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Non-prescribed ketamine use in under-16s and why it is a bad idea.

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Non-prescribed ketamine use in children and young people and why it is a bad idea

Abstract

Numbers of children and young people seeking support from drug and alcohol services to overcome issues with non-prescribed ketamine use have recently increased substantially. Ketamine, an anaesthetic drug causing feelings of detachment, has become an attractive option for experimentation with substances as it is affordable and accessible. The average age of first ketamine use has been reported as 16-17-years-old, but evidence suggests a downward trend in age of first use. Ketamine can have gastrointestinal and urological consequences, including chronic, ketamine-associated uropathy known colloquially as “ket bladder”. Accidents are also more common with ketamine use, given its dissociative effects.

Supporting ketamine cessation is complex, as there are no recognised detoxification programmes for under-16s in the UK. Paediatricians need an awareness of how to appropriately manage conversations about drug use and play a vital role in supporting access to drug and alcohol services. Services need to be welcoming and non-stigmatising to reduce barriers to treatment and prevent missed care opportunities.

Harm reduction advice may be appropriate given the gap between need for, and availability of, drug and alcohol services for under-16s. Prevention is also vital. Access to drug education is highly variable and sometimes poor quality. This leaves young people under-informed about the consequences of ketamine and other substances.

Keywords

Substance use; addiction; cessation; ketamine; children and young people; paediatrics; prevention

What is ketamine?

Ketamine is an anaesthetic drug used in humans and animals since the 1960s. Its ability to induce anaesthesia while maintaining cardiovascular stability and its rapid onset of action and short duration of effect make it a useful drug for emergency and pre-hospital settings.

Popular as a club drug since the mid-1990s, more recently it has shown potential as a therapeutic intervention in some forms of psychiatric illness and studies are now being undertaken to investigate its use in the management of alcohol use disorder. However, it remains prescription-only in the UK and is currently classified as Class B under the Misuse of Drugs Act 1971, the same classification as drugs such as cannabis and amphetamines.

Ketamine’s most common form is white or pale-brown grainy powder. This is often inhaled (snorted) or sometimes injected by users (intravenously or intramuscularly). Other forms of ketamine include a crystal-like form and a liquid form. Liquid forms are typically used in medical settings. As a Class B drug, it is against the law to carry, supply, or sell ketamine. Possession can result in up to five years imprisonment and/or an unlimited fine. Supplying ketamine can result in up to 14 years imprisonment and/or an unlimited fine.

Why do children and young people take ketamine?

Ketamine possesses anaesthetic, analgesic, and hallucinogenic properties, which can induce feelings of relaxation, detachment, and dream-like euphoria (2). These effects may appear appealing to children and young people (CYP) experiencing low mental well-being, inner conflict, or “noisy brains.” Feelings of anxiety, worthlessness, challenges with gender identity, or un/diagnosed neurodevelopmental conditions can increase the desire to disconnect from reality “for a break”.

Social factors, including peer influence and family/household dynamics, also play a significant role in shaping attitudes and decisions around drug use. Ketamine’s low cost, easy accessibility, and short duration of action further contribute to its appeal. For some CYP, the ability to dose in order to experience the brief, concealable effects of ketamine during a school break or in private settings makes it particularly appealing.

Patterns of ketamine use globally

The Global Drug Survey’s seven-year trend report, published in 2022, showed a worldwide increase in the use of many drugs, including ketamine. Globally, cannabis remained the most used drug reported. The report shows most drug use peaking in the 16-24 age range, but as all participants surveyed are over 16, patterns of use under-16 are not clear.

The European Union Drugs Agency’s 2025 report stated “ketamine is likely to be consistently available in some national drug markets and may have become an established drug of choice in some settings,” proposing that the recent popularity of ketamine will continue (3). They report ketamine being used in combination with other drugs e.g. “pink cocaine,” a combination of ketamine, MDMA, and a third substance (not always cocaine).

