to Drugs and Clubbing', a full colour booklet which aims "to dispel the many myths around drugs and their use by providing concrete facts" and hopes that "by identifying what we know the risks to be, we hope to help you make informed choices". *Crew 2000* has developed a set of postcards which are housed in racks installed in specifically targeted bars and clubs. They are also distributed in record and clothes shops accessing people who do not go to clubs.

## EVALUATION

In March 1997, the EMCDDA hosted the *First European Conference on the Evaluation of Drug Prevention* where the *Centre for HIV/AIDS and Drug Studies* (CHADS) conducted a workshop on the evaluation of ecstasy and synthetic drug-oriented interventions. The workshop confirmed that there was a great deal of innovative work being conducted in the EU Member States but that evaluation remained largely at a developmental stage, similar to other areas of drug prevention work. The relative novelty of the phenomenon has meant that most service-based investigations have focused on identifying needs, current trends in usage and process evaluation. There is still some bemusement on the part of educationalists, unfamiliar with dance drug culture and street work, about how informal interventions at rave events are conducted and evaluated. Conversely, anthropologists and detached workers are sceptical about the effectiveness of formally-structured programmes in schools and youth clubs.

Earlier research on agencies in the drug and alcohol fields (Burns, 1994) found that while there is a tremendous interest among agencies in the area of outcome, many do not carry out work that can be defined as monitoring. There was also little consistency in data collection although broad question areas did overlap. Evaluation should not solely be identified with outcome. Much useful information can be gathered from evaluation of inputs and processes. But, in the end, policy-makers, practitioners and other interested parties want to know the answer to the simple question - 'Does it work?'.

Coggans and Watson (1995) came to the following conclusions about the five main approaches to drug education:

- *Information-based approaches* do not, overall, live up to expectations although, with careful targeting, harm



reduction information “may have potential” for particular groups.

- *Value and skills-based interventions* “do not appear to be effective in stopping experimentation with drugs but may be effective in inhibiting a move into harder drugs”.
- *Resistance training*. “Peer pressure as a cause of widespread drug use is not supported by empirical findings”. In general, research has not found positive outcomes of this.
- *Alternatives-based programmes* “show promise” but there is too little research to recommend “which, with whom and where”.
- *Peer-led approaches*. Not enough research evidence exists to say anything about the effectiveness of this approach.

Finding evidence for effectiveness is dependent on the approach itself, the evaluation methodologies employed and the limitations in the theory and implementation of education interventions. One of the most important variables that is considered to influence effectiveness is whether a programme has a cultural understanding of drug misuse. There is a consensus that prevention activities should exhibit “a cultural orientation which seeks to anchor the drug using group (behaviour) to the larger context in which it develops, is maintained, and changes over the life trajectory” (Johnson 1993, quoted in Coggans and Watson, 1995).

In contemplating the main causes for drug use that are, implicitly or explicitly, behind much school drug education, Coggans and Watson conclude that “School-based drug education has frequently failed to take into account the likelihood that many young people use drugs on a recreational basis because they wish to experiment or enjoy the pleasurable aspects of intoxication, not because they lack knowledge, the social skills to ‘say no’ or because they have a poor self image” (Coggans and Watson, 1995).



## INFORMATION AND ADVICE

Henderson (1993) conducted an evaluation of 'dance drug' information materials developed in Manchester, collecting data from 144 young people aged 14-25 years and conducting a series of focus groups. The materials were assessed as to whether they were known to a wide range of relevant people; whether they improved drug knowledge; whether they raised awareness of the agency concerned; and whether they resulted in contacts requiring advice and agency casework.

The evaluation indicated that media coverage was a successful way of publicising the materials among the primary target group of known users of 'dance drugs' but less so among broader groups of young people. Known users welcomed confirmation of facts from a credible source. Respondents from the broader group were more resistant to comment, possibly not wanting to 'lose face' among the rest of the group by admitting ignorance. Participants' image of drug agencies in general was of organisations catering for 'junkies'. The materials did go some way to countering this image. The number of new referrals related to ecstasy and LSD to the agency distributing the leaflets almost doubled after their launch suggesting a 'real and growing change' in the profile of people using that agency's services (Henderson, 1993).

Interestingly, differences in respondents' opinions were not clearly marked by gender, age, demographics or stage of 'raver career'. While the harm reduction message of these materials was broadly appreciated, some younger teenagers felt they would like to hear more about the 'bad' side of drugs. Although behaviour change was not under study, several respondents did announce their intention to give up particular drugs after reading the leaflets (Henderson, 1993).

