

# KETAMINE

a guide for people  
who use Ketamine



New Zealand  
Needle Exchange  
Programme



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# Introduction



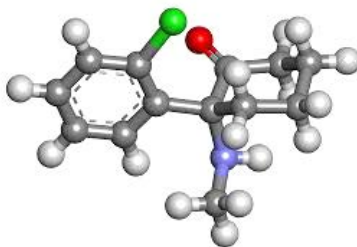
Ketamine is a dissociative anaesthetic that was developed in the 1960s. It has a broad range of uses, including veterinary medicine (it is commonly thought of as a horse tranquilliser, but

is used on many animals). It also has medical applications for anaesthesia, pain management, and more recently the management of treatment resistant depression.

Ketamine is also known for its recreational use due to its unique dissociative effects, which can include a feeling of detachment from reality or a dream-like state. It can also have hallucinogenic effects, including the distorted perceptions of sight and sound. For some, it is used to extend nights out by managing physical soreness.

Ketamine comes in several forms, including white or off-white powder, clear or white crystal shards, or sugar-like crystals. It can also come in the form of a clear liquid or occasionally pills.

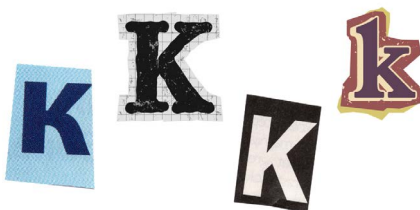
Ketamine is typically a combination of two isomers- S-ketamine and R-ketamine, also known as esketamine



and arketamine. Arketamine has shown more antidepressant-like effects, while someone taking esketamine is more likely to experience dissociative and analgesic effects. It's also possible to buy ketamine analogues, which are chemically similar to ketamine, but usually have stronger effects. Analogues include deschloroketamine, N-desmethylketamine and methoxetamine.

Intravenous administration involves injecting ketamine directly into the bloodstream, while intramuscular injection delivers the drug into a muscle. Injection allows for more precise control over dosage and quicker onset compared to other methods of administration. This booklet will focus on this method of administration, but ketamine can also be snorted or ingested orally, so we'll give advice on that too!

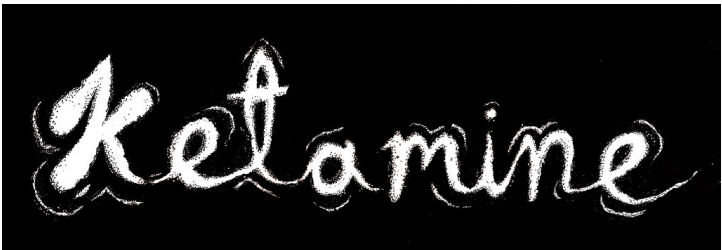
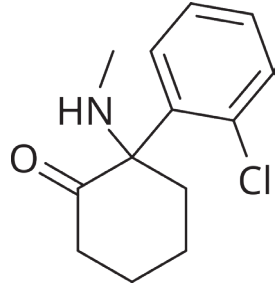
Ketamine is also sometimes known as Special K, K, ket, kitkat, super k or horse trunk.



# Effects of KETAMINE USE

The full impact of Ketamine on the brain is still being explored, especially its anti-depressant effects. However, we do know some things about how the drug works.

We know ketamine affects the brain by blocking the NMDA (N-Methyl-D-Aspartate) receptor, a receptor that is very important to controlling synaptic plasticity (the changes that occur in the junctions between neurons). Disruption of these synaptic processes can alter perception, cognition, and the sense of self. This blocking effect likely contributes to experiences of dissociation and hallucination. Blocking the NMDA receptor also results in analgesia by interfering with pain transmission in the spinal cord, which is why it is sometimes used for pain.



The word "Ketamine" is written in a white, stylized, cursive font on a black background.



Ketamine also strengthens connections between two brain regions that are involved in the production and regulation of dopamine, a neurotransmitter involved in pleasure, reward, and motor control. This contributes to a stimulant effect and feelings of euphoria of ketamine, especially at lower doses.

