



## Alcohol dependent rodents drank less after being given ketamine treatment

- For unclear reasons, the effects were only seen in male rats
- Some females drank even more while others became addicted to ketamine
- Researchers said it suggests ketamine as a potential alcohol disorder treatment

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A medicinal form of ketamine, the horse tranquiliser and illegal party drug, may offer hope to alcoholics, a study suggests.

Rodents which were dependent on **alcohol** were less tempted to drink after being given a course of medicinal ketamine treatment.

But the effects were only seen in male rats. Female rats given the drug were more likely to drink more and get addicted to the hallucinogenic.

It's not the first time ketamine has shown promise for alcoholics, with studies on humans and mice having produced similar results.

Theories suggest ketamine may interfere with memory, causing alcoholics to forget what drives them to drink.

But there are still major concerns about its use in medication because of its negative side effects - such as hallucinations and panic attacks - and risk of addiction.



**Ketamine, the horse tranquiliser and illegal party drug, may offer hope to alcoholics, a study on rodents suggests**

Scientists have increasingly shown interest into psychedelic drugs such as ketamine and MDMA as therapies for treatment-resistant mental illness.

Currently, such mind-altering drugs are largely illegal in the US and the UK.

In this study, researchers at Florida State University divided male and female rats into two groups based on how much alcohol they consumed.

The rats had been allowed unrestricted access to alcohol three times a week. Three weeks later, treatment using a ketamine-based drug began.

Medicinal ketamine reduced alcohol consumption in heavy drinking male rats, and the effects lasted at least three weeks after treatment ended.

However, the drug did not affect the habits of heavy drinking female rats and actually drove lighter drinking female rats to consume more.

The female rats also displayed a higher risk of abusing medicinal ketamine compared to the male rats, according to the research published in eNeuro.

It is not clear why there were differences between the sexes.

The authors said the findings are the latest to show forms of ketamine as a 'potential alcohol use disorder treatment'.

Other studies have shown that low-doses over short periods can reduce alcohol intake in rats and humans who drink a lot.

Ian Hamilton, a lecturer in mental health and addiction at the University of York, who was not involved in the study, called the findings 'promising'.

He told MailOnline: 'The findings of this study look promising particularly for men, as it is male rats who seemed to benefit from the ketamine treatment.'

'Overall this adds to some emerging evidence that ketamine has the potential to be used in the treatment of alcohol dependence.'

'While other studies have used ketamine in combination with psychotherapy as this study was on rats it suggests ketamine may have therapeutic benefit on its own.'

Ketamine is an NMDA receptor antagonist, meaning it blocks the brain receptor NMDA

## WHAT IS KETAMINE?

Ketamine is a powerful general anaesthetic that is used to stop humans and animals experiencing pain during operations.

It started being used as a party drug in the late 2000s, with people taking it before raves for a more intense experience.

### What are the side effects?

Ketamine causes a loss of feeling and paralysis of the muscles.

It can also lead to people experiencing a distortion of reality, which many call entering the 'k-hole'.

This is when people believe they have spoken to God or a higher power, which can lead to addiction as they crave that experience.

Ketamine may also cause people to feel incapable of moving, experience hallucinations or lead to panic attacks, confusion and memory loss.

Regular users can seriously damage their bladders, which may need to be surgically removed.

Other risks include a raised heart rate and blood pressure.

Paralysis of the muscles can leave people vulnerable to hurting themselves, while not feeling pain properly can cause them to underestimate any damage.

Many claim ketamine withdrawal is worse than any other drug, with some feeling so depressed they contemplate suicide.

which regulates mood and memory formation.

This may be useful in the context of alcohol abuse because it may help eradicate triggers that cause a person to drink excessively.

Ketamine is thought to relieve depression by limiting the levels of the chemical messenger glutamate in the brain, which lifts depressed patients' moods.

This year, the US Food and Drug Administration approved the use of ketamine-based nasal spray to treat depression alongside oral antidepressants.

Mr Hamilton said people with alcohol problems are also likely to suffer with depression.

'Therefore,' he said, 'it is still not clear if ketamine is able to treat both alcohol dependence and depression or simply alleviates one condition which triggers improvement in the other.'

'Paradoxically ketamine can also induce depression, so making sure you take a medically supervised dose will be critical to avoid making the persons problems worse.'

'Regular use of high dose ketamine is risky as it can cause panic attacks, memory loss and hallucinations.'

Harry Sumnall, a professor in substance use at Liverpool John Moores University, said it was difficult to translate the findings to humans.

He told MailOnline: 'We have lots of research in rats and rodents. But although it's an interesting topic, I'm always quite wary of making leaps from rodent animals.'

'I'm not sure how relevant it is to humans who abuse alcohol.'

'But it does suggest that perhaps ketamine might interfere with how rewarding alcohol is or might have some other effects on intake.'

If you are having suicidal thoughts, contact the Samaritans [here](#).

#### **How is it taken and what is the law around it?**

For medical use ketamine is liquid but the 'street' drug is normally a grainy, white powder, with one gram costing around £20.

As a class B drug in the UK, possession of ketamine can result in people facing up to five years in jail, while supplying it could mean up to 14 years in prison.

Both cases may result in people facing an unlimited fine.

*Source: Talk to Frank*