

A GUIDE TO SUBSTANCE MISUSE

For Medical Professionals



Health Service Executive South

*A Guide To Substance Misuse
For Medical Professionals
(Edition 1.2)*

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Introduction

During 2006 discussions between HSE South and General Practitioners highlighted the need for increased information and awareness around the use of illicit drugs. This issue was brought to the attention of the HSE South Regional Training and Accreditation Committee and in October 2006 they recommended that a poster around the use of cocaine should, be designed and disseminated to all the General Practitioners in the South Eastern Health Service Executive.

The availability of this poster, and the continuing dialogue with medical practitioners, highlighted the need for a practical and easy to read guide for the broad range of issues around substance abuse and drug related issues. This, in turn, led to the concept of designing a Medical Practitioners Manual on Substance Misuse and Drug Related Issues.

The manual, of which this is the first edition, is intended for all General Practitioners and medical professionals in the Southern Health Service Executive region. The manual's target is to highlight issues relating to alcohol and drug related concerns in an easily accessible quick reference manner.

This manual was designed in such a way as to include new information as it comes to hand and Substance Misuse Units in HSE South will feed in new information on an annual basis in order to update the pack. This will ensure that the Manual will remain relevant and up to date.

The Drug Education Officer in South Tipperary led on the design of the template of this manual and the Drug Education Officers in the South East were consulted and involved in the process throughout. This information is taken and referenced from a number of different sources and our thanks go to all who gave input and helped with this publication.

Manual Aim

This manual was designed in order to facilitate detailed information on Substance Misuse in the Southern Region.

The Objective of this manual is:

- To provide an easy access quick reference
- Substance Misuse related manual for all Medical Practitioners in the Southern Health Service Region
- To include relevant up to date drugs facts and information
- To provide a Directory of Services to all relevant services
- To provide a Mapping of Services relevant for all Medical Practitioners
- To provide an appropriate referral system for potential clients across the Southern region
- To create a system that can be added to over the following years as information around drugs changes.

We would like to thank and acknowledge those who reviewed this manual at different stages of its inception. They include:

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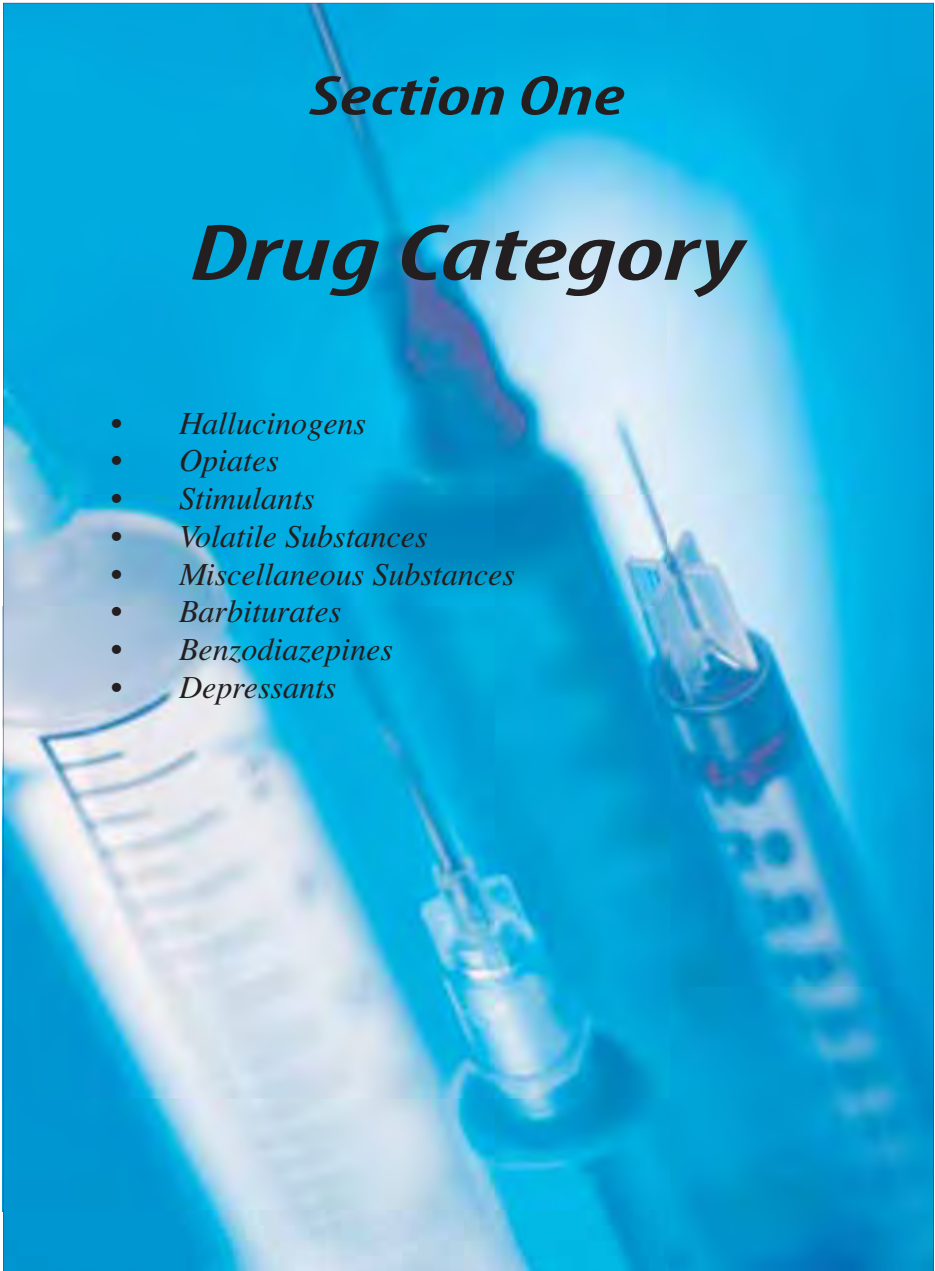
We would also like to give a special thanks to Eddie Matthews for his kind sponsorship of this project.

Tony Barden - Regional Drug Coordinator HSE South

Section One

Drug Category

- *Hallucinogens*
- *Opiates*
- *Stimulants*
- *Volatile Substances*
- *Miscellaneous Substances*
- *Barbiturates*
- *Benzodiazepines*
- *Depressants*



Hallucinogens

General information on Hallucinogens

This section includes information on LSD and other synthetic hallucinogens, hallucinogenic mushrooms and cannabis. The hallucinogenic amphetamines are included under stimulants, although they have both hallucinogenic and stimulant properties.



Cannabis joints (rolled) and Cannabis pipe

Drugs include:

DRUG NAME	STREET NAME
Amanita muscaria (Fly agaric)	Magic mushrooms, M&Ms
Cannabis	Pot, dope, blow, skunk
Lysergic acid diethylamide	LSD, Acid
Ketamine	Special K
Phencyclidine	PCP, Angel dust
Psilocybe semilanceata	Liberty cap, Magic mushrooms



Hallucinogens

Street Use

Cannabis is the most widely used illicit drug. Its use tends to be recreational in nature. Similarly, the use of LSD and magic mushrooms is normally associated with recreational use. Liberty Cap grows in the autumn, therefore its use tends to be seasonal, although the dried fungus can be stored.

Drug Effect

Heightened appreciation of sensory experiences, perceptual distortions, feelings of disassociation and elevation of mood.

Dependency

Minimal risk of physical dependence. All carry risk of psychological dependency.