## EVENTS, GUIDELINES AND SAFER DANCING

In the Netherlands, the evaluation of the '*Stadhuis en House*' regulations for large-scale events was undertaken by the Bureau SBGO (the advisory bureau of the Dutch association of municipalities) and the report published in 1996. The evaluation found that, overall, the guidelines appeared to be helpful, but there were some drawbacks such as a lack of clarity about risks of ecstasy and selective and divergent use of the guidelines by municipalities.

The evaluation of events, from initial planning through to reports of incidents from one of the various services involved in the event, must be an essential activity. In some areas, such as Edinburgh, this information has been gathered over time, and trends in incidents show a superficial decrease that is worthy of further investigation. There is already a well-defined event-based methodology to build on in this area (Newcombe, 1992a).

The organisers of the *London Dance Safety Campaign* stress that evaluation is an integral component of their project through:

- Recruiting and running a series of focus groups to develop appropriate materials for the poster and postcard campaign.
- Testing the impact of materials once the design is finalised, using baseline and follow-up questionnaires that test knowledge and attitudes of people recruited to focus groups.
- Time series interviewing with a purposive sample of people who attend clubs and dance parties during the two months of the campaign, exploring awareness of the project, views on materials and impact.
- Monitoring the number of calls to the club compliance hotline to provide quantitative data on the effectiveness of messages about health and safety standards in clubs.
- Monitoring attendance figures for the campaign launches across London to provide some indication of the impact of pre-launch publicity.

## PEER EDUCATION

Shiner and Newburn (1996), in their evaluation of the *Youth Awareness Programme* (YAP) in London, offer some evidence for the effectiveness of the peer education approach. They see credibility as central to the evaluation of peer education interventions and divide it into three dimensions: person-based (e.g. age, sex, ethnic origin); experience-based (experience of drug use); and message-based.

They conclude that the importance of age can be important but is often superseded critically by the educator's experience of drug use and the content and style of message delivery. The study provides some evidence for peer education's ability to discourage drug users from developing and extending their drug repertoires. For people who have started to question their own consumption, defining it as problematic, Shiner and Newburn believe they have some evidence that peer interventions can play a role in supporting and validating decisions to cease or cut down consumption (Shiner and Newburn, 1996).

An evaluation of the project *Mind Zone* financed by the Bavarian Ministry of Social Order, has been underway since July 1996 with the *Institut für Therapieforschung*, Munich. The evaluation is financed through the *Federal Centre for Health Education*, Cologne, and consists of two studies: one to evaluate how well-known *Mind Zone* is among the target groups; the other to gather data regarding the consumption patterns and leisure time behaviour of ravers.

## CONCLUSION: RESPONSES AND INTERVENTIONS

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The themes that emerged at an *Expert Meeting on Synthetic Drugs* held at the EMCDDA from 18 to 19 November 1996, were confirmed by the joint review conducted by the *National Addiction Centre* and the *Centre for HIV/AIDS and Drugs Studies* as follows:

- There is much co-operation between authorities, commercial interests and other concerned parties although relationships are far from settled.
- A wide range of localities, municipalities and national bodies have recognised the significance of harm reduction strategies.
- Preventive information is increasing in volume and distribution across Member States.
- Support to users is increasingly available.

Despite the evidence of much co-operation, the illegality of ecstasy and associated drugs means that the authorities in Member States find themselves veering between the urge to repress illegal activity and the pragmatic realisation that, on occasions, this might cause more harm than good.

The experience of some countries in implementing demand reduction initiatives around synthetic drugs is relatively extensive. Those countries first affected by the phenomenon on a mass scale, such as the UK, the Netherlands and Germany, were fortunate in having forward-looking NGOs closely in touch with consumer trends. These groups were able to implement harm-reduction programmes with which local government authorities, event organisers, and drug users themselves, largely agreed. Local governments are especially involved in Spain, Germany and Austria. Promoters, owners

and club managers, in particular, are seen as crucial partners and are often involved in the development of interventions, in some instances, taking the lead. There have been a few complaints about the explicitness and irreverent tone of some printed materials. However, in the pragmatic climate of the post-AIDS era, many policy-makers have been generally pleased at the imaginative way in which groups have responded to a newly-identified need.

The alacrity with which community-based groups have acted has meant that templates for action are already available for other cities and regions as yet little affected by a rapidly-developing trend. It took some time for most statutory drug services to realise what was happening. Working with ecstasy users sometimes seemed to be regarded as frivolous compared to stabilising and treating heroin addicts. Hence there was a tendency to leave wider demand reduction work, and even crisis intervention at clubs and raves, to volunteers and sessional paramedics unfamiliar with the anxieties and fears that might be aroused by a bad ecstasy or LSD experience.

