



**THE EXPERT ADVISORY COMMITTEE ON DRUGS (EACD)
ADVICE TO THE MINISTER ON:**

AMPHETAMINE

May 2004

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ADVICE TO THE ASSOCIATE MINISTER OF HEALTH ON AMPHETAMINE

Executive Summary

1. This paper presents evidence on the risk of harm associated with amphetamine. The information presented addresses criteria that the Expert Advisory Committee on Drugs [EACD] must take account of when considering the appropriate classification of a substance, under section 4B of the Misuse of Drugs Act 1975. Amphetamine is currently a controlled drug under Part 2 of the Act's Second Schedule. This paper offers arguments in support of reclassifying amphetamine under Part 1 of the Second Schedule of the Act, so as to better reflect the risk of harm associated with the drug. Key factors that support this position include:
 - Increasing prevalence of amphetamine use and importation into New Zealand
 - Clear evidence of the high risks of harm associated with amphetamine, and limited number of therapeutic applications for the drug
 - Evidence of drug substitution between amphetamine and other ATS drugs
 - Need for decisive police powers to tackle street-level amphetamine offending
 - Links between New Zealand's illicit amphetamine market and organised crime
 - Worrying implications of the increasing use of amphetamines for road safety.
2. Based on the evidence presented in this paper, the EACD recommends that presumption for supply of amphetamine be set at 5 grams or more of amphetamine, or 100 flakes, tablets, capsules or other drug forms, each containing some quantity of amphetamine.

Recommendations

After considering all of the information put to the Committee and the classification criteria in the Misuse of Drugs Act 1975, the EACD makes the following recommendations to the Minister of Health:

- (a) Amphetamine should be classified in Part 1 of the Second Schedule of the Misuse of Drugs Act 1975 (ie, B1).**
- (b) That the presumption for supply of Amphetamine be set at 5 grams or more of amphetamine, or 100 flakes, tablets, capsules or other drug forms, each containing some quantity of amphetamine.**

(c) This paper should be made publicly available (eg, posted on the National Drug Policy website www.ndp.govt.nz).

TERMINOLOGY

3. Much of the available research evidence relates to illicit amphetamine use with no distinction between the racemic mixture of amphetamine, dexamphetamine and methamphetamine. The term “amphetamines” is used in this paper to refer to any of these three forms. Where a distinction is possible, the relevant specific term is used.

SUBSTANCE IDENTIFICATION

4. Amphetamine (C₉H₁₃N) and related psychostimulants are simple organic bases which are derivatives of beta-phenylethylamine. Collectively, they are often referred to as amphetamine-type stimulants [ATS]. Chemically, amphetamine is listed in the Misuse of Drugs Act 1975 as 2-amino-1-phenylpropane, and in the United Nations Convention on Psychotropic Substances 1971 as (±)-alpha-methylphenethylamine. The Chemical Abstracts Registry Service number for amphetamine is 300-62-9.
5. The molecule of amphetamine has one asymmetric carbon, yielding two optical isomers that are mirror images of each other. These are designated as the laevo [L or -] and dextro [D or +] isomers (see Budavari et al. 1996). D-amphetamine possesses the greater central nervous stimulatory activity and L-amphetamine has stronger cardiovascular effects. Illicit manufacture of amphetamine usually results in a racemic mixture of the two isomers, although this is dependent on the precursor chemical that is used. Methamphetamine is the N-methyl derivative of amphetamine.
6. Amphetamines have a primary or secondary amino group in their molecules and form stable and crystalline water-soluble salts by reacting with several inorganic acids. Because of these properties, amphetamines are used in salt form. Of these salts, amphetamine sulphate and methamphetamine hydrochloride are the most common (Yoshida 1997).
7. Amphetamine is usually produced initially in liquid form. Historically, amphetamine has been sold as a liquid (with the street name “dragon’s blood”) but is now rarely seen in this form; rather it is typically sold as a powder or in tablets. Common street terms for amphetamine include speed, crank, go fast, whiz, uppers, buzz and rev.

SIMILARITY TO KNOWN SUBSTANCES

8. Amphetamine is structurally similar to the neurotransmitters noradrenaline, adrenaline and dopamine (WHO 1997). Other central nervous system stimulants with pharmacological similarities to amphetamine include methcathinone and methylphenidate. The *Australian Standard Classification of Drugs of Concern* also notes that amphetamine is closely related chemically to phenethylamines like 4-bromo-2,5-dimethoxyamphetamine

[DOB], 3,4, methylenedioxy-methamphetamine [MDMA], 3,4-methylenedioxyethylamphetamine [MDEA], paramethoxy-amphetaminamine [PMA] and trimethoxyamphetamine [TMA] (see ABCI 2002).