Long-term Use

Apart from those linked to smoking (cannabis), there are no known physical dangers attributed to long-term use. Adverse psychological reactions are possible with LSD, PCP and liberty cap. In some cases, they can be severe and long-lasting. Mushroom poisoning is also possible.

Overdose Risk

Overdose risk is small. However, with ketamine, inhalation of vomit may be a risk when doses sufficient to induce anaesthesia are taken.



Cannabis Sativa (Herbal form of Cannabis)



LSD is often added to absorbent paper, such as blotter paper, and divided into small decorated squares, with each square representing one dose.

Hallucinogens

Amanita Muscaria (Fly agaric)

Street Name

Magic mushrooms

Drug Effect

Hallucinogen

Description

A red mushroom, about 10-12cm high, with white spots. The psycho-active drugs are muscarine, atropine and bufotenine.

Method of Use

Usually cooked and eaten or boiled in water to make a "tea". Mushrooms can also be dried for storage.

Dependency

No

Withdrawal

Effects which include sweating, nausea, reduced heart rate and hallucinations begin within 30-40 minutes and usually last between four and eight hours. Aggressive mood changes have also been reported.

Long-term Use

Little is known about the long-term use of fly agaric.

Overdose Risk

Fly agaric mushrooms are very toxic. Heart failure is the most common cause of death.



Hallucinogens

Cannabis (Tetra-hydrocannabinol)

Street Name

Blow, draw, pot, dope, grass, black, hash

Drug Effect

Naturally occurring hallucinogen from the plant cannabis sativa

Street Form

Cannabis resin/hashish - most commonly used form is small blocks/lumps of brown resinous material. Marijuana/herbal cannabis - preparation resembles dried grass or leaves. Cannabis oil - strongest preparation, brown to black coloured thick oil.

Method of Use

Smoked, eaten

Dependency

Yes (probably psychological)

Withdrawal

If smoked, effects last for up to three hours. If eaten, the drug is absorbed more slowly and effects may last for 24 hours. No physical withdrawal symptoms reported but heavy users may experience restlessness and depression.

Long-term Use

Respiratory problems associated with smoking. Psychological disturbance with heavy use (rare).

Overdose Risk

Very unlikely, although vomiting is common when taken for the first time.



Cannabis (Tetra-hydrocannabinol)

Cannabis can have the effect of a depressant or mild hallucinogen, depending on the amount taken and situational factors.

Cannabis short-term effects

The immediate effects of low doses may include:

- tendency to laugh easily;
- becoming talkative;
- Loss of concentration
- Impaired balance
- Slower reflexes
- Increased appetite
- Increased heart rate
- Feeling of wellbeing
- Loss of inhibitions
- more relaxed behaviour; reddening of eyes; dry mouth; hunger.

If the drug is smoked, it produces a distinctive sweet smell.



Higher doses:

- Confusion and anxiety
- Restlessness
- Detachment from reality
- Hallucinations
- Paranoia
- Panic attacks

Cannabis can also affect:

- Short-term memory
- Logical thinking
- Motor skills (movement skills)
- Ability to perform complex tasks

These symptoms usually disappear when the effects of cannabis wear off.



Hallucinogens

Ketamine

Street Name

K, special K

Drug Effect

An anaesthetic with analgesic (pain killing) and hallucinogenic properties.

Brand Name

Ketalar (Parke-Davis)

Street Form

Clear liquid, White powder



Ketamine in 10 mL Vial Bottle

Therapeutic Use

Used as an anaesthetic, most commonly in emergency surgery.

Method of use

By mouth, sniffing, smoking or by injection.

Dependency

Yes (psychological)

Withdrawal

Ketamine takes between 30 seconds and 20 minutes to take effect, depending on how it is administered. Drug effects, which include a cocaine-like “rush”, loss of muscular coordination and LSD-like hallucinations, last between one to three hours but for considerably shorter periods among heavy users. There are no physical withdrawal symptoms but heavy users report a strong psychological dependence.

Long-term Use

Information on the long-term use of ketamine is limited. LSD-like “flashbacks” have been reported, together with loss of appetite and weight loss. There may also be a potential for the development of psychiatric problems following heavy use.

Overdose Risk

Few deaths have been reported. However, as with any anaesthetic, inhalation of vomit (after eating) is a serious risk if doses sufficient to induce anaesthesia are taken.

What is ketamine?

Ketamine is a “dissociative anaesthetic” which means it detaches the mind from the body. It’s used as a Horse Tranquillizer and is related to the veterinary anaesthetic PCP, also known as angel dust.

The Ketamine Effect

There’s an initial rush, similar to the cocaine rush, that may happen within 30 seconds if the drug is injected, or 20-30 minutes if swallowed. Then it’s rapidly downhill for about the next three hours. The body is numb and paralysed. There may be sickness and vomiting. Co-ordination goes and the simplest tasks are impossible. There’s feeling of being weightless and of being separated from the body. Terrifying hallucinations can occur; limbs feel as though they’re growing and shrinking; there’s tunnel vision and faces look grossly distorted. The hallucinations seem as if they’ll never stop and there’s a feeling of being close to death.

- Ketamine is not a dance drug and taking it in a club is a bad idea.
- The noisy, disorientating environment will worsen the bad effects of ketamine.
- It should never be taken on the spur of the moment.
- Ketamine should not be mixed with any other drugs.
- Ketamine and speed, ketamine and acid and ketamine and alcohol are all recipes for disaster.

Ketamine and Ecstasy

Be aware. Ketamine is one of the drugs most often “cut” with MDMA in ecstasy pills. People sometimes say they’ve had a “smacky” E, meaning it made them feel sedated, instead of euphoric and energetic. Worse still, ketamine pills are sometimes sold as ecstasy so be careful. Ketamine has anything but the effect of the E, and can be terrifying for someone who isn’t prepared for it.

A brief history of Ketamine

Ketamine was first synthesized in 1962 by Calvin Stevens at Parke Davis Labs while searching for PCP anaesthetic replacements. He named it “CI581”. In 1965 Ketamine was discovered to be a useful anaesthetic and was first used recreationally by Edward Domino who coined the term “dissociative anaesthetic”.

Ketamine was used for anaesthesia because it suppresses breathing much less than most other available anaesthetics, but in the 1970’s patients began to report unwanted visions while under its influence. In 1978, John Lilly published his book “The Scientist” and Ketamine popularity grew through the 1980’s until in 1995 the DEA in the United States added Ketamine to its “emerging drugs list”.

In 1998 & 1999, Ketamine was lumped by media and legislators with GHB as a ‘date rape drug’ and a ‘club drug’ and was emergency scheduled by the DEA on August 12, 1999.

Hallucinogens

LSD (Lysergic Acid Diethylamide)

Street Name

Acid, acid-tabs, trips, trade names e.g.: Strawberries

Drug Effect

Hallucinogen

Street form

Considerable local variation: paper squares, microdots, tablets

Method of Use

By mouth

Dependency

No evidence of physical dependency

Withdrawal

Trips begin up to one hour after dose and last for two to 12 hours depending on strength. Tolerance develops quickly after 3-4 days so that further doses are ineffective. No physical/psychological withdrawal symptoms reported.

Long-term Use

Flashbacks (re-experiencing previous trip) common. Temporary psychological disturbance with heavy use.

Overdose risk

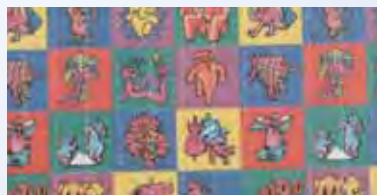
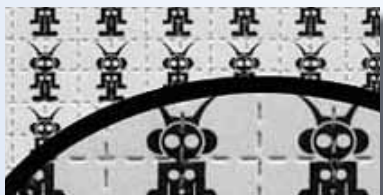
Only one recorded overdose death worldwide, although suicides and accidental deaths also reported.

