

Emerging Trends: Kratom in North Dakota, 2021-2026*

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Credit for the report inspiration given to the [Tennessee Department of Health Kratom Report](#)

Kratom

Kratom (*Mitragyna speciosa*) is a plant used for its psychoactive properties and is sold and used widely across the United States.¹ The leaves of the kratom tree may contain chemical compounds known as bioactive alkaloids that can affect the body. Kratom possesses a psychoactive compound that interacts with opioid receptors, producing opioid and stimulant-like effects, which vary by product potency, formulation and form of ingestion.¹

Although not currently approved by the U.S. FDA, kratom (mitragynine) and/or 7-hydroxymitragynine (7-OH) is reportedly used to manage drug withdrawal symptoms, opioid cravings, pain, fatigue and mental health concerns.¹ Researchers are still investigating how kratom compounds interact in the body and what short- or long-term health impacts may be associated with the ingestion of these compounds. As a relatively new substance, the benefits, health risks and adverse effects are largely unknown, with some people reporting mild side effects such as nausea to a small number of fatalities.¹

Currently, the U.S. Drug Enforcement Administration has filed its intent to temporarily place 7-hydroxymitragynine (7-OH) and three related substances into Schedule I of the Controlled Substances Act (CSA).¹⁴ Prior to the DEA issuing this notice, the Department of Health and Human Services (HHS) confirmed that synthetic 7-OH, and the three related substances have no accepted medical use and a high potential for abuse. Kratom is currently banned in 9 states, regulated in 13 states under the Kratom Consumer Protection Act and legal without specific regulation in 29 states.²

Kratom's transition from its natural leaf form to new high-potency products calls to question the risk of overdose and poisoning.² Due to the increasing concerns surrounding kratom and kratom-derived products, along with a lack of historical understanding of the effects of kratom, this report aims to summarize non-fatal and unintentional fatal kratom overdoses in North Dakota.¹

Common Kratom Forms

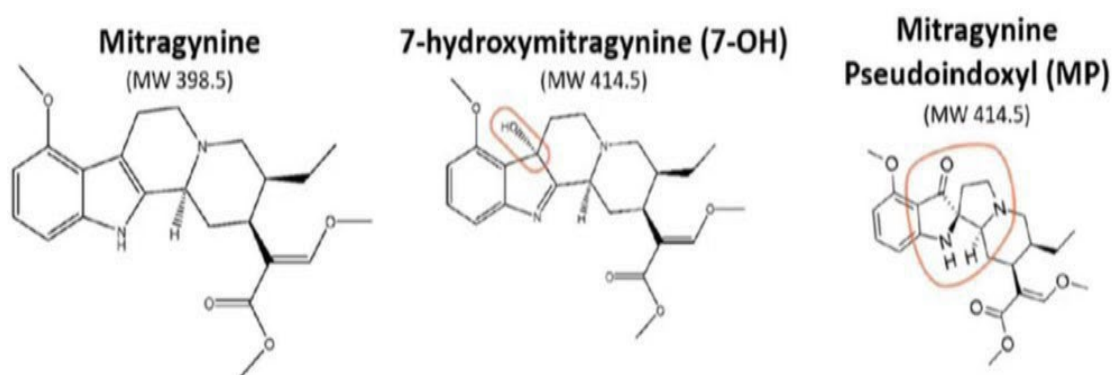
In North Dakota, prior to the executive order declaring kratom a public health emergency, kratom was available for purchase in gas stations, local smoke shops, herbal shops, online retailers and through other specialty retailers licensed to sell these products. These substances are available in the form of extracts, powders, capsules, gummies, teas, leaves and other forms. Some of these products have misleading labels, packaging and potencies making their consumption dangerous and difficult to predict its risks.

Kratom Derivatives

The substance mitragynine can be isolated from kratom leaves and then synthetically transformed into 7-OH. Using mitragynine as a base template, novel opioids with significantly enhanced opioid receptor activity have been developed. Several of these kratom derivatives, including 7-OH, mitragynine pseudoindoxyl (MP) and MGM-15, are far more potent than mitragynine.¹³ In fact, in September 2025, the presence of MGM-15 was confirmed to be present in some commercially available tablets (please note, MGM-15 is not naturally occurring).¹³

Kratom derivatives raise concerns as they differ in composition from botanical kratom. 7-OH is found naturally in trace amounts in the botanical form of kratom and 7-OH can also be further synthesized into MP.¹³ MP does not have a connection to the botanical form of kratom and can lead to different reactions, symptoms and dose responses than 7-OH. Due to the chemical makeup of the synthetic compounds, it is difficult to definitively separate the semi-synthetics from botanical kratom.¹³

Figure 1. Chemical Compound of Mitragynine and Derivatives (7-OH & MP)



The figure above shows the chemical compounds of mitragynine, 7-hydroxymitragynine (7-OH) and mitragynine pseudoindoxyl (MP). The Molecular Weight (MW) for 7-OH and MP are the same, which complicates the ability to differentiate the two derivatives.

Commercial sales of kratom products, high dose mitragynine preparations and synthetics (MP and 7-OH) have surged.¹³ These marketed products range from chewable tablets, concentrates, extracts, edible materials, or beverages and contain highly enhanced 7-OH and/or MP contents compared to botanical kratom products. Many of these products are readily available in gas stations and smoke shops.¹³

Both 7-OH and kratom can be addictive and cause severe withdrawal.¹³ Tolerance builds rapidly for kratom and 7-OH and dependence is known to form. Overdose from kratom is similar to other opioids with MP being almost as potent as fentanyl. A significant risk for respiratory depression is also associated with 7-OH.¹³

National Kratom Trends

At a federal level, the DEA has filed its intent to temporarily place 7-hydroxymitragynine (7-OH) and three related substances into Schedule I of the Controlled Substances Act.¹⁴

- According to the CDC's MMWR, there have been 14,449 kratom exposures nationwide, 233 kratom-associated deaths with 184 involving polysubstance use from 2015-2025.²
- From 2023 to 2025, according to national EMS data, there were 4,233 kratom or 7-OH related overdoses, with the highest national distribution being along the Eastern United States, followed by the Central region.³

Kratom in North Dakota

In North Dakota, kratom is not listed as a controlled substance and residents of any age can possess kratom as there is no state-mandated age minimum for purchase. As of July 2026, Governor Armstrong banned kratom statewide under an executive order declaring a public health emergency that prohibits sales for 180 days. This executive order took effect August 5th at 5 p.m.