High prevalence of ketamine usage has also been reported in areas of Asia and Oceania. In 2024, the United Nations Office on Drugs and Crime published an early-warning message regarding the increase in ketamine supply and use (4). Multiple countries within East and South East Asia and Oceania reported high levels of ketamine-related drug seizures in 2023. From 2022-2024 in Singapore, there was an increase in the number of seizures in which the substance contained ketamine (often with other substances e.g. MDMA and methamphetamine). There has also been an increase in substances reported to be “ecstasy” found to contain ketamine, rising from 23% in the later half of 2023 to 50% in the first six months of 2024.

Patterns of ketamine use in the UK

While it is difficult to capture an accurate picture of the extent of non-prescribed ketamine use in the UK, evidence suggests it is rapidly increasing, including amongst under-16s (1). For example, analysis of wastewater in England and Scotland has shown that levels of ketamine nearly doubled between 2021 and 2024, mostly reflecting non-prescribed use. Patterns of ketamine use among CYP in the UK show an upward trend, and tendency towards younger ages of first use (1), with the average age of first ketamine use previously being reported globally as 16- or 17-years-old (5).

Recent data from the National Drug Treatment Monitoring System (NDTMS) show that while cannabis remains the primary substance for which CYP seek help, ketamine help-seeking has seen a marked increase (6). The number of CYP aged under-17 in treatment for drug or alcohol issues has risen to 16,212 in 2024-25, a 13% increase from the previous year. Of all CYP seeking support from drug and alcohol services, the proportion of CYP seeking support for ketamine misuse remained steady at under 2.5% between 2005 and 2018, but rose to 9% in 2024-25. This equates to 1,465 CYP and means rates of ketamine use are now higher than both ecstasy and cocaine.

NHS survey data indicated that amongst responders in 2023, 1.1% of secondary school pupils aged 11–15 had used ketamine (7), a figure that is likely to have increased when the latest (2025) data are released in late 2026. One in nine 15-year-olds reported having been offered the drug. The routes of access reflect strong peer and household influence, with friends most often providing drugs. Early onset of substance use (before age 15) is a major vulnerability to chronic use and future development of dependence.

Observations from those working in paediatric service provision and community drug and alcohol services suggest a recent downward drift towards younger groups using ketamine. For example, since January 2025 there has been an increase in referrals to specialist paediatric urology services in Cheshire and Merseyside for under-16s with ketamine-induced uropathy (KIU).

What are the impacts of ketamine use on CYP?

The impact of ketamine on the developing or adolescent brain and dependence

Ketamine is a NMDA (N-methyl-D-aspartate) receptor antagonist interfering with the NMDA and glutamate neurotransmitter systems (see 8 for overview). This has impacts on long-term potentiation (LTP) and synaptic plasticity of the adolescent brain. Research suggests that acute exposure to ketamine may act to combat deficiencies in LTP and synaptic plasticity due to early life stressors (e.g. domestic violence, social isolation). However, doses that are significantly higher than those given for therapeutic benefit can have serious impacts on memory and cognition, and lead to states of depression and anxiety, as opposed to when taken at subanaesthetic doses. The effects of acute ketamine use are largely reversible and self-resolving; regular chronic use can lead to irreversible alterations in memory and cognition.

Short-term effects include dissociative and hallucinogenic symptoms with altered sensory, auditory and visual perceptions. High doses may lead to acute ketamine toxicity, a state colloquially known as a "K-hole." This may involve intense hallucinations and a severe sense of detachment which can be very frightening to the person experiencing this altered state if they have not entered it deliberately.

The nucleus accumbens (reward centre) in the adolescent brain matures earlier than parts involved in decision-making (e.g. pre-frontal cortex), leading to increased vulnerability to risk-taking behaviours and poor impulse control. Increased desire for taking risks, combined with poorer impulse control increases the likelihood of trying substances, with early introduction being the biggest risk factor in development of future addiction, highlighting the importance of prevention and early intervention in this age group.

The impact of ketamine on the body

Ketamine is known to have a wide range of short- and long-term effects on the body. Increased sympathetic innervation with an increase in heart rate, blood pressure, nausea and vomiting as well as a loss of motor control are all physical symptoms that may be apparent in acute use.

An increasing number of CYP attending health care providers and Emergency Departments are now presenting with longer-term effects of ketamine use. Ketamine can have significant gastrointestinal and urological consequences, with KIU being a significant outcome, now being seen more commonly in paediatric settings.