RATIONALE FOR RECLASSIFICATION

Likelihood or evidence of abuse

New Zealand prevalence data

11. New Zealand drug surveys indicate an increase in ATS use. The latest survey undertaken by the former Alcohol and Public Health Research Unit attached to the University of Auckland (Wilkins et al. 2002) found a significant increase in the number of respondents trying and using ATS [see Table 1]. The largest increases in the use of stimulants was in the 15-17 year old age group (increased from 2% to 6%) and 20-24 year old age group (increased from 6% to 11%). This data reflects a continuing trend of increased stimulant use that was also seen in the previous regional comparison survey (Field and Casswell 1999), where stimulant use increased from 2% in 1990 to 4% of respondents in 1998.

TABLE 1: Use of amphetamine/methamphetamine, 1998 and 2001

	Ever used		Used Last Year		Current User	
	1998	2001	1998	2001	1998	2001
Amphetamine / Methamphetamine	7.6%	11.0%	2.9%	5.0%	2.2%	3.5%

Source: Wilkins et al. 2002

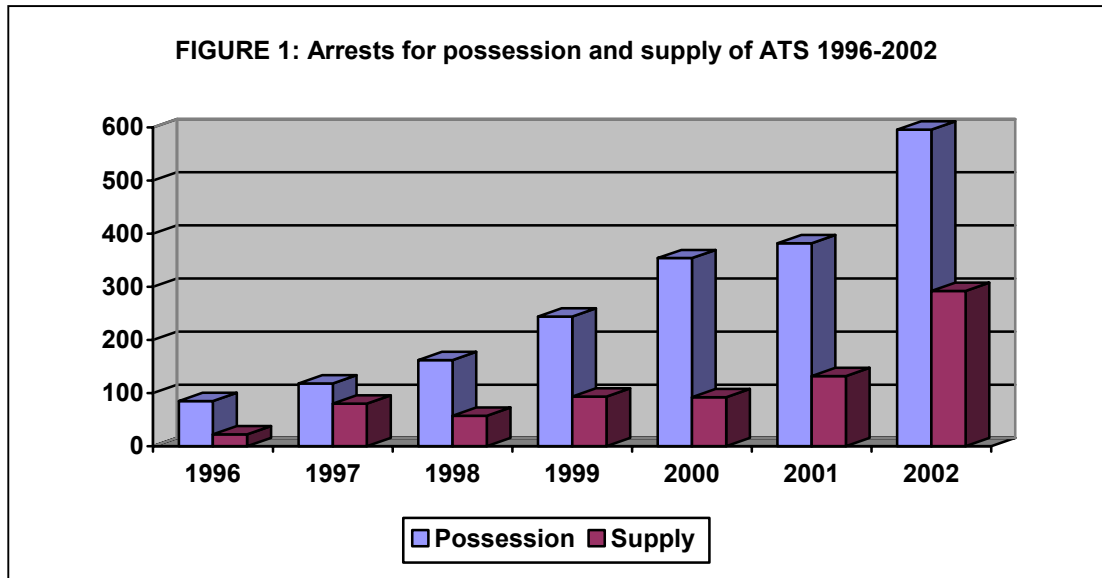
New Zealand mortality and morbidity data

12. Hospital data are unable to offer definitive information about the health-related impact of amphetamine, as they do not differentiate between amphetamine-related admissions and those relating to the use of other ATS drugs.
13. Although there were no deaths reported to be associated with stimulant use in New Zealand between 1990 and 1996, there were 109 publicly funded stimulant-related hospitalisations between 1996 and 1998 (NZHIS 2001). These hospitalisations were for non-dependent abuse, dependence, and poisoning either as the presenting condition or as a secondary diagnosis. There was also a rise in the total numbers of hospitalisations each year (18 in 1996, 46 in 1998).

New Zealand arrest and interdiction data

14. New Zealand law enforcement data indicates growing ATS availability, however data systems have until very recently not distinguished between

