


Surveillance Highlights

Serious and life-threatening events associated with non-medical cannabis use in Canadian children and youth

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CASES

Case example 1: The mother of a previously healthy 18-month-old boy returned home from work and found that her son was vomiting, sleepy, and off balance. He was being watched by his grandmother, who lived in the same home, while the mother was at work. The boy was brought to the emergency department and was noted as somnolent but rousable. After a series of tests and questions to the mother, it was revealed that the child may have ingested a cannabis brownie left out by the grandmother. Further testing confirmed the presence of cannabinoids through urinalysis. The child was observed for several hours and was later discharged with normal vitals (1).

Case example 2: The parents of a 7-year-old boy with no pre-existing conditions checked-in on their son and witnessed him experiencing two seizures, approximately 30 s each. The boy was brought to the emergency department and was noted as slow to respond with dilated pupils. The boy's vitals were initially assessed in hospital as: body temperature of 36.3°C, blood pressure of 109 mmHg over 62 mmHg and 98% oxygen saturation. The parents indicated that their son had ingested two of their cannabis cookies, each containing 9 mg of cannabis with an unknown concentration of THC. Urine/qualitative testing for cannabis was conducted but the results were unknown at the time of reporting. The boy was diagnosed with cannabis poisoning/intoxication, was kept several hours for monitoring, and was later discharged with normal vitals.

LEARNING POINTS

- Stories of accidental poisonings in children involving cannabis have been widely shared and reported since

the legalization of cannabis for non-medical purposes in Canada on October 17, 2018, from exposure involving Halloween candy (2) to accidentally eating a homemade brownie left out on the counter by a family member (1). These stories help to illustrate an increased trend in both emergency department visits and hospitalizations related to unintentional exposures to cannabis among children and youth that existed pre-legalization but that has continued to increase significantly post-legalization (3,4). While administrative health data allows for an approximate determination of incidence or prevalence of cannabis poisonings in children and youth, there remain several key knowledge gaps regarding clinical presentation, diagnosis, and treatment of cannabis poisonings in children as well as information related to cannabis source, form, and dose.

- A Canadian Paediatric Surveillance Program (CPSP) study addresses these knowledge gaps by reporting on children and youth (up to 18 years of age) who experience serious and life-threatening events associated with non-medical cannabis, over several years beginning in September 2018.
- Serious and life-threatening events associated with non-medical use of cannabis are occurring among children and youth in Canada, with 160 cases meeting the case definition since the study initiation in September 2018 (excluding cases from Quebec). Females made up 51% of cases (82/160) and males 47% (75/160), with a median age of 5.1 years. Almost two thirds of cases (63%, 101/160) indicated ingestion of cannabis in edible form.
- The most common primary case presentation was poisoning/intoxication (43%, 69/160), involving mainly

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children less than 13 years and cannabis in edible form (86%, 59/69). Other presentations of interest include cannabis-related disorder (irritability, difficulty sleeping, altered mood, nervousness, weight loss, etc. (5); 21%, 33/160) and neurologic problems (21%, 33/160). Most cases involved inpatient hospital admission (89%, 143/160), in which 14% involved admission to an intensive care unit (22/160) and 7% involved admission to a psychiatric bed (11/160). Most cases were reported as involving cannabis from unknown (65%, 104/160) or illegal (20%, 32/160) sources, while 15% of cases (24/160) were reported as being sourced from legal sources (e.g., legal retailer, authorized licenced producer, or legally home grown).

- This CPSP study extends current knowledge by providing greater detail regarding paediatric exposures to cannabis, including information related to clinical presentation, treatment, and cannabis source and form. These data can help to inform policies, legislation, and regulation related to cannabis for non-medical purposes, and can also inform public education and awareness materials related to non-medical cannabis such as Health Canada's public advisory on "[Accidental ingestion of edible cannabis products causing serious harm to children](#)." Continued awareness of the CPSP study on serious and life-threatening events associated with non-medical cannabis use in Canadian children and youth is required across Canada to continue to understand the public health impacts of cannabis legalization and to improve capture of key case details, including sourcing of the involved cannabis. Case reporting is encouraged by all paediatricians and subspecialists to ensure more representative data capture. For more information on the CPSP, or to find out how to report a case, please visit www.cpsp.cps.ca.

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POTENTIAL CONFLICTS OF INTEREST

CG and REB declare that they were co-chairs of the advisory group on cannabis issues at the Canadian Paediatric Society (2019–2021). REB also declares that he is a member of the Advisory Council, Drug Free Kids Canada and was a member of the Alcohol and Drugs Committee, Society for Adolescent Health and Medicine, USA (2019–2021). He has also received funding from the Canadian Institutes of Health Research and Programme de recherche sur l'usage du cannabis à des fins non-médicales for unrelated projects. There are no other disclosures.

REFERENCES

1. Kam AJ. Grandma's brownies are not what they used to be: Acute intoxication from cannabis ingestion. *Paediatr Child Health* 2020;25(Suppl 1):S3–4. doi:[10.1093/pch/pxaa014](https://doi.org/10.1093/pch/pxaa014).
2. CBC News. *Cannabis Candies Found in Children's Halloween Treats, Winnipeg Police Say*. Manitoba: CBC News, 2022. <https://www.cbc.ca/news/canada/manitoba/halloween-nerds-candy-cannabis-edibles-1.6636570> (Accessed February 21, 2022).
3. Myran DT, Tanuseputro P, Auger N, Konikoff L, Talarico R, Finkelstein Y. Edible cannabis legalization and unintentional poisonings in children. *N Engl J Med* 2022;387(8):757–9. doi:[10.1056/NEJMc2207661](https://doi.org/10.1056/NEJMc2207661).
4. Myran DT, Cantor N, Finkelstein Y, et al. Unintentional pediatric cannabis exposures after legalization of recreational cannabis in Canada. *JAMA Netw Open* 2022;5(1):e2142521. doi:[10.1001/jamanetworkopen.2021.42521](https://doi.org/10.1001/jamanetworkopen.2021.42521).
5. Patel J, Marwaha R. Cannabis use disorder. [Updated 2022 Jul 11]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2023 Jan. <https://www.ncbi.nlm.nih.gov/books/NBK538131/>.



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