

Special K, liquid ecstasy, super E, ice. Pharmacists in city areas may have heard these mentioned. Rather than admit, or maintain, ignorance it is worth learning about some of the newer drug trends

# Substance misuse

## emerging drug trends

By **Rhys Ponton**, PhD, MRPharmS, **Jenny Scott**, PhD, MRPharmS, and **Janie Sheridan**, PhD, FRPharmS

**R**ecreational drug use — the use of drugs for pleasure rather than to treat disease — is usually undertaken for its “rewarding” psychotropic effects, such as euphoria. As discussed in the accompanying articles (p347 and p351), such substance misuse also has its risks, including (for some drugs) dependence. The range of misused drugs in the UK is ever-changing and evolving. Most of us are familiar with the “classic” drugs of misuse (eg, cannabis, heroin, cocaine). This article discusses some of the newer or upcoming drugs that are being used recreationally.

### Ketamine<sup>1</sup>

**Common names:** Special K, vitamin K

**Current legal status:** Class C

**Methods of use:** Usually inhaled through the nose (snorted), but can be swallowed or injected

**Typical amount used:** (snorted) 10–250mg and above

In common use as a recreational drug in the UK since the early to mid 1990s, ketamine was initially developed as a “battlefield anaesthetic” and an alternative to phencyclidine (PCP). Nowadays, it is mostly used in veterinary medicine.

When used in small amounts, ketamine produces euphoria and a “trippy” effect. As the amount used increases, the drug causes dissociation with reality, loss of

### SUMMARY

**Along with the more common drugs of abuse, several new recreational drugs are hitting the streets. Some of these are discussed in this article. Little research has been conducted concerning these new drugs. However, the supply of some of them is not subject to legislative restriction and these are easily obtainable.**

Pharmacists should remain aware of the potential drugs of misuse, particularly since some are manufactured from substances that can be obtained from pharmacies, and it is always possible that pharmacists might encounter users of these drugs or be asked for information about them.

co-ordination and difficulty in controlling limbs. Larger amounts can render the user incapable of movement (known as “K-hole”); at this point hallucinogenic effects and “insights” are at their peak.

**Risks** At higher doses the user is at risk of unconsciousness. Overdose can have potentially fatal effects on the respiratory and cardiovascular systems. Also, mixing ketamine with other drugs, and the long-term effects of its use, is poorly understood.

### Gamma-hydroxybutyric acid<sup>2</sup>

**Common names:** GHB, GBH (play on the term “grievous bodily harm”), liquid ecstasy

**Current legal status:** Class C

**Methods of use:** Usually supplied as a liquid and swallowed, also as a powder to dissolve in water

**Typical dose:** 0.5–3g but effect depends on the individual. Strength of the preparation can vary, particularly if presented as a liquid

GHB has been used recreationally since the early 1990s, but had been used for about 10 years before that by bodybuilders for its potential growth hormone-releasing effects. The effects of GHB are not unlike those of alcohol. In small amounts it acts as a stimulant and an aphrodisiac.

GHB dependence has become more common as recreational use has increased. Withdrawal effects are similar to those with a sedative drug (ie, anxiety, insomnia and tremor). Delirium and seizures have been reported as more serious withdrawal effects. Such symptoms have been managed successfully with high-dose benzodiazepines in the same way as for alcohol withdrawal.

Two prodrugs of GHB (ie, 1,4-butanediol and gamma butyrolactone [GBL]) have become more commonly used since its change in legal status (it was designated class C in 2003). GBL appears to be widely available via the internet —

Emerging drugs of misuse: ketamine is usually snorted



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sold under the guise of a “cleaning product”. Both prodrugs are soon to be classified (class C) in the UK under the Misuse of Drugs Act following a recent consultation.

**Risks** A steep dose-response curve means the difference between a sub-effective dose and a potential overdose is small. Being a sedative, GHB should not be mixed with other sedatives, especially alcohol. Most GHB-linked deaths have involved such combinations although it is possible for GHB to cause fatalities on its own.

### Piperazines<sup>3</sup>

**Common examples:** Benzylpiperazine (BZP), trifluoromethylphenylpiperazine (TFMPP)

**Common street names:** X4 ecstasy, super E

**Current legal status:** Not currently controlled in the UK, but the Home Office has announced its decision to restrict these to class C

**Method of use:** Taken orally as tablet or capsule, as powder dissolved in drinks (reported to taste foul) or snorted (can be painful). Injecting is rare

**Typical amount used:** BZP 20mg–200mg; TFMPP usually 50–100mg (maximum of 250mg); although the two are often combined for greater effect

Piperazines (BZP and TFMPP) were readily available since 2000 in New Zealand — where they first emerged as legal “party pills” — but were banned in 2008. BZP has been banned in the US since 2002, but TFMPP remains legally available. Although BZP and TFMPP can be bought from some shops or via the internet, they are soon to be made class C drugs in the UK by the Home Office.