The summary below presents data from the Hennepin Healthcare Poison Center regarding reported exposures involving kratom and/or 7-OH from 2021 to August 2026.⁴ These data reflect calls received by the poison center and provide insight into reported exposures, clinical effects, and healthcare utilization. Poison center data are based on voluntarily reported cases and should not be interpreted as the total number of exposures occurring within the population.⁴

Starting in 2023, the number of kratom and/or 7-OH calls received by the ND Poison Center has increased.⁴ Twelve of these calls from 2023 to 2026 were associated with individuals aged 19 years old and younger.⁴ In the first 8 months of 2026, kratom and/or 7-OH calls have exceeded the total yearly calls for 2025.

Figure 1. Poison Control Calls Involving Kratom and 7-OH by Outcome, 2023-2026*

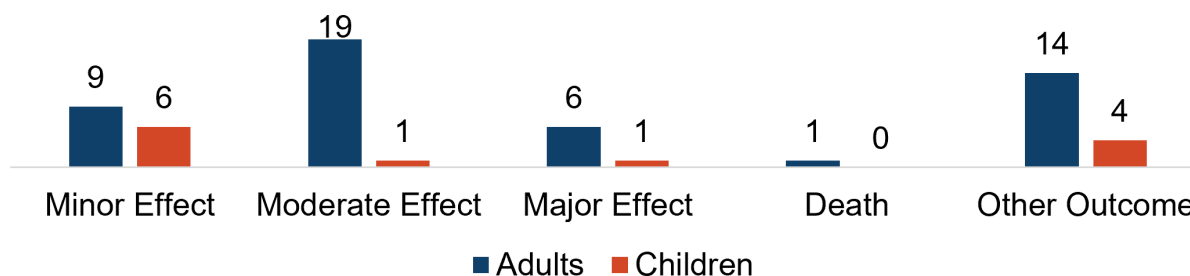


Figure Notes: *Data from 2026 represents events from January – August 26th, 2026

Minor Effect occurs when symptoms are minimally bothersome and resolved rapidly with no residual disability.⁵ Moderate Effect occurs when symptoms are more prolonged, non-life threatening, causing no residual disability.⁵ Major Effect occurs when symptoms are life threatening and result in residual disability.⁵

Frequently Asked Kratom Questions



In a study testing kratom as a treatment for symptoms of quitting opioids, called withdrawal, people who took kratom for more than six months reported withdrawal symptoms like those from opioid use. Treatments used for opioid addiction, such as buprenorphine and buprenorphine-naloxone may be needed.⁶

Overdose risk is substantially elevated when 7-OH is taken alongside other intoxicants, particularly alcohol, benzodiazepines, and/or unregulated street drugs.⁷



Kratom has been reported to react with other medications. This may lead to severe effects, such as liver damage and death. More research is needed to understand how kratom interacts with prescription, illicit and other natural supplements.⁸

7-hydroxymitragynine (7-OH) is 13 times more potent than morphine. Enhanced or spiked kratom products may contain as much as 500% more 7-OH than naturally expected.⁹



Kratom also affects babies during pregnancy. When a pregnant person uses kratom, the baby may be born with symptoms of withdrawal and need treatment.¹⁰

Understanding the Data in this Report

ESSENCE Data

To better understand some of the kratom and/or 7-OH related adverse events across the state, data was pulled from the Electronic Surveillance System for the Early Notification of Community-Based Epidemics (ESSENCE). ND ESSENCE captures syndromic surveillance data from approximately 90% of the hospitals in the state.¹¹ This includes data from all acute care and critical access hospitals. This data consists of emergency department, urgent care and walk-in-clinic visit information.¹¹

- These numbers represent a syndrome definition that utilizes both ICD-10 codes and chief complaint which looks for key words. These should not be considered a true “number of cases.” Syndromes may also contain “noise” meaning that the syndrome data may count actual non-related events. Kratom does not specifically have an ICD code, so data counts are likely lower than actual events reported.
- Not every hospital submits both ICD and chief complaints so some visits may be missing.
- Some hospitals only submit data on ND residents. Transient populations may not be included; therefore, underestimating the impact.



Important Note: The numbers provided in the ESSENCE data are based on where the patient lived, not necessarily where the patient was seen

Unintentional Overdose Fatalities

Information is collected through a state-based substance use surveillance that collects data on all violent deaths including unintentional overdoses.¹²

- Data is collected from a variety of sources including death certificates, coroner/medical examiner reports, law enforcement reports, crime laboratory reports, and toxicology results. This data is linked together to provide a clearer picture of the surrounding circumstances of unintentional overdose deaths. Further, demographic detail may be limited therefore races may be categorized into “other”.
- The numbers include all deaths where the injury occurred in North Dakota and are not dependent on North Dakota residency. Therefore, these numbers will not match North Dakota Vital Records data.
- This data may underestimate the true number of cases due to variability in how causes and circumstances of death are documented on death certificates by county coroners and forensic medical examiners. Differences in terminology, level of detail, and certification practices may affect case identification and classification.

