



psychostimulants  
**INFORMATION**



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for health care workers



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**Queensland Government**  
Queensland Health

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# Introduction

This booklet forms part of a national project to provide information on psychostimulants for a range of professional groups. It is recognised that few psychostimulant users access specialist services for assistance with problems; the majority present in other health care settings.

This resource has been developed for all health care professionals (except doctors) working in community and hospital settings in metropolitan, regional, rural and remote locations. It does not contain information specific to any particular health profession or health care setting.

It is not assumed that workers who use this booklet will have prior alcohol and drug knowledge. The aim of this resource is to help workers form appropriate and informed responses to psychostimulant use among their clients.

There are three sections in this booklet:

- *About psychostimulants* – background information on the drugs in this group, their effects, and the prevalence of use and types of problems associated with their use
- *Responding to psychostimulant use* – includes sections on identifying and dealing with psychostimulant intoxication, helping users reduce harm from use, and an overview of treatment interventions
- *Resources* – information about available resources for clients and workers, including alcohol and drug contacts for each state and territory

Much of this information is drawn from the recent comprehensive and expert publication in the National Drug Strategy monograph series, *Towards better intervention and care for psychostimulant users*. Readers are referred to this publication for further information on any of the topics covered in this booklet (details in Resources section).

## Managing overdose

Emergency care should be promptly sought if a user has any of the following symptoms:

- chest pain
- rapidly increasing body temperature
- psychotic features (hallucinations, severe paranoia, delusions or thought disorder)
- behavioural disturbances such that the individual may be a risk to themselves or others
- seizures
- uncontrolled hypertension

See section 5, page 31 for more information.





about  
**PSYCHOSTIMULANTS**





# 1. What are psychostimulants?

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## Summary

There are three main types of psychostimulant:

- amphetamines
- cocaine
- MDMA (an amphetamine analogue often called 'ecstasy')

There are also some pharmaceutical psychostimulants.

The most common form of amphetamines available in Australia is methamphetamine, which comes in the form of powder ('speed'), paste or oil ('base'), and crystal ('ice').

Cocaine is derived from the leaves of the coca plant, which is native to the mountains of South America. In Australia cocaine is found as a white crystalline powder.

MDMA is an amphetamine analogue (chemically, it is closely related to amphetamines). It is often called 'ecstasy', although what is sold as ecstasy is just as likely to be tablets made from locally manufactured methamphetamine, with other drugs sometimes added to mimic the effects of MDMA. Users do not know exactly what is in ecstasy tablets, and often just refer to them as 'pills'.

Psychostimulants are a group of drugs that stimulate central nervous system activity, producing euphoria, a sense of wellbeing, wakefulness and alertness.

There are three main types of psychostimulant:

- amphetamines
- cocaine
- MDMA

There are also some pharmaceutical psychostimulants.

## Amphetamines

There are three different types of amphetamines\*:

- amphetamine
- dexamphetamine
- methylamphetamine or methamphetamine

Methamphetamine is the most common form of amphetamine available on the illicit market in Australia.

Amphetamines are synthetic drugs, originally produced as pharmaceuticals. Since the 1970s and 1980s, amphetamine and methamphetamine have also been manufactured and sold illicitly in Australia and around the world. Now only dexamphetamine is used medically in Australia to treat attention deficit hyperactivity disorder and narcolepsy (uncontrollable sleepiness).

There are two main chemical forms of amphetamines: the base form and the salt form (which is produced by adding acid to the base). The salt form is usually a water-soluble powder.

\*The term 'amphetamines' can be confusing, because it is used as the generic name for all types of drugs in the class, as well as just one of them. Usually, 'amphetamine' (singular) is used to refer to the specific drug type and 'amphetamines' (plural) is the generic name.

## Cocaine

Cocaine is derived from the leaves of the coca plant, *Erythoxylon coca*, which is native to the mountains of South America.

There are two main forms of cocaine: the salt form, which usually appears as a powder, and freebase. Like amphetamine, the salt form is produced by addition of acid and is soluble in water.

## MDMA

Like amphetamines, MDMA (3,4-methylenedioxymethamphetamine) is synthetic. It is an amphetamine analogue, meaning that it is chemically closely related to amphetamines. It is also chemically related to mescaline, a hallucinogenic drug.

Like amphetamines and cocaine, MDMA can exist in freebase or salt form but is difficult to inhale in its base form because it is hard to get it to burn.

## Pharmaceutical psychostimulants

In addition to amphetamines, cocaine and MDMA, there are some psychostimulants that are manufactured by pharmaceutical companies and used to treat various medical conditions. Some people use them non-medically and some prescription drugs also find their way on to the street market.

Drugs such as methylphenidate (Ritalin®), diethylphenidate (Tenuate®) and phentermine (Duramine®) are used to treat attention deficit hyperactivity disorder and weight loss, and to combat narcolepsy. Ephedrine and pseudoephedrine have a number of pharmaceutical uses. Pseudoephedrine is marketed in preparations like Dimetapp® and Sudafed®, and is combined with other drugs in many other preparations, like Benadryl® and Sinutab®. Ephedrine is used, along with pseudoephedrine, in the manufacture of amphetamines.

## Street forms and names

Psychostimulants come in many different forms and have a variety of street names. The actual names vary between places and subcultural groups, and change frequently. There is a lack of consistency in the terms used to describe the different forms. Because the drugs are made and sold in an illicit market, the precise chemical composition can never be known with certainty.

The National Drug and Alcohol Research Centre (NDARC) and the Australian Customs Service have categorised the different forms of amphetamines as follows.<sup>1</sup> Pictures are available on the NDARC website:

<http://ndarc.med.unsw.edu.au/ndarc.nsf/website/IDRS.bulletins>

## Speed (goey, whiz, velocity)

'Speed' is the salt or powder form of amphetamine or methamphetamine. Widely available in Australia since the early 1980s, when it was amphetamine, speed is now almost all methamphetamine. It is still the most common form of amphetamine available in Australia. It ranges in colour from pink to white or from yellow to brown, and in texture from fine powder to coarse crystals. The variations arise from differences in the chemicals used to make it and the level of skill of the 'cook'.

Speed is sold in grams, half grams or points (one-tenth of a gram) and is usually snorted, injected or swallowed.

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1. Topp & Churchill (2002)

### **Base (point, pure, paste, wax)**

'Base' is a high purity freebase form of methamphetamine – an oily, waxy or sticky moist paste or damp powder, often with a yellow or brown tinge. It is assumed to be the product of an imperfect attempt at conversion from freebase into salt form. There is also a liquid form of base known as 'ox blood', which is probably the oil sold without attempting to convert it into powder or crystal form.

Base can be swallowed or smoked. Some users snort it, even though its oily form makes this difficult. Some users inject it, even though it is insoluble in water (a necessity for injecting). It is sold in points (one-tenth of a gram), grams and half grams.

### **Ice (shabu, crystal, crystal meth, yaabaa)**

'Ice' is a high purity form of methamphetamine. It comes as crystals or as a crystalline powder, and is usually translucent or white. The crystals can be very large, with their size dependent on how many times removed from the source they are when purchased. Most ice is imported from South-East Asia, where it is manufactured.

Ice can be snorted, smoked, swallowed or injected. To be smokeable, it is first cut with glucose. It is usually smoked through a pipe similar to a crack pipe, in a bong with cannabis (called a 'sno cone') or by inhaling the vapour while heating it on aluminium foil. It is sold in points or grams.

### **Cocaine (coke, okey-doke)**

Powder cocaine is an odourless white crystalline powder that readily dissolves in water. It can be snorted, swallowed or injected. It cannot be smoked as it is destroyed by burning. Virtually all cocaine in Australia is found in powder form.

Freebase cocaine is a form that can be smoked. 'Crack' is made by heating a mixture of cocaine hydrochloride and sodium bicarbonate (baking soda) and water. Its name is assumed to refer to the crackling sound it makes when it is heated for smoking. It is very common in the US and other places but virtually unknown in Australia.

