

New psychoactive substances (NPS): factsheet

Who is this factsheet for?

This factsheet is aimed at professionals who do not work specifically in the drugs field, but who may encounter substance misuse as part of their role and who need information on current substance misuse issues. It may also be of interest to the general public.

What are 'new psychoactive substances'?

'New psychoactive substances' (NPS) is an umbrella term used to cover a wide range of substances with a number of things in common:

- they are psychoactive (they affect the user's mental functioning or emotional state by stimulating or depressing the central nervous system (brain and spinal cord));
- they are newly available in the UK or have seen a recent increase in popularity and public awareness;
- they can pose a threat to health comparable to illegal drugs.

It is often not clear what is contained within individual products. The quality and content of such products varies enormously and the name used may not bear any relation to their actual contents. In addition, the huge variety of names, including chemical names, trade names and slang names, makes it very difficult to know exactly what exists.

Other terms sometimes use to refer to NPS include 'research chemicals' and 'legal highs'.

NPS and the law

Many psychoactive substances are already

classified by the *Misuse of Drugs Act 1971*. This means they are illegal. Possession or supply can carry a prison sentence. As new drugs are being developed all the time, it has proved a challenge to keep up with them using this law. The UK government responded to this by bringing in a new law, the *Psychoactive Substances Act 2016*.

This law, which came into effect on 26 May 2016, covers all psychoactive substances which are NOT already classified under the *Misuse of Drugs Act 1971*. The *Psychoactive Substances Act 2016* says that possessing with intent to supply, supplying or offering to supply, producing, importing or exporting any psychoactive substance, all carry a penalty of up to seven years and/or a fine, depending on the seriousness of the offence. **This means that it is against the law to supply anyone with one of these substances.**

Possession of a psychoactive substance is not an offence and carries no penalty. However, if you are in a custodial institution (prison or young offender's centre) and possess a psychoactive substance, it **is** considered an offence, and carries a penalty of up to two years and/or a fine, depending on the seriousness of the offence.

It will be up to the police and courts to decide the quantifiable difference between personal possession and possession with intent to supply.

Possession of a substance classified under the Misuse of Drug Act 1971 remains an offence.

More information on those drugs banned under the *Misuse of Drug Act 1971* can be found at www.gov.uk/penalties-drug-possession-dealing

What kind of substances are covered by the *Psychoactive Substances Act 2016*?

The act covers “any substance which (a) is capable of producing a psychoactive effect in a person who consumes it, and (b) is not an exempted substance.”

Exempted substances (those not covered by the act) include nicotine, alcohol and caffeine. Poppers (alkyl nitrates, which cause lightheadedness and relax muscles) are not covered by the act because their effects are caused by increasing blood flow, not by acting on the central nervous system, and are therefore not classed as a psychoactive substance.

How common are NPS?

In 2014, 101 NPS were notified to the European Monitoring Centre for Drugs and Drug Addiction. This compares to 81 in 2013, 74 in 2012 and 48 in 2011. The most commonly reported substance overall is synthetic cannabinoids.

The most recent statistics on adult use in Northern Ireland are from the *Drug Prevalence Survey 2014–2015*, which shows that around 1 in 45 people in Northern Ireland state that they