Kratom-Involved ED Visits in North Dakota

In North Dakota, kratom & 7-OH emergency department events have steadily increased over time. There was a total of 261 adverse events related to kratom & 7-OH between 2021 and August 25th, 2026.¹¹ The adverse events related to kratom & 7-OH indicate an individual presented to the emergency department, urgent care, or walk-in-clinic with withdrawal, detox, overdose symptoms or other adverse reactions related to kratom and/or 7-OH ingestion.¹¹

Figure 3. Adverse ED Events Involving Kratom and 7-OH by Year, 2021-2026*

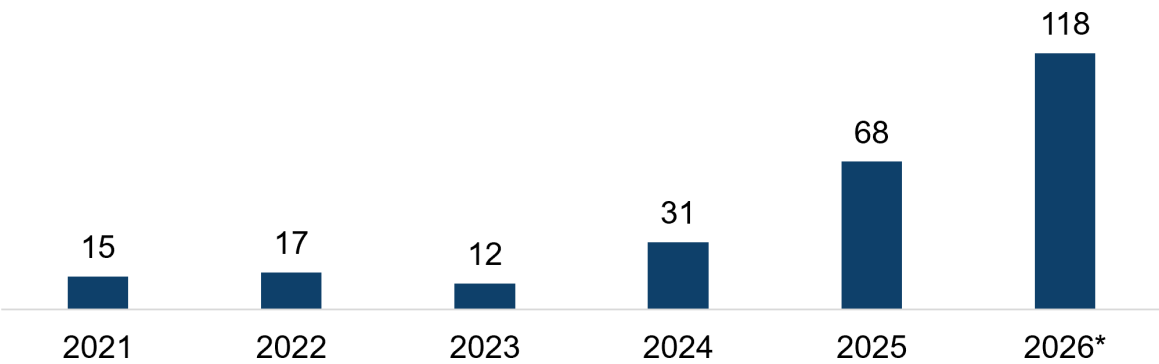


Figure Notes: *Data from 2026 represents events from January – August 25th, 2026

As of August 25th, 2026, the number of kratom events this year has met the number of events for the entire year of 2025. Furthermore, events increased by 158% between 2023 and 2024 and then by 119% from 2024 to 2025.¹¹

Who are Experiencing Adverse Kratom & 7-OH Events?

Figure 4. Adverse ED Events Involving Kratom by Age, 2021-2026*

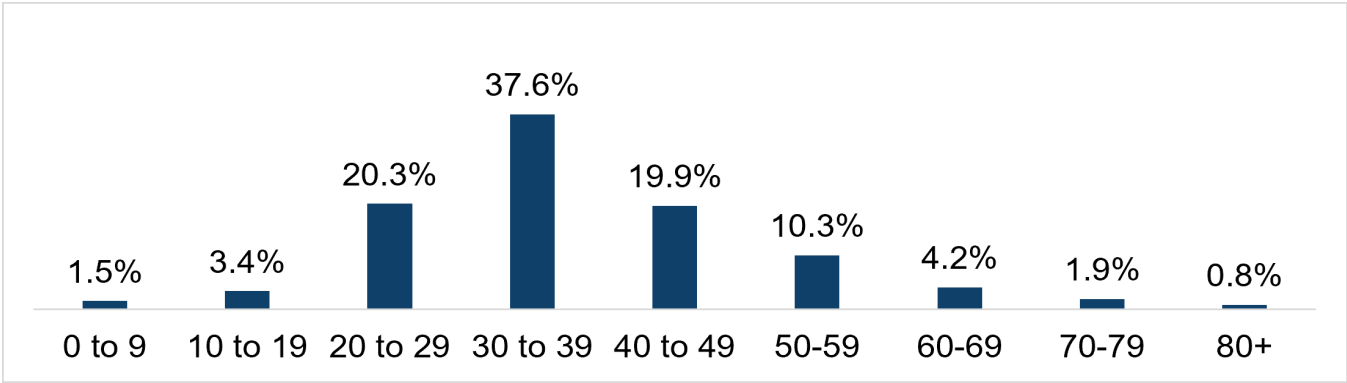


Figure Notes: *Data from 2026 represents events from January – August 25th, 2026

In North Dakota from 2021 to August 25th, 2026, more than 200 people were seen in emergency departments for adverse events related to kratom and 7-OH.¹¹ Between 2021 and August 25th, most adverse events occurred among 30–39 year olds (37.5%) followed by 20–29 (20.3%) and 40–49 year olds (19.9%).¹¹ The lowest population to experience adverse events related to kratom and 7-OH were 80+ year olds.¹¹

Figure 5. Adverse ED Events Involving Kratom by Sex, 2021-2026*

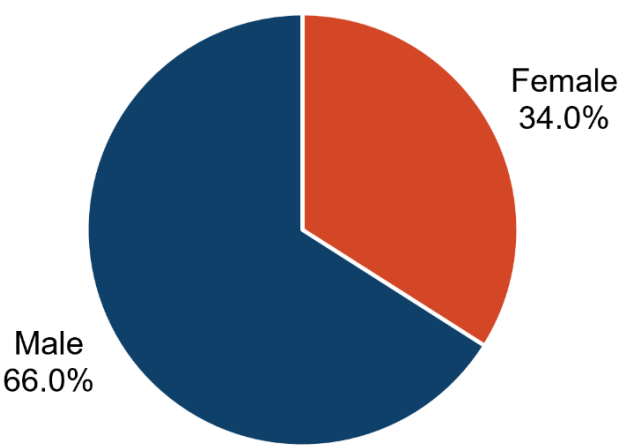


Figure Notes: *Data from 2026 represents events from January – August 25th, 2026

In North Dakota from 2021 to August 25th, 2026, men experienced adverse kratom and 7-OH emergency department events 1.5 times more than women.¹¹ Men have experienced a sharp increase in adverse kratom and 7-OH events resulting in emergency department visits. While women have experienced a roughly 250.0% increase in adverse kratom and 7-OH events resulting in emergency department visits from 2021 to August 25th, 2026.¹¹