Effects can vary depending on the nature of the experience. They include:

- relaxed behaviour & agitated behaviour.
- dilation of pupils & uncoordinated movements.



Sample of LSD printed onto Blotting Paper



Hallucinogens

Psilocybe semilanceata (Liberty cap)

Street Name

Magic mushrooms, mushies

Drug Effect

Hallucinogen. The mushroom effect is described as a 'trip' and may last up to 4-6 hours. It can be a powerful experience which may produce a distortion of normal perception similar to an LSD effect.

Description

Light brown mushroom about 6-8cm high containing psilocybin.



Method of Use

Usually cooked and eaten or boiled in water to make a "tea". Mushrooms can also be dried for storage.

Dependency

No

Withdrawal

Effects which include euphoria and hallucinations begin within 20-40 minutes and usually last between four and eight hours. Sleep often follows use. No withdrawal symptoms have been noted.

Long-term Use

Psilocybin can cause impaired cognitive functioning and poor performance on attention tests. However, no adverse long-term effects have been reported.

Overdose Risk

Liberty caps are not very toxic and so the overdose risk is low. Amounts of mushrooms used vary from one or two mushrooms to 20 or more. However, there is a risk of mistakingly taking a more poisonous mushroom or fungus.



Opiates

General information on Opiates

Opiates can be divided into two groups: the naturally occurring opiates, like heroin and morphine, which are derived from the opium poppy, and the synthetic opiates like methadone and dipipanone.

Drugs include:

DRUG NAME	BRAND/COMMON NAME	STREET NAME	THERAPEUTIC DOSE RANGE
Codeine	Actifed, Phensedyl, Codeine, Linctus Codis		
Buprenorphine	Temgesic	Tems	0.6-1.6mg
Dextropropoxyphene	Distalgesic Co-proxamol		
Dextromoramide	Palfium	Palf, peach	5-10mg
Diamorphine	Heroin	Smack, H	
Dihydrocodeine	DF118	DFs, diffs	120-180mg
Dipipanone	Diconal	Dikies	30mg
Methadone	Physeptone	Meth, phy	15-40mg
Morphine	MST Continus, Kaolin and Morphine Cyclimorph		
Opium	Gees Linctus		
Nubain	Nalbuphine hydrochloride		1 ml vial

Opiates

Street Use

Opiates can be smoked, sniffed, inhaled or injected depending on the drug and preparation.

Drug Effect

Opiates are used for their analgesic (painkilling) properties. They also reduce breathing rate, heart rate, hunger and anxiety. These effects, combined with an increase in blood flow to the skin, gives the warm, contented and sometimes euphoric feeling that is often reported. First time users may vomit but this stops with repeated use. At low doses, opiates do not interfere with physical coordination or mental alertness. After high doses, opiates produce a stupor (gauching).



Dependence

Tolerance to opiates develops very quickly and after a few weeks of regular use, doses must be increased to produce the same effect. Dependence takes longer to develop, but after taking opiates regularly for some months, there are physical withdrawal symptoms. The speed with which dependence develops and the severity of withdrawal symptoms experienced depends upon the quantity and type of drug taken, the method of administration and, to some extent, the expectations of the user. Withdrawal usually begins eight to 48 hours after the last dose of drug, peaks after three to five days and then fades after five to 14 days. Withdrawal from opiates can be unpleasant and uncomfortable. Symptoms are similar to a bad bout of flu and include sweating, stomach cramps, muscular pain, running nose and diarrhoea. Most symptoms fade fairly quickly but sleeplessness and feelings of weakness may continue for some months.

Long-term Use

The physical effects of long-term opiate use are not often serious in themselves. Common side effects include constipation, irregular periods (menstrual cycle) and weight loss. However, the use of unsterile equipment and the injecting of adulterated heroin, crushed tablets or the contents of capsules, can lead to more serious problems, including abscesses, vein collapse, loss of limbs, hepatitis B and C and HIV infection.

Overdose Risk

Deaths from opiate overdoses are relatively rare, although the intravenous use of Diconal is particularly dangerous. The risk increases after a period of abstinence or when opiates are mixed with other drugs such as cocaine, barbiturates or alcohol.

Risks in Pregnancy

Many women do not have periods (menstrual cycle) when they are using opiates regularly but as soon as they cut down or stop, their periods return. Many female drug users become pregnant at this time. There is no evidence that opiates cause birth defects although they may possibly increase the risk of miscarriage and still births. However, opiate use should not be stopped suddenly because this also increases the risk of miscarriage or premature labour. Gradual withdrawal over 12 weeks may be advised. Babies born to mothers who continue to use throughout the pregnancy show withdrawal symptoms within three days of birth (possibly longer if the mother has been using methadone). Symptoms include excessive restlessness, shrill crying, sleeplessness, constant sucking, diarrhoea, yawning and sneezing. In severe cases, babies may suffer convulsions which can be fatal.

Opiates - Heroin

Heroin acts as a depressant.

Short-Term Effect

- slowing down of breathing and heart rate
- suppression of cough reflex
- increase in size of certain blood vessels
- itchy skin & runny nose.
- lowering of body temperature
- sweating
- One-to-two minute “rush”
- Warm flushing of the skin
- Dry mouth
- Heavy feeling in arms and legs
- Nausea & Vomiting
- Severe itching
- Drowsiness and confusion for up to six hours
- Slowed heart rate & slowed breathing rate

Heroin’s many physical dangers include:

- Painful Withdrawal that Maintains Addiction
- Restlessness
- Muscle and bone pain
- Muscle spasms
- Insomnia
- Diarrhea and vomiting
- Chills and goose bumps
- Intense anxiety

Cardiovascular Damage

- Endocarditis - Heart infection
- Scarred and/or collapsed veins
- Blood vessels clogged by foreign particles, causing cell death

Infections and Viruses

- Boils and abscesses
- Soft-tissue infections
- HIV/AIDS
- Hepatitis B and C
- Systemic infections (bacteremia or sepsis)

Other Organ Damage and Disease

- Liver disease
- Kidney disease
- Arthritis

Danger During Pregnancy

- Miscarriage, premature delivery, or stillbirth of pregnancies.
- Addicted newborns greater risk of Sudden Infant Death Syndrome (“cot death”)



Heroin powder



Heroin powder (Asian)

Opiates - Methadone

Street Name

Meth, phy

Brand name

Pinadone DTF and Physeptone (Calmic)

Drug effect

Painkiller and depressant ("downer").

Description

White scored tablet marked Welcome (5mg)

1ml ampoules (10mg/ml)

Mixture (1mg/1ml)

Linctus

Therapeutic use

Severe pain and opiate dependence

Method of use

By mouth or injecting crushed tablets, linctus or ampoule

Dependency

Yes

Withdrawal

The effects of methadone last up to 24 hours, which is longer than heroin. Withdrawal symptoms are slower to develop but last longer. Flu-like symptoms appear up to two days after last dose, peak after five to six days and fade after 14 days. Sleeplessness may last for longer. It has been suggested that withdrawal is more difficult than from heroin.

Long-term use

Constipation; breathing difficulties; irregular periods (menstrual cycle).

If injected:

- infection risk and circulatory problems

Depresses effects of other opiates.

Overdose risk

Deaths from the use of methadone alone are relatively infrequent. However, the overdose risk increases after a period of abstinence or if methadone is mixed with other drugs such as benzodiazepines or alcohol.