KIU initially presents as “ket bladder”, a chronic, ketamine-associated cystitis characterised by severe lower urinary tract symptoms (frequency, urgency, dysuria, suprapubic pain), macroscopic or microscopic haematuria, and radiologic or cystoscopic evidence of bladder wall inflammation, ulceration, and contraction, occurring in the context of ongoing or prior ketamine exposure (9). KIU is described as being excruciatingly painful and may lead to a paradoxical increase in use of ketamine in order to combat the pain. The only effective treatment for ket bladder is cessation of ketamine: all other interventions are designed to help manage symptoms. Continued use leads to progressive uropathy, potentially requiring cystectomy and/or urostomy/nephrostomy, and ultimately resulting in renal failure in some individuals. Evidence suggests that ketamine can cause acute kidney injury and cholestatic jaundice (presenting with a dilated common bile duct in the absence of stones), even in younger age groups.

Social and community influences

Social and community influences play a crucial role in shaping decision-making around ketamine use. Household and family circumstances, including the attitudes of parents/carers, knowledge, and level of supervision, all significantly affect likelihood of experimenting with drugs (not just ketamine), while a lack of open communication about drug use can increase risk. Peer networks, in and outside of educational settings, are also major drivers of initial exposure and continued use. School students participating in the 2023 NHS survey reported that they most commonly accessed drugs through friends, with 28% of students first accessing and obtaining substances from a friend of their own age, and 6% from a parent or step-parent. In 2023, 11% of students using drugs stated that the last occasion they bought or were given drugs was on school grounds, an increase from 5% in 2021 (7).

Exclusion from mainstream education and subsequent attendance at alternative provision units may further expose CYP to risk-taking behaviours. If ketamine use is overlooked or even accepted by parental figures and peers, then this may lead to ignorance of its risks, and greater experimentation. Social media and private, peer-led online networks provide a discreet avenue for (mis)information about, and procurement of, ketamine, making it easier for CYP to access and learn about the drug without adult oversight. The quality of drug education is highly variable and where access or quality are poor, CYP are left under-informed about the risks and consequences. The affordability and accessibility of ketamine

compared to other substances makes it an attractive option for experimentation among CYP, particularly for those who might otherwise face financial or practical barriers to drug use.

What can we as paediatricians do to support CYP who use ketamine?

How to ask about ketamine use

Due to the stigma around drug use within society and healthcare services, there is an argument for normalising routine questions about nicotine, alcohol, and other drug use during history taking, primarily for anyone over the age of 11, as in adult healthcare settings.

Tools such as the HEADSSS assessment (Home, Education/Employment, Activities, Drugs, Sex and relationships, Self-harm and depression, Safety and abuse) may be useful to approach this routine questioning in a structured and holistic way, particularly in settings including the Paediatric Emergency Department (PED). Other tools such as Youth Screening, Brief Intervention, and Referral to Treatment (YSBIRT), developed by colleagues in the USA, may help if a more focused approach to questioning is needed.

When to ask about ketamine use

While paediatricians work towards integrating a more universal approach to asking about nicotine, alcohol, and other drug use, there are a number of presentations when it may be appropriate to ask more targeted questions e.g. abdominal pain.

Those with KIU may present in primary or secondary care as a UTI but may have isolated haematuria on urine dipstick. They may present to services several times and receive multiple courses of antibiotics before a clinician makes the link and asks directly about drug use. Unnecessary antibiotics in KIU is an example of how ketamine use may be contributing to other national and global issues e.g. antimicrobial resistance.

As ketamine is dissociative, and distorts perception, those who use ketamine may be more prone to accidents (in an age group who are already more prone to accidents as part of normal adolescent development) and there have been drownings reported where ketamine has been a contributing factor. Ketamine should therefore also be more broadly as a potential contributing factor in a wider range of presentations including accidents.

If a professional caring for a child or young person suspects that ketamine is playing a role in the clinical picture, and then it is vital to offer a safe and non-judgemental space in which to talk about drug use. This might be in private, without a parent or carer present (with awareness of appropriate safeguarding practices), in a similar way to asking about the possibility of pregnancy, or other concerns that might prove a source of potential conflict.