Figure 6. Adverse ED Events Involving Kratom by Race, 2021-2026*

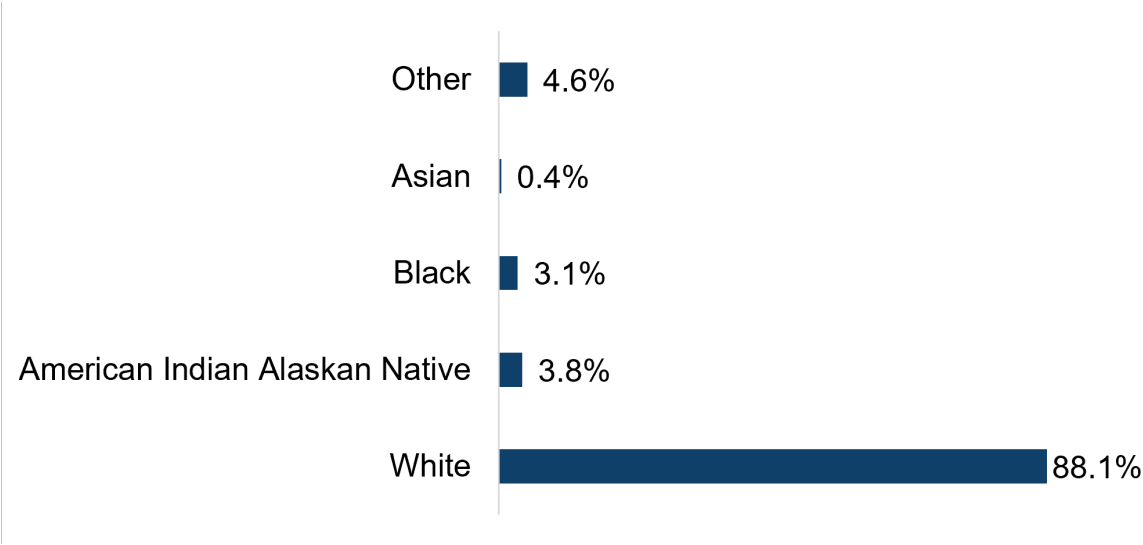


Figure Notes: *Data from 2026 represents events from January – August 25th, 2026

In North Dakota from 2021 to August 25th, 2026, White individuals had the highest frequency of kratom and 7-OH related emergency department visits, followed by individuals of other races.¹¹

Where are Adverse Events Related to Kratom and 7-OH Occurring?

Across the entire state of North Dakota, regional distributions showed the following trends from 2021 to August 25th, 2026*, North Central (n=59) followed by Central (n=55) and West (n=52) regions had the highest total counts.¹¹ From 2021 to August 25th, 2026, the Central region saw a 3000% increase, the West region saw a 300% increase and the North Central region saw an 340% increase.¹¹

Figure 7. Adverse ED Events Involving Kratom by County, Rates per 100,000, 2021-2026*

