

# KETAMINE

WHAT YOU NEED TO KNOW



**Australian Government**  
**Department of Health**

# WHAT IS KETAMINE?

Ketamine (Ketamine hydrochloride) is a dissociative general anaesthetic. Doctors and vets use this drug because it produces analgesia (pain relief) and amnesia. It is considered a safer alternative to general anaesthetic for some people (e.g. older people and children) because it doesn't slow down a person's breathing or heart rate.<sup>1</sup>

Used in small doses, it produces feelings of dissociation, helping the user to feel separated or detached from their body and/or environment. It also has hallucinogenic effects and can impact on the senses and on a person's perception of reality.<sup>2</sup>

Ketamine is usually a white powder, but it is also available in a liquid form (which is used in medicine).<sup>3,4</sup> It is usually sold in 'bumps' (a small amount of powder) or grams. Ketamine is usually snorted (a bump is usually snorted through a small glass nasal inhaler called a 'bumper'),<sup>3</sup> although it can also be swallowed, smoked or injected.<sup>3</sup> It can also sometimes be one of the drugs sold as 'pills' or ecstasy.<sup>5</sup>

As with all drugs sold in powder form, ketamine may also be sold cut (mixed) with other white powder substances which reduce the purity and can be harmful — users can never be 100% sure of what they're getting.

Ketamine is also known as K, Special K or Vitamin K and is also sometimes described as a horse tranquiliser, due to its use in veterinary medicine.

## METHOXETAMINE

Another dissociative anaesthetic sometimes used for its psychoactive effects is methoxetamine, also known as MXE. It is a 'new psychoactive drug' that is chemically similar to ketamine and has similar effects. It is also a white powder. Currently, little is known about the risks of taking it.<sup>6-8</sup>

### WHAT ARE THE EFFECTS OF METHOXETAMINE?

Methoxetamine takes effect after approximately 10-20 minutes, with effects lasting for approximately 2-3 hours.<sup>8</sup> Effects are similar to ketamine and may include:<sup>6</sup>

- **Increased heart rate**
- **Feeling of euphoria (a 'high')**
- **Anxiety, panic attacks**
- **Nausea, vomiting**
- **Paranoia (feeling extremely suspicious and frightened)**
- **Diarrhoea**
- **Visual and other perceptual distortions,**
- **Hallucinations (e.g. seeing or hearing things that aren't really there)**

## HOW MANY PEOPLE USE KETAMINE?

Ketamine use is very low in Australia. According to the 2016 National Drug Strategy Household Survey, one in two hundred and fifty (0.4%) Australians (aged 14 or over) had used it in the past 12 months.<sup>9</sup>

# WHAT ARE THE EFFECTS?

If snorted or 'bumped', ketamine takes effect within 5-10 minutes (longer if swallowed).<sup>2</sup> Its effects can last a couple of hours.<sup>10</sup> Effects of taking ketamine are extremely variable, but can include any of the following:<sup>1, 11-13</sup>

- **Increased heart rate, blood pressure and/or body temperature**
- **Increased energy**
- **Feelings of dissociation (e.g. disconnected from feelings and surroundings)**
- **Euphoria or a 'high'**
- **A feeling of calmness**
- **Increased sense of closeness (e.g. to people or objects)**
- **Feeling dizzy, faint or numb**
- **Distortions in time and space**
- **Paranoia (feeling extremely suspicious and frightened)**
- **Drowsiness, numbness, a feeling of paralysis, slurring words or difficulty speaking, loss of coordination**
- **Anxiety, panic and distress**
- **Nausea, vomiting**
- **Visual hallucinations**
- **Confusion, disorientation**
- **Passing out or risk of overdose, especially if used with other drugs such as alcohol or GHB**

It's hard to predict how a person will feel after they take ketamine. Effects vary from one person to another based on a number of factors including:

- **Physical size**
- **Age**
- **Gender**
- **Physical health**
- **The dose and purity of the dose**

Users may experience a 'comedown' in the following days. The comedown phase after-effects can include feeling twitchy and restless, having difficulty concentrating, memory problems (e.g. remembering names), feeling paranoid, suspicious or irritable.<sup>4</sup>

## WHAT IS THE K-HOLE?

At higher doses, ketamine users can have an experience called entering the 'K-hole', which is a 'trip'-like experience that varies from person to person, but commonly includes:<sup>12</sup>

- **Noticeable confusion**
- **Problems speaking**
- **Unexplainable experiences (these can range from pleasant to terrifying)**
- **Floating sensations**
- **Dissociation (perceiving a separation of mind and body)**

Less common K-hole experiences include:

- **Near-death experience sensations**
- **The feeling of being somewhere completely different to where the person actually is**
- **Visual distortions (things looking weird or different)**
- **Having out-of-body experiences**
- **Experiences such as feeling a deeper level of consciousness or understanding**
- **A distorted sense of self**

# WHAT ARE THE RISKS?

The effects of ketamine can be unpleasant or even dangerous when used in the wrong situations or by people with pre-existing conditions or susceptibilities (which they may not already be aware of).