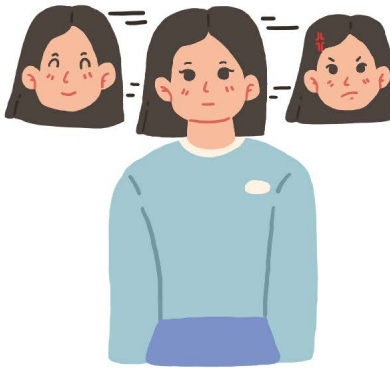
### **Effects:**

When ketamine is used, individuals may experience a range of effects, including:

- Feelings of euphoria
- Feelings of relaxation
- Sense of detachment from the body
- Visual and auditory hallucinations
- Nausea and vomiting
- Confusion and clumsiness
- Increased heart rate and blood pressure

At lower doses, people using ketamine might feel stimulated and have reduced sensitivity to pain.

People taking ketamine might encounter a 'k-hole' which is an intense state of dissociation with temporarily partial or full body paralysis. Many people are also unable to speak when in a k-hole. K-holes are more likely to occur at higher doses of ketamine, but if your tolerance is low or you are injecting, they can occur at lower doses. Usually, they last between 45 and 60 minutes. If it is your first time taking ketamine, it is best to avoid going out and being around unfamiliar people– trusted people and a familiar space will make a k-hole less uncomfortable.



Short-term effects of ketamine use can include cognitive impairment or memory loss. If used for longer periods, tolerance and dependence can develop. Tolerance develops quickly with ketamine, and it takes a long time to go back down.

Chronic use sometimes results in abnormal liver or kidney function and bladder damage, referred to as Ketamine induced cystitis. It is important to look out for signs of bladder problems such as blood in the pee, peeing frequently and back/flank pain if you are regularly using ketamine, especially at higher doses. If you notice signs, seek medical attention and reduce ketamine usage until you know what is wrong.



# Duration & Elimination OF EFFECTS

The onset of ketamine's effects varies depending on the way it is taken, and sensory perception may be affected for up to 24 hours after ingestion. However, effects tend to come on quickly and the most intense effects are fairly short-lived.

## Injected (IM)

Intramuscular injection is one of the fastest ways to release ketamine into your system. This method of injecting ketamine is recommended by peers, but sometimes people inject intravenously to speed up onset. When injected intramuscularly, effects are felt within one minute.



## Injected (IV)

Intravenous injection is the fastest way to release ketamine into your bloodstream, and is sometimes practised to maximise the bioavailability of the drug or for more intense effects. When injected intravenously, effects are felt almost immediately. IV injection is similar to IM, but has faster onset time and a potentially increased redose compulsion because of shorter duration of action.

Sometimes, IV and IM injections are combined for the intensity of IV administration and longer lasting effects of IM. This reduces the need to repeatedly administer IV injections.

## Snorted

Ketamine can be snorted up the nose, where it travels through mucous membranes to the bloodstream and brain. This is the most common method for taking ketamine, and effects typically begin within 5 to 15 minutes.



Sometimes, ketamine powder is mixed with water and administered nasally as a mist, so that it is less harsh on the nose.

## Ingested

Sometimes, ketamine is taken orally as a pill or a liquid. This is the slowest method of absorption and has the lowest bioavailability. It can take up to 30 minutes to feel the effects of ketamine when ingested. It will also lead to effects persisting longer, which is important to keep in mind when redosing.

Factors such as the dose taken, frequency of use, individual metabolism, and method of administration can all influence how long ketamine stays in the body.

# Safe use PRACTICES

When used without alcohol or other drugs, ketamine is not known to have a high risk of overdose. Here are some steps you can take to minimise those risks.

## Tip 1: Ensure your ketamine is ketamine

Even if you know your dealer, there is no way to know what you bought is really ketamine without getting it checked.

Sometimes, drugs will be cut (mixed with other substances) to reduce cost or increase potency. To the eye it looks

the same, but everything from caffeine to heroin has been sold in NZ as ketamine. That's why it is so important to bring your drugs to drug checking services or use test strips before you take them.



## Tip 2: Don't mix your ketamine

We'll provide information on mixing ketamine later in this booklet, but we advise against mixing ketamine with other substances, especially depressants like opioids, alcohol, and benzos. This significantly increases the risk of OD, slowed breathing, and choking on vomit in a k-hole.