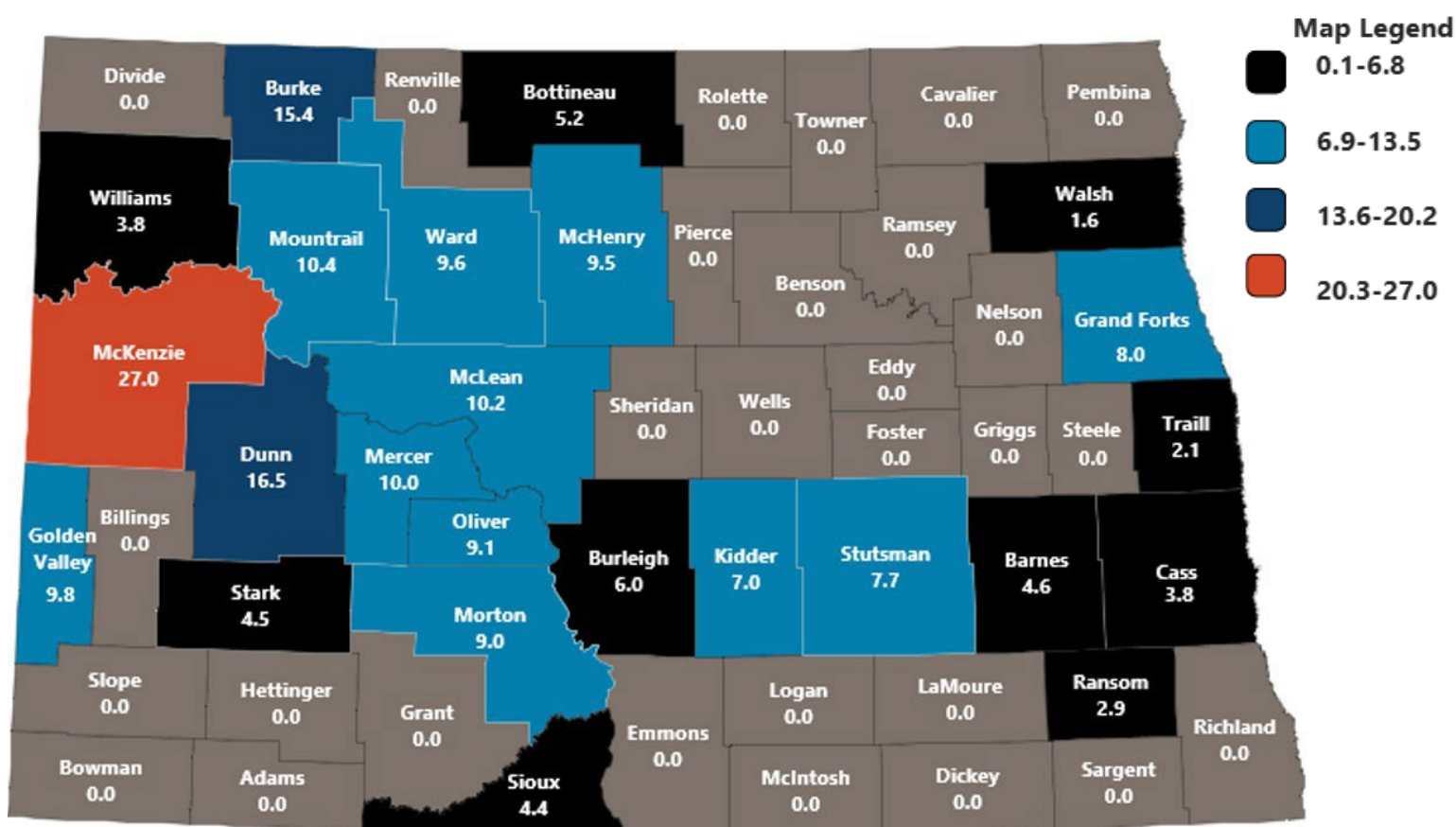


Figure Notes: *Data from 2026 represents events from January – August 25th, 2026

The map above shows the rate of kratom and 7-OH related adverse events by county. McKenzie County had the highest rate from 2021 to August 25th, 2026, followed by Dunn County. As highlighted by regional trends, there were larger concentrations of adverse events on the Western part of the state.¹¹

Reasons for Visits Involving Kratom

In North Dakota from 2021 to August 25th, 2026, individuals presented to the emergency department, urgent care, or walk-in-clinic for several reasons, including withdrawal/detox, overdose symptoms, mental health evaluation, side effects or other adverse reactions related to kratom and/or 7-OH ingestion.¹¹

Figure 8. Adverse ED Events Involving Kratom by Visit Type, 2021-2026*

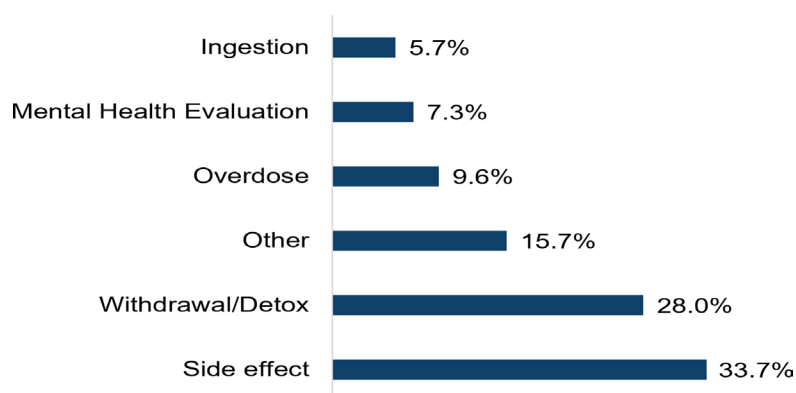


Figure Notes: *Data from 2026 represents events from January – August 25th, 2026

The chart above shows that most visits were related to side effects (33.7%) due to ingesting kratom or 7-OH, followed by withdrawal/detox (28.0%), other reasons (15.7%), overdose (9.6%), mental health evaluation (7.3%) or ingestion (5.7%). All events noted kratom or 7-OH in the chief complaint, discharge diagnosis or other notes related to the event.¹¹

Figure 9. Adverse ED Events Involving Kratom by Visit Type and Year, 2021-2026*

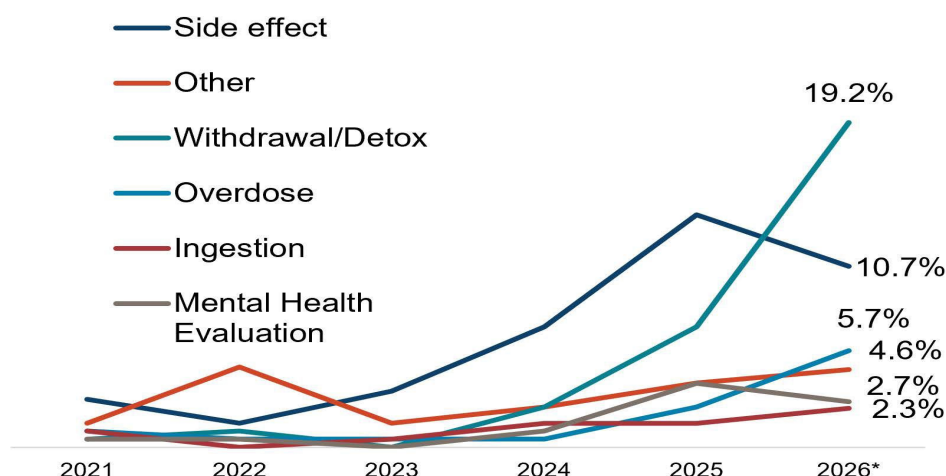


Figure Notes: *Data from 2026 represents events from January – August 25th, 2026

**Note percents do not equal 100% as this visualization accounts for more than just 2026 data in its total.

The chart above shows the visit type by year. Side effects associated with kratom ingestion peaked in 2025 but remained the top reason for visits between 2023 and 2025. Withdrawal and overdose visits increased from 2023 to August 25th, 2026.¹¹

Kratom Withdrawal

In North Dakota, from 2021 to August 25th, 2026, individuals presented to the emergency department for kratom withdrawal or detoxification in more than 44 instances.¹¹