## Ecstasy (e, XTC, eckie, pills)

Originally, the street name 'ecstasy' referred just to MDMA. However, for many years, street 'ecstasy' has more often been tablets that are made from locally manufactured methamphetamine and made to look like bona fide MDMA tablets. Sometimes other drugs are added to mimic the effects of MDMA. Because users almost never know exactly what is in tablets sold as ecstasy, they often just refer to them as 'pills'.

Analyses of ecstasy tablets seized in Australia have found MDMA, analogues of MDMA, methamphetamine, ketamine, LSD, cocaine, benzodiazepines, caffeine, aspirin, paracetamol and pseudoephedrine. Around half of all ecstasy tablets sold in Australia contain no MDMA.<sup>2</sup> Almost all pills that do contain MDMA are imported and make up just a small proportion of the 'pill' market.

There is a large industry in South-East Asia producing illicit methamphetamine in tablet form, sometimes known as 'yaabaa'. Some of these pills have made their way to the Australian street market, where they are sold as ecstasy.

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2. ABCI (2002)

## Summary of different forms of psychostimulants available on the illicit market in Australia

	Speed	Base
<b>Drug(s)</b>	Methamphetamine or amphetamine	Methamphetamine
<b>Street names</b>	Goey, whiz, velocity	Paste, point, pure, wax
<b>Appearance</b>	Fine or coarse powder	Sticky, gluggy, waxy or oily form of damp powder, paste or crystal
<b>Colour</b>	White, pink, yellow, orange, brown	Often has a yellow or brown tinge
<b>Method of administration</b>	Usually snorted or injected, sometimes swallowed	Swallowed, smoked, snorted, injected
<b>Place of origin</b>	Most is produced in clandestine laboratories in Australia; some imported	Most is produced in clandestine laboratories in Australia
<b>Purchase quantity</b>	Point (0.1 gram), half gram, gram	Point (0.1 gram); also gram, half gram
<b>Availability</b>	Most widely available form	Widely available (varies between states and territories)

Ice	Cocaine	Ecstasy
Crystalline methamphetamine	Cocaine hydrochloride	MDMA; methamphetamine, often with other drugs added to mimic the effects of MDMA
Shabu, crystal, crystal meth, yaabaa	Coke, okey-doke	E, eckie, XTC, pills
Crystal or coarse crystalline powder	Crystalline powder	Tablets, powder
Translucent or white; may have green, blue or pink tinge	White	Various
Swallowed, smoked snorted, injected	Swallowed, snorted, injected	Swallowed, sometimes injected
Most imported from East and South-East Asia	Imported from South America	Mostly imported; some domestic manufacture in clandestine laboratories
Point, gram	Gram	Pill
Less available but availability is increasing	Not very available	Availability is increasing

**Sources for this section**

Topp & Churchill (2002); Breen et al (2004); NDARC (1998); NDARC (2000); ABCI (2002)

## 2. Who uses psychostimulants?

### Summary

Psychostimulant use is not limited to any particular social group, although most users are under 30 years of age.

Availability of all psychostimulants has increased in recent years. Amphetamines are the second most commonly used illicit drug, after cannabis. Use of psychostimulants (especially ecstasy and methamphetamine) at dance parties is common, as is use at home. Cocaine use occurs among injecting drug users and also in a recreational setting, where it is usually taken intranasally (snorted). Ecstasy use is more common in conjunction with recreational or party situations. In all contexts, use of other drugs at the same time is common. Most psychostimulant users do not use very often. A small proportion use more frequently and some of these, especially methamphetamine and cocaine users, become dependent.

A small number of users inject psychostimulants. Amphetamine use is increasing among people who inject drugs. More frequent users are more likely to inject psychostimulant drugs.

Psychostimulants are used by a wide cross-section of society. In the 1980s and 1990s, psychostimulants were primarily 'party drugs', but now use is not limited to any particular group.

We can categorise psychostimulant users into four types:

- *Recreational users* – use irregularly and, in general, not frequently; use occurs in a social setting, typically at a dance party but also in private homes
- *Intermittent 'binge' users* – use intensively for a longer period, from two to ten days, with significant breaks (from psychostimulants at least) between using
- *Circumstantial users* – use of psychostimulants is occupational or instrumental, such as long distance truck drivers or those seeking to lose weight
- *Regular, daily or near-daily users* – usually inject psychostimulants and may inject other drugs as well

Recreational and binge users might use any or all three types of psychostimulants at various times, although binges exclusively on MDMA would be rare. Few circumstantial or regular users use MDMA or cocaine. However, a small number of regular users (mainly in Sydney) do also use cocaine.

## Changes in psychostimulant use

During the 1990s, the range of psychostimulants available on illicit markets became wider and levels of use increased. World-wide, police and customs seizures of amphetamine-type stimulants reached record levels. In Australia, use of all psychostimulants has increased since the early 1990s, with the highest rates of use among people under 30 (as is the case with most illicit drugs).

### Use of cocaine, amphetamines and ecstasy/designer drugs, percentage of the adult population, 1993 to 2001<sup>4</sup>

	1993	1995	1998	2001
<b>Lifetime use</b>				
Amphetamines	5.4	5.7	8.8	8.9
Cocaine	2.5	3.4	4.3	4.4
Ecstasy/designer drugs	3.1	2.4	4.8	6.1
<b>Recent use (in the last 12 months)</b>				
Amphetamines	2.0	2.1	3.7	3.4
Cocaine	0.5	1.0	1.4	1.3
Ecstasy/designer drugs	1.2	0.9	2.4	2.9

Source: AIHW (2002a, 2002b)

4. These figures are taken from the National Drug Strategy Household Survey, a national survey carried out at regular intervals that asks about licit and illicit drug use. Although a large national survey, it has some distinct limitations. Being a 'household' survey, it automatically excludes people who are, for example, homeless or in prison. It can also be assumed that, given the nature of the survey questions, there is an unknown amount of under-reporting about illicit drug use. In addition, in most cases the numbers of people who use illicit drugs are low and so the percentages derived from responses from the survey sample are often based on a small number of positive responses. Comparing surveys from different years can show trends in use, although it needs to be recognised that there was an important change to the survey in 2001 when the wording of the question about lifetime use was changed from 'ever tried' to 'ever used'.

## Amphetamines

The prevalence of amphetamine use increased throughout the 1990s. According to the 2001 National Drug Strategy Household Survey, the rate of lifetime use was nine per cent, with three per cent having used in the last 12 months (see table on page 9).

The reported increase in use is matched by increases in the number of seizures by police and customs since the mid-1990s, and the amounts of amphetamines seized, especially crystal methamphetamine. Further, the number of clandestine laboratories manufacturing amphetamines that have been detected nationally has increased from 58 in 1996–97 to 314 in 2002–03. The majority of these laboratories are in Queensland.

Consistent with use of all illicit drugs, most users are young; the 20–29 age group has the greatest proportion of users, followed by the 14–19 age group. Lifetime use in the 20–29 age group is 22 per cent, and recent use 11 per cent. Users in this age group are also more frequent users.

Among school students, amphetamines are the third most commonly used illicit drug, after cannabis and inhalants, with about seven per cent having ever used them.

Although more people are using amphetamines, most users do not use very often. According to the National Drug Strategy Household Survey, just 12 per cent use at least once a week, and nearly half (46 per cent) use just once or twice a year. However, it is estimated that about 60 per cent of users ‘binge’, defined as using for at least 48 hours without sleep. The most likely place of use was ‘in a home’ (59 per cent of recent users in the same survey), while 46 per cent used amphetamines at dance parties. Forty-seven per cent used at private parties. Alcohol and cannabis are most commonly used in conjunction with amphetamines.

## Cocaine

As with other psychostimulants, prevalence of cocaine use increased throughout the 1990s. Its use is much more limited than amphetamine use; in 2001, four per cent of the adult population had ever used and just over one per cent had used in the last 12 months (see table on page 9).

Since the late 1990s, the number of seizures by police and customs (and the amounts of cocaine seized) has increased. As an indicator of use, these seizures suggest a substantial market, which may be among ‘hidden’ populations<sup>5</sup> (such as people in higher socioeconomic groups who may not present for treatment or welfare services, or show up in surveys).

