

Accidental cannabis ingestion in young children

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Abstract

Question A 3-year-old girl was brought to my office by her caregiver because she was not acting like herself. She was excessively sleepy, difficult to rouse, and had poor balance. The caregiver reported cannabis products in the home in the form of gummies the caregiver takes for sleep and anxiety. What symptoms should prompt consideration of marijuana ingestion and how should accidental ingestion be managed?

Answer Cannabis is one of the most widely used drugs in the world. Many countries are decriminalizing and legalizing marijuana, but its negative impact on pediatric health is growing. Current evidence shows unintentional marijuana ingestion and severe toxicity are steadily increasing. Common symptoms of marijuana ingestion in young children are drowsiness, somnolence, nausea, and vomiting, with children being at high risk for severe symptoms of respiratory depression and seizures. Primary care providers should talk to families about issues surrounding marijuana in the home, including safe storage of products containing cannabis and when to suspect an accidental ingestion. Public health should focus on the packaging and distribution of edibles to prevent easy access and accidental ingestion by young children.

Ingestion accidentelle de cannabis par de jeunes enfants

Résumé

Question Une fillette de 3 ans est amenée à ma clinique par son parent, parce que l'enfant ne réagit pas normalement. Elle est excessivement somnolente, difficile à réveiller et manque d'équilibre. Le parent signale qu'il y a des produits de cannabis à la maison sous forme de jujubes que le parent prend pour son insomnie et son anxiété. Quels symptômes devraient nous inciter à envisager une ingestion de marijuana et comment devrions-nous prendre en charge une ingestion accidentelle?

Réponse Le cannabis est l'une des drogues les plus largement consommées dans le monde. De nombreux pays décriminalisent et légalisent la marijuana, mais ses impacts négatifs sur la santé pédiatrique sont à la hausse. De récentes données probantes démontrent que l'ingestion non intentionnelle et la toxicité sévère augmentent de manière constante. Les symptômes courants de l'ingestion de marijuana par de jeunes enfants sont la léthargie, la somnolence, la nausée et des vomissements, et les enfants sont à risque élevé de symptômes graves de détresse respiratoire et de convulsions. Les professionnels des soins primaires devraient discuter avec les familles des questions entourant la marijuana à la maison, notamment l'entreposage sécuritaire des produits contenant du cannabis et les indices laissant présager une ingestion accidentelle. La santé publique devrait se pencher sur l'emballage et la distribution des produits sous forme comestible afin d'empêcher un accès facile et de prévenir une ingestion accidentelle par de jeunes enfants.

Cannabis is one of the most commonly used drugs around the world, with 16.7% of Canadians 15 years or older reporting use in the fourth quarter of 2019.¹ The Cannabis Act of 2018 that decriminalized marijuana use in Canada had specific stipulations for edible formulations of cannabis that were added in 2019.^{2,3} In the United States, medical and recreational marijuana use is legal in 24 states and the District of Columbia; 7 states decriminalized possession of small amounts of marijuana for personal consumption.⁴ In Canada, 72% of individuals reported purchasing marijuana from a legal source in 2024, increasing from 37% in 2019.⁵ While smoking remains the most common form of cannabis use, edible use increased to 55% from 2018 to

2024.⁶ Despite hope further regulation of cannabis products would increase its safety and promote public health, pediatricians have voiced concerns widespread availability of legal marijuana may increase the number of children affected by unintentional cannabis exposure.⁷

Unintentional marijuana ingestion

Young children, especially those younger than 6 years old, are at risk of unintentional or accidental marijuana exposure.⁸ Unintentional marijuana ingestion in children younger than 5 years old accounted for 41.6% of all poison control encounters in the United States in 2020.⁹ Between 2017 and 2021 in the United States, 36.2% of cases of marijuana ingestion reported in this age

group were treated and discharged from the emergency department (ED), 14.6% were admitted to the general care floor, and 8.1% were admitted to the intensive care unit.⁹ These represented increases in hospital and health care resources across multiple medical environments and raised awareness of pediatric marijuana ingestion as a public health concern.

