

# Phenethylamines

## Key Points

- Very few illicit MDMA laboratories have been detected in Australia; only two MDMA laboratories were detected in Australia during 2000–01.
- Analysis of seized tablets nationally confirms that locally produced tablets containing methylamphetamine and/or a variety of other drugs continue to be marketed and sold as MDMA.
- While MDMA continues to be sourced primarily from European countries, a number of importations during 2000–01 originated in China.
- Southeast Asian ports were increasingly used as transshipment points for importations into Australia of European-produced MDMA.
- There was a significant increase in the weight of MDMA importations detected by Customs: 338.4 kilograms during 2000–01 compared with 141.6 kilograms in 1999–2000.

## Description

'Ecstasy' or MDMA (3,4-methylenedioxymethylamphetamine) belongs to the family of drugs known as phenethylamines and is closely chemically related to both MDA<sup>1</sup> and mescaline (Push & Silcott 2000). The Australian Standard Classification of Drugs of Concern also lists DOB,<sup>2</sup> DOM,<sup>3</sup> MDEA,<sup>4</sup> PMA,<sup>5</sup> and TMA<sup>6</sup> within the phenethylamine group (ABS 2000). Common street names for MDMA are 'Es', 'XTC', 'eekie', 'pills' and the 'love drug'.

MDMA is also chemically related to amphetamine but is not a derivative, being produced by a different chemical process. While some effects of MDMA are similar to amphetamine, MDMA also has hallucinogenic properties.

Tablets sold as ecstasy do not necessarily contain MDMA. The term ecstasy covers a range of drugs that can include a variety of mixes of MDMA with amphetamine, methylamphetamine, ketamine and other drugs—and even a drug mix containing no MDMA.

## Main forms

In its base form, MDMA is a white, musty-smelling oil with a searing, bitter taste. The base is converted into a salt form or powder for processing into capsules or tablets, usually with a symbol or logo. MDMA derivatives that have been found in Australia are MDA, MDEA, PMA and 4-MTA.<sup>7</sup> Table 5.1 shows the phenethylamines used in Australia.

## Methods of administration

The most popular method of administration is oral. Taken orally, the pharmacological effects of the drug become evident in about 30 to 45 minutes and last for four to six hours. MDMA can also be taken intravenously. Injecting users report a 'rush' or 'peak' similar to amphetamine or cocaine but different from oral use (Thomas 1998). In rare instances, the tablet is placed inside the rectum ('shafting' or 'shelving'). This avoids the tablet causing irritation to the user's stomach lining, a common problem when MDMA is taken orally. However, the long-term effects of this practice are unknown.

## Effects

Amphetamine analogues have both stimulant and hallucinogenic properties. MDMA's effects differ from amphetamine; the main effects felt by MDMA users are confidence, warmth, empathy and intimacy with those around them. Some of the unpleasant short-term effects MDMA users have described are nausea, raised body temperature, numbness and tingling, increased blood pressure, blurred vision, profuse sweating, jaw clenching, tooth grinding, anxiety and loss of appetite (Solowij 1993).

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**Table 5.1: Phenethylamines used in Australia (ABCI, Australian Government Analytical Laboratories, South Australian Forensic Science Centre)**

Drug type	Common names	Forms	Method of administration
3,4-methylenedioxymethylamphetamine (MDMA)	Ecstasy, Adam, hug, love drug, XTC, eckie, Es,	Tablet	Oral, injection (less common)
3,4-methylenedioxyethylamphetamine (MDEA)	Eve	Tablet	Oral
3,4-methylenedioxyamphetamine (MDA)	MDA	Tablet	Oral
N-methyl-1-(1,3-benzodioxol-5-yl)-2-butanamine (MBDB)	Eden	Tablet	Oral
Paramethoxyamphetamine (PMA)—has stimulant and hallucinogenic properties, an analogue of MDMA with broadly similar effects	Death drug, chicken yellow, chicken powder	Powder, tablet	Oral
4-bromo-2,5-dimethoxyphenethylamine	2CB, capsules, nexus, powder	Tablet	Oral
4-bromo-2,5-dimethoxyamphetamine (DOB) strong effect-low effective dose	Bromo, bromo-DMA, golden eagles, club, Indian head, shamrock	Tablet, blotting paper	Oral
2,5-dimethoxy-4-methylamphetamine (DOM)—similar dose to DOB	DOM, STP	Tablet, blotting paper	Oral
4-methylthioamphetamine (4-MTA)	4-MTA, flatliner	Tablet	Oral