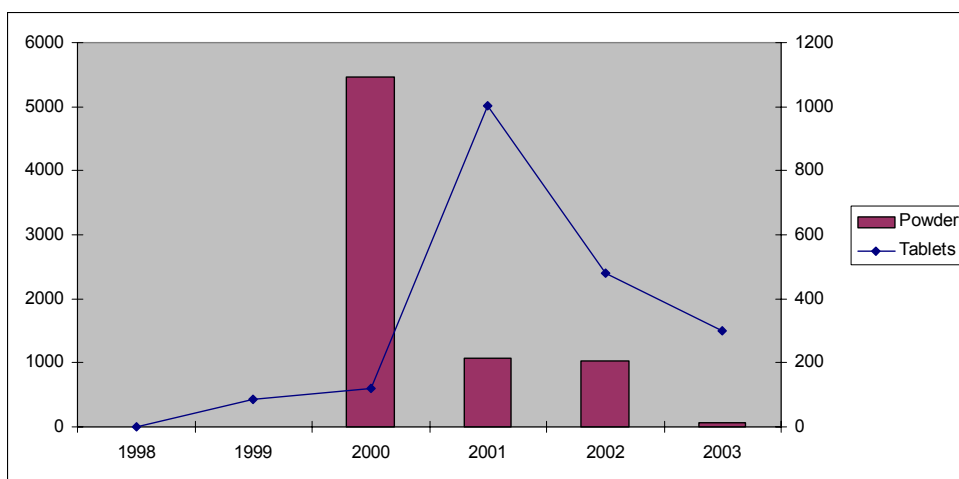
amphetamine and other ATS. The number of people arrested for ATS possession has increased approximately 650 percent between 1996 and 2002 [see Figure 1]. Increasing numbers of people have also been charged with supply offences for ATS in recent years. In 2002, 596 people were arrested for possession of ATS and 292 for importation, supply and manufacture offences.



Source: Police data

15. New Zealand Police and Customs Service seizures of amphetamine have risen sharply in recent years. Before 1998, amphetamine seizures were sporadic and small in quantity (NDIB 1999). However, since that time there have been several significant interdictions of amphetamine powder and tablets [see Figure 2].
16. There also appears to have been a decline in the street price of amphetamine. In its annual report for 1998, the National Drug Intelligence Bureau [NDIB] reported that amphetamine sold for between \$200 and \$250 per gram; whereas in its most recent overview report, the NDIB states the current street price for amphetamine is between \$150 and \$200 a gram (NDIB 1999; 2003). This could be interpreted as a sign of increasing levels of supply, however, it is accepted that the relationship between an illicit drug's price and availability is not explicit.

FIGURE 2: Seizures of amphetamine, 1998 to 30 November 2003



Source: Police and Customs Service data

Specific effects of amphetamines

Pharmacological effects

17. Amphetamines exert their effects indirectly by stimulating the release of peripheral and central neurotransmitters, principally dopamine, adrenaline and noradrenaline (WHO 1997). It is the elevated extracellular levels of these neurotransmitters that produce the stimulant effect of amphetamines. D-amphetamine also releases serotonin and may act as a direct agonist of serotonin receptors (Kuczenski 1987). Amphetamines also have an uptake blocking effect, and inhibit the enzyme monoamine oxidase, which inactivates dopamine, noradrenaline and serotonin.
18. Amphetamine can be taken orally, the powder can be inhaled intranasally (snorted), or it can be injected intravenously or intramuscularly. Unlike methamphetamine, for example, amphetamine cannot be smoked, as it is destroyed at high temperatures (WHO 1997; Chesher 1993). Across studies of illicit users, multiple methods of administration of amphetamine are the norm (Kamieniecki et al. 1998).
19. The intensity and timing of the amphetamine “rush” (which results primarily from the release of high levels of dopamine in the brain) depends in part on its route of administration. Amphetamines are highly lipid soluble, meaning they are readily absorbed from the gastrointestinal tract. Once in the bloodstream, amphetamines quickly distribute to various body compartments and cross the blood-brain barrier. Consumed orally, amphetamine effects occur in about half an hour; snorting produces a more intense effect, approximately five minutes after administration (Anglin et al. 2000). Injecting results in an almost immediate effect.
20. Amphetamines are metabolised in the liver, and eliminated chiefly by renal excretion which varies with urine flow and pH. Acidification of the urine and vigorous hydration (so as to promote increased urine output) increase renal excretion (WHO 1997). The rate of elimination of the drug differs between users according to the extent of their use of the drug. The half-life of the drug

depends on the dose and route of administration as well as prior exposure to amphetamines - in frequent users the half-life is significantly longer than in naïve or infrequent users (Chesher 1993). For a 5-10mg dose of amphetamines taken orally, the plasma half-life is approximately 8-10 hours (WHO 1997).