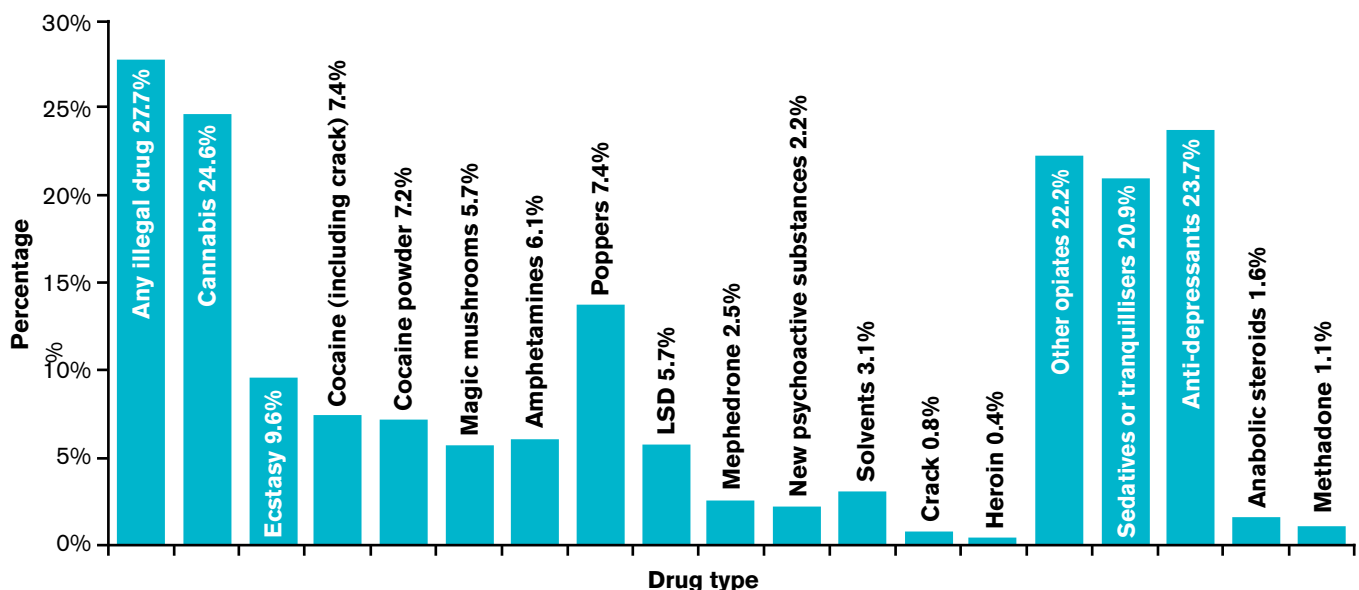
have ever taken an NPS. It also shows that use is more common among males, with males three times as likely to use as females.

However, it is known that despite the emergence of these new drugs, cannabis, cocaine and ecstasy continue to be among the most commonly used drugs here. The tables below show ‘lifetime prevalence’ of NPS use and ‘last year prevalence’ of NPS use in Northern Ireland.

Last year prevalence for all drugs is lower but is useful as it indicates more recent use. Lifetime prevalence includes people who may only have used a substance once or twice many years ago.

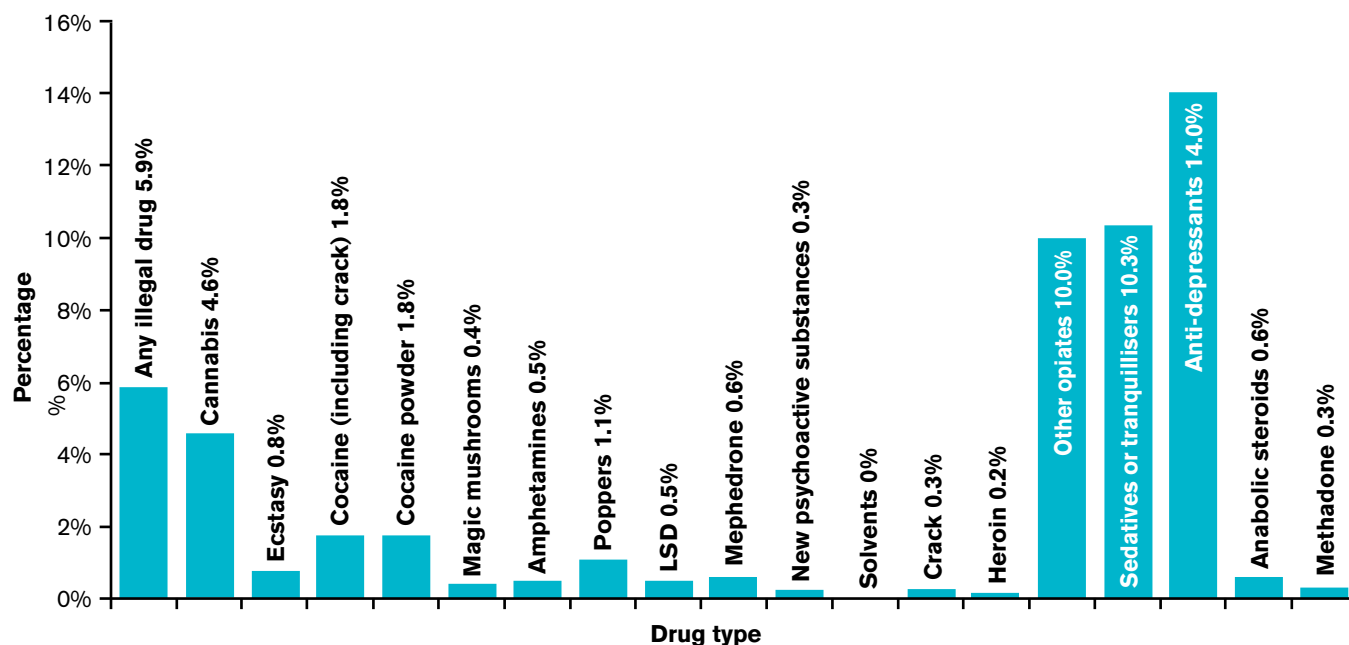
It is important to note that NPS may be most commonly used by people who are vulnerable, such as homeless people, young people in care or people in prison. These are hidden populations who do not generally participate in surveys. These people may also be more likely to use NPS in high risk ways. This means that, while at a population level the numbers of users appears small, within certain hidden populations use may be much higher, as well as higher risk.