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5. Breen et al (2004) p 21

Cocaine use in Australia is often determined by availability, impacting considerably on how regularly it is used. Since the 1980s, there have been predictions of an Australian 'cocaine epidemic' but so far this has not eventuated.

In general, cocaine users in Australia can be divided into two groups, distinguished by socioeconomic status and method of administration. One group comprises professional people and workers in the entertainment and hospitality industries who can afford an expensive drug like cocaine. For most users in the higher socioeconomic category, cocaine is a social-recreational drug and is usually snorted. The other group comprises people who are already mostly marginalised heroin injectors who also inject cocaine, and whose cocaine use is more chaotic. Most users in this second group are in Sydney.

Cocaine users, on average, are slightly older than amphetamine users. According to the National Drug Strategy Household Survey, the greatest proportion are in the 20–29 age group, followed by people aged 30–39.

As with amphetamines, most cocaine users do not use very often. In 2001, 16 per cent of recent users used once a month or more, and 65 per cent used just once or twice a year. Alcohol and cannabis are most commonly used in conjunction with cocaine. Amphetamines and 'ecstasy/designer drugs' are also commonly used with cocaine.

## MDMA

According to the National Drug Strategy Household Survey, the 1990s saw a big increase in the number of recent users of 'ecstasy/designer drugs': from just over one per cent in 1993 to three per cent in 2001 (see table on page 9). The rate of lifetime use increased from three to six per cent in the same period.

From the mid-1990s, the number of seizures by customs (and the amounts of MDMA seized) has been increasing.

Ecstasy use is most common among people aged 20–29. Use, especially recent use, is very low among people over 30.

Most users do not use very often. According to the National Drug Strategy Household Survey, only six per cent of recent users use weekly or more, and 46 per cent use just once or twice a year. Most use intermittently, at social events, and in small doses (one or two tablets).

The most common place of use is at a rave or dance party (70 per cent of recent users), with 54 per cent using at private parties, 50 per cent in 'public establishments' and 46 per cent 'in a home'. Alcohol and cannabis are most commonly used in conjunction with ecstasy. Amphetamines are also commonly used with ecstasy. Of course, it is known that much of what is sold as 'ecstasy' is in fact methamphetamine (see section 1).

## Prevalence of injecting

Most users of psychostimulant drugs do not inject them, although injecting is common among heavier users and dependent users.

Among those who have ever injected drugs, the first drug that 60 per cent of them injected was amphetamines. That is, amphetamines are the drugs most commonly used the first time a person injects. This highlights the role of amphetamines in initiating injecting as a method of administration.

Amphetamines are also the most common drugs to be recently injected; 77 per cent of those who have recently (in the last 12 months) injected any drug have injected amphetamines in that time. That is, most injecting drug users (IDU) inject amphetamines (and possibly other drugs as well). But this group is just a small proportion of all amphetamine users. Just 17 per cent of all amphetamine users ever inject. Most (83 per cent) use by other methods.

Use of methamphetamine is common among IDU, especially those whose drug use has included heroin. Amphetamine injecting increased in 2001 and does not appear to have dropped since then. The use of base and ice among drug injectors has increased, again particularly since 2000. The rate of methamphetamine injecting varies considerably across Australia. In 2003, three-quarters of a national sample of IDU reported using methamphetamines in the previous six months. Since 2000, the percentage of IDU reporting recent use of methamphetamine has been increasing.

The increase in use of cocaine in Australia has been among injecting drug users. The proportion of injecting drug users injecting ecstasy has also been increasing, although this would not reflect the mode of use for the majority of users.

### Sources for this section

Breen et al (2004); Baker et al (2004) ch 2; McKetin & McLaren (2004); Australian Crime Commission (2004)

### 3. What effects do psychostimulants have?

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#### Summary

All psychostimulants have the following effects:

- increased heart rate, blood pressure and body temperature
- increased alertness and energy
- euphoria, mood elevation, sense of wellbeing, self-confidence
- talkativeness
- sleeplessness and reduced fatigue
- reduced appetite
- dilated pupils
- dry mouth

The effects of cocaine are more short-lived than those of amphetamines or MDMA. In addition to the effects listed above, MDMA typically produces feelings of emotional closeness to others, peace, happiness and self-acceptance, a heightened sense of perception, and reduced aggression, fear and defensive behaviour.

How strongly an individual feels these effects, and how long they last, depend on several factors: the individual physical and psychological characteristics of the user, the user's environment, how the drug is taken (whether swallowed, snorted, smoked or injected), the quality and purity of the drug, and the combined effects of any other drug the user has taken.

#### Influences on drug effects

Apart from the known pharmacological properties of the drug itself, there are some other factors that influence both physical and psychological effects of any psychoactive drug.

## Set and setting

The 'set' and 'setting' are particularly important in shaping the effects that the user experiences, and how positive the experience is. This is particularly the case with amphetamine analogues such as MDMA.

The **set** includes the user's personality, past experiences (including type and extent of drug experience and experiences with the drug in question), motivations, expectations, mood and attitudes at the time of taking the drug.

The **setting** is the physical environment in which the user takes the drug, including the 'mood' generally, the level of stimulation and the user's interactions with others.

## Method of administration

An important influence on how long it takes to feel the effects of a drug, and how long the effects last, is the method of administration: whether the drug is injected, smoked, snorted (through the nose) or swallowed. The faster it is absorbed, the more intense the euphoria and the shorter the duration of action. In general, injecting, smoking or snorting provides the quickest effect, with effects generally being more intense but of shorter duration. When a drug is swallowed, the onset of effects is slowest (absorption is delayed about 30 minutes) and the 'coming down' is more gentle.

Compared with snorting or swallowing, smoking and injecting are the most efficient methods of administration, as they maximise bioavailability of the drug (the amount of the dose that reaches the bloodstream).

## Variation in quality

This is a problem with illicit drugs and a particular problem with synthetic drugs, which are manufactured in illicit laboratories where there are few or no facilities, skills or incentives for controlling quality. This means that the exact chemical composition of the end product can vary considerably. The skill of the 'cooks' who produce the drugs varies hugely and there is often inadequate equipment and insufficient precursor chemicals or time to follow the 'recipe' correctly. This means that drugs sold on the street are not necessarily 'true to label'. This could explain some discrepancies between the reported effects and the known effects of some drugs.

## Polydrug use

As we have seen, psychostimulants are commonly used in combination with other drugs. Drug effects are mediated by use of other drugs. A user might

take a second psychostimulant drug to enhance the effects of the first (for example, an amphetamine on top of MDMA). The increased effect can be greater than the sum of the effects of the drugs if taken individually. Drugs that have depressant or hallucinogenic effects on the central nervous system, such as alcohol, benzodiazepines or cannabis, might be taken concurrently with psychostimulants to decrease side-effects or to alleviate the effects of 'coming down'.

## Dose

Effects of all drugs vary with dose. A 'common' dose will give users the effects they are seeking and a 'high' dose will usually intensify these effects and give additional, often adverse, effects. It is not possible to specify what a 'common' dose is, due to variation in purity of street drugs and differences among individual responses.

*This section deals with 'common' dose effects, most of which are those that users are seeking when they use the drug. Effects of high doses and of long-term use, which are more likely to be associated with adverse effects, are covered in the next section.*

## Physical and psychological effects

### Effects common to all psychostimulants

#### Physical effects

- increased heart rate, blood pressure and body temperature
- increased alertness and energy
- sleeplessness and reduced fatigue
- reduced appetite
- dilated pupils
- dry mouth

#### Psychological effects

- euphoria, mood elevation, sense of wellbeing, self-confidence
- talkativeness

## Amphetamines

While the effects of different forms of amphetamines are similar, methamphetamine has a longer half-life and more intense effect than amphetamine, and ice and base are typically more potent than the powder forms of methamphetamine. (Half-life refers to the time it takes for the level of the drug in the blood to be reduced by 50 per cent.)

Other reported physical effects of amphetamines include sweating, palpitations, shortness of breath, headache, tremors and hot and cold flushes. Other psychological effects of amphetamines in low doses include increased visual awareness, irritability, restlessness and excitability.