Psychoactive effects

21. In general, the immediate effects of amphetamines are wakefulness, alertness, increased energy, reduced hunger, and an overall feeling of well-being or euphoria (eg., Brands et al. 1998; Kamieniecki et al. 1998; Drugs and Crime Prevention Committee 2003, esp. chapter 4). However, the subjective effects of amphetamines, as with all psychoactive drugs, depend not only on the pharmacology of the drug, but also on factors associated with the user and his/her socio-personal environment.
22. The stimulant properties of amphetamines facilitate their use in social settings, such as music and dance events, where a stimulant action is valued. Their ability to reduce appetite for slimming purposes and reduce the need for sleep are also reasons why this type of drug has proved attractive to drug users (WHO 1997).
23. For legal therapeutic use, the doses recommended for amphetamine use are in the region of 5-10mg per dose and up to 50mg per day in divided doses. In doses of this order, amphetamine induces an elevation of mood, an increase in feelings of self-confidence, increased arousal, alertness, and energy, and a reduction in fatigue. Improvements in the performance of simple psychomotor tasks can be recorded - an effect which is most notable with those tedious tasks for which boredom and irritability would usually produce a decline in efficiency (Chesher 1993).
24. The increase in alertness is usually accompanied by an increased talkativeness and, in some, an irritability and garrulousness. The expectation of the drug taker and the environment in which the drug is taken can exert a significant effect on the response to the drug. Even at low therapeutic doses, some individuals may become anxious and irritable, while others may report an idiosyncratic drowsiness. At therapeutic doses, peripheral cardiovascular effects are usually noted. There may be a slight increase in blood pressure, and possibly an increase in heart rate. More commonly the heart rate is slowed because of a reflex in response to the increase in blood pressure. Oral doses within the recommended therapeutic range are usually without effects on body temperature. The appetite suppressant effects of amphetamine are achieved at these dose levels (Chesher 1993), as is bronchodilatation (WHO 1997).
25. With illicit use of amphetamines, tolerance to the psychoactive effects generally develops rapidly, resulting in the use of escalating doses to achieve the desired effects. As the dose is increased, the intensity of effects also increases. The heart rate is more likely to rise at higher doses and arrhythmias may occur. It is the increase in the intensity of the mood effects that may encourage some drug users to increase the dosage, and to change

from oral to intravenous use. The intensity of the effect on body temperature also increases with dose (Chesher 1993). When higher dosages of amphetamine are taken, typical after-effects - which may last for 48 hours - are fatigue and dysphoria or depressive mood (WHO 1997). The degree of post-psychostimulant depression is dose dependent (Chesher 1993).

Adverse effects

26. The toxic effects of amphetamines are effectively an exaggeration of their pharmacological actions. As such, they largely reflect over-stimulation of the peripheral sympathetic and central nervous systems. Signs and symptoms of acute amphetamine intoxication typically include flushing, sweating, tachycardia (sometimes resulting in life-threatening arrhythmias), hypertension (occasionally resulting in intracerebral haemorrhage) and sometimes convulsions and severe hyperthermia. The latter is said to be the most common cause of death in amphetamine overdose. Hyperactivity, restlessness, bellicosity and confusion are often observed. Not uncommonly acute intoxication with amphetamines results in paranoid ideation (WHO 1997).
27. Adverse effects of amphetamine use commonly reported by users include nausea, abdominal cramps, tachycardia, headaches, anxiety, dysphoria, muscle pain, difficulty concentrating, tiredness, reduced appetite, irritability, tremors, memory loss and dehydration. Such effects usually occur during intoxication or when 'coming down' from the drug. Other common adverse effects associated with long-term regular use of the drug include tooth decay, weight loss, sleep problems, skin problems, and reduced immunity to infections, like colds (Kamieniecki et al. 1998).
28. Chronic use can result in physical and psychic dependence with manifestations of mood swings (Vincent et al. 1998), depression, paranoia, hallucinations (Domier et al. 2000), insomnia, anxiety and panic attacks (Williamson et al. 1997). More serious consequences include cognitive impairment (McKetin and Mattick 1997; Simon et al. 2002), psychosis (eg., Perry and Lund 2002), and violent or aggressive behaviour (Asnis et al. 1978; Vincent et al. 1998; Wright and Klee 2001). Vincent and colleagues (1998) also found significantly poorer health in a sample of 100 South Australian amphetamine users when compared to the general population.
29. Mental health problems appear very common among regular amphetamine users, with studies reporting sample prevalence rates for depression of between 51-92%, for anxiety between 60-76%, for hallucinations between 28-67%, for paranoia between 33-78%, for mood swings between 44-80%, aggression and violence between 17-72%, for panic attacks between 9-35%, and for suicidal ideation between 13-47% (Kamieniecki et al. 1998).
30. The frequency of symptoms of depression, anxiety, paranoia, mania, hallucinations, aggression, and violent behaviour has been found to be significantly higher in subjects following their first use of amphetamines than prior to using amphetamines. Hall and colleagues (1996) found that the severity of these symptoms were related to frequency of use and injection as

the usual form of administration. The presence of pre-existing mental health symptoms, use of benzodiazepines, higher severity of dependence, and poor role performance due to health problems may also influence psychological problems associated with amphetamine use (Kamieniecki et al. 1998).

