

# Emergency Department Patients Intoxicated with Oral Cannabis Require More Resources than those Intoxicated with Inhaled Cannabis: A Retrospective Analysis

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## OBJECTIVES

Despite increased rates of cannabis use, little has been published about the typical presentations to the emergency department (ED) due to the acute effects of cannabis use. It is possible that oral cannabis results in more severe ED presentations than inhaled cannabis, but to date, this has not been well-studied. Thus, We sought to compare the outcomes of patients who present to the ED because of oral cannabis use to patients who present because of inhaled cannabis.

## METHODS

We performed a retrospective cohort analysis of patients who presented to an ED within a single hospital system in South Florida for acute cannabis intoxication. A specialist in information technology provided a list of all patients who were given a cannabis-related diagnosis during a hospital visit between January 1, 2020 and December 31, 2023.

We performed manual chart review to determine if each of these visits was felt to be “unlikely”, “possibly”, or “highly likely” due to the acute effects of cannabis. To be considered “highly likely”, documentation had to indicate the development of intoxication symptoms shortly after the use of cannabis (without coingestions). Patients with symptoms related to chronic cannabis use were considered “unlikely” to be from acute cannabis use and excluded. For included encounters we abstracted the route of use, diagnostic test results, disposition, and ED length-of-stay. We compared diagnostic test utilization and outcomes of patients who inhaled cannabis to those who ate it using Fisher’s exact tests or the median test.



## RESULTS

From 2020 to 2023, there were 3521 patient encounters with a cannabis-related diagnosis, of which 240 (6.8%) were deemed highly likely to be due to acute cannabis use. Of those 240, 188 (78.3%) had used oral cannabis, and 52 (22.7%) had inhaled it. One patient died from drowning after consuming edible cannabis.

	Inhaled Cannabis (n = 52)	Oral Cannabis (n = 188)	Absolute difference (95% CI)
Blood test performed, n (%)	22 (42.3%)	103 (54.8%)	12.5% (-2.7 to 27.7%)
CT brain performed, n (%)	1 (1.9%)	20 (10.6%)	8.7% (2.9 to 14.5%)
Admitted, n (%)	0 (0%)	12 (6.4%)	6.4% (2.9 to 9.9%)
ED length-of-stay, median	173 min	256 min	83 min (53.0 to 118.5)

## CONCLUSION

In this retrospective cohort study, the majority of patients who presented to the ED for symptoms directly attributable to acute cannabis use had taken cannabis orally. As compared to inhaled cannabis, oral cannabis was associated with higher CT brain use, a higher hospitalization rate, and (for discharged patients) longer ED stays. Although critical illness from acute cannabis use (without coingestions) is rare, it did occur after oral cannabis use in our study.