The psychological and physical effects of long-term use of high doses of MDMA have been documented. While there is no physical withdrawal associated with MDMA use, compulsive and excessive use suggesting psychological dependence has been reported (EMCDDA 2000). Among the physical and psychological effects of long-term MDMA use are paranoia, insomnia, nausea, depression, extremely high heart rate, hypothermia and severe headaches. These effects tend to subside after drug use ceases. Researchers are investigating whether there are residual effects resulting from long-term use of MDMA (Solowij 1993).

MDMA does not appear to be heavily conducive to long-term use because tolerance develops to its positive effects and its negative effects become exacerbated. (Solowij 1993).

Serious adverse physical effects resulting from MDMA use are relatively rare, although a range of complications have been reported including liver inflammation, bone marrow problems and sudden death. Most complications result from interaction between the pharmacological effects of the drug and the context in which the drug is used—for example, in nightclubs and at dance venues. Users risk overheating and dehydration exacerbated by excessive dancing in a confined environment while under the influence of the drug. This may lead to kidney failure, blood clots, convulsions and sometimes death (EMCDDA 2000).

Medical researchers have found that MDMA use reduces the release of the brain chemical serotonin, which influences cognitive and memory functions. There is evidence of destruc-

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tion of serotonergic neurons which is labelled brain damage. Gouzoulis-Mayfrank *et al.* (2000) found that MDMA users demonstrated impairment in memory, attention and learning tasks.

## Sources

### Production within Australia

Comparatively few MDMA-producing laboratories have been detected in Australia, hence it is believed there are few, if any, operating at any given time. During the 2000–01 period only two States reported the detection of an MDMA laboratory—Western Australia and Queensland.

However, analyses of seized tablets confirm the continuing trend of locally produced tablets containing methylamphetamine and a variety of other drugs and chemicals, such as ketamine, heroin, diazepam (Valium), caffeine, and LSD, being sold as MDMA. The tablets look the same as MDMA tablets with familiar colours and logos, and are marketed as such, thus attracting a higher profit margin. However, the tablets may contain only a small percentage of MDMA, or even none at all.

Tablets analysed in South Australia during 2000–01 were found to include pyrethrum (insecticide), procaine, THC (the active ingredient in cannabis) and morphine. Towards the end of 2000–01, an increasing number of tablets in South Australia were reported to contain MDA rather than MDMA. New diluents found in ecstasy tablets seized in Victoria during 2000–01 included carbamazepine (one of the benzodiazepine family), quinine (anti-malaria medication) and flunitrazepam. The Division of Analytical Laboratories in New South Wales noted an increase in tablets in the Sydney area containing a mix of caffeine and ketamine (Donkin cited in ABCI 2001).

Instances of imported MDMA powder being incorporated into gelatine capsules and MDMA tablets being ground and reconstituted into lower strength tablets have also been reported in a number of jurisdictions. Tablets containing even a small percentage of MDMA will still

indicate a positive MDMA reaction when tested with home-test kits such as the commercially available *EZ Test Kit*.

As observed in previous years, there were regular seizures of small numbers of PMA tablets in South Australia. There is some suggestion that these tablets are produced in South Australia, although evidence of manufacture has not been found for some years. There have been at least 12 ecstasy-related fatalities in Australia attributable to PMA, a toxic analogue of MDMA also sold in tablet form.