Those countries that have only recently identified a level of synthetic drug use requiring attention are fortunate that a significant body of work is underway in other Member States. In spite of this, it is difficult for quality research to keep pace with developments, even in those countries with over ten years experience. Patterns of use are not fully understood and further exploration is required at a local level.

What seems remarkable is the ease with which existing programmes have been initiated and applied in other countries. The extent to which this is happening is striking. It indicates, firstly, the level of commonality and shared experience bound up in music-oriented, drug-using, youth sub-cultures across national boundaries. Secondly, it illustrates the advances that have been made in constructing formal and informal networks between drug field professionals, sharing knowledge, expertise and ideas across the European Union.



# Conclusion

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Research into synthetic drug use is being carried out in a number of countries in the European Union. Studies of ecstasy consumers are being conducted or are planned, for example, in France, Spain, the UK, Ireland, Italy, the Netherlands and Germany while, elsewhere, activity is more limited.

Overall, the topic of synthetic drug consumption is poorly understood when compared to the knowledge base that exists on the consumption of opiate drugs or the problems of drug injection. Many of the studies that are being conducted are relatively modest in their aims and it would appear that much work is to be done before a comprehensive knowledge base is available. The next steps for the research agenda with regard to the consumption of ecstasy, amphetamines and LSD requires detailed consideration.

The rapid rise in popularity of drugs such as MDMA poses a challenge to traditional drug monitoring systems. This report contains a section on rapid-reporting methodology which considers the lessons to be learnt with regard to improving our ability to monitor any new trends in drug consumption which may subsequently occur in Europe.

In brief, a number of areas appear particularly salient topics for research activity:

- The needs of chronic amphetamine users are poorly understood.
- Across the EU, methodological systems capable of reporting rapidly on the development of new drug trends are lacking and this is an area in which resource investment is likely to pay dividends.

- There is a need for longitudinal studies of cohorts of synthetic drug consumers if the co-morbidity associated with this kind of drug consumption is to be better understood.
- The question of the neurotoxic effects of these substances needs to be resolved.
- Patterns of synthetic drug use have been poorly explored.
- There is much of value to be learnt about how these patterns of drug use are initiated and how some individuals go on to develop long-term patterns of use, whilst others only experiment with the substances.
- In some countries, and particularly where synthetic drug use is a new phenomenon, there is virtually nothing known about this pattern of drug consumption and an urgent need exists to collect information that can inform the development of prevention, demand reduction and legislative activities.

It is clear that there remain strong differences between those who see rave events and associated interventions as condoning or promoting drug use, and those who see the consequences of the complete repression of events as causing far more harm than the drug use itself.

While a great deal more is required to advance evaluation, there is an increasing awareness that no intervention should be allowed to continue indefinitely without rigorous testing of its effectiveness. There is encouraging evidence that it is becoming a requirement for appropriate evaluation measures and systems to be built into any substantial project.

It will never be possible to evaluate every spontaneous act without which the field would be the poorer. But neither will it be possible to resolve disputes over conflicting approaches to policy and practice without evaluation. A variety of ideas, interventions and works in progress have been described in this report. A great deal more investigation and analysis still needs to be carried out in the furtherance of appropriate interventions and good practice in the fields of prevention and demand reduction.



# Glossary

TERM	DEFINITION
2CB	4-bromo-2,5-dimethoxyphenethylamine.
Alco-pops	Alcohol-based cordials and soft drinks.
Anorexia	Loss of appetite.
Ataxia	Loss of co-ordination.
Bruxism	Teeth-grinding.
NAC	National Addiction Centre, UK.
CHADS	Centre for HIV/AIDS and Drugs Studies, UK.
Chill-out	Relaxing.
Dance event	An event where dance music is played continuously and mixed by DJs into an apparently seamless sequence. The nature and tempo (measured in beats per minute) of different kinds of dance music varies greatly (SDF, 1995).
Demand reduction	There is an on-going debate concerning the definition of what constitutes demand reduction. The issues are identified by the EMCDDA-commissioned <i>Delphi Study on Drug Demand Reduction</i> undertaken by ISDD (UK). Demand reduction activities vary in their approach depending on the behaviour they seek to change or prevent and the theoretical assumptions of their initiators (see ISDD, 1996).
Designer drug	A popular term that is not always used with precision. It refers to a sub-set of synthetic drugs that are structurally and pharmacologically very similar to a controlled substance but are not themselves controlled substances as defined by a UN Convention or national law. The US Drug Enforcement Administration uses the term Controlled Substance Analogue (CSA) where an analogue is defined as a substance having the same electronic structure but different atoms (Cooper undated; Henderson 1986; Langston and Rosner, 1986). Variations in usage of the term 'designer drug' may derive from the legislative frameworks that operate in different countries. For instance, in 1977, Great Britain amended its Misuse of Drugs Act (1971) to include, as Class A drugs, all compounds structurally derived from an N-alkyl-a-methylphenethylamine by substitution in the ring with an alkylendioxy substituent (Saunders, 1993). Hence, MDMA was already illegal in Great