When smoked or snorted, onset and effects occur within 3–5 minutes; when injected, onset and effects are almost instantaneous.

The effects of amphetamines last around 4–8 hours and, with crystal methamphetamine, up to 24 hours. Amphetamines can be found in the urine for at least two days after use, longer if large amounts have been used.

## Cocaine

The effects of cocaine are similar to amphetamines, with the main difference being the much shorter duration of effect. Cocaine has a very short half-life and, hence, a short action of 20–40 minutes.

Although cocaine causes an increase in body temperature, at the same time there is decreased perception of heat, and sweating and skin blood flow can be impaired.

In addition, cocaine acts as a local anaesthetic and a vasoconstrictor (it causes blood vessels to narrow).

Cocaine can be found in the urine 2–5 days after use; in heavy users, this can be up to 10 days.

## MDMA

The psychological effects of MDMA distinguish it from other amphetamine analogues much more markedly than the physical effects. Amphetamine analogues can produce both stimulant and hallucinogenic effects, and usually a mixture of both. MDMA produces some hallucinogenic effects, but its overall effect is more stimulant than hallucinogenic.

Typically MDMA produces feelings of emotional closeness to others, peace, happiness and self-acceptance, a heightened sense of perception, and reduced aggression, fear and defensive behaviour.

Other physical effects include nausea, sweating, dry mouth, general muscular aches, inability to urinate, teeth-grinding and hot and cold flushes. Sometimes users experience visual and auditory hallucinations. Hyperactivity and racing thoughts can also be experienced as can confusion, irritability, agitation, bizarre or reckless behaviour, and trouble sleeping.

Tolerance to MDMA develops rapidly when it is used repeatedly within a short time, meaning that the intensity of effect of the same dose is much reduced.

When swallowed, the most common method of administration, onset of effects is 30–60 minutes and duration 4–6 hours. MDMA can be found in the urine for 3–4 days after use.

### **Sources for this section**

Baker et al (2004) chs 2, 3; NDARC (1998); NDARC (2000); Swan & Ritter (2001)

## 4. Why are we concerned about psychostimulants?

### Summary

Use of psychostimulants is increasing and becoming more widespread. The majority of psychostimulant users will not experience significant adverse effects from their use of these drugs. However, the increasing numbers of users, and the use of the more potent crystal form of methamphetamine, point to an increase in problems associated with psychostimulant use.

There are some risks associated with any use of psychostimulants. These include:

- taking unknown substances
- unsafe sex (increased likelihood due to feelings of invincibility, especially among cocaine users)
- overheating and dehydration, especially when using MDMA, and in the context of crowded dance venues

At high doses, and when used long term, there are further risks:

- increased incidence of aggressive and violent behaviour
- dependence
- mental health problems (mainly psychosis and mood and anxiety disorders)
- evidence for neurotoxicity (this remains inconclusive)
- potential for fatal cardiac or cerebral events (very rare)

Injecting as the usual method of taking psychostimulants also carries extra risks (apart from general risks of injecting illicit drugs):

- increased risk for dependence
- increased risk of mental health problems
- vein damage from injecting base, the consistency of which makes it difficult to inject
- specific problems associated with cocaine injecting (although the number of people who regularly inject cocaine is very small)

## Recent increase in use of psychostimulants

The majority of psychostimulant users will not experience significant adverse effects from their use of these drugs. However, as with most drugs, there are significant risks associated with psychostimulant use and these may occur to varying degrees in different users. Use of these drugs has been increasing in recent years and we can expect to see greater prevalence of associated harms.

The increase in availability and the use of the potent crystal form of methamphetamine means that users are probably developing problems more quickly. Hospital admission data shows an increase in inpatient hospital admissions for amphetamines since about 2000.

## Contexts for risk

As with most drugs, some risks depend on the context of use and what is required of the user while intoxicated (for example, whether the user is required to work or drive a vehicle). Potential harms associated with the direct effects of the drug are similar for all psychostimulants. However, social differences among users may increase the risk of harm; for example, the consequences of not eating for a well-nourished and fit successful professional using cocaine will be different from those experienced by a socially marginalised regular injecting drug user whose nutritional state may be poor to start with.

## Risks for acute and chronic harm

Some harms can result from a dose of any size, although most risks are associated with large doses taken at once or over a short period of time (acute risks) and chronic use over a long period.

## Risks associated with any dose

### Pill contents

As we have seen in section 1, ecstasy tablets are not consistent in their content; around half contain MDMA, while the rest comprise mainly methamphetamine with a range of other drugs added. Users recognise the risk of not knowing what they are taking, but may become less concerned about this over time.

### Unsafe sex

Psychostimulants, especially cocaine, are associated with increased sexual risk-taking, including engaging in unsafe sex. In the case of cocaine, it is thought this may be connected to the feeling of invincibility that can accompany its use. This is of particular concern among sex workers who use cocaine while working.

## Inexperienced users

Research indicates that, as we might expect, newer users lack accurate information about the negative as well as the positive effects of psychostimulants. Public events like raves and dance parties are often the setting for first use of ecstasy.

## Overheating (hyperthermia) and dehydration

One of the effects of psychostimulants is to raise body temperature, an effect which can be compounded in the context of dancing and crowded venues.

In addition, MDMA can cause electrolyte disturbances, which can exacerbate the potential for dehydration. When dancing for long periods in a hot place, close to many other people, body temperature can be raised to 40°–43°. Overheating and dehydration can cause rhabdomyolysis ('muscle meltdown'), kidney failure and death.

Users have been advised to drink plenty of fluids to avoid dehydration, but can easily lose track of their intake due to intoxication and dancing. MDMA can cause dry mouth and repetitive behaviour, and a user can easily take repeated mouthfuls of water without knowing how much they are drinking. However, MDMA causes increase of an antidiuretic hormone, which means the person passes less urine, and there have been cases of water intoxication, swelling of the brain and death.

In the case of cocaine, the combined effect of increased body temperature, decreased perception of heat, and impairment of sweating and skin blood flow means that the user can be unaware of becoming seriously overheated, which can be fatal.

It is important to note that, although such deaths have attracted significant publicity, they are rare events.

## High dose effects

These are effects when larger doses are taken, quickly repeated over a period of hours or days; this is commonly known as a 'binge'.

## Amphetamines

### Amphetamines: high dose effects

<b>Physical effects</b>	<ul style="list-style-type: none"> <li>• high blood pressure</li> <li>• rapid or abnormal heart action</li> <li>• seizures</li> <li>• jaw clenching and teeth grinding</li> <li>• nausea and vomiting</li> </ul>
<b>Psychological effects</b>	<ul style="list-style-type: none"> <li>• confusion</li> <li>• anxiety and agitation</li> <li>• performance of meaningless motor activity</li> <li>• impaired cognitive and motor performance</li> <li>• aggressiveness, hostility and violent behaviour</li> <li>• paranoia, including paranoid hallucinations</li> </ul>

Common delusions include being monitored with a hidden electrical device and preoccupation with 'bugs' on the skin.

## Cocaine

### Cocaine: high dose effects

<b>Physical effects</b>	<ul style="list-style-type: none"> <li>• nausea and vomiting</li> <li>• tremor and muscle twitches</li> <li>• cardiovascular complications: chest pain, rapid weak pulse, arrhythmias (irregular heart beat), infarcts (blood vessel closure and tissue death), stroke</li> <li>• seizures</li> </ul>
<b>Psychological effects</b>	<ul style="list-style-type: none"> <li>• grandiose feelings, paranoid thinking</li> <li>• extreme agitation</li> <li>• psychosis</li> <li>• unpredictable aggressive or violent behaviour</li> <li>• stereotyped behaviour (repetitive motor patterns)</li> </ul>

## MDMA

MDMA: high dose effects	
<b>Physical effects</b>	<ul style="list-style-type: none"><li>• vomiting</li><li>• convulsions</li><li>• jaw clenching</li></ul>
<b>Psychological effects</b>	<ul style="list-style-type: none"><li>• hallucinations</li><li>• irrational behaviour</li><li>• paranoia and psychosis</li><li>• distorted perception, thinking and memory</li></ul>

## Risks associated with high dose use

### Behavioural disturbances

Reports of violence and aggressive behaviour associated with amphetamine use have been increasing in Australia, along with increasing use of amphetamines and, in particular, since the availability of the more potent forms of methamphetamine.