### Production outside Australia

The global MDMA trade continued to expand during 2000–01. In the United States, authorities regard the spread of MDMA use out of club and dance venues into college and school campuses as a national crisis. Southeast Asian countries have experienced increasing MDMA use, especially among wealthier young people. In Hong Kong, MDMA has overtaken cannabis as the second-most commonly consumed illicit drug. Japan, which has a long history of methylamphetamine use, also saw a sharp rise in MDMA use during 2000. MDMA is used widely in the United Kingdom where large multiple-drug shipments are often detected containing heroin, cocaine, cannabis products and MDMA.

Manufacture of MDMA is focused offshore in Western and Eastern Europe. Most MDMA trafficked into Australia can be sourced back to European countries, particularly the Netherlands, which continued to be the dominant supply country during 2000–01. The amount of MDMA seized worldwide where a Dutch connection was established increased from 9.7 million tablets in 1999 to 16.2 million in 2000.

Investigations conducted throughout the year pointed to Southeast Asian centres, particularly Indonesia, becoming more significant in the organising and transshipping of amphetamine-type stimulants, MDMA and heroin to Australia. Couriers travel westward from Southeast Asian centres to Europe carrying heroin and return east with MDMA for con-

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sumption in Southeast Asia or for transshipment further afield, including Australia. Some MDMA passes through Hong Kong to mainland China and high purity methylamphetamine is carried on the return trip.

There are indications that an increased number of seizures of MDMA are originating in China. Given its dominance in the precursor market, especially for ephedrine, criminal elements in China appear poised to produce even more MDMA and crystalline methylamphetamine.

The National Crime Authority has noted a convergence between heroin importation and large-scale importation of MDMA and amphetamine-type stimulants. This has given criminal entrepreneurs greater market flexibility and allowed them to increase profits by using contacts and networks already established for the heroin trade.

## International efforts

In acknowledgment of the Netherlands as a principal source of MDMA, the Dutch authorities have announced plans to post police intelligence officers to Washington to help investigate trafficking to the United States. Outbound passengers and cargo from the Netherlands are to be subjected to extra screening to combat the flow. The United Kingdom's National Criminal Intelligence Service assesses that some MDMA and amphetamine-type stimulant producers have responded to suppression activity in the Netherlands by establishing facilities in Italy and Eastern European countries.

In response to increased enquiries relating to MDMA trafficking from Western Europe to Australia, and to improve the flow of information between Dutch and Australian drug law enforcement authorities, the Australian Federal Police opened a liaison office in The Hague in November 2000. The office covers the Netherlands, Belgium, Germany, Luxembourg and the Scandinavian countries. The value of having immediate contact with authorities in the

Netherlands was quickly demonstrated. In a joint operation with the Australian Federal Police in early December 2000, Dutch drug law enforcement authorities arrested high-level traffickers and seized 200 000 MDMA tablets—some intended for Australia—and large quantities of cannabis products. The operation was developed from intelligence surrounding the seizure of 50.75 kilograms of MDMA in Australia on 15 January 2000.

## Border situation

During 2000–01 Customs detected a record total weight of 338.4 kilograms of MDMA and Australian law enforcement agencies made the two largest border detections of MDMA to date—131 kilograms and 105.5 kilograms.