Figure 10. ED Withdrawal Events Involving Kratom by Age, 2021-2026*

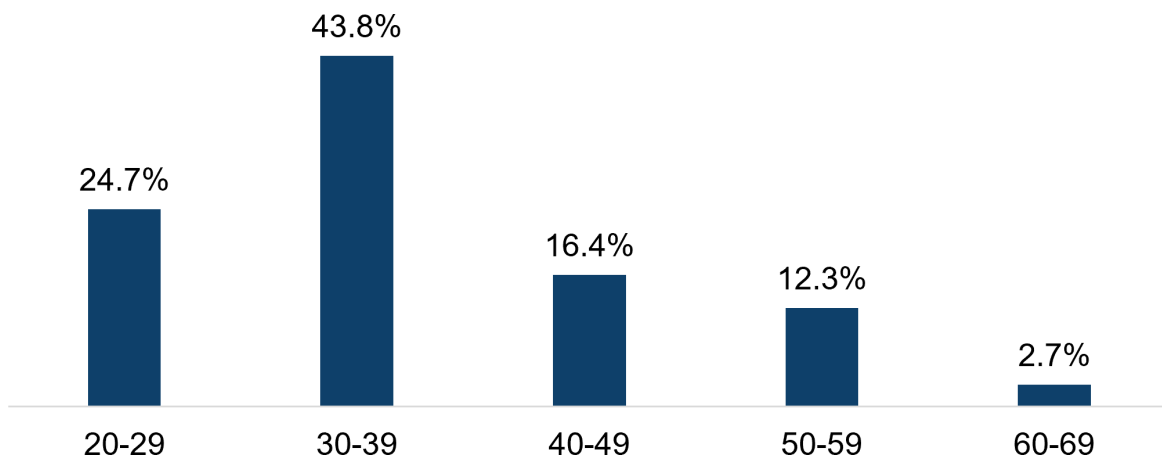


Figure Notes: *Data from 2026 represents events from January – August 25th, 2026

The chart above shows that most withdrawal events seen in emergency departments involving kratom occurred among 30-39 year olds (43.8%), followed by 20-29 (24.7%), 40-49 (16.4%), 50–59 year-olds (12.3%) and 60-69 year-olds (2.7%).¹¹

Figure 11. ED Withdrawal Events Involving Kratom by Sex, 2021-2026*

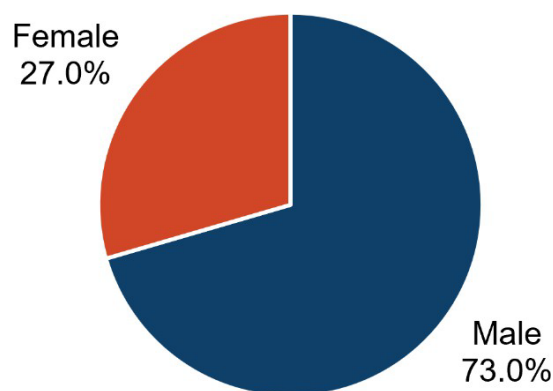


Figure Notes: *Data from 2026 represents events from January – August 25th, 2026

The chart above shows that most withdrawal events seen in emergency departments involving kratom were among males (73.0%), with female patients comprising approximately only one-third of events.¹¹

Fatal Kratom-Involved Unintentional Overdoses

Fatal kratom-involved overdoses were identified using the substance use surveillance program for unintentional overdose cases. From 2019 - June 30th, 2026, North Dakota received reports of 24 deaths associated with kratom and/or its associated compounds.¹²

Of these identified fatalities:

- 23 cases had these substances listed as part of their primary cause of death
- 1 case had it listed as a contributing cause of death

For the remainder of this report, we include only cases in which one or more of these substances was listed on the death certificate as either the primary cause of death (23 cases) or a contributing cause of death (1 case).¹²

Figure 12. Fatalities Where Kratom and/or Associated Compounds were the Primary Cause of Death or a Contributing Factor by Year, 2021-2026*

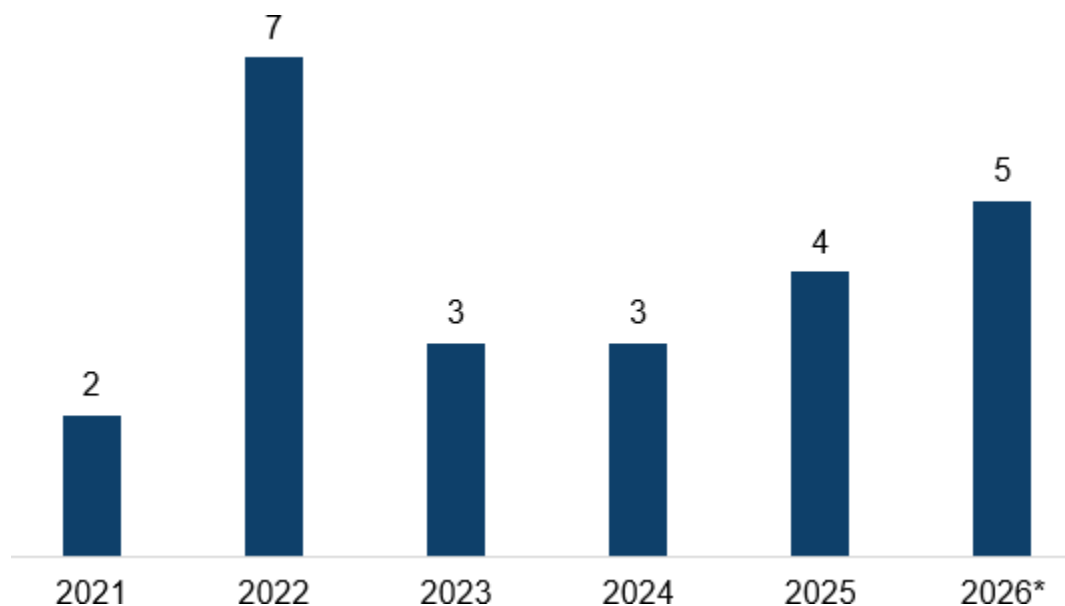


Figure Notes: *Data from 2026 represents events from January – June 30th, 2026

The highest fatalities occurred in 2022, with additional increases in fatalities from 2023 to 2026*. These increasing trends align with emergency department events that are simultaneously increasing.¹²