Lifetime prevalence of drugs 2014/15



(Source: *Northern Ireland Drug Prevalence Survey 2014-15*, Department of Health)

Last year prevalence of drugs 2014/15



(Source: Northern Ireland Drug Prevalence Survey 2014-15, Department of Health)

Deaths linked to NPS

NPS have received a high media profile over the past few years, in part because of the difficulties in restricting access to these drugs using the law, and also because of deaths in Northern Ireland relating to NPS.

The most recent data published shows there was a total of 15 deaths here in 2013 where the coroner declared that NPS contributed to “the deceased’s death (eg through poisoning or intoxication) or causing their powers of reasoning and/or perception to be so affected as to induce them to take risks which they would not have done had they been sober”.¹

Three specific NPS have been detected in a high number of deaths in Northern Ireland. It should be noted that when a drug is detected in a person who has died, it does not follow that the drug caused the death.

- During 2013–2014 20 deaths were linked to the stimulant **4,4’-DMAR**.² It is important to note that in all reported cases, the death had taken place after the individual had consumed two or more drugs (including alcohol), so we cannot say that any of these deaths were caused solely by this substance.
- During 2014 and 2015, there were 20 drug-related deaths in which **ethylphenidate** was detected. In all but one case, other substances were detected, so for almost all these cases, we cannot say that the deaths were caused solely by this substance.
- **Mephedrone** was detected in seven deaths in 2014 and three deaths in 2013.³

Across the UK, 144 deaths were linked to NPS in 2014.⁴

While most NPS-related deaths here have been linked to stimulant-type drugs, there have been deaths elsewhere linked to synthetic cannabinoids. A 2016 alert highlighted 13 deaths in Europe associated with the synthetic cannabinoid MDMB-CHMICA.⁵

Polydrug use

Although specific risks depend on which substance or substances are taken, one of the biggest risk factors is using more than one drug at a time (including alcohol). Recent reports on drug-related deaths show that in the vast majority of cases, at least two substances (including alcohol) had been taken.¹ Using more than one substance at a time (polydrug use) is increasingly common among those who use drugs.

What type of drugs do NPS include?

NPS can be categorised in a number of different ways. For the purposes of this factsheet, they are grouped into four categories: **stimulants**, **synthetic cannabinoids**, **hallucinogens** and **depressants**. Some substances fall into more than one category. For example, a number of drugs have both stimulant and hallucinogenic properties, eg MDMA (ecstasy – usually classed as a stimulant) and AMT (usually classed as a hallucinogen). A drugs wheel that separates substances into seven categories has also been developed and can be viewed at www.thedrugswheel.com

Stimulants

A stimulant is a drug that speeds up the central nervous system to increase neural activity in the brain. Stimulants tend to make people feel more alert and awake, and can produce feelings of euphoria.

Stimulants include phenethylamines, cathinones and piperazines, all of which are quite similar

drugs. Phenethylamines include benzodifurans, PMA and PMMA, all of which are Class B illegal substances under the *Misuse of Drugs Act 1971*.

Cathinones include mephedrone, methyone and MDPV. All cathinones are Class B illegal substances under the *Misuse of Drugs Act 1971*.

Piperazines include BZP and are Class C illegal substances under the *Misuse of Drugs Act 1971*.