### Importations

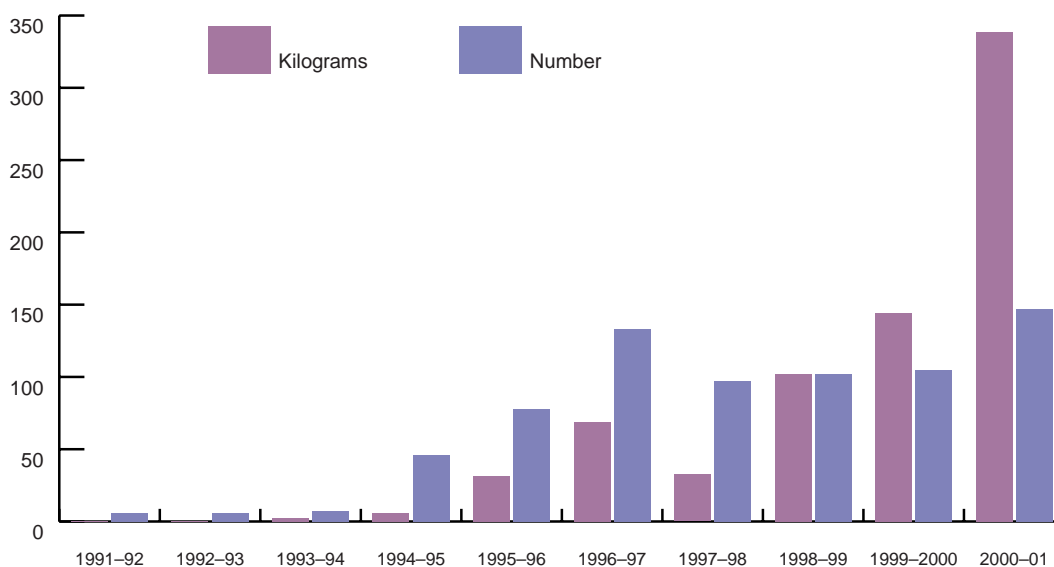
As Figure 5.1 shows, there was a significant increase in the weight of Customs detections of MDMA from 141.6 kilograms in 1999–2000 to 338.4 kilograms in 2000–01.<sup>8</sup> This is the largest total weight of MDMA detected by Customs to date. There were 147 detections, an increase of 43 on the previous year. The average weight of MDMA detections also increased from 123 grams in 1994–1995 to 2.3 kilograms in 2000–01.

**Plate 5.1: A coat hanger containing MDMA tablets detected in the suitcase of an air passenger from Indonesia (Australian Customs Service)**



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**Figure 5.1: MDMA: Customs border detections by number and weight, 1991–92 to 2000–01 (Australian Customs Service)**



## Methods of importation

The most commonly detected method of importing MDMA in 2000–01 was the postal stream which accounted for 54 per cent of the number of MDMA detections and five per cent of the total weight. The largest detection in the postal stream occurred in January 2001 when Customs officers in New South Wales opened a package from the Netherlands and found 4.7 kilograms of MDMA tablets concealed in various items including model cars, boxes of chocolate, candles and coffee tins.

The second most frequently used method of importation during 2000–01 was air passengers (35 per cent). The weight of detections in the air passenger stream made up 19 per cent of the total weight of MDMA detections. One MDMA detection in the air passenger stream occurred in August 2000 when an Indonesian national flew into Sydney Airport. On examination of the man's suitcase, Customs officers found 3.48 kilograms of MDMA tablets inside the tubes of coat hangers.

During 2000–01 the sea cargo stream accounted for 70 per cent of the total weight of

MDMA detections. The two sea cargo detections accounted for over 236 kilograms of MDMA, a significant increase compared with 79.5 kilograms in 1999–2000. Figure 5.2 shows details of methods of importation in 2000–01.

During 2000–01, the United Kingdom, Indonesia, the Netherlands and Germany were the most common embarkation points for MDMA detected by Customs. Nearly all the MDMA imported into Australia is produced in Western Europe, mainly the Netherlands, from which 29.4 kilograms of MDMA was detected in 2000–01. Smaller amounts were also detected in post and air passenger streams from Belgium, Germany and the United Kingdom, with Indonesia identified as a key transshipment area. China appeared as a new source of MDMA in 2000–01 with the single detection of 131 kilograms in a sea cargo container. Nineteen per cent of detected MDMA importations in 2000–01 arrived from Southeast Asian countries other than China. It is likely that the majority of MDMA shipped from these countries was European-produced.

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## Significant detections

The Australian Federal Police and the Australian Customs Service work closely together in their efforts to detect and seize illicit drugs that are being imported or exported. On detection of narcotic drugs, Customs alerts the Australian Federal Police for follow-up investigation.

In November 2000, Customs officers made the largest detection in Australia of MDMA up to that time. A sea cargo consignment of 940 cases of wine from France was found to contain 105.5 kilograms of MDMA. The most likely source country was the Netherlands. The discovery led to a joint Customs and Australian Federal Police operation which resulted in two men being arrested and charged in connection with the importation.