31. The hazards of psychostimulant use are closely associated with the pattern of use. The importance of the route of administration rests not only with the bioavailability of the drug (the proportion of the administered dose which reaches the bloodstream), but also with the rate of its delivery to the site of action in the brain (Chesher 1993). The “binge” or “speed run” (high frequency, high doses) is the most hazardous pattern of use. A “speed run” with amphetamine may last days or weeks. The continued repeated administration of amphetamine leads to intake of excessively high concentrations of drug, and elevates the risk of users experiencing toxic effects (Chesher 1993).
32. Adverse effects could also arise from interactions between amphetamines and prescription medications, particularly antidepressants such as monoamine oxidase inhibitors.

The risks that amphetamine poses to public health

Violent, aggressive behaviour

33. Intense and sudden acts of aggression can occur in amphetamine users. Aggressive acts are often related to paranoia, feelings of persecution, and distortion of perception. Hallucinations, panic, mood swings, or lowered impulse control may also be factors in violent, aggressive behaviour (Kamieniecki et al. 1998).
34. Self-injury and violence toward others are common behavioural outcomes of the acute phase of amphetamine-induced psychosis (Kratofil et al. 1996; Fukushima 1994). The potential for amphetamines to induce psychotic symptoms has been reported in the scientific literature since the 1930s (eg., Young and Scoville 1938). The symptoms of amphetamine-induced psychoses closely mimic those of acute paranoid schizophrenia (Davis and Schlemmer 1980; Flaum and Schultz 1996), with the most consistently reported symptoms, including the emergence of paranoid delusions accompanied by delusions of reference, and auditory and visual hallucinations (Bell 1965; Davis and Schlemmer 1980; Harris and Batki 2000). Less commonly reported symptoms include olfactory and tactile hallucinations, thought disorder, and affective blunting (Bell 1965; Jonsson and Sjostrom 1970; Davis and Schlemmer 1980; Harris and Batki 2000).
35. Psychoses induced by amphetamines generally resolve within one or two weeks of admission to hospital (Jonsson and Sjostrom 1970; Bell 1973; Davis and Schlemmer 1980), but this disorder is noted for its potential to recur (Nakatani et al. 1989; Sato 1992). Triggers for relapse include amphetamine or other drug use (Tomiyaama 1990; Sato 1992) and psychosocial stressors (Yui et al. 2000).

37. Few studies of illicit amphetamine-induced psychoses provide detailed information regarding patients' antecedent amphetamine use, although a recent study conducted in South Australia has provided some indications of emerging risk factors for this disorder (Morefield et al., in preparation). This study suggests that the development of amphetamine-induced psychosis tends to be preceded by an increase in frequency of amphetamine use, and that the use of rapid, efficient routes of administration (notably injecting) is more strongly associated with the disorder than are the oral or nasal routes.

"Functional Use"

38. The stimulant effect of amphetamine result in the drug being used in some cases to enhance performance. The context of such "functional" or "instrumental" use may include students wanting to keep awake for extended periods, or long-distance drivers and labourers wanting energy to keep them strong and focused for hours of tedious work (WHO 1997). Functional use of this kind has been reported in several countries (Helschober and Miller 1991; Sawaki 1991; Hall and Hando 1993; Rawson et al. 2002), and may have been the trigger for the epidemics of amphetamine use that occurred in Japan after the Second World War (King and Ellinwood 1997).
39. The use of amphetamines by drivers of heavy road transport vehicles has been associated with serious road accidents. Studies have found the presence of licit and illicit stimulants in the blood of 14-16% of fatally injured truck drivers (see Hunter et al. 1998), and police agencies across Australia have reported the use of amphetamines by some long distance transport drivers – although the extent to which such drug use contributes to crashes is unclear (ACPR 2003). Such incidents appear to relate to the sudden onset of fatigue when the effects of amphetamines "wear off", and not to psychomotor impairment associated with amphetamine use.

Infectious diseases

40. As with any injecting drug use, use of amphetamine by injection is associated with risk of spread of HIV/AIDS and other blood-borne infections through the use of non-sterile injecting equipment. In addition, use of amphetamines appears to further increase the risk of transmission of blood-borne viruses through the increased possibility of unsafe sexual activity, due to increased sex drive and the disinhibiting effects of the drug. Bacterial endocarditis has also been related to the intravenous use of amphetamines (Kamieniecki et al. 1998).

Prenatal exposure

41. Assessing the effects of amphetamine use during pregnancy is difficult because of the confounding effects of poor nutrition, polydrug use, and differences in dose, frequency and route of administration. Where research has been carried out, the obstetric complications have appeared to parallel those of cocaine, with a reported increase in premature labour, foetal distress, intra-uterine growth retardation, placental abruption, and anaemia. Most studies have not found support for the hypothesis that amphetamines may cause congenital abnormalities in offspring. Whether there is any

longer-term effect on children exposed prenatally to amphetamines remains unclear (Kamieniecki et al. 1998).