Stimulants

General information on Stimulants

The most commonly used stimulants are amphetamines and cocaine. Cocaine is derived from the leaf of the coca plant (*Erythroxylum Coca*) and amphetamines are manufactured both legally and illegally. Most recently, the recreational use of Ecstasy has become common, particularly among young people who follow the club scene.

Drugs include:

DRUG NAME	STREET NAME
Amphetamine sulphate	Speed
Cocaine hydrochloride	Cocaine
Catha edulis-khat	Khat
Dexamphetamine sulphate	Dexedrine
Methamphetamine	Methamphetamine/crystal meth/meth/ice
Methylenedioxymethamphetamine	Ecstasy



Stimulants (continued)

Ecstasy Tablets



Street Use

Stimulants can be swallowed, sniffed or injected. Amphetamine sulphate can also be smoked and cocaine freebase, heated and inhaled. Ecstasy is usually taken by mouth.

Drug Effect

Stimulants increase cerebral activity, causing excitement and euphoria. They also dilate the pupils of the eye, increase heart rate and blood pressure, cause sleeplessness and anorexia (loss of appetite). Cocaine is a powerful local anaesthetic but amphetamines are not. Low to moderate doses of stimulants do not disrupt thinking but users may experience mood swings. High doses, on the other hand, can cause thought disorder and a drug induced psychosis resembling paranoid schizophrenia is not uncommon. Their use may also cause hallucinations and paranoid thinking.

Dependence

Tolerance develops quickly with amphetamines, provoking massive increases in doses. Tolerance to cocaine tends to be much less marked, although tolerance to the euphoric effects of "freebase" has been noted, causing increasing frequency of use. Dependence on stimulants is said to be more psychological than physical although recent evidence suggests possible long-term changes to the nervous system. Withdrawal is characterised by hunger, fatigue, periods of fitful sleep, increase in dreaming and depression. In some individuals, depression can be prolonged and severe.

Long-term Use

Prolonged use of stimulants can lead to weight loss, insomnia, exhaustion and mental confusion, severe depression and drug-induced psychosis (usually resolved after drug taking is stopped).

Overdose Risk

Death from drug overdoses is more common with cocaine than with amphetamines and often results from respiratory failure. Individuals with high blood pressure or a heart condition are at risk when using stimulants because extra stress is placed on the cardio-vascular system.

Risks in Pregnancy

Stimulants can cause congenital abnormalities, miscarriage, premature labour and smaller than average babies. Drug use should be stopped immediately, without any drug substitution, because of risk to the baby. Babies born to mothers who continue to take stimulants during pregnancy show a withdrawal syndrome. Withdrawal among newborn babies is characterised by shrill crying, irritability and repeated sneezing.

Stimulants (continued)

Stimulant drugs (amphetamines, butyl nitrite, cocaine)

These Drugs can cause:

- increased pulse rate.
- increased blood pressure.
- agitation.
- lack of coherent speech or talkativeness.
- dilated pupils.
- loss of appetite.
- damage to nasal passages (tendency to sniff).
- increased tendency to go to the toilet.
- mouth ulcers; fatigue after use.



Dexedrine Capsules

Short-Term Effects of Cocaine Use

- Talkativeness and sociability.
- Extreme mental alertness.
- Nervousness and jumpiness.
- Anxiety, especially about being caught using.
- Irritability.
- Paranoia.
- Diminished decision-making ability.
- Insomnia.
- Tremors and dizziness.
- Muscle twitches and spasms.
- Lost self-control.
- Violent behaviour.
- Dry mouth.
- Constricted blood vessels.
- Dilated pupils.
- Decreased appetite.
- Abdominal pain and nausea.
- Blurred vision.
- Fever.
- Increased heart rate and blood pressure.
- Impotence combined with excessive interest in sex.



Butyl Nitrite (Poppers)



Cocaine Powder

Long-Term Effects of Cocaine Use

There is no safe way to use cocaine! The health risks become much worse when combined with alcohol or other drugs. Alcohol and cocaine combined produce cocaethylene, which intensifies cocaine's effects and may increase the risk of sudden death. Cocaine's many dangers include:

Neurological Effects

- Headaches.
- Convulsions.
- Seizures.
- Coma.

Heart Disease

- Altered heart rhythm.
- Chest pain.
- Very high or very low blood pressure.
- Heart attack.
- Endocarditis -- Heart infection.
- Stroke.
- Sudden death.

Lung Damage and Disease

- Difficulty breathing.
- Chronic bronchitis.
- Ruptured lung structures.
- Collapsed lung.
- Respiratory failure.

Psychological Damage

- Irritability and mood disturbances.
- Auditory hallucinations (imaginary sounds that seem real).
- Formication - The sensation that insects are crawling under the skin.

Reproductive System Damage

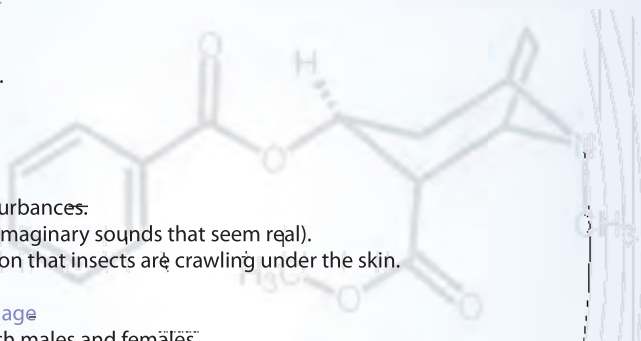
- Sexual dysfunction in both males and females.
- Menstrual cycle disturbances.
- Infertility in both males and females.

Danger During Pregnancy

- Miscarriage, premature delivery, or stillbirth of pregnancies.
- Addicted newborns.
- Low birth weight, smaller head size, and shorter length in newborns.
- Deformities in newborns of addicted mothers or addicted fathers.

Other Damage

- Burns in mouth and on hands from smoking.
- "Tracks" - puncture marks on arms or wherever injections are made.
- Infections and sores associated with injection tracks.
- Incontinence (inability to control urination and/or bowel movements).
- Allergic reactions to cocaine or the additives in street drugs.
- Brain infections - both bacterial and fungal, sometimes leading to abscesses.
- Weight loss and malnourishment due to decreased appetite for food.
- Gangrene (rot) of bowels and other body parts from lack of blood flow.
- More risk-taking behaviour, including unsafe sex.
- Increased risk of HIV/AIDS and hepatitis, either from unsafe sex or using infected needles.



Stimulants

Amphetamine Sulphate

Street Name

Sulphate, sulph, whizz, speed, billy

Drug Effect

Strong stimulant ("upper")

Street form

White/yellow crystalline powder, usually sold in "wraps"

Method of Use

Eaten, sniffed or injected

Dependency

Yes (mainly psychological)

Withdrawal

Tolerance to amphetamine sulphate develops rapidly and users can increase dose up to 50-fold. Effects of amphetamine sulphate last for three to four hours. Withdrawal from this drug is divided into two phases. The immediate "crash" or rebound lasts two to three weeks and is characterised by hunger, extreme fatigue and long periods of disturbed sleep. In the second phase, heavy users become irritable and depressed (sometimes severely). The second phase can last weeks and sometimes months.

Long-term Use

Excessive restlessness and insomnia; weight loss; amphetamine psychosis (hallucinations and paranoid thinking). If injected: infection risk circulatory problems.

Overdose risk

Death from overdose is possible with large doses, but rare. Overdose risk increases if amphetamine is mixed with drugs such as heroin or depressants like barbiturates or alcohol.



