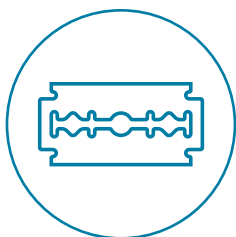


# Novel psychoactive substances

In the last decade, there has been a surge in the circulation of, and demand for, novel psychoactive substances (NPS), which are designed to mimic the effects of existing—and illegal—recreational drugs. There is widespread concern about the safety of NPS due to a lack of regulation and knowledge about their constituents. This also makes providing effective treatment, recovery and support a challenge.<sup>1,2</sup>

NPS can be split into the four main categories outlined below.

## Stimulants and hallucinogens



Stimulants mimic the effects of amphetamine, cocaine and ecstasy, increasing alertness and producing a sense of euphoria and well-being. Hallucinogens cause altered states of consciousness.

### Can cause:

Anxiety | Agitation | Stroke psychosis | Hyperthermia | Depression | Seizures

### Examples include:

Bath salts | Amphetamines | Phenethylamines | Cathinones

### Can cause:

Hallucinations | Distorted perception of time, direction, distance and reality | Tachycardia | Dilated pupils | Nausea and loss of appetite

### Examples include:

LSD | Ketamine | PCP | Mescaline | Psilocybin | Salvia

## Opioids



Opioids are a broad group of pain-relieving drugs that block pain signals by interacting with opioid receptors in the cells. These substances are commonly used as adulterants in heroin and counterfeit preparations to mimic the effects of controlled opioids.

### Can cause:

Analgesia | Euphoria | Sedation | Respiratory depression | Nausea | Vomiting | Reduced blood pressure and heart rate | Extreme dependence/tolerance from repeated use

### Examples include:

Fentanyl | Fentanyl analogs | U-47700 | U-48800 | Fluoroisobutyrylfentanyl | Cyclopropylfentanyl | Buprenorphine | Isotonitazene | Fluorofentanyl | Metonitazene

## Synthetic cannabinoids



Synthetic cannabinoids, also referred to as synthetic cannabinoid receptor agonists (SCRAs), are often laced into herbal products and sold as Spice, K2, Kronic, etc.

### Can cause:

Agitation | Anxiety | Extreme anxiety | Psychosis | Paranoia | Hallucinations | Seizures | Hypertension | Tachycardia | Psychological dependency | Addictive potential

### Examples include:

APP-BINACA | MDMB-4en-PINACA | 4F-MDMB-BICA | 5F-EDMB-PICA | 4F-ABINACA | ADB-PHETINACA | EDMB-PINACA

## Benzodiazepines



Benzodiazepines are one of the most prescribed groups of medications in the world. They are central nervous system depressants that are typically prescribed for their sedative, anxiolytic, hypnotic and anticonvulsant properties.

### Can cause:

Delayed responses | Incoordination | Muscle relaxation | Decreased blood pressure and heart rate | Ptosis | Impaired cognitive function and motor skills

### Examples include:

Phenazepam | Etizolam | Diclazepam | Flubromazepam | Fonazepam | Flunitrazolam | Bromazolam | Bromazepam | Deschloroetizolam | Flubromazolam

1. Novel psychoactive substances: types, mechanisms of action, and effects. *BMJ* 2017; 356: i6848. <https://doi.org/10.1136/bmj.i6848>

2. Robinson, J. Novel psychoactive substances: what are they and what implications can they have for pharmacists? *The Pharmaceutical Journal* 2016. <https://doi.org/10.1211/PJ.2016.20201674>