The relationship between amphetamine use and violence is quite complex and one that is in need of further research. Amphetamine-related violence results from the interaction between the pharmacology of the drug, the individual concerned and the context of use. It has been suggested that those more likely to become violent under the influence of amphetamines are people who have previously been violent, those who belong to a 'macho' subcultural group, and those who are in a highly stimulating environment. Aggressive and violent behaviour is more likely to be seen in heavy users of amphetamines, those who inject, and those experiencing paranoia or psychosis.<sup>6</sup>

### Neurotoxicity

Neurotoxicity refers to short and long-term changes in brain functioning that persist after drug use has stopped. While there has been a considerable amount of research into the possible neurotoxic effects of psychostimulants, especially MDMA, evidence for neurotoxicity in humans remains inconclusive. Amphetamines and MDMA may cause disruption to neurotransmitters. In the case of MDMA, there may be alterations to serotonin levels and function.

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6. Henry-Edwards (2003)

## The 'crash'

When intensive use of psychostimulants stops, users experience what is known as a 'crash', which is a period of recovery that is analogous to an alcohol hangover. The crash can last up to a few days. Users experience the opposite of intoxication effects, especially dysphoria, hunger and fatigue.

As use continues, the intensity of the crash increases and users may experience sleep disturbances and depression (which is sometimes of a suicidal intensity).

## Overdose death

Amphetamine or cocaine overdose can lead to death from stroke, cardiac arrhythmia (irregular heart beat), cardiac failure, respiratory failure, hyperthermia and seizures.

Deaths attributable to psychostimulant overdose are rare. Where people have died following the use of psychostimulants, they have usually taken other drugs as well, most often opioids.

## Effects of long-term use

There are effects of using psychostimulants over a prolonged period. This will usually be a series of 'binges' separated by periods of abstinence from psychostimulants (although not necessarily from other drugs). Long-term use effects can also be caused by regular use, especially among those misusing pharmaceutical psychostimulants.

## Amphetamines

Amphetamines: effects of long-term use	
<b>Physical effects</b>	<ul style="list-style-type: none"><li>• weight loss and malnutrition</li><li>• neurological changes including memory loss and dizziness</li><li>• menstrual problems including pain, irregular periods or absent periods</li><li>• seizures</li></ul>
<b>Psychological effects</b>	<ul style="list-style-type: none"><li>• dependence</li><li>• poor cognitive functioning in dependent users. Highly dependent individuals show poorer performance on tests of cognitive functioning, especially with memory and concentration</li><li>• extreme mood swings, anxiety and paranoia</li><li>• delirium and depression</li><li>• psychotic symptoms, including perceptual distortions, hallucinations and delusions</li><li>• chronic sleeping problems</li></ul>

One Australian report has noted that amphetamine use tends to be accompanied by a greater number of mental health problems, and more severe problems, than any other drug use.<sup>7</sup>

Anyone who uses a sufficient amount will experience psychosis. The symptoms usually resolve within a few days of stopping use.

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7. Hall et al (1996)

## Cocaine

### Cocaine: effects of long-term use

<b>Physical effects</b>	<ul style="list-style-type: none"> <li>• cardiovascular complications               <ul style="list-style-type: none"> <li>• ischaemia – blood vessel narrowing</li> <li>• infarcts – blood vessel closure and tissue death</li> <li>• arrhythmia – irregular heart beat</li> <li>• stroke from abnormalities in blood flow to areas of the brain, or cerebro-haemorrhage</li> </ul> </li> <li>• seizures (it is thought that chronic exposure to cocaine may increase sensitivity to seizures)</li> </ul>
<b>Psychological effects</b>	<ul style="list-style-type: none"> <li>• depression, anxiety, paranoia</li> <li>• psychosis</li> <li>• dependence</li> </ul>
<b>Chronic snorting</b>	<ul style="list-style-type: none"> <li>• chronic rhinitis</li> <li>• reduced sense of smell</li> <li>• nosebleeds</li> <li>• perforated septum</li> </ul>

## MDMA

There is little conclusive research regarding the long-term effects of MDMA.

### MDMA: effects of long-term use

<b>Physical effects</b>	<ul style="list-style-type: none"> <li>• weight loss</li> </ul>
<b>Psychological effects</b>	<ul style="list-style-type: none"> <li>• irritability</li> <li>• depression</li> <li>• paranoia and psychosis</li> </ul>

## Risks associated with long-term use

### Dependence

A clear dependence syndrome has been described in relation to long-term use of psychostimulants. Dependence can be seen in regular high dose users who use several times a week, especially if the usual form of use is injecting. Dependent users are likely to experience declining social functioning.

## Mental health problems

Intensive and long-term psychostimulant use can result in mental health problems, mainly psychosis and mood and anxiety disorders.

Problems usually resolve when use stops. A proportion of people experiencing these mental health problems following psychostimulant use have also experienced symptoms prior to use. In cases where there is a predisposition, psychostimulant use can act as a stressor or trigger for an underlying psychotic disorder that does not resolve after stopping use.

The severity of mental health problems arising from psychostimulant use is related to:

- the severity of dependence
- frequency of use
- injecting as the usual method of administration, the transition to injecting being correlated with serious psychiatric symptoms

### Psychosis

Intensive or prolonged psychostimulant use can produce a psychosis similar to that which occurs in non-drug-induced psychosis. The psychosis usually appears as a result of chronic high dose use. It usually disappears after drug use stops. Symptoms may include:

- hallucination
- paranoid delusions
- uncontrolled violent behaviour

Psychostimulant-induced psychosis is more common following amphetamine use than cocaine use and, in Australia, this has especially been the case since the more potent forms of methamphetamine (ice and base) have become more available.

Risk of drug-induced psychosis increases as drug use risk increases (high doses, chronic use and injecting as usual form of use) and as psychosis vulnerability increases. Psychosis vulnerability increases if the user has:

- drug-related psychotic symptoms in the past
- schizophrenia
- paranoid disorder
- brief reactive psychosis
- mood disorder with psychotic features
- family history of serious mental illness

## **Mood and affective disorders**

High rates of psychological problems, especially depression and anxiety, often accompany psychostimulant use. Other symptoms experienced are those of panic, mania, hallucinations and paranoia. They typically manifest during intoxication, the 'crash' following use and withdrawal.

Again, these disorders are more common following amphetamine use than cocaine use. This may result from the longer half-life of methamphetamine, or may reflect higher levels of pre-existing disorders in socially different groups of users.

## **Risks associated with injecting psychostimulants**

There are some health risks associated with injecting any drugs, including:

- transmission of blood-borne viruses (especially hepatitis C and HIV)
- inflammation, scarring and abscess at the injecting site

There are some further risks if injecting is the usual method of psychostimulant use.

## **Dependence**

Injecting as the usual method of administration has a higher potential for dependence than other forms of psychostimulants use.

## **Mental health problems**

There is a strong correlation between injecting as the preferred method of administration and mental health problems associated with psychostimulant use.

## **Injecting 'base'**

Because base amphetamine has an oily consistency, it is difficult to inject and users who are injecting it are experiencing more vein damage than other drug injectors.

## **Cocaine injecting**

Although the number of people who regularly inject cocaine is very small, the problems cocaine injectors experience are significant.

Injecting cocaine is associated with particularly chaotic drug use, more so than other drugs. Because the duration of action is short, cocaine users inject more frequently than heroin or amphetamine users. Fifteen injections a day is not unusual. Cocaine use is also associated with frenetic, unrestrained behaviours

that increase the likelihood of unsafe injecting practices, even in previously careful injecting drug users.

Cocaine injectors experience an intense and urgent desire to use, so that binges escalate rapidly. During a binge, use takes precedence over everything else, such as eating, sleeping, basic hygiene, relationships and finances. A binge usually stops when the money runs out, the body collapses from exhaustion or the user is incarcerated. Binges can last from one to two days (most common) to a week or more. The intensity of the desire to use during a binge, combined with feelings of invincibility, can lead to a user sharing injecting equipment. The frequency of injection increases opportunities for exposure to blood-borne viruses and infection at injection sites.