The therapeutic value of amphetamine

42. Amphetamine was introduced as a nasal astringent under the brandname Benzedrine and sold in over-the-counter inhalers in the early 1930s. Therapeutic effects of amphetamine for the treatment of narcolepsy were also discovered at this time. The marketing of oral preparations of amphetamine sulphate began in the United States and United Kingdom, followed by Germany and other countries. Shortly afterwards, at the end of the 1930s, methamphetamine hydrochloride was placed on the market in Germany. During the following decade, both amphetamine and methamphetamine were sold under a variety of brand names in many countries (Yoshida 1997). The abuse of inhalers subsequently became a problem, especially in the United States, leading to their withdrawal and ban after the Second World War.
43. In addition to amphetamine's use as a medication for narcolepsy, it was also used for hyperkinesis in children, obesity and mild depression. Amphetamine was also tested as a possible therapy for a large range of other conditions, from epilepsy and schizophrenia to poliomyelitis and urticaria, Parkinsonism and alcoholism, dysmenorrhea and night blindness, albeit with less convincing results (WHO 1997).
44. Therapeutic benefits from amphetamine have been the subject of disagreement, and the use of amphetamines for most conditions is no longer recommended. However, narcolepsy and hyperkinetic syndromes in children have remained as indications for prescribing amphetamine in clinical practice (WHO 1997).
45. Narcolepsy is a sleep disorder that results in sleep attacks during daytime. It is incapacitating, and symptoms emerge mainly after mid-life. Prevalence is estimated at less than 0.1% of the population. Dexamphetamine and methylphenidate are prescribed for narcolepsy, and are partially effective (WHO 1997).
46. Hyperkinetic syndromes in children [Attention Deficit Hyperactivity Disorder – ADHD] are characterized by reduced attention span, irritability, distractibility, impulsivity, mostly on the basis of organic brain dysfunction. These syndromes typically develop in pre-school age children and may persist into adulthood. The substances most commonly prescribed for these conditions are amphetamine, methamphetamine, methylphenidate and pemoline. Rarely, amphetamine psychosis is observed in children receiving therapeutic doses of amphetamines (WHO 1997; NHMRC 1997).
47. Prescription of dexamphetamine for ADHD is an area of ongoing debate, with concerns relating to the administration of a drug of abuse to children, the increasing number of children being diagnosed with ADHD and prescribed stimulants, and the possible diversion of prescribed dexamphetamine to the illicit market (NHMRC 1997). The use of amphetamines in the treatment of

obesity, depression and to counter sedation caused by use of neuroleptic medication in psychiatric patients has also become more questionable (WHO 1997).

48. An emerging therapeutic application of dexamphetamine is in the substitution treatment of dependent, injecting users of amphetamines or cocaine. Substitution therapies aim to replace harmful drug use with safer modes of drug use in terms of dose, route of administration and adverse effects. Effective substitutes may allow patients to stabilise on doses that prevent withdrawal and drug craving, while reducing the harms associated with illicit drug use (Gowing et al. 2001). Initial studies of dexamphetamine substitution for amphetamine or cocaine dependence have shown promise in terms of retention in treatment and reduction in illicit drug use, without significant adverse effects including psychosis (Shearer et al. 2001; Shearer et al. 2003). However, the efficacy and safety of the approach has not been adequately tested by randomised controlled trials, and dexamphetamine substitution treatment is currently available only in the United Kingdom (Shearer and Gowing, in press). The potential significance of dexamphetamine substitution treatment lies in the fact that to date no pharmacotherapy has proven effective in the management of psychostimulant disorders.

The potential for amphetamine to cause death

49. Although amphetamine undoubtedly has the potential to cause death, it is difficult to identify with any certainty the number of deaths attributable to amphetamine use. Where amphetamine-related deaths have occurred, they are usually attributable to accidents, cerebrovascular haemorrhage, acute cardiac failure, and suicide. For example, of the 1816 methamphetamine-related deaths in the United States between 1992 and 1994, the manner of death was predominantly accidental (47%). Suicide was reported in 13% of the episodes. Approximately 90% of the total methamphetamine-related deaths involved the use of multiple drugs. Deaths have also occurred as a result of the combined use of amphetamines and monoamine oxidase inhibitors (Kamieniecki et al. 1998).
50. The most consistent pathologic finding at autopsy in cases of amphetamine overdose is cerebrovascular haemorrhage. In a limited number of cases there is evidence of left ventricular failure with pulmonary oedema. In these cases, it is often surmised that the drug induced a cardiac arrhythmia (ventricular fibrillation). Other less consistent findings have been noted, but it is unclear how many of these findings are coincidental and how many are related to other factors (WHO 1997).
51. The toxic dose of amphetamines varies widely; doses under 30mg rarely produce symptoms of overdose. Death has resulted from 120mg administered intravenously, but doses over 500mg have been survived by non-tolerant persons (WHO 1997).

