# Ketamine
# Harm Reduction Information

Also called Special K and K; esketamine is the nasal spray form (Spravato)

**Last updated 10/26/2026**

## Please Read First

This page is educational. It is not medical, legal or professional advice, and I am not a physician or an attorney. I gathered this information from published harm reduction organizations, medical and legal sources, and my own training and experience, and I may have made mistakes. You are responsible for confirming anything here before you act on it, with a qualified medical provider and, for questions of law, an attorney. Laws and knowledge about psychedelics change quickly, and some of what is written here may have changed since the date above. Nothing here encourages anyone to break the law. It exists to reduce harm for people who will make their own choices. I do my best to keep up with current law and research, but I cannot promise that anything here is current or complete.

It is advisable to meet with a psychedelic-informed physician for an assessment before using any psychedelic or related substance.

**Where this information came from:** The sources listed under References, and my own training and experience.

## What Ketamine Is

Ketamine began as an anesthetic. It was first made in 1962 as a relative of phencyclidine (PCP) that acted for a shorter time and was gentler on the heart and breathing [1], and it has been sold in the United States since the 1970s [2]. In 1999 the DEA placed it in Schedule III [2].

It is called a dissociative because it loosens the sense of being in your body and in ordinary time and space. Like PCP it changes consciousness in proportion to the amount taken, with less violence and a much shorter reach: its half-life is about 2.2 hours, against 21 for PCP [3]. From the first clinical trials, researchers saw dissociative, psychedelic effects in people coming out of anesthesia [3].

Four worlds now use it: the operating room, the depression clinic, the therapy office where it is paired with psychotherapy, and the street. The body treats the molecule the same way in each, so this sheet speaks to all four.

# About Ketamine and Its Effects on the Body

Ketamine blocks the NMDA receptor, a receptor for glutamate, the brain's main excitatory messenger [4]. Ketamine itself is a mixture of two mirror-image forms, esketamine and arketamine [4]. Esketamine is the form sold as the nasal spray Spravato [4].

## How Long It Lasts

The DEA describes onset as rapid, often within a few minutes and a little slower when swallowed, and the hallucinatory effects as relatively short [2]. In the esketamine trials, blood pressure peaked about 40 minutes after a dose and stayed raised for about 4 hours [4]. Dissociation was brief and happened on the day of dosing, yet the label tells patients not to drive or do anything hazardous until the next day, after a restful sleep [4]. Swallowed ketamine lasts longer than the other routes [5]. Duration depends on route and amount, so the general statement is that the main effects last from minutes to a few hours, and thinking and coordination can be off for some hours after that.

## Heart, Blood Pressure and Breathing

Esketamine raised blood pressure at every recommended dose. In the label's trials, 8% to 17% of people had a rise of more than 40 points in systolic or 25 points in diastolic pressure within the first hour and a half, at least once in the first four weeks, and a big rise could come after any dose even when earlier doses had been mild [4]. In a study of healthy volunteers, heart rate rose by more than 10 beats a minute, with no clinically relevant change in the heart's electrical rhythm (QTc) at the therapeutic amount [4].

Slowed breathing (respiratory depression) has been seen after marketing [4], and the FDA lists it among known safety concerns for ketamine products, with increases in blood pressure [6]. In one case reported to the FDA, a person taking compounded oral ketamine at home for PTSD developed slowed breathing, with a ketamine level that appeared to be about twice what is seen in anesthesia [7].

## Sedation and Dissociation

In the label's clinical trials, 49% to 61% of people given esketamine became sedated, and 0.3% lost consciousness [4]. Dissociative or perceptual changes, including distorted time and space, illusions, unreality and detachment from the self, affected 61% to 75% [4]. Dizziness, nausea, vomiting, vertigo, anxiety and "feeling drunk" were common [4]. The DEA notes that ketamine can make a person unresponsive to what is going on around them [2].

## Bladder and Urinary Tract

Ketamine is hard on the bladder. Regular heavy users report frequent and urgent urination, pain above the pubic bone and a bladder that holds less; cystoscopy often shows an inflamed, ulcerated bladder lining [8][9]. In long-term heavy use the damage can reach the kidneys (swelling from blocked or refluxing ureters, and kidney failure in the worst cases) [9][10].

The harm depends on the amount and the length of use, and it can become irreversible [11]. Symptoms usually return if a person who stopped starts again [10]. Stopping is the main treatment; medicines and surgery are used for severe cases [8][10]. The damage seems to come from ketamine itself, not from what it is cut with [11]. It has also been reported after months of medical ketamine for chronic pain at amounts below recreational use, and in nearly all of those cases symptoms improved or cleared when the dose was lowered or stopped [11]. In the esketamine trials, urinary symptoms were more common than with placebo, though no esketamine-related interstitial cystitis appeared in studies lasting up to a year, and the label says to monitor for bladder symptoms [4].