BZP has a stimulant effect similar to amphetamines and TFMPP is reported to have effects similar to those of ecstasy. Most products contain BZP alone or in combination with TFMPP. They can reduce appetite and cause gastrointestinal disturbances, headaches and hot and cold flushes. Psychological effects include increased socialisation, difficulty sleeping and an unpleasant “come-down” the day after where the user feels depressed and lethargic (although this may also be related to alcohol use or lack of sleep).

**Risks** Little research exists on these products. Research conducted in New Zealand suggests most people use these products with alcohol despite warnings not to do so. The need to access medical help is uncommon and, in the short term, these substances appear relatively safe. Long-term effects are unknown, though there have been reports of dependence.

### Methamphetamine<sup>4</sup>

**Common street names:** Crystal meth, ice

**Current legal status:** Class A

**Methods of use:** Injected, taken orally or smoked

**Typical amount used:** 10–30mg (but can be far higher for users who develop tolerance)

First manufactured in Japan in the late 19th century, methamphetamine (methamphetamine) was initially



Khat for sale

used medicinally for depression and nasal congestion, but is most famous for its heavy use to increase endurance and alertness of fighting personnel during the 1939–45 war. It has recently re-emerged as a drug of misuse, especially in the US and Australasia. It can be relatively easily manufactured in clandestine laboratories from readily available precursors, such as pseudoephedrine. (Pharmacists should be alert to sales of large quantities of pseudoephedrine-containing products.)

Methamphetamine has a stimulant effect, causing euphoria, a rise in energy, feelings of invincibility, insomnia and reduced appetite (similar to cocaine but longer acting). Unpleasant effects include anxiety and paranoia. Cessation of its use can cause depression, anxiety, fatigue, dysphoria, paranoia, aggression and cravings for more of the drug.

**Risks** Methamphetamine use can induce risk-taking behaviours (eg, fast driving, unprotected sex) since users often feel “bullet-proof”.

Methamphetamine dependence is frequently reported. It is also possible for users to become sensitised to its effects, in which case previously safe quantities can lead to toxicity or overdose. Drug-induced psychosis is a potential adverse effect and some users become aggressive after taking high doses or during withdrawal. Cardiovascular problems, including stroke, can also occur.

### Khat<sup>5</sup>

**Common street names:** Cat, chat

**Current legal status:** Not controlled in the UK

**Methods of use:** Leaves and stems are chewed to release the active substance (cathine and cathinone)

**Typical dosage:** leaves are chewed one at a time until desired effect is achieved

Khat is plant material from the *Catha edulis* shrub. It has been available in the UK since the early 1990s and used for millennia in Ethiopia, Somalia and other African countries. A bunch of leaves can cost as little as £4.

Plant material must be used promptly after harvesting because cathinone breaks down within approximately two days — this can be delayed by refrigeration. The product

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is reliant on air freight to be transferred from its origin because of this degradation. Cathinone is a stimulant drug and has amphetamine-like effects (although not as potent). It produces mild euphoria and a generally pleasurable sensation.

**Risks** Khat presents risks similar to those of amphetamines, although to a lesser degree. Like other stimulants it can cause hyperactivity and increased stamina. It also causes sympathomimetic effects typical of stimulants, including raised blood pressure and heart rate. Long-term use of khat can cause dependence with withdrawal leading to tiredness, irritability and mild depression.

### Future drugs

Most misused substances are of plant origin or are simple compounds that illicit chemists are able to synthesise; it is unlikely that many new chemical entities will be discovered from nature or in illicit laboratories.

Some drugs of misuse, such as heroin and cocaine, are products of the pharmaceutical industry. Indeed, benzodiazepines — heralded in the 1960s and 1970s as safer than the barbiturates and non-addictive — and, more recently, the “Z-drugs” (eg, zopiclone, zolpidem) have been associated with dependence and have become targets for drug misusers. Each year pharmaceutical companies introduce many new drugs to the market — some of these will pose a potential for recreational use or could be used to synthesise new substances for misuse.

### Conclusion

The emergence of new drugs of misuse is likely to continue. The drugs discussed in this article are just a small selection of those in use.

As pharmacists it is our responsibility to be aware of any potential new drugs of misuse so that we remain well placed to provide information — and dispel myths — when the issue of such drug use is raised.

### References/further reading

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