The full extent of the risks of using these drugs is not known, and because they have not been available for very long, there is no understanding of the long-term risks of taking them. However, their general risks include both physical side effects (dizziness, tremor, headache, flushed skin, chest pains with palpitations, excessive sweating, vomiting, and abdominal cramps) and psychological effects (agitation, hostility, panic, aggression, and suicidal ideation). Paranoia, sometimes accompanied by both auditory and visual hallucinations, may also occur.

Overdose can cause high fever, convulsions, stroke, or heart problems like cardiac arrest, sometimes leading to death. Because stimulants affect the body's cardiovascular and temperature-regulating systems, physical activity can increase the risks.

There are numerous different types of stimulant NPS and the type of drug and the effects are likely to differ from batch to batch. This increases the risk to the user. For example, someone might take a pill one week which contains ecstasy, and an identical or similar looking pill the following week which contains PMA (or PMMA). Since PMA is slower to take effect, the user may think it is weak ecstasy and redose, which could lead to fatal overdose as PMA is more toxic.

In Northern Ireland, particular concerns have been expressed over a substance known as 'white', which appears to be popular among some injectors. Anecdotal evidence suggests that substances being sold as 'white' may include ethylphenidate and methiopropamine. As well as the link between ethylphenidate and the deaths mentioned above, 'white' has been linked to many serious injecting-related harms, including an increase in wounds at injection sites. Users also report a strong desire to redose, and psychosis after only a small number of times using the substance.

Synthetic cannabinoids

Often sold as herbal incense, synthetic cannabinoids are a non-psychoactive plant base that has been sprayed with synthetic cannabinoids to mimic the effects of cannabis. Effects depend on the brand, with some producing euphoric or 'stoned' feelings akin to cannabis, while others produce effects more like those of psychedelic or dissociative drugs. Their effects can be much more potent than cannabis. There are 107 known synthetic cannabinoids on the European market. Brand names include Spice, Doob, Sky Blue/Sky High and Psyclone. Some synthetic cannabinoids are illegal (Class B) to possess, while others are covered by the *Psychoactive Substances Act 2016* and are only illegal to supply. Because a user does not know what chemicals are in the products, they cannot know if what they are using is illegal to possess or not.

The physical effects of the more potent types can be quite overpowering, with reports of breathing difficulties, tight chest, racing heart, palpitations, shakes and sweats, which can lead to severe panic. Other effects can include numbness in limbs, vomiting, collapse and unconsciousness.

Synthetic cannabinoids can have significant effects on mental health, including disorientation, anxiety, panic and psychosis.

Short-term memory can also be severely impaired.

Researchers have concluded that synthetic cannabinoids are potentially more harmful than cannabis. Tolerance develops quickly, and compulsive use and needing to use more and more are reported frequently by users. There is some evidence that links synthetic cannabinoid use with acute kidney injury.

A recent small-scale Irish study highlighted the rapid development of tolerance, regular dependent use within short timeframes and acute withdrawal symptoms on cessation of use.⁶

Through its early warning system, the Drug and Alcohol Monitoring and Information System (DAMIS), the PHA receives regular reports of synthetic cannabinoids causing serious adverse reactions in users in Northern Ireland, some requiring hospitalisation.

Hallucinogens

Hallucinogens affect perception, inducing a distorted sense of sight, hearing and touch, changing the user's impressions of time and space and distorting reality. Users can find it hard to distinguish reality from illusion.

A number of plant-based hallucinogens, with a range of effects, can be bought in the UK. These include kratom and salvia. Unlike other NPS, some of these plant-based substances have been available for many years, but have received increased attention recently.

Synthetic (manufactured) hallucinogens include N-Bombs and AMT (both classified Class A under the *Misuse of Drugs Act 1971*).

The risks depend on the specific hallucinogen taken. For example, most physical harm resulting from using salvia occurs as a result of people injuring themselves when under the influence of the drug, rather than the drug directly causing harm. There is, however, some concern that salvia could trigger psychotic episodes, particularly in young people and people with previous history of, or a family history of, mental health problems. Some hallucinogens (eg N-Bombs) are powerful and can cause increased heart rate and blood pressure, which can lead to heart failure. They may also lead to seizures.

Depressants

Depressants include nitrous oxide ('laughing gas' or 'NOS'), a gas used in catering, mostly in whipped cream aerosol cans to prevent the cream going off. Users tend to inhale from a balloon. When inhaled, it can make people feel euphoric, relaxed or giggly. Some people also experience hallucinations. Nitrous oxide slows down your brain and your body's responses. It is one of the most commonly used NPS in other parts of the UK. However there is no evidence to suggest that it is widely used in Northern Ireland.