However, in March 2001, Customs officers made a new record detection of MDMA in Australia. A container arriving in Sydney from China was declared to contain tins of pineapple pieces. Customs examination of the tins revealed 131 kilograms of MDMA tablets and 12.8 kilograms of heroin. The importation, for which two men were arrested, highlights the trend towards polydrug shipments.

## Seizures

Australian Federal Police seizures of MDMA in 2000–01 exceeded 380 kilograms (including 338 kilograms at the border), a sharp increase

on the 1999–2000 figure of 172 kilograms. Similarly, the aggregate amount of MDA, MBDB, MDEA and other phenethylamines seized increased, though they continue to be less than two per cent of the total amount of phenethylamines seized.

## Exports

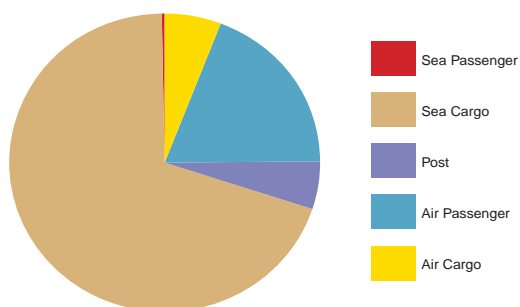
During 2000–01, there were three detections of MDMA tablets totalling 2.87 grams on two departing air passengers and a departing sea passenger. The air passengers were destined for Germany and Malaysia, while the sea passenger was on a departing passenger liner.

## Distribution

No single group has been identified as dominating the distribution of MDMA. Distribution networks continue to be flexible and diverse, and may include involvement by individuals who may not be members of a criminal syndicate. Several groups, however, play a significant role in the importation and distribution of MDMA. Established Southeast Asian organised crime groups are involved in all aspects of the importation and distribution of MDMA in Australia. There are also links suggesting greater involvement of these crime groups in the production and distribution of domestically produced amphetamine-type stimulants, both independently as well as collaboratively with other crime groups. Western Australia and New South Wales police report the involvement of foreign students in distribution. A growing trend is distribution networks diversifying to handle a variety of illicit drugs, depending on availability and supply.

In the Australian Capital Territory, MDMA is believed to be sourced from Sydney to supplement locally produced methylamphetamine-based product. Ethnically-based crime groups as well as members and associates of outlaw motor cycle gangs are primarily involved in distribution.

**Figure 5.2: MDMA: methods of importation as a proportion of the total weight of detections, 2000–01 (Australian Customs Service)**



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While some jurisdictions link MDMA distribution to outlaw motor cycle gangs, a number of these gangs are also closely associated with the production and distribution of methylamphetamine-based tablets. Involvement of outlaw motor cycle gangs in the entertainment/nightclub industry—from both a financial and a security perspective—provides these groups with ready access to major distribution opportunities for both imported and locally produced product.

Micro-distribution remains similar to that of other amphetamine-type stimulants. Wholesalers sell bulk amounts of MDMA to known associates. However, further distribution to users occurs in a variety of ways, with delivery to personal residences or selling at nightclubs and dance parties continuing to be common methods. There are increasing reports of the use of pre-paid SIM cards and mobile phone Short Message Services (SMS) to arrange delivery. The most prevalent form of supply, however, is through networks of friends.

## Distribution centres

Sydney, Brisbane, Perth and Melbourne have been identified as the primary points of entry for MDMA importations into Australia. From these points, drug shipments are broken down for further distribution around the country. The majority of MDMA seized in Tasmania arrived via Victoria and is imported either by person or the postal system. Regional areas such as far north Queensland also report the use of the postal stream as a distribution method. Communal letterboxes at backpacker hostels are a popular means of distributing ecstasy in the southern centres of Sydney and Melbourne.

While MDMA is imported into Western Australia from the eastern States via domestic airlines and motor vehicles, it is also a point of entry for overseas importation. Indonesia, in particular, has been identified as a staging country.