Amphetamine Sulphate Wraps

Amphetamine Sulphate Powder



Amphetamines

Amphetamines are nicknamed “speed” or “uppers” because of the burst of energy they provide. Abusers do not feel the need to sleep or eat when they are using. Some users also experience euphoria, a sense of well-being, and self-confidence. Users are usually talkative, and may be aggressive and paranoid, even at an early stage of use. The desirable effects of amphetamines are not without a price. Users shortly build tolerance and dependence – addiction. Soon they need amphetamines to get through an ordinary day. In the meantime, the drugs do serious psychological and physical damage.

Short-term Effects

Amphetamines can be extremely dangerous or fatal from the first use. Users may die from burst blood vessels in the brain, heart failure, or super-elevated body temperature.

Common short-term effects include:

- Dry mouth and/or Headache.
- Dilated pupils.
- Insomnia.
- Dry, itchy skin.
- Acne, sores.
- Dizziness and blurry vision.
- Loss of coordination.
- Uncontrollable movements (twitching, jerking, tremors, etc.)
- Fever, flushing, and sweating.
- Diarrhoea or constipation.
- Numbness.
- Impaired speech.
- Increased heart rate.
- Rapid breathing rate.

Overdose

Amphetamine overdose is fairly common, which is probably due to abusers’ ever increasing need for more and more of the drug (tolerance.) Abusers try to overcome their tolerance by escalating their use, they overdo it, and they overdose. Amphetamine overdose is often fatal.

Symptoms include:

- Chills, fever, and sweating.
- Muscle spasms, including severely exaggerated arching of the back.
- Convulsions.
- Lack of urine output.
- Difficulty breathing.
- Dilated pupils and blurred vision.
- Blue lips and fingernails.
- Nausea and/or vomiting.
- Elevated blood pressure, followed by a dramatic drop in blood pressure.
- Irregular heartbeat.
- Chest pain.
- Nervousness, irritability.
- Restlessness and/or Aggressive behaviour.
- Coma.

Amphetamines (continued)

Long-term Effects

Amphetamines cause a wide variety of potentially fatal damage to users' mental and physical health. One of the most troubling effects of amphetamine abuse is the addiction itself, which can be life-altering. Withdrawal causes painful side effects as well.

Addiction

- Amphetamine psychosis (see below)
- Craving
- Tolerance dependence

Withdrawal

- Craving
- Exhaustion
- Depression
- Mental confusion
- Restlessness and insomnia
- Deep and disturbed sleep lasting up to 48 hours
- Extreme hunger
- Psychosis
- Intense anxiety

Other serious, long-term damage caused by amphetamine abuse includes:

- Gastrointestinal/nutritional damage
- Malnutrition
- Ulcers
- Unwanted weight loss
- Heart disease, rapid heart rate, dangerously high blood pressure
- Cardiomyopathy (enlarged and/or weakened heart), heart attack
- Neurological damage: permanent brain damage, disturbed thought processes, speech difficulties, confusion, memory loss
- Psychological damage: hallucinations, deep depression, hypochondria (the false belief that one is physically ill), delusions of power or fame, antisocial behaviour, stereotypic behaviours (odd repetitive movements or habits)
- Psychosis: paranoia, bizarre and violent behaviour
- Danger to newborns of women who use during pregnancy (addiction and withdrawal, cardiac defects, cleft palate, other physical abnormalities)
- Developmental delays (neurological damage not detectable at birth)
- Other damage: liver damage, impotence



Amphetamine Tablets

Stimulants

Cocaine hydrochloride (cocaine/cocaine freebase)

Street Name

Coke, snow, crack, freebase, rock

Drug Effect

Strong stimulant ("upper"), local anaesthetic

Description

Cocaine - white powder

Cocaine freebase - small white chips



Powdered Cocaine in plastic wrap

Therapeutic use

As local anaesthetic for eyes, ears and nose (rarely used)

Method of use

Cocaine hydrochloride - sniffed/injected, rubbed on mucous membrane, eaten, anecdotal evidence of cocaine being placed under eyelids, and administered through anal passage.

Cocaine freebase - heated and inhaled

Dependency

Yes (mainly psychological)

Withdrawal

Effects of cocaine last for 15 to 30 minutes. Effects of freebase/crack last for only five to ten minutes. No physical withdrawal symptoms but after the "high", users experience a "crash" or rebound dysphoria when they feel extremely tired and depressed.

Long-term use

Excessive restlessness and insomnia; weight loss; increase in blood pressure; paranoid psychosis. If sniffed: damage to nasal membrane, damage to septum between nostrils.

If injected: circulatory problems and/or infection risk.

If inhaled: respiratory problems and lung damage.

Overdose risk

High doses can result in an increase in body temperature, extreme agitation, convulsions and respiratory arrest. Overdose risk increases if cocaine is mixed with other drugs such as heroin or depressants like barbiturates and alcohol.

Recent anecdotal information suggests that 'synthetic' home made cocaine is being circulated. Nasal apparatus such as rolled up bank notes and straws can spread viral infections, e.g. Hepatitis.

Stimulants

Crack Cocaine

What does it look like? How is crack abused?

Crack typically is available as rocks. Crack rocks are white (or off-white) and vary in size and shape. Crack is nearly always smoked. Smoking crack cocaine delivers large quantities of the drug to the lungs, producing an immediate and intense euphoric effect.



What is crack cocaine? How is it produced?

Crack cocaine is a highly addictive and powerful stimulant that is derived from powdered cocaine using a simple conversion process. Crack emerged as a drug of abuse in the mid-1980s. It is abused because it produces an immediate high and because it is easy and inexpensive to produce—rendering it readily available and affordable. Crack is produced by dissolving powdered cocaine in a mixture of water and ammonia or sodium bicarbonate (baking soda). The mixture is boiled until a solid substance forms. The solid is removed from the liquid, dried, and then broken into the chunks (rocks) that are sold as crack cocaine.

What are the risks?

Cocaine, in any form, is a powerful, psychologically addictive drug, and addiction seems to develop more quickly when the drug is smoked—as crack is—than snorted—as powdered cocaine typically is. In addition to the usual risks associated with cocaine use (constricted blood vessels; increased temperature, heart rate, and blood pressure; and risk of cardiac arrest and seizure), crack users may experience acute respiratory problems, including coughing, shortness of breath, and lung trauma and bleeding. Crack cocaine smoking also can cause aggressive and paranoid behaviour.



Crack Cocaine



Street dose of Crack Cocaine

Stimulants

Dexamphetamine sulphate (Dexedrine)

Street name

Dexies

Brand name

Dexedrine (Evans)

Drug effect

Strong stimulant (“upper”)

Description

White scored tablet (5mg) marked DB5

Therapeutic use

Narcolepsy (uncontrolled sleeping) and hyperactivity in children

Method of use

By mouth or injected

Dependency

Yes (mainly psychological)

Withdrawal

Tolerance to Dexedrine develops rapidly and users can use up to 50 times the therapeutic dose. Effects last for three to four hours. Withdrawal is divided into two phases. The immediate “crash” or rebound lasts for two to three weeks and is characterised by hunger, extreme fatigue and long periods of fitful sleep. In the second phase, heavy users become irritable and depressed (sometimes severely). The second phase can last weeks and sometimes months.

Long-term use

Excessive restlessness and insomnia; weight loss; psychosis (hallucinations and paranoid thinking).

If injected:

- circulatory problems
- infection risk

Overdose risk

Death from overdose is possible with large doses, but rare. Overdose risk increases if Dexedrine is mixed with other depressant drugs such as opiates, barbiturates or alcohol.



Stimulants

Catha edulis-khat **(contains cathinone and cathine)**

Street name

Khat, chat, qat, quaadka

Drug effect

Khat is a mild stimulant. Users often report a calming effect.