### Thinking and Memory

A single esketamine dose made thinking harder around 40 minutes later, and performance matched placebo by 2 hours [4]. Long-term thinking and memory problems have been reported with repeated misuse [4][12].

### Toxicity and the Mind

There is no specific antidote for an esketamine overdose, and Poison Help advises considering whether other drugs are involved [4]. People with a history of psychosis need careful assessment, since the dissociative effects can aggravate it [4]. The label carries a boxed warning on suicidal thoughts and behavior in adolescents and young adults taking antidepressants, and esketamine is prescribed alongside an oral antidepressant [4].

## How Much Medicine: Levels of Effect

People use the words low dose, psycholytic, psychedelic, full dose and K-hole for points along one slope. Nobody has fixed the lines between them. One clinic calls low what another calls moderate, and the same amount lands very differently by route (see How It Is Taken). This section describes what each level feels like and risks, and leaves amounts to the sources and a medical provider. The sources do agree that effects follow dose and deepen as it rises [4][3].

### Psycholytic: the Talking Level

Psycholytic comes from Greek roots for mind or soul and for loosening. In ketamine therapy it names a level light enough that the person stays lucid and slightly dissociated [13]. From an IFS lens, we would say that ketamine lowers analytical and protective parts, making the deeper work of psychotherapy more easily accessible. Practitioners describe mild dissociation that keeps a person able to take part in the session [14], and talk-friendly levels that help with emotional processing in real time [15]. Even this level is a real drug experience: at approved clinical amounts, most people in the esketamine trials had dissociation and about half had sedation [4].

### Psychedelic: the Going-Inward Level

In ketamine therapy, psychedelic names a higher, more dissociative level that practitioners say offers deeper access to the unconscious [15]. Speech and movement thin out, and the experience becomes more internal. A 2023 pilot study of ten people compared a higher intramuscular approach, with therapy the next day, against a lower lozenge approach during therapy sessions. Everyone improved and the higher approach looked more consistent, though ten people cannot settle the question [16].

### The K-Hole

The DEA defines K-hole as an out-of-body, near-death experience [2]. Utah State University Extension describes it as taking too much, with a complete numbness or disconnection from the body [12]. The same source warns that people trying to reach it can overdose, most of all when other substances are on board [12]. Some people go for it deliberately, and the DEA records a milder cousin, K-land, a mellow and colorful experience [2].

In the K-hole a person may not be able to speak, move with purpose or ask for help, and the people around them cannot tell whether things are fine or going wrong. Vomiting is common with ketamine [4], and a sedated person who vomits is in danger. A sober person who can stay with them, and who knows what the warning signs are, matters most at this level.

### Anesthetic Level

This is the level ketamine was made for, with breathing and heart monitored by a medical team. Esketamine is not approved as an anesthetic, and its safety and effectiveness in that role have not been established [4].

## How It Is Taken

Ketamine has been given by mouth, under the tongue, through the lining of the nose, by shot into muscle, into a vein and under the skin [17]. The route changes how fast it acts and how much of an amount reaches the bloodstream. Estimates differ between studies, and these are averages with wide person-to-person variation.

### Into Muscle or a Vein

A shot into muscle gets about 93% to 95% of the amount into the blood [18]. Intravenous is the most common route in treatment and is also the most studied [17]. Onset is within seconds to a minute [5].

### Through the Nose

Nasal absorption estimates run from about 30% to 50% [18]. The esketamine spray was measured at about 48% [4]. Some of the spray can be swallowed, which changes the amount absorbed [17].

### Under the Tongue and Swallowed

Under the tongue gets about 30% into the blood [18]. Swallowed ketamine reaches the blood at only about 20% to 25%, and how much varies from person to person is poorly studied [19]. The gut and liver break down much of an oral amount before it reaches the brain [19]. The result is a slower onset and a longer experience [5], and an amount that feels mild by one route can be intense by another. A person who knows how they feel on one route cannot carry that over to a different one.

### Compounded Lozenges and Home Use

Compounded ketamine, often lozenges or troches sent by telehealth companies, is not evaluated by the FDA for safety or effectiveness [6]. The FDA says it knows of no evidence that compounded ketamine is safer, more effective or faster than approved medicines for psychiatric conditions [7]. Taken at home, there is nobody to watch sleepiness, dissociation, blood pressure or heart rate [6]. The CDC adds that compounded products are not covered by the Spravato safety program (REMS), which requires supervised administration [20].

## Medical, Off-Label and Street Use

### Approved Medical Use

Ketamine is approved as an anesthetic. Esketamine (Spravato) is approved, together with an oral antidepressant, for treatment-resistant depression in adults, and it is available only through the Spravato REMS: it must be given in a certified healthcare setting, with the person observed for at least 2 hours afterward [4].