Figure 13. Fatalities Where Kratom and/or Associated Compounds were the Primary Cause of Death or a Contributing Factor by Year, by Age, 2021-2026*

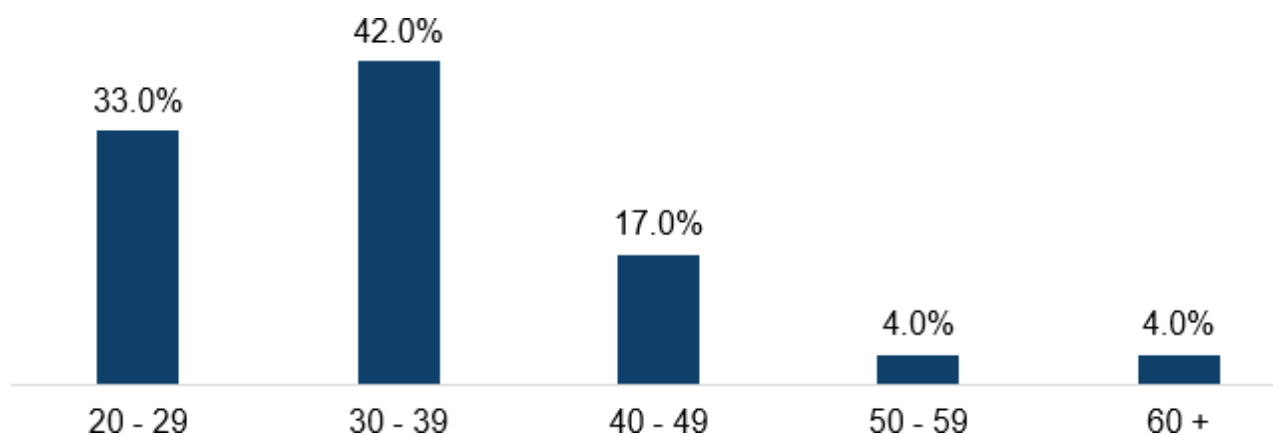


Figure Notes: *Data from 2026 represents events from January – June 30th, 2026

Adults aged 30-39 year olds were among the greatest percentage of individuals who died with kratom or 7-OH as the primary cause of death or contributing factor.¹² Three-quarters of the individuals who died were male (75.0%) and 25.0% were female. Additionally, most of the individuals were White at 82.0%, followed by American Indian/Alaska Native at 10.0% and other races at 8.0%.¹²

What drugs are involved in these deaths?

Figure 14. Number of Unintentional Overdose Deaths in Which Kratom and/or Associated Compounds were Present in Toxicology Testing Results, 2021-2026*

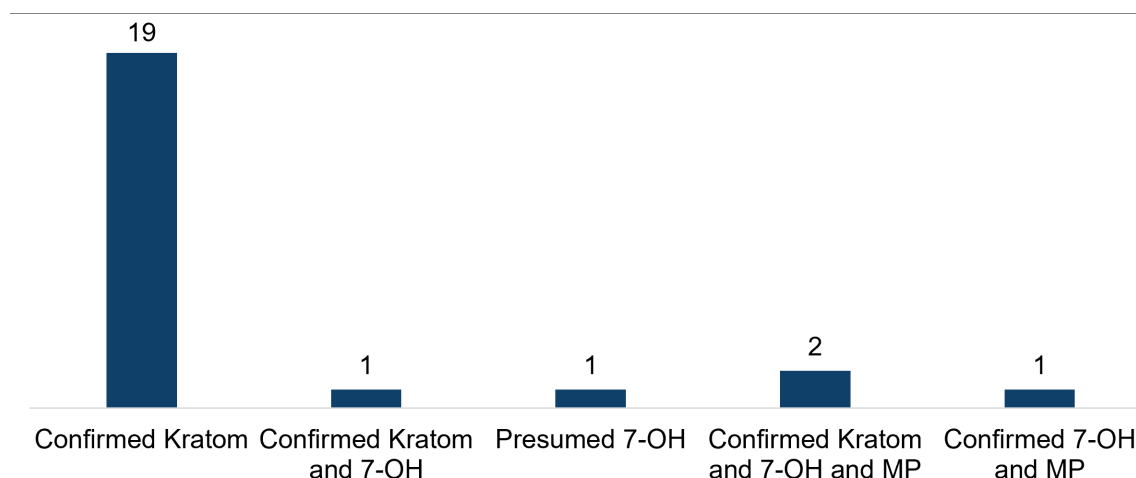


Figure Notes: *Data from 2026 represents events from January – June 30th, 2026

The table above investigates cases where kratom-related substances were the primary cause of death or contributing factor from toxicology results. Confirmed kratom on its own was the most common kratom-related toxicology result present among these fatalities.¹² The majority of the victims with confirmed kratom were male at 73.7%, with roughly one-quarter female. Additionally, as found with the adverse event emergency room data the majority of the victims of kratom-related unintentional overdose were 30-39 years old. These were then followed by 20-29 year olds that comprised 33.3% of the fatalities.¹² One of the cases of confirmed kratom is still awaiting further testing.

Of the fatalities where kratom-related substances were the primary and contributing cause of death, 87.5% of these cases had other substances reported in their toxicology.¹² Polysubstance use is the act of an individual using more than one substance in a short period of time. This polysubstance use highlights an additionally elevated risk factor for overdosing, or adverse health events that can cause long-term health complications. These trends of additional substances in toxicology, highlighting polysubstance use, align with national trends the find polysubstance use prevalence among kratom-related fatalities.¹²

Where are Kratom and 7-OH Related Fatalities Occurring?