Description

Green leafy plant cultivated throughout Africa.

Therapeutic use

Khat is used socially in many African countries in much the same way as coffee is used in Western culture.

Method of use

Chewing leaves or drinking infusion of leaves (like tea). Use has been linked in Scotland to the dance/rave scene.

Dependency

There is no record of dependency, though it would be reasonable to expect similar psychological dependency exhibited by other stimulant users.

Withdrawal

There is no recorded withdrawal syndrome. It would be reasonable to expect listlessness and tiredness experienced by other stimulant users.

Long-term use

Khat is normally chewed and this can cause medical problems associated with the oral cavity and digestive tract, leading to inflammation and secondary infections. There is evidence that excessive khat use can cause psychological problems such as depression and anxiety leading to drug-induced psychosis. There have been some reports of poisonings of khat chewers as a result of the inappropriate use of fertilisers used in farming. There is also some evidence of increased risk of oral cancer.

Overdose risk

There is no known record of khat resulting in overdose, although it would be likely to act with other stimulants causing palpitations and agitation.



Khat leaves (Dried)



Stimulants

Crystal Methamphetamine

Methamphetamine was first synthesized in 1887, but went unnoticed until it became the alternative to ephedrine, a drug commonly used to treat asthma. Medically produced amphetamines (including methamphetamine) were used in Japan, Britain, Germany and the US during the Second World War to enable soldiers to stay awake, alert and compulsively focussed. Methamphetamine use and its spread is of concern in several countries, particularly in South East Asia (Thailand and Japan), the USA, Australia and the Czech Republic. It is relatively uncommon in Ireland presently, although the drug's widespread use abroad and its appearance on the dance scene have led to fears of it becoming more popular. The drug is relatively cheap and easy to manufacture although methods may involve inflammable chemicals and the release of toxic fumes. The chemicals needed to manufacture the drug (e.g., ephedrine, red phosphorous and iodine) are readily available.



Street name

The drug is also known by the street names of 'crystal meth', 'crank', 'tina' or 'ice'. Its euphoric effects are similar to but more intense and longer lasting than those of cocaine.

Drug effect

Methamphetamine is a central nervous system stimulant with a high potential for misuse and dependence. A synthetic drug, it is closely related chemically to amphetamine ('speed') but produces greater effects on the central nervous system. The drug alters mood in different ways, depending on how it is taken. Immediately after smoking or injecting the user experiences an intense rush similar to that produced by crack cocaine but longer lasting. Even small amounts of methamphetamine can produce euphoria, arousal, wakefulness, increased physical activity, decreased appetite and increased respiration. Common side effects include nausea, panic attacks, compulsive repetitive behaviour and jaw clenching.

Description

Methamphetamine takes the form of a white odourless and bitter tasting crystalline powder, readily soluble in water or alcohol, and can also be produced in tablet or powder form. It can be smoked, injected, snorted or consumed orally.

Dependency

Regular use of methamphetamine can lead to dependency, with increased tolerance to the effects of the drug and physical and psychological withdrawal symptoms.

Stimulants

Crystal Methamphetamine(continued)

Withdrawal

Withdrawal symptoms can include depression, anxiety and craving for the drug. Some studies have linked reduced motor skills with methamphetamine use, which may be indicative of a predisposition towards Parkinson's disease for users of the drug.

Long-term use

Effects can last between 4 and 12 hours, depending on the route of administration, which equates to between four and twelve times the duration of cocaine's effects. It can cause psychiatric problems with symptoms resembling those associated with paranoid schizophrenia, such as paranoia and hallucinations. Methamphetamine induced psychosis can result in homicidal or suicidal thoughts. It is also associated with violent and aggressive behaviour and with acquisitive crime.

Drug users who inject the drug are at risk of infection from HIV, hepatitis C and hepatitis B if they share needles and other injecting paraphernalia. Increased sexual arousal and loss of inhibition increase the likelihood of unsafe sexual practices. Heavy and regular users of the drug may suffer tooth loss and decay, a condition known as 'meth mouth'.



Stimulants

Methylamphetamine (methedrine)

Drug effect

Has a very strong and long-lived stimulant effect

Description

White/yellow/pink crystalline powder, clear liquid, ampoules (meth). Small whitish chips (ice). Most methylamphetamine is illicitly manufactured and, as such, is of questionable quality.

Therapeutic use

Methedrine is no longer available on prescription.

Method of use

Smoked or injected

Dependency

Yes, though mainly psychological

Withdrawal

Tolerance to methylamphetamine develops quickly. The effects last from three to four hours. Like amphetamine sulphate, withdrawal is in two phases. Firstly, the “crash” or “come down”, which produces tiredness and depression. In the second phase, users can become irritable and severely depressed. This will last for three to four weeks and in some cases, can last for months.

Long-term use

Prolonged use of methylamphetamine can lead to severe weight loss, insomnia, exhaustion, paranoid psychosis (this is generally drug-induced and as such will be resolved within a few weeks after drug taking has stopped) and severe depression. Smoking “ice” over long periods causes severe psychotic episodes with both visual and auditory hallucinations, presenting not unlike schizophrenia.

Overdose Risk

Overdose is not so common with methylamphetamine, but when it does occur, it can result in heart and/or respiratory failure. Users who exhibit a predisposition for a heart condition are at risk due to excess stress placed on the cardiovascular system.

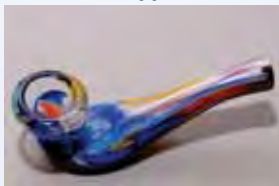


Meth powder

'Meth-Mouth' - a common side effect



Meth pipe



Meth use



Stimulants

Methylenedioxymethamphetamine (MDMA)(Ecstasy)

Drug effect

Has a very strong and long-lived stimulant effect

Street name

Ecstasy, E, Eddy, adam XTC, Dennis the Menace. Sometimes known by “brand names” such as “doves”, “speckled doves”, “new yorkers” or “mercedes”, though these names frequently change as the logos change.

Drug effect

Stimulant with mild psychedelic effect. Possible hallucinogenic effect, particularly in high doses.

Description

Off-white or occasionally coloured tablets
Clear or coloured capsules
White powder (rare)

Method of use

Particularly associated with the dance music scene. Usually taken by mouth.

Dependency

Psychological

Withdrawal

Tolerance to Ecstasy develops with time, but not as rapidly as cocaine or amphetamine. Drug effects begin within 20-60 minutes after use. There is no evidence of physical withdrawal, although after-effects of the drug can include fatigue, depression and anxiety. “Flashbacks” following repeated use over several days have been reported.

Long-term use

Ecstasy use can be associated with anxiety, panic attacks and insomnia, especially in cases of long-term use, or use of large doses. Increased susceptibility to minor infections such as colds, flu and sore throats has also been reported. Some female users have reported an increase in genito-urinary infections. Pre-existing conditions such as high blood pressure, glaucoma and epilepsy can be exacerbated. In addition, there is some evidence to suggest that Ecstasy may have the potential to cause brain damage associated with mood disorders. Ecstasy increases body temperature and has a dehydrating effect. Users should take care to replenish lost body fluids and take regular breaks from physical exertion to help avoid dehydration and overheating. In acute cases of Ecstasy-related overheating and dehydration, the body temperature regulation system can be impaired, or break down altogether.