### Off-Label Use

Off-label means a medicine used for something its approval does not name. The FDA has not approved ketamine for psychiatric disorders, yet compounded ketamine has been used for depression, PTSD, anxiety and OCD [6]. The FDA lists the known concerns as abuse and misuse, psychiatric events, increased blood pressure, slowed breathing, and bladder symptoms [6]. Ketamine is also used off-label for chronic pain, where the bladder problems above have been reported [11].

Telehealth prescribing leans on temporary federal flexibility. The Ryan Haight Act normally requires an in-person medical evaluation before a controlled substance is prescribed remotely [21], and the temporary DEA rule that waives that requirement expires 12/31/2026 [22]. Whether it is extended or replaced is not settled as of 10/26/2026.

### Ketamine-Assisted Psychotherapy

Ketamine-assisted psychotherapy (KAP) pairs ketamine sessions with preparation and integration therapy [1]. Researchers report that ketamine’s psychedelic effects have always gone hand in hand with its antidepressant effects [3], and they are working out

how to pair it with approaches such as Acceptance and Commitment Therapy [23]. Models differ widely: some use one or two medicine sessions with therapy before and after, and some use frequent lower-level sessions at home [1][14]. The evidence is early and mostly from small studies.

### Street Use

Ketamine on the street usually starts as pharmaceutical liquid that has been evaporated to powder [2]. The DEA counts it among the club drugs of dance clubs and raves [2], and a study of U.S. poison center data reported rising recreational use at dance clubs and an 81% increase in ketamine poisonings, with about a third of cases involving other substances, most often benzodiazepines and opioids [24]. Among heavy users with urinary symptoms, most also used methamphetamine, cocaine or cannabis [11]. Slang includes K, Special K, K-land and K-hole; a longer list is in the Utah State University Extension fact sheet [12].

The researcher who led the poison center study said ketamine is far from the most dangerous drug, but that it becomes dangerous when combined with other drugs or used in physically or socially hazardous situations [24]. The DEA also records its use to facilitate sexual assault [2]. A drink or powder from an unknown source can carry ketamine without the person knowing.

## Legal Status

Last checked 10/26/2026. Ketamine law is moving, mostly around telehealth.

### Federal

Ketamine is a Schedule III controlled substance [2]. Using or holding it without a valid prescription falls outside the law. Esketamine (Spravato) is FDA-approved and tightly restricted by its REMS [4]. Telehealth prescribing without an in-person visit rests on a temporary rule that expires 12/31/2026 [22].

### Colorado

Ketamine is not part of Colorado’s Natural Medicine Health Act. Ketamine clinics are legal in the state through FDA-approved medical use and ordinary medical rules, not through the Act [25]. The state’s definition of natural medicine covers psilocybin and psilocin, and the Department can add DMT, ibogaine and mescaline later; ketamine is not on that list [26].

## Contraindications

Certain medications and conditions make ketamine riskier. Most of the specifics below come from the esketamine label, which is the best-documented source; where the evidence is about ketamine in general, the line says so. Check with a medical provider before using, and never stop or change a prescribed medicine on your own.

### Medications

- **Benzodiazepines (diazepam and others), opioids and barbiturates:** these add to sedation, and the label asks for close monitoring when they are taken with esketamine [4]. In the poison center study, most cases with other substances involved benzodiazepines and opioids [24]. One source says diazepam can slow the breakdown of ketamine and raise its level [27].
- **GHB:** using ketamine with GHB or opioids was linked to a significantly higher risk of major adverse effects [24].
- **Stimulants (amphetamines, methylphenidate, modafinil, armodafinil):** may raise blood pressure further, and the label asks for close blood pressure monitoring [4].
- **MAOIs:** may raise blood pressure further, and the label asks for close blood pressure monitoring [4].

### Conditions

- **Aneurysmal vascular disease (aorta, brain or limb arteries), arteriovenous malformation, or a history of bleeding in the brain:** the esketamine label lists these as contraindications, because the rise in blood pressure can be dangerous [4].
- **High blood pressure, heart attack, stroke, heart failure, heart valve disease, symptomatic rhythm problems, brain injury or raised pressure in the brain:** the label tells people to raise these with a provider before use [4].
- **History of psychosis:** the dissociative effects call for careful assessment [4].
- **Liver problems:** esketamine stayed in the body longer in moderate liver impairment and is not recommended in severe impairment [4].
- **Pregnancy and breastfeeding:** not recommended; ketamine given to pregnant animals was linked to fetal harm and brain cell loss in offspring, and esketamine is present in human milk [4].
- **Bladder or urinary conditions:** ketamine can cause bladder inflammation, and the label asks for monitoring [4][8].
- **History of substance use disorder:** people with a history of drug abuse or dependence are at greater risk of misuse [4].
- **Under 18:** esketamine is not approved for anyone under 18 [4].