The risks of using ketamine include:<sup>1,11</sup>

- **Increased heart rate and blood pressure — this is extremely dangerous for people who have pre-existing problems such as hypertension (high blood pressure), severe heart disease, or who are at risk of a stroke. This risk is even greater when ketamine is used alongside drugs that have stimulant effects (e.g. ecstasy or methamphetamine)**
- **Users are also more likely to experience injury. Injuries can occur due to ketamine's anaesthetic properties. People often injure themselves but do not realise it until much later**
- **Distress, anxiety, panic attacks**
- **Paranoia (usually among regular users)**
- **Nausea, vomiting**
- **Psychotic symptoms can be triggered in some people (e.g. those with schizophrenia)**
- **Overdose, especially if the user is also using other depressant drugs (e.g. alcohol, tranquillisers/ benzodiazepines such as Vallium, some types of painkillers such as opioids including morphine or OxyContin, or heroin)**

Ketamine use over the longer term can also lead to:<sup>1,15</sup>

- **Problems with memory, attention and decision making abilities. These may remain even after the person stops using ketamine**
- **More fragile mental health**
- **Ulcerative cystitis – symptoms include frequent and painful urination, cramps and urinary incontinence. Some people have also developed kidney problems**
- **'K-cramps' – if the person uses a lot over a long period of time, they could experience intense abdominal pains known as K-cramps. These usually stop when the person stops using**

There is still a lot that we don't yet know about the long-term risks of regular ketamine use, or what can happen when ketamine is taken with other drugs.<sup>1</sup>

Whether a person is a first-time, occasional or regular user, one of the major risks is that the effects of illegal drugs are unpredictable. Users can never be sure of what they're using — what they are told is ketamine may actually be something quite different, or it could be cut (mixed) with something more harmful.

Currently, there is also a lack of information about the problems methoxetamine use can cause, although there have been some reports of people requiring hospital treatment after taking it.<sup>7</sup>

## IS KETAMINE ADDICTIVE?

It is possible to be dependent on (addicted to) ketamine, particularly if it's used regularly and/or heavily. People who are dependent on ketamine find that using the drug becomes far more important than other things in their lives, such as work, sport, socialising or study. They crave the drug and find it very difficult to stop using it.<sup>1</sup> People also develop tolerance to the drug. This means that they need to take more of the drug to get the same effect.<sup>1</sup>

# SOURCES

1. Morgan, C.J. and Curran, H.V., 2012. Ketamine use: a review. *Addiction*. 107(1): p. 27-38.
2. Jansen, K.L.R., 2000. Review of the nonmedical use of ketamine: use, users and consequences. *Journal of Psychoactive Drugs*. 32(4): p. 419-433.
3. Sindicich, N. and Burns, L., 2012. Australian Trends in Ecstasy and related Drug Markets 2011. Findings from the Ecstasy and Related Drugs Reporting System (EDRS). Australian Drug Trend Series No. 82. , National Drug and Alcohol Research Centre, University of New South Wales: Sydney.
4. MIMS online, 2012. MIMS online accessed 23 August 2012 via UNSW [www.mimsonline.com.au](http://www.mimsonline.com.au).
5. Garlepp, D., Johansen, M. and Gerstner- Stevens, J., 2012. Methorphan and piperazine derivatives in illicit drug seizures in Victoria. Paper presented at 21st International ANZFSS Symposium. Hobart, 23-27 September.
6. Rosenbaum, C.D., Carreiro, S.P. and Babu, K.M., 2012. Here today, gone tomorrow...and back again? A review of herbal marijuana alternatives (K2, Spice), synthetic cathinones (bath salts), kratom, *Salvia divinorum*, methoxetamine, and piperazines. *Journal of Medical Toxicology*. 8(1): p. 15-32.
7. Wood, D.M. and Dargan, P.I., 2012. Novel Psychoactive Substances: How to Understand the Acute Toxicity Associated With the Use of These Substances. *Therapeutic Drug Monitoring*. 34(4): p. 363-367.
8. Hofer, K.E., Grager, B., Muller, D.M., Rauber-Luthy, C., Kupferschmidt, H., Rentsch, K.M. and Ceschi, A., 2012. Ketamine-like effects after recreational use of methoxetamine. *Annals of Emergency Medicine*. 60(1): p. 97-9.
9. Australian Institute of Health and Welfare, 2017. 2016 National Drug Strategy Household Survey report, AIHW: Canberra.
10. Winstock, A.R. and Mitcheson, L., 2012. New recreational drugs and the primary care approach to patients who use them. *BMJ*. 344(Feb 15 1): p. e288-e288.
11. Dillon, P., Copeland, J. and Jansen, K., 2003. Patterns of use and harms associated with non-medical ketamine use. *Drug and Alcohol Dependence*. 69(1): p. 23-28.
12. Stirling, J. and McCoy, L., 2010. Quantifying the psychological effects of ketamine: from euphoria to the K-hole. *Substance Use and Misuse*. 45(14): p. 2428-2443.
13. Reynaud-Maurupt, C., Bello, P.-Y., Akoka, S. and Toufik, A., 2003. Characteristics and behaviors of ketamine users in France in 2003. *Journal of Psychoactive Drugs*. 39(1): p. 1-11.
14. Jansen, K.L.R. and Darracot-Cankovic, R., 2001. The nonmedical use of ketamine, part two: A review of problem use and dependence. *Journal of Psychoactive Drugs*. 33(2): p. 151-158.
15. van Amsterdam, J.G., Brunt, T.M., McMaster, M.T. and Niesink, R.J., 2012. Possible long-term effects of gamma-hydroxybutyric acid (GHB) due to neurotoxicity and overdose. *Neuroscience and Biobehavioral Reviews*. 36(4): p. 1217-27.