Overdose risk

Overdose risk still needs to be properly assessed. However, there have been a number of deaths in the UK linked to the use of Ecstasy. Most of these are thought to have been associated with a rare but fatal drug reaction which can cause blood clots to develop in the lungs. Furthermore, heat stroke or dehydration are also thought to be possible contributing factors. There is also evidence that Ecstasy can damage the liver. The risk of overdose from MDA (a close relative of MDMA which is stronger and often sold as Ecstasy) is significantly greater. (A dose of 500mg of MDA has proved fatal in tests. Such a dose is the equivalent of 3 street tablets.) Some deaths associated with the taking of Ecstasy have been attributed to dilutional hyponatremia. That is, people have drunk too much water in attempting to counteract the dehydrating effect of the drug. One effect of MDMA is to cause the release of a hormone called anti-diuretic hormone (ADH) which prevents the production of dilute urine. Excessive drinking in turn causes fluid buildup inside the body cells, particularly in the brain, which soaks up the fluid and is eventually "crushed" as it swells against the inside of the skull. All its functions are irreparably damaged, which leads to death.

A selection of Ecstasy tablets depicting popular cultural images.



Various ecstasy tablets



Stimulants

Methylenedioxymethamphetamine (MDMA)(Ecstasy)



Ecstasy is sometimes referred to as a hallucinogenic stimulant. Its effects will therefore include those listed for stimulants.

In addition it can cause:

- increased temperature.
- possibly excessive sweating.
- very dry mouth and throat.
- hallucinations and heightened perceptions which may make users more tactile or dreamy.
- jerky, uncoordinated movements.
- repetitive movements - many users want to dance.
- clenched jaws/grinding teeth.
- uncontrolled jaw movements caused by muscle spasms.
- occasional nausea when first used.
- fatigue after use, possibly accompanied by some anxiety, depression and muscle pain.
- weight loss.

Ecstasy effects

One particular effect of Ecstasy is overheating, especially after constant dancing in a club with a hot atmosphere. In these circumstances it is very important that the person who has taken Ecstasy cools down and re-hydrates quickly.

- Give them water to drink - but not too much or too quickly - take them to a cool place,
- loosen their clothing and apply cool damp cloths or towels to the back of their neck.
- If they stop sweating and/or collapse, phone for an ambulance immediately.
- Put them in the recovery position and keep trying to cool them down.
- If they stop breathing begin mouth-to-mouth resuscitation and tell the ambulance crew exactly what has happened and what the person has taken.
- If the person has taken a hallucinogen, such as LSD, magic mushrooms, or cannabis in combination with Ecstasy, they may become very anxious, distressed and fearful. They may act in an unusual way.
- It is very important to reassure the person - tell them that you will look after them, that they are in no danger, that it is the effects of the drug and that the effects will soon wear off.
- You may want to take them to a quiet place, keep other people away, and continue to reassure them. Just stay with them and talk calmly to them. This may take a long time depending on the amount taken.
- If they show no signs of becoming calmer, or they become hysterical, take them to hospital - explain calmly to the person what is happening - this will help decrease any feelings of panic.

Volatile Substances

A range of volatile substances are available directly over the counter. Those most commonly used fall into four categories:

1. Adhesives and Glues
2. Aerosols
3. Cleaning and de-greasing agents
4. Petrol, lighter fuel and other products.
5. Poppers

Street use

Vapours from volatile substances are usually inhaled directly from their containers or from polythene bags.



Drug effect

Vapours from volatile substances pass rapidly from the lungs to the brain, causing depression of the central nervous system. Effects similar to acute alcoholic intoxication occur within two to three minutes. Feelings of euphoria are very common and some users report hallucinations. If inhalation (sniffing) continues, there is further depression of the central nervous system, which leads to loss of awareness, judgement and muscular coordination and eventual coma. The intoxicating effects last for 15-60 minutes after sniffing ceases. Sniffers often report a mild "hangover" for up to a day after use.

Dependency

Tolerance develops so that, over time, greater and greater quantities of volatile substance are required to produce the same effect.

Withdrawal

Occasional mild physical withdrawal symptoms, such as headaches, have been noted. However, psychological rather than physical dependence is more common.

Long-term use

Following regular use of volatile substances, "sniffers rash", memory impairment and loss of concentration have been reported. With chronic use, loss of muscular coordination, slurring of speech and vision impairment are common. However, these effects are usually reversible if sniffing stops. Long-term heavy use (10 years or more) may lead to permanent brain damage. A small number of cases involving permanent liver and kidney damage have also been reported.

Overdose risk

Every year, there are over 100 deaths in the UK linked to sniffing. Deaths in Northern Ireland are far less frequent but do occur. Over half are linked directly to the toxic effects of substances inhaled. The remainder are caused by a combination of accidents, inhalation of vomit and suffocation caused by a plastic bag over the head.

Risks in pregnancy

Volatile substances pass the placental barrier but there is little information about their effects on the foetus.

Volatile Substances

Adhesives and Glues

Products

Contact adhesives, glues, plastic cement, rubber solution adhesives.

Substances

Toluene, N-hexane, Xylene and Trichloroethylene.

Drug effect

Depressant

Method of use

Usually inhaled from polythene bag

Dependency

Yes (mainly psychological)

Withdrawal

Tolerance develops within three months of regular sniffing sessions. Occasional minor physical withdrawal symptoms include headaches.

Long-term use

Chronic users may have “sniffers rash” (usually around mouth and nose) and show impaired performance on memory, intelligence and concentration tests. In most cases, functions return to normal once solvent use ceases. Toluene has been implicated in reversible impairment of the central nervous system and visual problems. However, in a small number of cases, loss of brain tissue has also been reported.

N-hexane has been linked to visual problems and limb dysfunction, while trichloroethylene has been associated with a small number of cases of liver/kidney damage.



Volatile Substances

Aerosols

Products

Perfume sprays, deodorants, paint sprays, fly sprays, pain-relieving sprays, air fresheners.

Substances

Propane, Butane, Chlorinated-fluorocarbons.

Drug effect

Depressant.

Method of use

Volatile substances are inhaled directly from canisters or sprayed into a plastic bag and then inhaled.

Dependency

Yes (mainly psychological).

Withdrawal

Tolerance develops with repeated use. Occasional physical withdrawal has been noted.

Long-term use

Aerosol propellants, particularly butane, are thought to sensitise the heart to excitement or exertion. This can cause cardiac failure if the user exerts him/herself during or immediately after use.

Overdose risk

Cooling effects of aerosol sprays on the larynx (back of throat) may make it swell and can cause death by suffocation. As noted, butane has also been linked to sudden death caused by heart failure. For this reason, it is advised that sniffers are never startled or chased if they are discovered sniffing.



Example of Nitrous Oxide hardware kit available in the United States

Volatile Substances

Cleaning and de-greasing agents

Products

Industrial and domestic dry cleaners, degreasing agents, typewriter corrector fluid and thinners, nail varnish remover.

Substances

1,1,1-trichloroethane, Tetrachloroethane, Tetrachloroethylene, Methylene chloride, Carbon tetrachloride, Acetone

Drug effect

Depressant

Method of use

Inhaled directly from container or absorbent material soaked in agent.

Dependency

Yes (mainly psychological)

Withdrawal

Tolerance develops with repeated use. Occasional physical withdrawal has been noted.

Long-term use

Similar to long-term use of adhesives. Trichloro/tetrachloroethane and tetrachloroethylene have also been implicated in a few cases of liver/kidney damage. Carbon chloride is highly toxic and causes liver and brain damage.

Overdose risk

This group of solvents (particularly those containing 1,1,1-trichloroethane) is associated with about a third of solvent-related deaths.



Volatile Substances

Petrol, lighter fuel and other products

Products

Gas lighter fuels, petrol, fire extinguishers

Substances

Gas lighter fuel: Butane Petrol: Benzene Tetraethyl-lead,
Fire extinguishers: Bromodichloro-fluoro methane.