## Tip 3: Start low, go slow

Everyone will react differently to ketamine, and even if you've taken it before, it can be hard to measure dosage without knowing the purity of the substance. That's why

we recommend always starting with a smaller dose than you think you need and wait about an hour, until you know how it affects you before you take more.

These are the dosages the Level recommends for snorting ketamine, but if you're injecting a smaller amount of ketamine will produce the same effects, so reduce the dose:

Light	10 - 30 mg
Common	30 - 75 mg
Strong	75 - 150 mg
Heavy	150 mg+

#### **Tip 4: Don't use alone**

If possible, avoid using ketamine alone. Not only does having a sober friend ensure there is someone to call for help if you need it, but they can also help ground you if the dissociative effects get severe or scary. Because ketamine is such an intense sensory experience, it helps to have someone to talk you through it and help you stay safe.

#### **Tip 5: Evaluate your mindset and setting**

Your environment influences how you feel - this will still be true when you're high. If you can, make sure the place you are using is safe and comfortable. It is also important to consider your mood when taking ketamine. Will the dissociative effects make things better, or worse?

#### **Tip 6: Stay hydrated**

It's easy to forget to drink water (or even better—electrolyte water) when under the influence of ketamine, but it is important to stay hydrated, as it can reduce the risk of bladder damage. It can also help make veins easier to find, if you're injecting and helps your body as it comes down from the high, because you won't be feeling the effects of dehydration.

*Note: if someone is in or going into a k-hole, it becomes dangerous for them to drink water. Avoid water if this is the case.*

**If you snort ketamine, these tips could also help you:**

### **Tip 7: Crush thoroughly**

To avoid damage to your nasal cavity from large particles of your ketamine, make sure you crush it into a very fine powder before you snort it

### **Tip 8: Care for your nose**

Between lines of ketamine, we recommend doing a nasal rinse to reduce irritation and risk of infection. If you can't do it between lines, before bed is also a good idea. For irritation around the outside of your nose, vaseline can be effective to soothe and protect the area.

### **Tip 9: Don't share equipment**

If you are snorting ketamine with friends, don't share equipment (straws, keys, bills) with other people. If possible, try to stick to clean straws, as these are less likely to carry bacteria



or blood borne viruses. It is also risky to snort off unsterile tables and mirrors that other people have used.

# Injecting KETAMINE

Sometimes, people inject ketamine. Injecting leads to a quicker onset of effects and a more intense high, depending on dosage. It can either be injected in its liquid form, or the powder can be mixed with water (we recommend sterile water), filtered, and injected.

Ketamine can be injected intramuscularly (IM) or intravenously (IV), but is typically known as a "muscle drug." This is because the effects IV injecting carries more risk of damage to veins. It can be hard to find veins and easy to insert the needle incorrectly when engaging in IV use compared to IM. Due to the anaesthetic effects of ketamine, it can also sometimes be difficult to tell if the needle has come out of the vein mid injection or if the vein has been missed.

## Recommended equipment for injecting ketamine

Form	Needles	Syringe	Filter
IV - powder	26 - 27 g x 1/2"	3ml or 1ml	Ciggy filter or cotton Blue wheel filter (.2 micron)
IV - liquid	26 - 27 g x 1/2"	3ml or 1ml	Blue wheel filter (.2 micron)
IM - powder	25g x 1-1.5 in	3ml or 1ml	Ciggy filter or cotton Blue wheel filter (.2 micron)
IM - liquid	25g x 1-1.5 in	3ml or 1ml	Blue wheel filter (.2 micron)

*Here are some tips we recommend whether you are using IV or IM injections. Here are some tips we recommend whether you are using IV or IM injections.*

### Tip 1: Use sterile equipment

When injecting any substance, it is important to use new, sterile tools every time, along with sterile water, if you are injecting powder or crushed pills. This will reduce the chance of contracting a blood-borne virus. Remember to also wash your hands, to reduce risk of infection. You don't need to worry about conserving resources- needle exchanges across New Zealand provide injecting supplies for free.