Distribution centres of methylamphetamine-based 'ecstasy' tablets are largely dependent on the location of domestic production and

therefore do not lend themselves to the identification of specific distribution points.

## Market indicators

### Availability

Law enforcement agencies Australia-wide reported the availability of MDMA ranges from 'available' to 'readily available' in metropolitan areas. In response to a survey conducted by the New South Wales Police Information and Intelligence Centre, most New South Wales Police Local Area Commands in non-metropolitan areas reported MDMA as 'difficult' to 'very difficult' to source. The exceptions were Albury, Wagga Wagga, Cootamundra and Goulburn Local Area Commands, which all reported MDMA as easy to obtain—contributing factors may be the university campuses in Wagga Wagga and Albury.

Queensland regional centres also reported 'limited' availability of MDMA. Availability was predominantly centred in Brisbane and the Sunshine and Gold Coasts. Jurisdictions such as the Australian Capital Territory and Victoria further quantified their reporting by stating that the majority of tablets available contained mixes of methylamphetamine, ketamine and caffeine.

It is difficult to assess the availability of MDMA given that an estimated 80 per cent of so-called ecstasy available in Australian markets is really amphetamine-type stimulant or combinations of substances such as ketamine and caffeine. Although law enforcement agencies seized record quantities of MDMA over the 2000–01 period, this locally produced product marketed as MDMA negates any real impact on ecstasy availability.

### Price

Prices vary depending on the amount of MDMA in a tablet and where it is purchased. As in the 1999–2000 period, the street price for MDMA in the Territories was higher than the States. Police in the Australian Capital Territory reported the price for locally produced ecstasy was between \$25 to \$40, while imported MDMA

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**Table 5.2: MDMA: street price by State and Territory, 2000–01 (ABCI, NDARC)**

State/Territory	Price (\$) per tablet
New South Wales	40–60
Victoria	30–50
Queensland	40–50
South Australia	35–45
Western Australia	40–50
Tasmania	50–60
Northern Territory	60–80
Australian Capital Territory	60–80

was more expensive. The street price for a tablet in Western Australia remained relatively constant. However, there appears to have been a significant rise in the price for purchases of 25 to 100 tablets, the price increasing to \$25 to \$40 per tablet in 2000–01 from \$15 to \$27 during 1999–2000. Additional prices for MDMA can be found in the Statistics chapter. Table 5.2 provides a breakdown of the State and Territory street prices for MDMA during 2000–01.

## Purity

Purity levels can vary widely. Some tablets contain less than one-third MDMA; the remainder being ketamine, PMA or other amphetamine-type stimulant compounds. New South Wales and Western Australia recorded higher median level purity levels than other jurisdictions with 41.1 per cent and 48.1 per cent respectively, possibly because these States are points of entry for overseas importations.

The next highest median purity level was recorded in South Australia with 32.8 per cent. The Northern Territory recorded a median purity level of 46 per cent, however this was based on a single analysed seizure and is not truly indicative of purity levels in that jurisdiction. Similarly, the lowest median purity recorded against a single seizure in Tasmania (3.4 per cent) cannot be considered representative of that jurisdiction.

Although anecdotal reports indicate MDMA purity levels in the Australian Capital Territory are low, the median level purity of analysed seizures increased from 19.3 per cent in 1999–2000 to 36.8 per cent during 2000–01. New South Wales, Victoria and Western Australia also recorded increases, while median purity levels in Queensland and South Australia fell.

## Phenethylamine offences

As a number of jurisdictions do not differentiate between arrests connected with amphetamine-type stimulants and phenethylamines, all arrests have been aggregated. For details on consumer and provider arrests connected with amphetamine-type stimulants, see Amphetamines chapter.

## Seizures

As a number of jurisdictions do not differentiate between seizures connected with amphetamine-type stimulants and phenethylamines, all seizures have been aggregated. For details on seizures connected with amphetamine-type stimulants, see Amphetamines chapter.