Private residences are the most common location for accidental ingestions.^{10,11} Children indiscriminately explore familiar environments and often discover marijuana kept in the home. Unfortunately, many labels and packaging used for cannabis products are made to resemble popular candy or snacks, placing children at risk for consumption.⁸ Homemade products, easy-to-open packaging, and enticing flavours further increase the risk of unintentional ingestion in children.⁸ While regulations are in place to protect children from ingesting dangerous materials, cannabis products were not included in the original literature of the law. In 1970 in the United States, the Poison Prevention Packaging Act was passed with the intention of preventing children from accidental exposure to harmful chemicals, such as bleach, cleaning solutions, and prescription medications.¹² However, regulation for packaging of cannabis products does not fall under the act and remains unregulated. Since that time, Canada published regulations for the commercial production and packaging of cannabis-containing products with the intention of reducing the risk of accidental ingestion; this includes warning labels, plain-text requirements, and child-resistant packaging. This is an important step toward reducing the incidence of unintentional ingestions.¹³

Symptoms of marijuana toxicity

Marijuana toxicity symptoms range from mild to severe and can have a range of presentations. In a case series from British Columbia, marijuana toxicity caused altered mental status in an 11-month-old with acute-onset hypotonia and decreased responsiveness; excessive sleepiness and poor balance after waking up from a nap in a 3-year-old; and nausea, pallor, and loss of consciousness in a 4-year-old.¹⁴ All these cases were marked by a sudden change in the patient's level of consciousness and mental status.¹⁴

Mild symptoms of marijuana toxicity in children are somnolence, nausea, vomiting, mydriasis, and conjunctival erythema.⁹ Patients with abnormal heart rates usually have tachycardia but can have bradycardia. Hypotension is the main blood pressure abnormality.^{7,9} Symptoms of severe toxicity include respiratory depression, respiratory failure, altered mental status, ataxia, hypotonia, seizure, and unresponsiveness.^{9,15}

Risk of overdose

Children younger than 6 years old are at higher risk of severe toxicity and overdose from accidental marijuana

ingestion because of factors related to the developmental stage and the types of marijuana in circulation. In the 2024 Canadian Cannabis Survey, the most commonly consumed edibles were foods that are highly appetizing for children, such as gummies (91%), chocolate (37%), cookies (18%), and brownies (15%).⁶ Many of these edible products contain multiple doses, with some single edible items containing up to 500 mg of tetrahydrocannabinol (THC). Although no standard dosing guidelines have been established for recreational marijuana use, some studies proposed 5 mg as a standard unit of measurement for THC.¹⁶ Doses of 1 to 5 mg are considered microdoses and 100 mg or greater is considered a very high dose.¹⁷ Children are at risk of consuming an entire product indiscriminately, which may contain high levels of THC, especially when marketed as an enticing candy or encountered as a palatable homemade item.

In a retrospective review, the American Academy of Pediatrics reported data that outlined the weight-based impact of marijuana ingestion in children.¹⁵ In cases where the ingestion dose was reported, the weight-based dose was a substantial predictor of severe toxicity and duration of symptoms in accidental ingestions. Symptoms typically presented 2 to 4 hours after ingestion, and patients with severe toxicity experienced symptoms for more than 6 hours. Almost half (46%) of cases were considered severe; intravenous fluids or vasopressors were used to manage cardiovascular depression, requirement of supplemental oxygen, respiratory failure, seizures, or unresponsiveness.¹⁵ The authors concluded a 3-year-old of 25th percentile weight (13 kg) with access to 2 or more 10-mg serving sizes of THC (around 1.7 mg/kg) would place the child at risk of severe toxicity. This study recommended any child with a reported history of high-dose ingestion should be monitored for at least 4 to 6 hours until return to baseline, and in a facility where they could be admitted for treatment.^{15,18}

Workup and management

Owing to regulatory changes in Canada and the United States in the past decade, unintentional marijuana ingestion should be highly considered in the differential diagnosis of patients younger than 6 years old presenting with acute onset of somnolence, altered mental status, lethargy, or similar symptoms. Patients presenting with mild symptoms, such as conjunctival erythema, somnolence, and drowsiness, are at risk to worsen clinically based on the dose and timing of ingestion. The ED is the best clinical setting for monitoring and observing patients who may have ingested cannabis. A urine drug test, blood glucose test, electrocardiogram, blood gas analysis, and head imaging scan should also be considered. In cases of severe toxicity requiring more invasive interventions, transfer to a facility with pediatric wards and an intensive care unit is recommended.¹⁹ If a patient has not returned to their baseline after 6 hours,

it is generally recommended the patient be admitted for further monitoring.

Conclusion

Unintentional marijuana ingestion and intoxication are important for primary care providers to recognize, diagnose, and treat across diverse clinical settings as legalization of cannabis products continues. Parents and providers should be advised to call poison control centres to receive expert guidance for managing instances of ingestions. Finally, any patient who may have ingested cannabis should be directed to the ED for evaluation, especially if there is altered state of consciousness or mental status, or respiratory difficulties. 🌿

Competing interests

None declared

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