### Tip 2: Filter your ketamine

Once you have dissolved your ketamine in sterile water, make sure you filter it through a blue (.2 micron) wheel filter to remove large particles. Ketamine dissolves in water- anything not dissolved is likely filler and large particles can do damage to veins and muscles.

### Tip 3: Clean the area

Using alcohol swabs to clean your injection site before you use ketamine is a good way to decrease risk of infection. When using swabs, remember to only do one pass in a single direction, to wipe away bacteria and avoid redistributing it.

### Tip 4: Rotate injection sites

When injecting ketamine, it is important not to inject the same place over and over again. If you do, the area will likely experience bruising and soreness. If you usually inject into your delts, try switching to your thigh or glute and then back again once your arm has time to heal. Our Veintenance or Steroids resources can help you decide where to inject.



### Tip 5: Sit down

When injecting ketamine, it is recommended to ensure you are sitting down in a safe place such as a comfy chair or couch, or on your bed. The quick onset can result in a rapid k-hole effect, loss of coordination and even falling over. This ensures you can enjoy the effects safely, without injuring yourself.

### Tip 6: Remove needle quickly

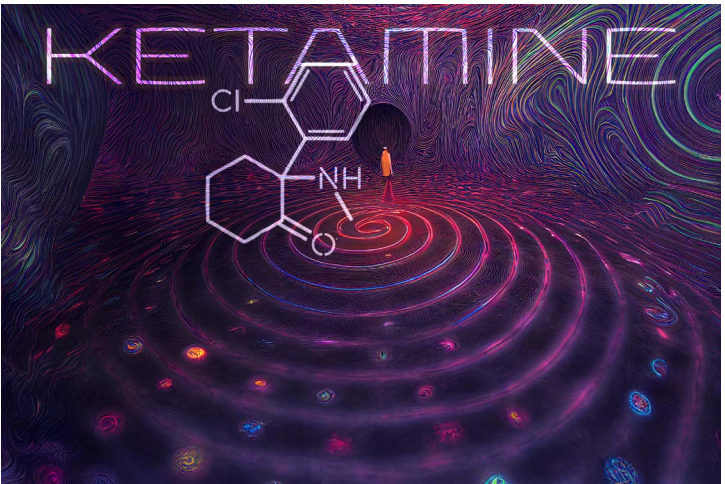
When injecting ketamine intravenously, it can sometimes be difficult to get the needle out of your vein before the effects hit and you k-hole. This can result in vein damage, or if the needle/syringe comes out while you are in a k-hole it can make a mess. Where possible, remove the needle from your vein as soon as possible before the effects take over to prevent vein damage.





## Tip 7: Prepare shots

People often like to have multiple ketamine shots over a period of time. It can be useful to prepare a set number of injections before having the first shot to ensure you don't get carried away, or simply make a mistake with dosing whilst under the effects.



# Mixing KETAMINE

*While ketamine is often used on its own, it is common for it to be mixed with other substances, often called "poly-substance use" or "poly-drug use." As a general rule when mixing substances, we recommend using less of each drug than you would ordinarily, at least to start.*

## **Ketamine and stimulants**

Mixing stimulants with ketamine is common (you may have heard of Calvin Klein, the Cocaine-Ketamine combo). It is also common for the drug to be mixed with MDMA and occasionally amphetamines. We recommend exercising caution when mixing these substances, especially if you have not tested the drugs. Take them slowly and allow time to see how your body reacts to the combination, and make sure you keep track of how much and when you took each dose.

## **Ketamine and depressants**

Ketamine causes sedation and acts as a depressant in your body. Mixing it with central nervous system depressants like alcohol, benzos, opioids or GHB/GBL increases these side effects and the risk of overdose. We strongly recommend avoiding this combination altogether, as the risks are higher than the potential reward (frequently mixing these substances will result in extreme sedation rather than an enjoyable high).

## **Ketamine and other drugs**

Other types of drugs, including hallucinogens like LSD and mushrooms are typically physically safe to consume with ketamine, however psychologically they may be unsafe. Mushrooms also commonly cause vomiting-- if a person in a k-hole vomits they will not be able to stop choking, which adds additional risk. It is important to consider your mental state carefully before mixing these substances.