Risk factors for substance use in CYP

Early-onset substance use is the biggest risk factor for developing any substance-use disorder. Risk factors for onset of substance use in CYP people include: ACEs (adverse childhood events); life stressors; psychiatric co-morbidities; ADHD; neurodevelopmental immaturity; genetic predisposition; pressure from peers and the cultural climate. A lack of

education about ketamine, as well as its relative inexpensiveness and accessibility, also increases risk. With an increasing population of CYP requiring access to mental health and neurodevelopmental services, some CYP may be “self-medicating” with ketamine while they wait to be seen. Healthcare providers should consider potential substance use in all CYP, especially those with identified risk factors, in order to prevent harm and provide prompt, early intervention.

Accessing drug and alcohol services for support around ketamine use

Paediatricians play a vital role in supporting access to community drug and alcohol services, by identifying vulnerability early, providing evidence-based prevention advice, and facilitating connections to existing resources. However, at the time of writing, there are no inpatient or outpatient “detox” or “rehab” programmes for those under 16 and limited provision for those aged 16 or 17. If early intervention is crucial, then this needs to change.

The gap between the availability of specific drug and alcohol services for children and young people, and the need for them is high. Services need to be tailored to the physiological and psychosocial needs of young ketamine users.

If CYP disclose that they have used or are currently using ketamine, and you feel you are able to, it is important to begin a discussion about ketamine reduction. In common with discussions e.g. for smoking cessation, discussing the benefits (physical, psychological, financial) of reducing and stopping using ketamine may be helpful, while acknowledging any “positives” the individual may get from their ketamine use (and would lose if they stopped) in a balanced way.

Identifying if a CYP is currently experiencing symptoms of “ket bladder” (painful urination, increasing urgency and/or frequency, haematuria) is vital to them accessing appropriate support. Provision at the clinic in Alder Hey Children’s Hospital in the North West of England provides a model for referral and support that integrates help with addiction, with symptom management, and a CYP version of the adult KIU guideline (9) is under development at the time of writing.

All healthcare staff can signpost CYP and families to accessible services offered by charities; in the UK, these include *With You*, *Talk to Frank (2)*, and *Change Grow Live*, which provide credible information, harm reduction advice, and links to local support services. Paediatricians can advocate for improved service provision and outcomes including highlighting the urgent need for investment in youth-specific treatment, workforce training, and integrated care models to address the growing demand for substance misuse support among CYP.

Ketamine harm reduction advice

Supporting cessation of ketamine use is complex. Harm reduction and minimisation advice may be appropriate to support CYP if they are likely to continue using ketamine, including:

- Using ketamine in a safe way (physically, but also psychologically, sexually, etc.), in a familiar/supported space, and away from hazards such as water. It is also

important to reinforce that using ketamine in the bath (which may be used to ease bladder pain) must be avoided.

- Not mixing ketamine use with use of other drugs and/or alcohol.
- Ensuring they know what to do in case one of their friends “ends up in a K-hole”, including ensuring safety and calling for help if needed (reinforcing that they will not get “in trouble” for seeking urgent medical assistance).

Conclusion

The rise of non-prescribed ketamine use in the UK is an important public health issue. Healthcare systems are now facing mounting pressure to respond to unmet need around the acute and chronic complications of ketamine use among CYP and young adults. This is particularly difficult given the often-fragmented addiction support systems available and compounded for those under the age of 16, with ketamine use disorder, by the fact that there are currently no paediatric-specific inpatient or outpatient drug detox or rehab programmes in the UK (NHS or private), or guidelines for clinicians to follow. To improve the health and wellbeing of CYP, it is vital that upskilling the workforce, investing in provision, and reducing barriers to accessing services are all addressed. The voices of CYP should be at the centre of any and all future design and delivery of drug and alcohol services.

Practice points

Recommendations to support clinicians in managing suspected/apparent ketamine use in children and young people include knowing how to:

- ask about the use of substances in general and when to ask about ketamine specifically;
- look for red flags in a history that would suggest a safeguarding referral is needed;
- give basic harm reduction advice;
- refer to local community drug and alcohol services (and consider universal referral following a ketamine-related attendance);
- ensure you maintain your own psychological safety.

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