Drug effect

Depressant

Method of use

Usually inhaled directly from canister

Dependency

Yes (mainly psychological)

Withdrawal

Tolerance develops with repeated use. Occasional physical withdrawal has been noted.

Long-term use

Similar to the long-term use of adhesives. Sniffing petrol has been linked to permanent brain damage. However, it is unclear whether this is due to the hydrocarbons or the tetraethyl-lead added to leaded petrol. Benzene is highly toxic and has been shown to cause bone marrow depression.

Overdose risk

The inhalation of gas fuels (mainly butane) has been linked to about 25% of deaths. However, since its use is less common than the inhalation of solvents from adhesives, it appears to be significantly more dangerous. The pressurised gas in both gas lighter fuels and fire extinguishers makes the inhalation of these products extremely dangerous - as with the inhalation of aerosols, there is a significant risk of suffocation caused by swelling of the larynx (back of the throat). Butane is also thought to sensitise the heart to exertion, which can lead to heart failure.



Volatile Substances

Poppers

Products

Alkyl nitrites are related to nitrous oxide (laughing gas) and are clear yellow volatile liquids. They are available for sale at some retail outlets and by mail order. Drugs include amyl nitrite (rush or poppers) and butyl nitrite (poppers).

Drug effect

Alkyl nitrites are vasodilators. They cause dilation of the blood vessels leading to the heart. This is accompanied by a drop in blood pressure and an increase in heart rate. Users report a “rush” and experience euphoria and dizziness. The effects following inhalation are virtually instantaneous and last from two to five minutes. Alkyl nitrites also increase sexual arousal and cause the rectal sphincter to relax, easing anal intercourse.

Method of use

Alkyl nitrites are used mainly by members of the male gay community, who inhale volatile fumes to enhance sexual arousal and performance. However, recreational and experimental use has also been reported among other groups of young people.

Dependency

Tolerance develops within two to three weeks if used on a daily basis. However, this is lost following a few days of abstinence. There have been no reports of withdrawal symptoms, either physical or psychological. Hence dependency does not appear to be a problem.

Long-term use

Alkyl nitrites are excreted rapidly from the body and there do not appear to be any serious consequences of long-term use among healthy adults. However, people with a history of heart problems and glaucoma may be at risk because of the increased strain on the cardio-vascular system.

Overdose risk

Excessive use can lead to lack of oxygen in the blood. Users become cyanosed, which gives their skin and lips a blue colour. This is usually accompanied by severe vomiting and can lead to clinical shock and loss of consciousness. Deaths have occurred when nitrites have been swallowed.



Volatile Substances

General Information on Solvent Misuse

Solvents include glues, butane gas refills, aerosols, typewriting correcting fluids and thinners.

Signs of solvent misuse include:

- usual signs of intoxication.
- possible odour on clothes and breath.
- if using glue, redness around mouth and nose.
- a cough.
- possible stains on clothing depending on type of solvent used.
- persistent coughing with a runny nose and eyes.

Short-term effects of Inhalants

- Sniffing or huffing inhalants can kill on the very first use or any use! Inhalants cause massive health damage in both the short and long-term.

The physical damage includes:

Short Term Effects	Long Term Effects
Loss of Sensation	Compulsive Use
Drowsiness & lack of energy	Withdrawal
Risk taking behaviour	Disorientation
Light headedness	Weight loss
Agitation	Irregular or rapid heart beat
Hostility	Irritability and or depression
Lack of concern about life around them	Impaired thinking ability
Poor judgement	Dementia lose contact with reality
Inability to function in their environment	Lose sense of touch
Slurred Speech	Deafness and or blindness
Poor reflexes	Reproductive complications
Muscle weakness	Bone marrow injury
Poor coordination	Lung, heart, liver or kidney damage
Confusion and delirium	Damage to nerve cells
Nausea and vomiting	Brain shrinkage
Unconsciousness and or sudden death	Possible death

Volatile Substances

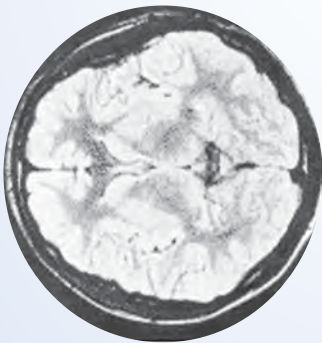
Sudden Sniffing Death Syndrome

Sudden Sniffing Death Syndrome (SSDS) is the most common killer of inhalant abusers. A victim may be trying inhalants for the first time, or may have tried them any number of times in the past. SSDS occurs when an abuser is surprised or startled while sniffing or huffing. Often, this occurs when a parent or other authority figure finds the person inhaling. An especially exciting or frightening hallucination could also trigger SSDS. When the abuser is surprised or startled, he has a sudden surge of the hormone epinephrine. Epinephrine is also called adrenaline. Epinephrine aids in regulating the functions of the body that are beyond a person's conscious control, like heart rate. When a person is highly stimulated (by fear or challenge, for example,) extra amounts of epinephrine are released into the bloodstream to prepare the body for energetic action. Epinephrine increases blood pressure, heart rate, and cardiac output. The presence of the chemical inhalants in the body makes the heart muscle more sensitive to epinephrine. When the surge of epinephrine reaches the heart, the heart suffers an arrhythmia (irregular heart beat). This massive arrhythmia kills the user in seconds.

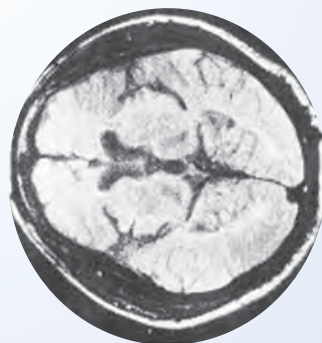
Central Nervous System Damage

Many of the chemicals found in commonly abused inhalants cause severe and permanent brain and nerve cell damage. Brain scans of inhalant abusers show dramatic shrinkage in the overall size of the brain. Abusers also lose "white matter" in the brain, which is responsible for conducting nerve impulses throughout the body. The white matter is destroyed because each cell is encased in myelin, a lipid or fat, and many commonly used inhalants are lipid-solvents; that is, their purpose is to break down lipids.

Chronic inhalant abusers suffer massive central nervous system damage, which results in dementia (lost contact with reality) and loss of cerebellum function. The cerebellum is the portion of the brain that coordinates movements of the voluntary muscles. Abusers lose the ability to think, reason, learn, and remember. Their way of walking becomes abnormal and they lose coordination.



The brain scan from a non abuser



The brain scan from an inhalant abuser

Miscellaneous Substances

Anabolic steroids (e.g. *Durabolin, Stanozolol, Dianabol*)

Street name

Iron Brew

Drug effect

Users take the drug as an aid to muscle development, though there is a strong chance that users will become more aggressive.

Method of use

Tablets, injections, capsules.

Dependency

Psychological dependence is common.

Therapeutic use

Can be used in the treatment of anaemia, thrombosis and often used to build muscle for patients who are long-term bed-ridden.

Withdrawal

Some steroid users have reported lethargy and depression on stopping use.

Long-term use

It is difficult to offer conclusive evidence regarding the effects of long-term steroid use as most users are taking multiple combinations and at doses that are well above the recommended level. There is some clear evidence that persistent and heavy use may cause infertility or lack of sex drive in men. Conversely, some men may become sexually violent. Women may develop masculine side-effects, such as a deeper voice and smaller breasts.

Overdose risk

Can cause high blood pressure. In extreme cases, they can cause liver damage and there is some evidence of liver cancer.