The ability of amphetamine to cause physical or psychological dependence

52. Widely accepted criteria for the diagnosis of dependence include as key elements the loss of control over use, continued use despite awareness of problems caused or exacerbated by the using behaviour, and withdrawal symptoms on ceasing use. Many young people who have experimented with drug use do not become frequent users and many who become frequent users do not become dependent (Gowing et al. 2001). Nonetheless, an amphetamine dependence syndrome does clearly exist (Topp and Mattick 1997). Amphetamine dependence may be either physical or psychological (Topp and Darke 1997), and understanding of the phenomenon has been extended by several research studies and academic reviews in recent years (eg., Churchill 1991; Burrows et al. 1993; Hall and Hando 1994; Hall et al. 1996; Topp and Darke 1997).

International classification and experience

United Nations drug control conventions

53. As a state party to the 1971 United Nations Convention on Psychotropic Substances, New Zealand has an international treaty obligation to implement a control regime for the drugs that are listed in the schedules to the Convention. Amphetamine is listed as a Schedule II substance under the 1971 Convention.

Other countries' classification of MDMA

54. In the United States, amphetamine is a Schedule II substance under the Controlled Substances Act [the same classification as for methamphetamine and cocaine]; and in the United Kingdom, amphetamine is a Class B drug under the Misuse of Drugs Act. Amphetamine is also a tightly controlled drug in Australia. For example, in September 2001, amphetamine was upgraded in Queensland's Drugs Misuse Regulation 1987 from Schedule Two to Schedule One status. This raised the maximum penalty for serious offences such as trafficking to 25 years' imprisonment, reflecting the risk assessment of amphetamine as a drug threat in that state (see Queensland Crime and Misconduct Commission 2003).

RECOMMENDED PRESUMPTION FOR SUPPLY AND JUSTIFICATION

55. It is recommended that the EACD consider a presumption for supply of amphetamine be set at 5 grams or more of amphetamine, or 100 flakes, tablets, capsules or other drug forms, each containing some quantity of amphetamine.
56. Such a presumption is based on the fact that, for legal therapeutic use, the doses recommended for amphetamine use are only in the region of 5-10mg. Taking the upper level, 5 grams of pure amphetamine would thus be the equivalent of approximately 500 doses. As for other drug forms, intelligence indicates that illicit amphetamine users will commonly consume more than one tablet per session, sometimes up to five or more tablets over a 48-hour period. It follows that possession of 100 or more amphetamine tablets,

capsules or other drug forms would (as a rebuttable presumption) be far in excess of ranges for personal use.

57. Finally, it is noted that a presumption for supply of 5 grams or more of amphetamine, or 100 flakes, tablets, capsules or other drug forms, would be consistent with the presumption for supply which is already set for the chemically related phenethylamines MDMA and MDEA, and the parent compound MDA [2-amino-1-(3,4-methylenedioxyphenyl) propane] under section 6(6)(cb) of the Misuse of Drugs Act. Further, it would also align the presumption for supply of amphetamine with the levels agreed to by Ministers for the related substance methamphetamine.

OTHER RELEVANT INFORMATION

Drug substitution and possibility of impure drug combinations

58. The experience of Police Drug Squad detectives is that users will take whatever ATS drugs they can get, and often cannot visually tell the different ATS substances apart. Amphetamines sold illegally – be they tablets, powder, capsules, etc. – are often alike in appearance to methamphetamine, 'Ecstasy', and a range of other products. Indeed, the variability of tablets sold as 'E' was borne out by New Zealand testing of all Ecstasy seizures in 1999/2000, which found amphetamine, MDA, MDEA, methamphetamine, and ketamine in some samples (ESR 2000).
59. Some commentators have also emphasised the need to be aware of the risks of using amphetamines that are of impure quality, especially if the route of administration is injecting. For example, the Australian Drug Foundation (2002) advises: "Most amphetamines sold illegally contain a mixture of pure amphetamines and other substances such as sugar, glucose bicarbonate of soda and ephedrine. These additives can be highly poisonous. They can cause collapsed veins, tetanus, abscesses and damage to the heart, lungs, liver and brain. And because the user doesn't know whether they are using five per cent or 50 per cent pure amphetamines, it is easy to overdose by accident".