	Britain before it appeared in any quantity in the mid to late 1980s. In contrast, in the Netherlands, MDMA and five of its chemical variants were only placed on Schedule 1 of the Opium Act (1976) in 1988. MDEA was added as late as 1993 (NIAD, 1996).
DIC	Disseminated Intravascular Coagulation.
Ecstasy	Ecstasy refers to the compound MDMA and is used in several different ways. The term is more than simply a popular euphemism for a chemical compound. It has strong symbolic associations with particular types of lifestyle and patterns of consumption. Forsyth argues that ecstasy is less a specific pharmacology and more a “concept”, like any licit commercial product that is packaged in different brands (Forsyth, 1995).
EMCDDA	European Monitoring Centre for Drugs and Drug Addiction.
Entactogen	Term coined to classify MDMA as a different type of drug because of its unique combination of stimulant and mood-enhancing effects.
Flappers	Female dance enthusiasts in the 1920s.
Harm reduction	A harm reduction philosophy takes the view that it is of greater benefit to the common good to actively attempt to reduce the harm that drugs can cause rather than simply try to prevent drug taking. It is a pragmatic approach that recognises the difficulties inherent in attempting to prevent all forms of illicit drug taking, and emphasises maximising benefits and minimising harm.
HIV	Human Immunodeficiency Virus.
Hyperpyrexia	Abnormal rise in body temperature (above 41.1 degrees celcius).
ICD 9	International Classification of Diseases, ninth edition.
ICE	Crystalline methyl amphetamine.
Incidence	The number of new instances of an event (e.g. injecting) in a population.
Ketamine	An anaesthetic with analgesic and hallucinogenic properties.
LSD	Lysergic acid diethylamide.
MDA	3, 4 Methylenedioxyamphetamine.
MDEA	3, 4 Methylenedioxyethylamphetamine.



MDMA	3, 4 Methylenedioxymethamphetamine.
Mods and Rockers	Youth sub-cultural groups from the 1950s and 1960s.
Neurotoxicity	Poisonous to brain cells.
Nystagmus	Rapid side-ways eye movements.
Paraesthesia	Abnormal tingling sensations (such as ' <i>pins and needles</i> ').
Prevalence	The extent of drug use in a population at any one time or over a specified period of time (e.g. measures of 'ever use').
Punk	Youth sub-culture of the mid 1970s.
Rave, techno, (acid) house	Terms describing various styles of dance music.
Rhabdomyolysis	Breakdown of muscle tissue.
Rhinitis	Inflammation of the mucous membrane of the nose.
Synaesthesia	A condition when one sense is perceived as another (e.g. music perceived as a colour).
Synthetic drug	A useful catch-all term referring to psychoactive substances artificially produced in laboratories from chemical raw materials (precursors) rather than from natural products. In this instance, it refers to ecstasy and analogues, amphetamine and LSD. The term should be used with care as there are synthetic sedative-depressants and analgesics, as well as hallucinogens and stimulants (Cooper).
Trismus	Jaw muscles spasm keeping the jaw tightly closed.
XTC	See ecstasy.



# TimeLine

## SELECTED DATES FROM THE HISTORY OF SYNTHETIC DRUGS

- 1887 Amphetamines first synthesised.
- 1910 MDA first synthesised.
- 1914 MDMA first synthesised.
- 1918 Ergot alkaloid (from which LSD derives) first isolated by Stoll.
- 1930s MDA put through a series of drug trials as a remedy to Parkinson's disease and an appetite suppressant, then abandoned.
- 1932-46 Pharmaceutical industry finds 39 licenced uses for amphetamines.
- 1939-44 World War II - amphetamines extensively used by troops.
- 1940s Amphetamines regularly used for weight control in Sweden. Sweden developed amphetamine abuse problem.
- 1943 Hoffman discovers LSD's mind-altering properties.
- 1948-1960 Japanese methamphetamine 'epidemic'.
- 1950s Exploration of the use of LSD for therapeutic purposes.
- 1957 American researcher Gordon Alles describes MDA as a drug capable of heightening perception and producing strange visual distortions.
- Late 1950s - early 1960s Amphetamines widely used by 'mods and rockers'.  
Amphetamines became associated with biker gangs.
- 1960 Harvard professor, Timothy Leary, has first psilocybin mushroom experience.