Cocaine is a peripheral vasoconstrictor and so makes veins harder to access. It is also a local anaesthetic, which can make it hard to tell if the needle is in tissue or the vein. These difficulties in injecting are compounded by the urgency of use.

A particular problem often experienced by cocaine injectors is obsessive skin picking, which creates sores and carries risk of infection. This behaviour results from a combination of perceptions that exaggerate skin blotches and tactile hallucinations that create the sensation of skin crawling.

## Psychostimulant use in pregnancy

Cocaine has no specific teratogenic effects (causing foetal abnormalities), and amphetamine use in controlled doses is also unlikely to pose any teratogenic risk. There is a potential teratogenic risk from use of MDMA.

Women who use amphetamines or cocaine during pregnancy are more likely to experience obstetric complications such as low birth weight of their babies. This can be due to other factors as well, such as use of other drugs and general maternal health. The risk of neo-natal withdrawal symptoms can be reduced by avoiding regular drug use late in the third trimester.

### Sources for this section

Baker et al (2004) chs 3, 4, 10, 11; Breen et al (2004); Henry-Edwards (2003); Pead et al (1999); White et al (1996); Hall et al (1996)



responding  
TO PSYCHOSTIMULANT USE





# 5. Identifying and managing intoxication

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## Summary

Severe intoxication can cause aggressive, violent or difficult behaviour, as well as physical emergencies. It can be very difficult to distinguish between a psychostimulant-induced psychosis and a mental illness or severe emotional disturbance.

Strategies for managing intoxication aim to provide a non-stimulating environment, provide support and reassurance, and prevent users from harming themselves or others.

In the case of overdose, emergency care should be sought promptly.

In many settings and circumstances, health workers may need to manage an intoxicated client. Severe intoxication, where the user experiences distressing problems, will most likely result in them seeking treatment at local hospital accident and emergency departments. However, for those users attending your service, there is a range of practical strategies you can employ. While it is more likely that there will be no immediate emergency, your observation of possible signs and symptoms of overdose is essential as would be the case with any client intoxicated on any drug. The possibility of other substances having also been taken must be considered.

## Identifying intoxication

Severe intoxication can cause aggressive, violent or difficult behaviour, as well as physical emergencies, and these need to be managed as they would in any situation regardless of the cause. It can be very difficult to distinguish between a psychostimulant-induced psychosis and a mental illness or severe emotional disturbance.

However, where it is known that psychostimulant use is involved, management of aggressive or difficult behaviour needs to also address the possibility of physical overheating. Behaviour is likely to moderate as the effects of the drug pass.

## Managing overdose

Emergency care should be promptly sought if a user has any of the following symptoms:

- chest pain
- rapidly increasing body temperature
- psychotic features (hallucinations, severe paranoia, delusions or thought disorder)
- behavioural disturbances such that the individual may be a risk to themselves or others
- seizures
- uncontrolled hypertension<sup>8</sup>

## Managing intoxication

Managing an intoxicated person can be a real challenge. There is the potential for aggressive and violent behaviour and for display of mental disturbance. The aims should be to:

- provide a non-stimulating environment
- provide support and reassurance
- prevent the person from harming themselves or others

This can involve:

- reducing environmental stimuli as much as possible, including removing the person to a quieter environment
- avoiding confrontation or arguments while allowing the person to satisfy their need to talk
- approaching the person slowly and with a sense of confidence, and getting the message across that the situation is under control
- providing reassurance to the person that symptoms will resolve in time
- encouraging supportive friends and relatives to stay with them, or contacting supportive people
- monitoring their vital signs and mental state
- encouraging the person to maintain their fluid intake
- removing the person to a cool place and removing heavy or restrictive clothing

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8. Baker et al (2004)

## Managing agitated behaviour

Don't take it personally:

- keep your voice low and controlled
- listen to the person
- avoid insincerity, ridicule or smiling

Think of alternatives to reacting negatively:

- let the person set the pace
- ask what you can do to help

Find a rational response:

- remind the person it's the effects of the drugs<sup>9</sup>

In the case of psychosis or extreme agitation, it will be necessary to follow protocols appropriate to the type of organisation you work in. Antipsychotics and/or sedatives may be administered while following procedures for managing acutely agitated behaviour.

## Managing cardiovascular and cerebrovascular emergencies

Accident and emergency staff need to know how to manage these emergencies.

Pharmacological treatment of cocaine-related chest pain differs from usual management of cardiovascular and cerebrovascular emergencies, because of drug interactions and cocaine toxicity. Chapter 6 in Baker et al (2004) provides detailed management information for accident and emergency staff in these circumstances.

### Sources for this section

Baker et al (2004) chs 6, 12; Pead et al (1999)

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9. Pead et al (1999)

## 6. Harm reduction interventions

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### Summary

Harm reduction interventions aim to reduce the risk of personal and social harms associated with drug use.

It is recommended that all users:

- be informed about the physical and psychological effects of low dose and high dose use
- be discouraged from using other drugs, especially alcohol, with psychostimulants
- be discouraged from injecting psychostimulants
- if injecting, be encouraged to use sterile equipment
- be encouraged to practise safe sex

Harm reduction interventions aim to reduce the risk of personal and social harms associated with drug use. Harm reduction interventions can be undertaken in a clinical setting as well as in a community education or community development context, or as a public health measure. As a health worker, this often involves providing accurate information to users and encouraging less harmful behaviours.

The Resources section of this booklet refers you to client information resources that are available.

As we saw in section 4, the main risks for harm come from high dose and long-term use, and from injecting as the main method of administration.

### Strategies to reduce harm from use of any dose

These strategies can be relevant to any user, and particularly to experimental and irregular recreational users.

In general, to reduce the risk of experiencing adverse effects of amphetamines:

- use less than twice a week
- use small amounts<sup>10</sup>
- buy the drug from the same source

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10. Baker et al (2004) ch 5

## Use with other drugs

Users should be informed about the false sense of psychomotor competence that comes from using amphetamines together with alcohol or other central nervous system depressants, so that they understand the importance of not driving when using these combinations of drugs.

## Pill contents

Users need to be aware that the contents of pills are unknown. Strategies that can reduce possible harms include:

- not using alone, in case the pill has an adverse effect
- calling an ambulance as soon as unexpected and/or distressing symptoms occur
- not taking more than one pill at once

Testing of pills is not recommended as a harm reduction strategy. Kits for testing pills cannot assess purity or identify how much of an identified substance is in a pill. They cannot distinguish between MDMA and similar (but potentially more harmful) substances. They also cannot provide information on combinations of substances a pill may contain. The risk is that, having identified the substance in a pill, users might falsely think it is safe to use, even though it will probably contain other unknown substances.

## Overheating (hyperthermia) and dehydration

MDMA users can avoid overheating and dehydration by:

- drinking water or fruit juice: 500 ml/hour if active, 250 ml/hour if inactive
- not drinking alcohol as it can increase dehydration
- resting for 15 minutes after an hour of dancing or until their pulse and temperature drop. Their heart rate should be less than 90 beats per minute after five minutes rest
- getting fresh, cool air

Water does not replace salts that are lost through sweating. Users can eat salty food to replace the salt lost through sweating. Isotonic (sports) drinks are not recommended because they can increase blood pressure.

## Neurotoxicity

Users should be informed about the risk of neurotoxic effects. To reduce the risk of neurotoxicity from MDMA, it has been recommended that users:

- take no more than one street dose at a time
- use less than fortnightly
- not inject MDMA
- use for less than 24 hours

## Strategies to reduce harm from high dose and long-term use

It is important to inform users about the physical and psychological effects of long-term use of psychostimulants, so they can moderate their use if symptoms of dependence or mental health problems develop.

## Overdose

Users should be encouraged to:

- not use alone
- let others know which drug they are using
- carry a mobile phone or phone card
- call an ambulance as soon as unexpected and/or distressing symptoms occur

## Mental health problems

To reduce the risk of mental health problems, or stop incipient mental health problems from developing, users should be encouraged to:

- reduce or stop their use of psychostimulants
- not inject psychostimulants

If a user is experiencing signs of paranoia, having a break from psychostimulant use and getting a few good nights sleep can stop it progressing to psychosis.