'Street drug' nature of amphetamine requires matching police powers

60. The fact that illicit drug users sometimes cannot visually tell different tablet, powder, or capsule forms of ATS drugs apart, also complicates the task of law enforcement agencies in tackling amphetamine-related offending. Like methamphetamine, MDMA/Ecstasy, and other ATS substances, amphetamine is a street drug that is commonly carried, used, and dealt/sold in a street, public place or club environment. Illegal transactions for sale/purchase can take place in a matter of moments, with the illicit drug rapidly secreted in a person's clothing, bag or vehicle. Consumption of the entire quantity of the drug by the user may take place quickly thereafter, and the drug dealer may fairly quickly move on to other locations. Because of these dynamics, it is important that officers have the ability to take decisive action to tackle amphetamine offending, where it is occurring. In most

cases, it is not viable to spend the hours required to obtain a search warrant to be able to investigate amphetamine offences when they are observed (eg., through covert surveillance).

61. Under section 18 of the Misuse of Drugs Act, however, police officers currently do not have the power to detain, search and seize without warrant, even when they have reasonable grounds for believing that an amphetamine-related offence is being or has been committed. The proposed reclassification of amphetamine from a Class B2 to a Class B1 controlled drug would address this perceived anomaly. Were this step taken, it would add to the investigative abilities of police officers in must-act-now situations, which would help to enhance enforcement of the offence provisions of the Misuse of Drugs Act, and thus further the *National Drug Policy's* goal of preventing the expansion of a hard drug market in New Zealand.
62. It is worth noting that the decisive police powers that would come with such a reclassification are used every day in other comparable jurisdictions for known/suspected amphetamine offences. In the United Kingdom, for instance, under the Police and Criminal Evidence Act, police officers can make use of on-the-spot search and seizure powers, so long as there is a general arrest power for offences involving the substance (which, in the New Zealand context, would cover all Class A, B and C controlled drugs in the Schedules of the Misuse of Drugs Act).

Organised crime links with the amphetamine market

63. Also relevant to the EACD's consideration of amphetamine is the fact that the market for the drug in New Zealand has been largely controlled by organised crime entities to date. The significant seizure incidents recorded from 2000 to 2002 are characterised almost exclusively by a New Zealand based syndicate of Eastern European nationals, with strong links to synthetic drug manufacturers and traffickers based in Eastern Europe. This syndicate recognised the growing market in New Zealand for methamphetamine, and sought to exploit this by resorting to a product with similar properties that was most readily available to them in Eastern Europe. Global risk assessments indicate that such trafficking routes are being increasingly exploited by transnational crime groups (see UN Office on Drugs and Crime 2003).
64. Added to the fact that amphetamine has been a significantly trafficked commodity in New Zealand, a small number of domestic clandestine drug laboratories have also been discovered that were either found (or suspected) to be making amphetamine.

Implications of increased ATS use for road safety

65. Finally, information has already been presented in this paper on the association between amphetamine use and road crashes [see paragraph 39 above]. However, the implications of increased amphetamine use within the general population, and what this might mean in terms of road safety, warrants some further brief discussion.

66. Although there is currently a lack of evidence from the New Zealand environment, relevant overseas studies suggest that use of ATS by drivers is not uncommon. For example, Poyser and colleagues (2002) reported that among their sample of traffic offence detainees in Australia, 4.5% tested positive to amphetamines alone, and 20.3% tested positive to amphetamines and another drug. Such polydrug use is highly likely to affect driver judgement and also the ability to safely operate a vehicle.
67. In a very recent review of the use of ATS drugs by offenders involved in high-speed pursuits with police, the Australasian Centre for Policing Research (2003) concluded that the use of amphetamines could:
- encourage risk taking (eg., make it more likely that offenders become involved in high speed pursuits);
 - make risk taking while being pursued more likely, because of feelings of grandiosity or invincibility;
 - mean that offenders' pupils cannot effectively adapt to changes in light intensity (such as the headlights of oncoming traffic at night);
 - in the case of high blood levels of the active drug, mean that the offenders are paranoid, hallucinating, suffering from other delusions, or potentially have life threatening medical conditions; or
 - make the offender feel fatigued, depressed or suicidal.
68. While not all amphetamine users drive while affected by them, researchers have also noted that it is possible that the reasons why individuals are attracted to using ATS (as opposed to other drugs) are the same reasons why individuals are drawn towards involvement in high-speed pursuits with police. These reasons include the need for excitement and the associated rush of adrenaline. It is not difficult to see how this need for excitement could also lead to 'baiting' police so as to experience the thrill of the chase (ACPR 2003).
69. Taken together, there is good reason to believe that ATS-related issues have broader significance to road safety than just people driving while incapacitated or impaired by amphetamines.

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