The table below indicates the county where the injury occurred for each of these deaths, with Williams County (25%) having the highest number of deaths followed by Burleigh County (17%). The top five counties comprise 71% of these deaths.¹² Additionally, 92% of these cases occurred in the western half of the state.¹²

Figure 15. Number of Unintentional Overdose Deaths in Which Kratom and/or Associated Compounds were Present in Toxicology Testing Results by the Top Five Counties, 2021-2026*

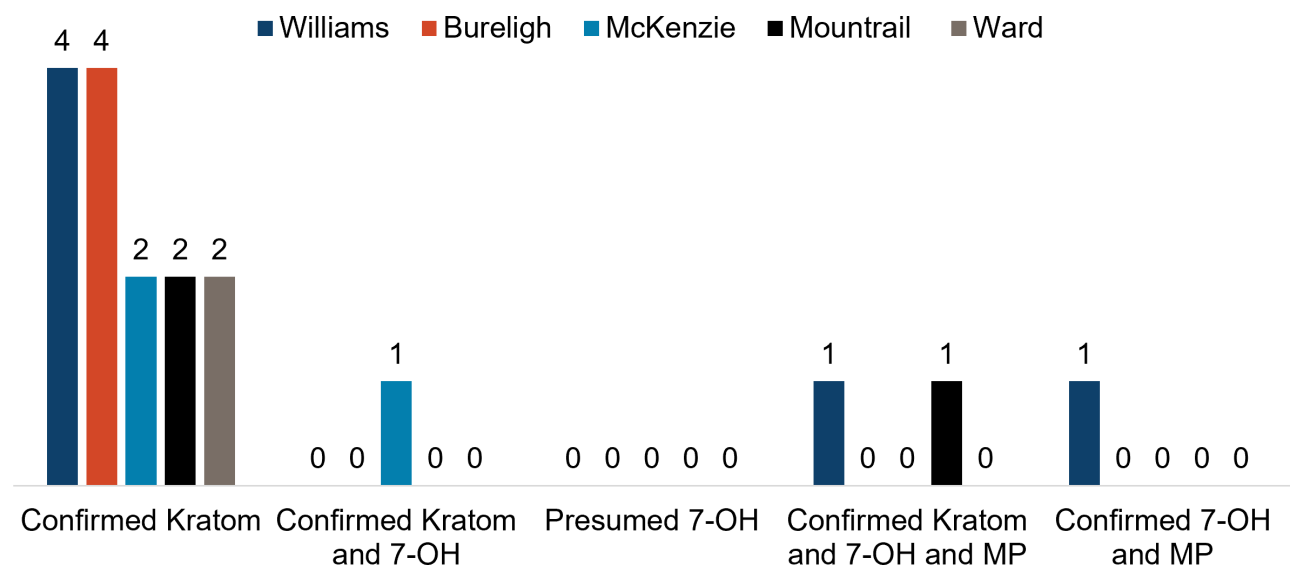


Figure Notes: *Data from 2026 represents events from January – June 30th, 2026

We currently do not understand why this is occurring, hypotheses could include regional kratom use patterns, testing patterns, demographic composition of the state, access to high-potency products, co-occurring substance use, and more. Beyond the 24 unintentional overdose fatalities discussed in this brief, 26 additional fatalities were reported with kratom and/or associated compounds reported in their toxicology.

Conclusion

Kratom is a substance of concern both nationally and in North Dakota. Kratom-related adverse events, poisonings and unintentional fatalities have increased dramatically over the last six years with sharp increases in preliminary 2026 trends.

Kratom is impacting adults aged 30-39, men and North Dakota residents of other races besides White in increasing proportions. Additionally, the western and central parts of the state are seeing higher rates of adverse events and fatalities calling for greater outreach and public health efforts to reduce this harm.

These increasing trends across all of North Dakota highlight risk not only the identified higher risk populations but potentially threaten the lives of all residents able to purchase kratom legally in the state. Without research and evidence emphasizing the risks, side effects and potency of kratom, there is a level of uncertainty with the sale and distribution of this substance in North Dakota.

Resources

Resources for substance use prevention, care, and response can be found below:

- **Child Mental Health Resources:** Find behavioral health support, community resources and referrals to care for children and youth in North Dakota at the [ND HHS Behavioral Health page](#).
- **Adult Mental Health Resources:** Find behavioral health support, community resources and referrals to care at the [ND HHS Behavioral Health page](#). For 24/7 mental health, substance use, or emotional crisis support, individuals can contact the 988 Suicide and Crisis Lifeline by calling or texting 988, or by chatting at [988lifeline.org](#). Trained crisis counselors are available to help individuals in distress or those concerned about a loved one.
- **Peer Support:** A peer support specialist is someone with the lived experience of recovery from a mental health condition, substance use disorder, brain injury, or any combination thereof. They provide behavioral health services and support to others experiencing similar challenges. Learn more about peer support training programs through the [ND HHS Peer Support Page](#).
- **Overdose Prevention Resources:** For overdose prevention training, tools, education and resources, visit the [ND HHS Overdose Prevention](#) page.
- **Using Naloxone:** Naloxone, is a lifesaving medication used to reverse the effects of opioids, including the opioid-like effects of kratom and kratom-related substances. Request Narcan (naloxone kits) at the [ND HHS Naloxone Request Form](#).
- **Syringe Services Programs (SSPs):** SSPs offer a range of resources to support people at all stages of substance use, including substance use education, overdose prevention support, and connections to health care. Syringe services programs (SSP) are prevention programs that provide community level benefits. SSPs provide a safe space for those struggling with substance use disorders. Services available at SSPs can include:
 - Linkage to substance use disorder treatment.
 - Access to and disposal of sterile syringes and injection equipment.
 - Vaccination.
 - Testing and linkage to care and treatment for infectious diseases.

Visit [ND HHS Services Syringe Service Programs](#) page.

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