Cannabis is typically safe to consume with ketamine using harm-reduction techniques, however psychological risk should still be considered.

If you are on any other regular medications like antidepressants or mood stabilisers, make sure you check for specific interactions. These drugs may not cause a "high" but they still impact your chemistry and could interact with ketamine.

# Ketamine

## OVERDOSE

Though ketamine is not as likely to cause fatal overdose as other drugs, it still carries some risk, especially if you have mixed it with other substances. The signs of overdose depend on how much has been taken. At first, you may experience an amplification of the usual effects of ketamine, for example extreme sedation, heart palpitations, or severe neurological effects like paranoia and dysphoria. It can be difficult to tell whether to ride it out or call help in this situation. As the overdose progresses, other symptoms will appear that generally only occur in the case of overdose, including:

- Respiratory – respiratory depression, breathing starting and stopping
- Cardiovascular – chest pain, racing heart
- Neurological – seizure, stupor, coma

In the event of an overdose, it is crucial to **call 111 immediately**. Once you've done that, these are some tips that could help:

- Do not leave the person alone.
- Ensure the airway is clear and place the person in the recovery position to prevent blockage.
- Remain calm and keep monitoring their condition until help arrives.
- If the person is not breathing, perform CPR/rescue breaths.

# Cessation of Use and **WITHDRAWAL**

Stopping ketamine use is sometimes associated with withdrawal symptoms, especially if you have been taking large amounts or using for a long period of time. When large amounts are taken over a period of time, a tolerance may occur. This means the body needs more of a substance to feel the same effects. When stopping chronic use, people who use ketamine will often experience symptoms like:

- Cravings
- Appetite loss
- Exhaustion
- Sweating/chills
- Tremors
- Elevated body temperature

You may also experience psychological withdrawal, which can be more intense than the physical. Often people experience feelings of anxiety and depression, along with nightmares, when stopping ketamine.

The important thing to remember is that withdrawal is temporary, and can be managed with the right strategies. Here are some techniques to consider:

- Regular exercise
- Balanced diet
- Hobbies/distractions
- Hot showers

# Getting Help and SUPPORT SERVICES

*If you use ketamine and are finding yourself feeling out of control or have the desire to stop, there are lots of resources available to help you achieve that goal.*

## **Support Groups**

Sharing how you are feeling and the truth about your relationship with ketamine can be scary, but you are not alone and you don't have to do this without support. There are lots of options for support groups to help you along the way. Narcotics Anonymous is probably the most well-known drug cessation support group organisation, but there are non-abstinence based alternatives too. We highly recommend seeking out a group online or in your area if you want to manage your ketamine use. Check out the resources page on the NZNEP website for information on groups, or call a branch and talk to us.

## **Hotlines**

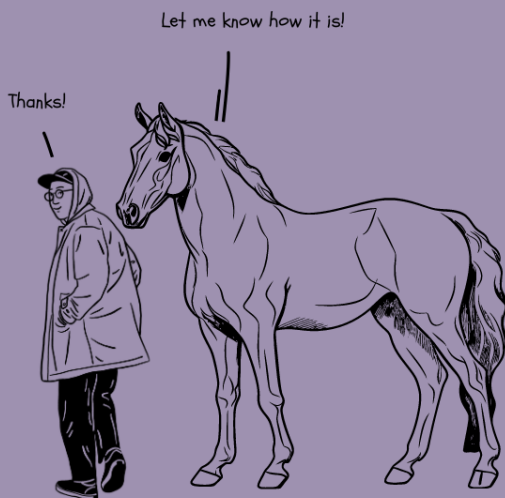
If you are in a crisis or feel like you might take ketamine even though you don't want to, there are lots of text and call lines you can use in NZ. Different hotlines exist for different issues, but they provide a kind, confidential resource to people who are feeling very unwell, and will always be happy to talk to you.

Scan this code for a  
full list of NZ hotlines:



## Stay Informed. Stay Safe.

Understanding ketamine's effects, safe use practices, and available support resources is crucial for managing risks and promoting well-being. For further information and assistance, consult local health services or contact support organisations.





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