



## KRATOM IN MONTANA

### About Kratom:

- Kratom is a tropical tree native to Southeast Asia (*Mitragyna speciosa*).
- Kratom is used recreationally, to manage pain, or to ease drug withdrawal symptoms.<sup>1-4</sup>
- Kratom effects are associated with two alkaloids, mitragynine and 7-hydroxymitragynine (7-OH).<sup>1-4</sup> At low doses, kratom acts as a stimulant. At higher doses, kratom acts as a sedative, with effects such as pain relief, relaxation, and a sense of euphoria.<sup>1-4</sup>
- Kratom alkaloids bind the same brain receptors targeted by opioids such as morphine or fentanyl. However, kratom effects are not entirely comparable to opioids and may not result in the same risks.<sup>2,4-6</sup> Research is ongoing.
- The research base on long-term health effects is limited, although there is evidence of withdrawal symptoms and substance use disorder symptoms related to kratom use.<sup>3,4</sup>
- Overdose deaths involving kratom are uncommon and often include other substances, making it difficult to understand the degree to which kratom contributes to deaths.<sup>2,4,7</sup>
- Kratom has no U.S. Food and Drug Administration (FDA)-approved medical use.<sup>2</sup>

### Kratom Versus 7-OH:

- Both mitragynine and 7-OH occur naturally in the kratom plant. Mitragynine accounts for about 66% of kratom alkaloid content, and 7-OH makes up less than 2%.<sup>1,4</sup>
- Some products marketed as kratom may have levels of 7-OH higher than what would be naturally present. Other products are marketed explicitly as 7-OH.<sup>8</sup>
- The effects of 7-OH when consumed on its own may present higher risks than when consuming a naturally-occurring kratom product.<sup>4,8</sup>
- In the brain, 7-OH acts like an opioid and is considered more potent than morphine.<sup>8</sup>
- There is growing evidence that 7-OH has potential for abuse, and risks of dependence and withdrawal may be similar to other opioids.<sup>4,8,9</sup>
- 7-OH may depress respiratory function, which can be reversed by naloxone.<sup>5,8,10</sup>

### Kratom Data in Montana:

Montana data on kratom use and adverse effects is sparse, with few data systems capable of tracking kratom systematically. No surveillance data in Montana is known to reliably distinguish 7-OH from other kratom products.

- **Kratom use:** The 2022-2023 National Survey on Drug Use and Health (NSDUH) estimates about 8,000 people in Montana ages 12 or older consumed kratom in the past year.<sup>11</sup>
- **Overdose deaths:** From 2019 to 2024, there have been 45 unintentional drug overdose deaths with kratom detected in toxicology. At least one other substance was listed as contributing to cause of death in about 8 in 10 deaths with kratom present (n=35).<sup>12</sup>
- **Poison control:** From 2018 to 2024, there have been 48 human exposures involving kratom reported to the Montana Poison Control Center.<sup>13</sup>



**TABLE 1. KRATOM-RELATED DATA BY YEAR, MONTANA.**

Indicator	2018	2019	2020	2021	2022	2023	2024	Total
Unintentional overdose deaths – Kratom detected	n/a	8	7	5	6	6	13	<b>45</b>
Unintentional overdose deaths – Kratom present, at least one other drug contributing to death	n/a	7	5	4	6	6	7	<b>35</b>
Poison Control – Kratom exposures	7	8	4	5	9	10	5	<b>48</b>

**References:**

1. Drug Enforcement Administration. [Kratom \(Mitragyna speciosa\)](#).
2. U.S. Food and Drug Administration. [FDA and Kratom](#).
3. National Institute on Drug Abuse. [Kratom](#).
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6. Váradi A et al. [Mitragynine/Corynantheidine Pseudoindoxyls As Opioid Analgesics with Mu Agonism and Delta Antagonism, Which Do Not Recruit  \$\beta\$ -Arrestin-2](#). *J. Med. Chem.* 2016; 59:18.
7. Olsen EO et al. [Notes from the Field: Unintentional Drug Overdose Deaths with Kratom Detected – 27 States, July 2016–December 2017](#). *MMWR Morb Mortal Wkly Rep* 2019;68:326–327.
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9. Matsumoto K et al. [Antinociception, tolerance and withdrawal symptoms induced by 7-hydroxymitragynine, an alkaloid from the Thai medicinal herb Mitragyna speciosa](#). *Life Sciences* 2005; 78:1.
10. Hill R et al. [The respiratory depressant effects of mitragynine are limited by its conversion to 7-OH mitragynine](#). *Br J Pharmacol.* 2022;179(14):3875-3885.
11. Substance Use and Mental Health Services Administration. [Data Analysis System](#).
12. Montana State Unintentional Drug Overdose Reporting System (SUDORS), 2019-2024, EMS & Trauma Systems Section, Public Health and Safety Division. Montana Department of Public Health and Human Services.
13. Rocky Mountain Poison Center Data, 2018-2024. Rocky Mountain Poison and Drug Safety (RMPDS).