## Addiction and Misuse

Physical dependence, addiction and misuse are three different things. Physical dependence means the body has adapted to a substance and reacts with withdrawal when it is stopped. Addiction, which the DSM-5 calls substance use disorder, is a pattern of continued use despite harm. The esketamine label separates abuse, which is intentional non-therapeutic use of a drug even once for its effects, from misuse, which is intentional use for a therapeutic purpose in a way other than prescribed or by someone it was not prescribed for [4]. Misuse can happen without addiction.

For ketamine the picture is mixed and depends on how it is used. In supervised clinical settings, studies report minimal craving, escalation, misuse or illicit use [28]. Among frequent users the story changes. Physical dependence and tolerance have been reported with prolonged use, and withdrawal has been reported after long periods of frequent (more than weekly) large amounts, with craving, fatigue, poor appetite and anxiety [4]. Case reports of dependence exist, but there are no large studies, and the true rate is unknown. Evidence for a distinct withdrawal syndrome conflicts, while craving appears to be the central problem [29]. In a Hong Kong study, just over half of ketamine abusers reported withdrawal symptoms on stopping [30]. In 104 Taiwanese inpatients treated for ketamine dependence, stronger cravings went with more days of use and worse depression [31]. Ketamine is a drug where the physical and psychological sides of dependence both deserve respect, and where heavy regular use costs the bladder as well.

## Synergistic Effects and Combining Medicines

Sedatives and opioids stack with ketamine's own sedation and slowed breathing [4][24]. Stimulants and MAOIs add to the rise in blood pressure [4]. The handout Psychedelics and Cautions names more combinations known to go badly, with a note that this is a young field and caution is the best way to proceed. Any other substance can change the experience in ways nobody has studied well, so check each one with a medical provider.

## Testing and Purity

Pharmaceutical ketamine comes with a label and a known strength. Street ketamine does not, and nobody can read strength or purity from the look of a powder. DanceSafe sells reagent kits that test for the presence of certain compounds, but a kit cannot tell you how much of anything is in the powder or rule out every other substance. Compounded products are not evaluated by the FDA for safety or effectiveness [6].

## Preparation and Integration

### Before

Meet with a psychedelic-informed physician for an assessment. Clinical programs check blood pressure first and screen for heart and blood vessel conditions [4], and your medication list belongs in that conversation. Where the esketamine program supervises, the person is monitored for at least 2 hours afterward and arranges a ride home [4]. Without that structure, the same safeguards are worth building on your own: a sober person present who knows the warning signs, a place where falling cannot hurt you, and no plans to drive. Therapy before the session is part of how KAP is designed [1].

### After

The label tells patients not to drive or do anything requiring full alertness until the next day, after a restful sleep [4]. Watch for bladder symptoms such as urgency, pain or

frequent urination, and see a provider promptly if they appear [4][11]. Watch mood as well: the label asks for close attention to new or sudden changes in mood or thoughts of suicide, especially early in treatment and when the dose changes [4]. Integration work with a therapist helps make sense of what came up [23][1].

## If You Need Help Now

In a medical emergency, call 911. If you are in emotional crisis, you can call or text 988. Fireside Project has trained volunteers who talk with you by phone or text during and after a psychedelic experience, and DanceSafe sells kits for testing what you hold.

### Warning Signs

- **Cannot be woken, or does not respond to voice or touch:** call 911 [2][4].
- **Slow, shallow or stopped breathing:** call 911 [6].
- **Chest pain, shortness of breath, sudden severe headache, vision changes, seizure or fading consciousness:** these are the label's warning signs of a dangerous rise in blood pressure; call 911 [4].
- **Poison Help, 1-800-222-1222:** the label directs overdose questions here, and there is no specific antidote [4].
- **Blood in the urine, burning, or a constant need to urinate:** see a provider; stopping ketamine is the main treatment [8].

## Where to Find More Information and Support

Amounts, timing and combinations are best checked against these sources and with a medical provider, because they are updated more often than this sheet. Erowid, TripSit and PsychonautWiki include user reports and community writing, so read them as experience as well as research.

Erowid: https://erowid.org

DanceSafe: https://dancesafe.org

TripSit: https://tripsit.me

PsychonautWiki: https://psychonautwiki.org

Zendo Project: https://zendoproject.org

Fireside Project: https://firesideproject.org

MAPS: https://maps.org

Poison Help: 1-800-222-1222

### Mailing Lists

Erowid Monthly, a free email list:
https://www.erowid.org/about/about_announcements.shtml

Erowid Extracts, the members' newsletter: https://erowid.org/membership/

MAPS email newsletter: sign up at https://maps.org

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