The biggest risk from using nitrous oxide is if the gas is used in an enclosed space or if it is inhaled using a plastic bag which covers both the mouth and nose. This can lead to nitrous oxide using up space usually taken up by oxygen, and can cause unconsciousness or death.

Inhaling directly from a canister can cause frostbite as pressurised gas is extremely cold. Inability to control the speed at which the inhalant leaves the canister could damage the respiratory system if it rushes into the lungs too rapidly.

NPS and sexual health

NPS have been linked to increased levels of blood borne viruses (HIV, hepatitis B and C) in some parts of the UK. In some cases, this has been attributed to 'chemsex parties' among men who have sex with men (MSM). These are parties where people take drugs and then engage in high-risk sexual behaviours, often with a number of partners.⁷

Where can I get more information or advice?

If someone is concerned about their drug use, they should speak to a GP, who can provide advice and direct them towards support services.

Information about local support available can be found in the 'services near you' section of the Northern Ireland Drug and Alcohol Coordination Teams (NIDACTS) website **www.drugsandalcoholni.info**

This includes support for alcohol/drug users, both adults and people under 18, as well as support for family members.

The PHA works with local DACTs' 'Connections' service to provide information, advice and a range of awareness-raising sessions (including one focusing on NPS) for community organisations or other stakeholders concerned about drug or alcohol issues. Details can be found in the 'NIDACTS' and 'connections' sections of **www.drugsandalcoholni.info**

The PHA funds ongoing training of relevant staff across Northern Ireland, to ensure that the workforce has the knowledge and skills needed to work with people who misuse NPS and achieve positive outcomes. Information on training can be found at **www.ascert.biz**

The PHA provides public information on alcohol and a wide range of drugs, as well as harm reduction information aimed at people who use stimulants or synthetic cannabinoids. This can be downloaded from **www.publichealth.hscni.net**

More information on synthetic cannabinoids, including harm reduction advice, can be found at **www.drugscope.org.uk/Resources**

For the report of the UK Expert Panel into the effectiveness and issues of the UK's current response to NPS, go to **www.gov.uk/government/publications/new-psychoactive-substances-review-report-of-the-expert-panel**

A summary of UK drugs laws can be found at **www.gov.uk/penalties-drug-possession-dealing**

The PHA coordinates an early warning system, DAMIS, to identify emerging substances of concern as soon as possible, and circulate that information to anyone at risk. This service also provides harm reduction information, targeted at those who, despite strong warnings not to, continue to use NPS. If you are aware of any drugs of concern, you can email the Drug and Alcohol Monitoring and Information System at **Damis@hscni.net**

For more information on specific NPS, go to **www.talktofrank.com**

References

1. Claridge, H & Goodair, C. Drug Related Deaths in England, Northern Ireland, the Channel Islands and the Isle of Man: January – December 2013. St George's University, London: National Programme on Substance Abuse Deaths
2. Cosbey S et al. Multiple fatalities involving a new designer drug: Para-Methyl-4-Methylaminorex. *Journal of Analytical Toxicology* 2014: 1-2.
3. Alcohol and Drug Deaths. Available from www.nisra.gov.uk/demography/default.asp30.htm Accessed 25 March 2016.
4. Home Office and Karen Bradley MP. Landmark law to tackle legal highs commences later this month. Available from www.gov.uk/government/news/landmark-law-to-tackle-legal-highs-commences-later-this-month. Accessed 25 May 2016
5. European Monitoring Centre for Drugs and Drug Addiction. EU Early Warning System Alert 8 February 2016.
6. Van Hout, MC & Hearne, E. User Experiences of Development of Dependence on the Synthetic Cannabinoids, 5f-AKB48 and 5F-PB-22, and Subsequent Withdrawal Syndromes. *Int J Ment Health Addiction*. DOI 10.1007/s11469-016-9650-x
7. Public Health Wales: Chemsex linked to rising levels of HIV among gay men. *Pink News*. 28 October 2014. Available from www.pinknews.co.uk/2014/10/28/public-health-waleschemsex-linked-to-rising-levels-of-hiv-among-gay-men Accessed 6 March 2015

Last revised May 2016.