## Minimising harm from injecting

For experimental and recreational users, the key strategy for minimising harm is to prevent the transition to injecting. The perceived benefits of injecting (such as the misconception that injecting is cheaper and healthier) should be challenged, and vascular problems associated with injecting emphasised.

If clients are injecting or are intending to inject, and will not contemplate change, then safer injecting information should be provided. This may conflict with the values of some health care workers; it is, however, vital in preventing transmission of blood-borne viruses and injury from poor injecting practices.

Increasing a user's social support can bring a range of benefits; in this context this includes reducing injecting risk.

## Minimising harm during pregnancy and breastfeeding

It is preferable not to use drugs at all during pregnancy and breastfeeding. However, if a pregnant or breastfeeding woman is using psychostimulants, the following recommendations should be given:

- even if a woman has used psychostimulants early in her pregnancy, there can still be benefits from stopping or cutting down later in the pregnancy, and women should be encouraged to do this
- pregnant psychostimulant users should be advised not to 'binge' during pregnancy
- pregnant psychostimulant users should be advised to reduce their use of other drugs, especially alcohol and nicotine
- if a woman is breastfeeding and using psychostimulants, exposure of the child to the drug can be minimised by breastfeeding just before using and not breastfeeding again for at least two or three hours

Pregnant women who are using drugs usually feel guilty and ashamed about the possibility of their drug use harming the foetus. This, combined with the stigma, means that they tend to present later than other women for antenatal care and may try to hide their drug use, especially if they are heavy or dependant drug users. Maternal and child health outcomes will be improved by early and non-judgemental antenatal care.

### Sources for this section

Baker et al (2004) chs 4, 5, 11, 12; Hando et al (1997); NDARC (1998)

## 7. Treatment interventions

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### Summary

Treatment interventions will depend on the type of drug use involved: infrequent, 'binge' (using heavily for some days with breaks in between), circumstantial or instrumental, or regular heavy use.

Motivational enhancement strategies, especially cognitive behavioural approaches such as brief interventions, coping skills therapy and relapse prevention, are effective psychosocial interventions to assist users to stop or cut down their psychostimulant use. Specialist alcohol and drug workers can provide these interventions, and opportunistic interventions in other health care settings can be effective.

Dependent psychostimulant users will experience withdrawal symptoms when they stop using the drug. They do not usually require medication and most symptoms resolve within 10 days, although disturbed sleep patterns and energy level and mood swings can continue for up to three months.

### Treatment for psychostimulant use

In Australia, psychostimulant users are less likely to seek treatment in specialist services, and there are few amphetamine-specific interventions available. There are no specific pharmacotherapies for general use.

Given that psychostimulant users do not often seek specialist treatment, opportunistic interventions in other health care settings, as appropriate to the setting and role of the health care worker, can be effective.

Interventions will depend on whether a user is an infrequent user, a 'binge' user (using heavily for some days with breaks in between), a circumstantial or instrumental user, or a regular heavy user.

Any treatment for psychostimulant use needs to take into account other drug use, as most psychostimulant users are polydrug users. For example, someone may be receiving treatment such as withdrawal support or pharmacotherapy for their use of another drug, while at the same time receiving psychosocial treatment for their psychostimulant use.

Amphetamine users report seeking treatment that is specific to their drug use. They also look for non-judgemental treatment options that allow for a range of goals, including controlled use and stopping use altogether.

## Psychosocial interventions

There is a range of effective psychosocial interventions that specialist alcohol and drug workers can provide for psychostimulant users, in both residential and outpatient settings. This involves assessing where the user is in terms of readiness to change.

Motivational enhancement strategies can be used with those who are not ready to change, with the aim of increasing commitment to change. If they are ready (or close) to take action, there are cognitive behavioural approaches, such as relapse prevention and coping skills therapy. The available evidence suggests that relapse prevention and other cognitive behavioural approaches are the most effective treatments for psychostimulant users to date. They can be effective in reducing use and in maintaining the reduction in use.

'Binge' users and instrumental users should be informed about the symptoms of heavy use, and the need to cut down or stop use.

For ecstasy users, brief interventions are probably most appropriate. The aim of a brief intervention is to investigate a potential problem and motivate a user to begin to address their drug use. The immediate goal is to reduce the risk of harm that could result if drug use continues. It can, therefore, be a useful technique for harm reduction interventions to encourage behaviour change. A brief intervention can also be the first stage of more intense treatment. Brief interventions are suitable for use in a wide range of settings and with users from different backgrounds.<sup>11</sup>

Depending on your work role, referral to specialist services that provide these treatment interventions may be your main function. If appropriate, you may have the opportunity to initiate counselling yourself.

For those familiar with cognitive behavioural therapy and motivational enhancement techniques, a brief cognitive behavioural intervention has been trialled and evaluated, and a treatment guide is available, setting out the intervention in detail. See the Resources section of this booklet.

Other treatments that can be effective are residential rehabilitation programs, including therapeutic communities. Behavioural therapies may be included in

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11. Adapted from Baker et al (2004) ch 5, p 68

the treatment program and this may improve outcomes for psychostimulant users. Better outcomes are associated with progress during treatment and completion of treatment. The evidence for the effectiveness of self-help groups is equivocal. Users who participate in meetings of 12-step groups do better than those who simply attend.

If psychostimulant using clients present and are unwilling to engage in treatment you can speak to them about the range of harm reduction strategies referred to in Section 6 of this booklet.

## Withdrawal

Withdrawal is a feature of psychostimulant dependence and is the period of re-adjustment that the body goes through to get back to a state of working 'normally' without the drug. It may be seen in users of any psychostimulant, including regular users of pharmaceutical psychostimulants. Withdrawal is not an end in itself, and is not effective in the long term without follow-up treatment that should include motivational enhancement and relapse prevention interventions.

In most cases of dependence or suspected dependence, referral for assessment and treatment will be the most appropriate. However, you may find yourself in the position of needing to respond to a client who is inadvertently experiencing unplanned withdrawal. This will involve recognising withdrawal symptoms and providing information to clients about what they might expect to experience.

### Psychostimulant withdrawal

Withdrawal from psychostimulants is much less well understood than withdrawal from depressants such as alcohol or heroin. There are DSM criteria for amphetamine and cocaine withdrawal.

The types of withdrawal symptoms and the length of withdrawal that people go through vary from person to person, based on their current health (medical and psychiatric) status, their expectations, their length and level of psychostimulant use, any other concurrent drug use and the level of psychosocial support.

Withdrawal follows the same process for all psychostimulants, with onset and duration varying according to the particular drug, and onset also varying according to the method of administration.

## Features of psychostimulant withdrawal

Withdrawal symptoms can include:

- dysphoria
- slowing of physical movements and lethargy
- poor concentration
- strong cravings or urges to use psychostimulants
- feeling angry or upset
- headaches, general aches and pains
- long but disturbed sleep, tiredness, exhaustion and insomnia
- hunger
- anxiety
- depression; can include suicidal thinking
- feeling anxious (which can result in panic), irritable, 'nervy' or restless

These symptoms are usually fairly short-lived and medication is not necessary. Benzodiazepines may be prescribed, as may antidepressants or antipsychotics if indicated.

Most symptoms resolve within 10 days, although it can take up to three months for normal sleep patterns and level of activity to return, and for mood swings to even out.

Psychostimulant users experiencing withdrawal might find the *Getting Through Amphetamine Withdrawal* guide useful. See the Resources section of this booklet.

## Withdrawal treatment

Withdrawal does not usually need to take place in an inpatient setting, unless there are medical, psychiatric or social reasons to do so.

Treatment for withdrawal from psychostimulants involves:

- a supportive environment
- information and reassurance
- monitoring

Anybody monitoring withdrawal should be alert for symptoms of psychosis and depression. Health workers should carry out a thorough mental health assessment, if appropriate to their work role and training.