## FOR MORE INFORMATION

We have listed some of the national telephone helplines and websites below.

### **Australian Drug Foundation**

Provides information about drugs and links to services in each state and territory  
[www.adf.org.au](http://www.adf.org.au)

### **DrugInfo Line**

Provides information about drugs and alcohol. Open 9am–5pm, Monday to Friday  
**1300 85 85 84** or **03 8672 5983**. Or visit [www.druginfo.adf.org.au](http://www.druginfo.adf.org.au)

### **Just Ask Us**

Provides information about drugs, alcohol, health and well-being  
[www.justaskus.org.au](http://www.justaskus.org.au)

### **Kids Helpline**

Free, private and confidential telephone and online counselling service for young people aged 5–25 years  
Open 24 Hours **1800 55 1800**

### **Lifeline**

24 hour crisis line **131114**  
Also available is one-on-one chatlines for crisis support, visit  
[www.lifeline.org.au/Find-Help/Online-Services/crisis-chat](http://www.lifeline.org.au/Find-Help/Online-Services/crisis-chat)

### **Counselling Online**

Free, confidential counselling service for people using drugs, their families and friends  
[www.counsellingonline.org.au](http://www.counsellingonline.org.au)

### **National Drugs Campaign**

Australian Government website provides information about illicit drugs and campaign resources.  
[www.australia.gov.au/drugs](http://www.australia.gov.au/drugs)

### **Family Drug Support**

For families and friends of people who use drugs or alcohol  
**1300 368 186**

## Some state and territory based helplines are listed below.

Alcohol and Drug Information Service (ADIS)(free, confidential advice about drugs and alcohol).  
Some services operate 24 hours.

State/Territory	City contact	Regional/Rural contact (free call from landline)
New South Wales ADIS	02 9361 8000	1800 422 599
Queensland ADIS	1800 177 833	1800 177 833
Victoria Directline	1800 888 236	1800 888 236
Western Australia ADIS	08 9442 5000 08 9442 5050 (for parents)	1800 198 024 1800 653 203
Australian Capital Territory Alcohol & Drug Program	02 6207 9977	
Northern Territory Alcohol & Other Drug Services	08 8922 8399 (Darwin) 08 8951 7580 (Alice Springs)	1800 131 350
Tasmania ADIS	1800 811 994	1800 811 994
South Australia ADIS	1300 131 340	1300 131 340

Callers in Victoria can also contact the Youth Substance Abuse Service (YSAS) on 1800 014 446  
(24 hour toll free service)

[sydney.edu.au/matilda-centre](http://sydney.edu.au/matilda-centre)

© National Drug and Alcohol Research Centre 2014-2018 © The University of Sydney Matilda Centre for  
Research in Mental Health and Substance Use 2018

This booklet was funded by the Australian Government Department of Health. It was written by Emma Black in  
consultation with Anthony Shakeshaft, Nicola Newton, Maree Teesson, Michael Farrell and Daniel Rodriguez.  
Expert review was provided by Louisa Degenhardt and Raimondo Bruno.  
Design and layout by Greg Stephenson of Netfront.

ISBN 978-0-7334-3228-6



**Australian Government**

---

**Department of Health**