## User patterns

Ecstasy is a social drug used mostly in a group environment. Its popular image is entrenched in many aspects of youth fashion, music and media and many tablet logos reflect these current trends. An example is the

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popularity of tablets bearing designer logos such as 'HQ' or 'cK'. Ecstasy use has become more mainstream—extending beyond the dance and rave scene—with most jurisdictions reporting increases in the numbers of users and the popularity of the drug. The Queensland Crime Commission estimates that there are approximately 38 000 recent ecstasy users in Queensland.

Research coordinated by the National Drug and Alcohol Research Centre in South Australia, Queensland and New South Wales, found ecstasy is subject to abuse by bingeing. Between 50 to 60 per cent of users sampled claimed to have used ecstasy continuously for more than 48 hours (Topp & Darke 2001, McAllister *et al.* 2001, Longo *et al.* 2001).

According to NDARC, users are starting to refer to ecstasy as 'pills' rather than 'E' indicating an awareness that tablets often contain little or no MDMA (NDARC 2001). However, despite this awareness, this is not a deterrent to its use. The most common method of consuming ecstasy is orally, however a significant minority of users experiment with injecting ecstasy.

## Polydrug use

Polydrug use, particularly cannabis, amphetamine-type stimulants and hallucinogens, is common among ecstasy users (AIHW 2000). Ecstasy users are also known to take the drug in conjunction with amphetamines, cocaine, alcohol and cannabis.

## Law enforcement initiatives

In response to the significance of the Netherlands in the global MDMA supply, the Australian Federal Police Law Enforcement Cooperation Program funded initiatives to raise MDMA trafficking awareness in Australia and improve the flow of information between Dutch and Australian drug law enforcement authorities. Activities included:

- seminars presented in Perth, Melbourne, Brisbane, Sydney and Canberra by a team of representatives from the Dutch

Synthetic Drugs Unit, the German Bundeskriminalamt, Europol and Interpol;

- an Israel–Middle East regional synthetic drug trafficking seminar;
- short-term attachments of Australian Federal Police Agents to Europol headquarters in The Hague, the Bundeskriminalamt in Wiesbaden and the Dutch Synthetic Drugs Unit in Eindhoven, focused on disrupting MDMA trafficking; and
- inquiries in Europe following the seizure in Australia of 105 kilograms of MDMA concealed in wine cartons in a shipping container from France.

## National impact

Law enforcement agencies and allied bodies face a difficult task in reversing the trend towards increased MDMA availability due to the rising demand for the product, competing resource demands and the increasing diversity of criminal activity. The prospect of increased MDMA importation, particularly from East Asian centres, only exacerbates the situation.

Criminal elements and opportunists have identified a growing market for MDMA. Given the difficulties faced in obtaining the necessary precursor chemicals, as well as in reaching the synthesis stage of MDMA production, it is unlikely that domestic production will pose a significant threat to Australian law enforcement agencies or the Australian community. However, there is clear potential for increased involvement of organised crime in the importation of commercial quantities of MDMA and the domestic production of methylamphetamine-based imitation product. Initiatives undertaken by the Australian Federal Police to stem the flow of MDMA importations before they reach Australia are a significant new step to address this concern.

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MDMA use has the potential to cause major physical and psychological harm. Potentially dangerous trends in the MDMA market include polydrug use, bingeing, intravenous drug use and the sale of tablets purported to be MDMA but containing a cocktail of illicit and dangerous substances. These trends have the potential to become an even more serious problem for law enforcement agencies, the public health system and other stakeholders in the future.

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## Notes

- 1 MDA (3,4-methylenedioxyamphetamine)
- 2 DOB (4-bromo-2,5-dimethoxyamphetamine)
- 3 DOM (2,5-dimethoxy-4-methylamphetamine)
- 4 MDEA (3,4-methylenedioxyethylamphetamine), also called MDE
- 5 PMA (paramethoxyamphetamine)
- 6 TMA (trimethoxyamphetamine)
- 7 4-MTA (4-methylthioamphetamine)
- 8 Where the detection weight was not available, an estimate of 0.29 grams per tablet has been used. This is based on an average weight of tablets seized.