### Sources for this section

Baker et al (2004) chs 3, 5, 7; Baker & Lee (2003)





resources  
**PSYCHOSTIMULANTS**





# Client information resources

## NDARC booklets

The National Drug and Alcohol Research Centre produces a number of booklets about different drugs, treatment and related topics. These can be ordered through the website: <http://ndarc.med.unsw.edu.au> in the Publications > Resources section; or ordered through the ADF (see below).

### **A User's Guide to Speed**

A self-help guide for people who use speed. It lists the most common features of speed use, ways to reduce harms associated with the use and strategies for cutting down and quitting.

### **Cocaine: Cutting it Fine**

Based on a number of cocaine-related studies carried out at NDARC, this booklet provides information for people who use cocaine, including some tips on reducing or stopping use.

### **Ecstasy: Facts and Fiction**

This booklet was based on a study of ecstasy use in Australia conducted by NDARC. In response to users' requests, it covers a variety of issues, including the main features of ecstasy use, and short-term and long-term effects of using the drug.

### **Club Drugs**

This booklet has been designed to provide information for people who use, or are considering using, the range of substances known as 'club drugs'.

### **Drugs and Bugs**

A resource designed to inform injecting drug users about a range of infections which may be linked to injecting drug use. The booklet covers a range of infections including hepatitis C, hepatitis B and hepatitis A, HIV and some other infections. The main aim of this resource is to outline ways to avoid contracting these infections.

## Turning Point withdrawal series

Turning Point Alcohol and Drug Centre produces a series of self-help booklets as resources for people undergoing withdrawal, including *Getting Through Withdrawal: A guide for people trying to stop amphetamine use*. Order through Turning Point, phone (03) 8413 8413 or download the order form from the website: <http://www.turningpoint.org.au>

## NDARC fact sheets

NDARC produces fact sheets on a number of drugs, including an Amphetamines Fact Sheet and an Ice Fact Sheet. These can be downloaded in pdf format from the website: <http://ndarc.med.unsw.edu.au> in the Drug Information > Facts sheets section.

## Amphetamines (How drugs affect you series)

The Australian Drug Foundation produces this brochure. Visit <http://www.adf.org.au/store/default.asp> for further information and online ordering, contact the ADF at PO BOX 818, North Melbourne, Vic 3051 or phone (03) 9278 8100.

## Amphetamines (Speed)

This Centre for Information on Drugs and Alcohol (NSW Health) brochure can be downloaded from the website: <http://www.health.nsw.gov.au/public-health/dpb/publications.htm>

## Information about amphetamines

This Queensland Health brochure can be downloaded in pdf format from the website: <http://www.health.qld.gov.au/atods/documents/18346.pdf> or ordered from Queensland Health, phone (07) 3236 2414.

## Website

### The Vaults of Erowid

The Vaults of Erowid is interested in the spiritual properties of mind-altering substances: in drugs as a tool for personal and spiritual growth. Its philosophy is that it is important that accurate information be made available as a means of reducing the harm associated with the use of these substances. This is a US site which has up-to-date and comprehensive information on most drugs, including contributions from users. All information is clearly identified as based on scientific research or anecdotal.

<http://www.erowid.org>

# Health worker information resources

## Reference books

Jenner, L., Baker, A., Whyte, I., & Carr, V. (2004). *Management of patients with psychostimulant use problems - Guidelines for general practitioners*. Canberra: Australian Government Department of Health and Ageing.

To order a copy of this document, contact National Mailing and Marketing on 1800 020 103 (ext 8654) or e-mail: [nmm@nationalmailing.com.au](mailto:nmm@nationalmailing.com.au)

This publication can be downloaded in pdf format from the website:  
[http://www.nationaldrugstrategy.gov.au/pdf/psychostimnts\\_gp.pdf](http://www.nationaldrugstrategy.gov.au/pdf/psychostimnts_gp.pdf)

Baker, A., Lee, N. K. & Jenner, L. (Eds) (2004). *Models of intervention and care for psychostimulant users*, 2nd Edition, National Drug Strategy Monograph Series No. 51. Canberra: Australian Government Department of Health and Ageing.

To order a copy of the monograph, contact National Mailing and Marketing, phone 1800 020 103 (ext 8654) or email: [nmm@nationalmailing.com.au](mailto:nmm@nationalmailing.com.au)

This publication can be downloaded in pdf format from the website:  
<http://www.nationaldrugstrategy.gov.au/publications/monographs.htm>

Baker, A., Kay-Lambkin, F., Lee, N. K., Claire, M. & Jenner, L. (2003). *A brief cognitive behavioural intervention for regular amphetamine users: A treatment guide*. Canberra: Australian Government Department of Health and Ageing.

To order a copy of this publication, contact National Mailing and Marketing, phone 1800 020103 (ext 8654) or email: [nmm@nationalmailing.com.au](mailto:nmm@nationalmailing.com.au)

This publication can be downloaded in pdf format from the website:  
<http://www.nationaldrugstrategy.gov.au/pdf/cognitive.pdf>

## Websites

### **Australian Drug Information Network**

The ADIN website is funded by the Commonwealth Government as part of the National Illicit Drug Strategy. It provides a central point of access to quality internet-based alcohol and drug information and enables searching from a large collection of identified and quality-assured websites.

<http://www.adin.com.au>

### **Australian Drug Foundation (ADF)**

The ADF is an independent, non-profit organisation working to prevent and reduce alcohol and drug problems in the Australian community. The site contains information about all drugs, for users and parents of young people, as well as research and policy information.

<http://www.adf.org.au>

### **National Drug and Alcohol Research Centre (NDARC)**

Through research and related activities, NDARC aims to contribute to the minimisation of the harmful consequences of alcohol and other drug use in Australia by increasing the effectiveness of the Australian treatment response to drug-related problems. It is not an information centre but they do produce some general information resources. NDARC also coordinates the national Illicit Drug Reporting System, which provides information on developing trends in illicit drug use.

<http://ndarc.med.unsw.edu.au>

# Contacts

## Alcohol and drug counselling and referral services

These are 24-hour helplines that the general public and health professionals can ring.

### Australian Capital Territory

Alcohol and Drug Information Service (ADIS) (02) 6207 9977

### New South Wales

NSW Health Centre for Drug and Alcohol  
(Sydney) (02) 9361 8000  
(country) 1800 422 599

### Northern Territory

Alcohol and Drug Information Service (ADIS) 1800 131 350

### Queensland

Alcohol and Drug Information Service (ADIS)  
(Brisbane) (07) 3837 5989  
(country) 1800 177 833

### South Australia

Alcohol and Drug Information Service (ADIS) 1300 131 340

### Tasmania

Alcohol and Drug Information Service (ADIS) 1800 811 994

### Victoria

DirectLine 1800 888 236  
Family Drug Helpline 1300 660 068

### Western Australia

Alcohol and Drug Information Service (ADIS)  
(Perth) (08) 9442 5000  
(country) 1800 198 024

## State and territory government alcohol and drug departments

### Australian Capital Territory

#### **ACT Health Services – Alcohol and Other Drugs**

<http://www.health.act.gov.au> > Health services > Community health > Community health services

### New South Wales

#### **NSW Health Centre for Drug and Alcohol**

<http://www.health.nsw.gov.au/public-health/dpb>

### Northern Territory

#### **Department of Health and Community Services – Alcohol and Other Drugs Program**

<http://www.nt.gov.au/health/healthdev/aodp/aodp.shtml>

### Queensland

#### **Queensland Health Alcohol, Tobacco and Other Drug Services**

<http://www.health.qld.gov.au/atods/default.asp>

### South Australia

#### **Department of Human Services – Drug and Alcohol Services**

<http://www.dasc.sa.gov.au>

### Tasmania

#### **Department of Health and Human Services – Alcohol and Drug Service**

<http://www.dhhs.tas.gov.au/alcoholanddrugs>

### Victoria

#### **Department of Human Services – Public Health Topics: Drugs and Poisons**

<http://www.health.vic.gov.au/drugstopics/index.htm>

### Western Australia

#### **Government of Western Australia – Drug and Alcohol Office**

<http://www.dao.health.wa.gov.au>

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