- 1963 Leary, relieved of his teaching post, embarked with author, Ken Kesey, on their famous 'trip' around the US.
- 1960s Military experiment with both MDA and LSD as potential 'brainwashing' chemicals.
- 1960s LSD therapeutic role confined to alcoholics and those suffering psycho-sexual problems. Therapeutic use of LSD discontinued by end of the decade when the Advisory Committee on Drug Abuse concluded 'there is no proof that LSD is an effective agent in psychiatry'.
- Mid 1960s-70s LSD began to become popular among young people, linked to 'hippy' ideology.
- Mid 1960s Research chemist, Alex Shulgin, rediscovers MDMA.
- 1968 MDA becomes available in California and called 'the love drug'.
- 1968 First 'Summer of Love'. LSD receives considerable media attention. Psychedelia influences fashion, music and the arts.
- 1970 MDA placed in Schedule 1 of the Controlled Substances Act in the US.
- 1971 United Nations Convention on Psychotropic Substances.
- 1974 *Operation Julie*, smashes the UK's, and possibly the world's, largest LSD production lab.
- 1975-88 LSD declines in popularity in those countries with significant using populations.
- Mid 1970s MDMA attracts attention in the US as a therapeutic tool. MDMA allegedly becomes popular among followers of certain religious cults.

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| 1976               | Beginnings of a marriage between disco and electro-pop in American gay clubs.  |
| 1977               | Kraftwerk's 'Trans Europe Express' released. Influential album on the development of a new European electronic music sound.  |
| 1977               | The UK Misuse of Drugs Act (1971) amended to encompass all ring-substituted amphetamines.  |
| Late 1970s         | Emergence of punk rock. Amphetamines were the chosen drug of the 'punks'.  |
| Early to mid 1980s | LSD use continues to decline in the EU. Amphetamine use more variable as in some countries the drug was popular among young people and small chronic injecting populations were found in some areas. |
| 1981               | MDMA become available on the illicit drug market in parts of the US.   |
| Early-1980s        | MDMA begins to become popular among fashionable members in the music and fashion industries in some parts of the EU.   |
| 1985               | Emergency ban of MDMA in the USA.  |
| 1986-7             | Emergence of 'Balearic' influence on music throughout Europe after DJs and others holiday in Ibiza.  |
| 1986               | Emergence of 'new-beat' in Belgium.  |
| 1986               | First 'house' DJs begin to make impression on the charts in the UK.  |
| 1987               | MDMA banned in France.   |
| 1988               | Second 'Summer of Love'. Large unregulated dance events called 'raves' held in various parts of Europe.  |



- 1988 First reported ecstasy death in the UK.
- 1989 First 'significant' seizures of MDMA in UK (39,000).
- 1989 Berlin's first 'love parade' street dance event.
- 1990 In the UK, the Entertainments Act becomes law aimed at outlawing unregulated dance events.
- Early 1990s onwards Fragmentation of 'house scene' into a number of variants of dance music. LSD and amphetamines increase in popularity, linked with ecstasy use and the growing 'dance scene'.
- 1992 The 'Shamen' have a No 1 hit with 'Ebeneezer Goode' - chorus line is 'Es are good, Es are good'.
- 1993 The Netherlands add MDEA to Opium Act (outlawed).
- 1994 Luxembourg reports first recorded MDMA seizure.
- 1994 Criminal Justice Act passed in UK. (Reference to 'repetitive beats' prompts a dance band to produce a non-repetitive beat house record, the term 'rave' is used for the first time in English law).
- 1995 Death of Leah Betts. Subsequent media attention prompts campaign against ecstasy use.
- 1995 The Netherlands introduces a range of public health responses to ecstasy use including studying the quality of ecstasy tablets available on the illicit market.
- 1996 EMCDDA commissions reviews on synthetic drug epidemiology and demand reduction activities.
- 1997 16 June, EU adopts *Joint Action* on the subject of new synthetic drugs.

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(eds).

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*Printed in Portugal*

**EMCDDA, NOVEMBER 1997**

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European Monitoring Centre for Drugs and Drug Addiction

Luxembourg: Office for Official Publications of the European Communities

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