

Health Advisory: Emerging concerns regarding kratom and 7-hydroxymitragynine (7-OH) products

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Summary

Kratom (*Mitragyna speciosa*) and its active alkaloids, particularly mitragynine and 7-hydroxymitragynine (7-OH), are an increasing clinical and public health concern across the United States. These compounds may produce stimulant effects at low doses and opioid-like effects at higher doses.

While kratom products are marketed as “natural” and safe remedies for pain, anxiety, or opioid withdrawal, they are not FDA-approved for any therapeutic use. Product variability, adulteration with synthetic 7-OH, and co-use with other substances have contributed to increasing reports of toxicity and fatalities. In Los Angeles, 6 recent overdose deaths among individuals ages 18 and 40 were linked to synthetic 7-OH.

In San Francisco, the Office of the Chief Medical Examiner has detected mitragynine in overdose decedents, impaired-drivers, and other forensic cases. No fatal cases have involved these substances as the sole cause of death. 7-OH has also been detected, however it is consistent as a metabolite of mitragynine and not use of 7-OH directly.

Clinicians should be aware of the signs of kratom intoxication and withdrawal, inquire about use when evaluating unexplained symptoms, and counsel patients about associated risks.

Background

- **Pharmacology:** Kratom’s primary alkaloids – mitragynine and 7-OH – are partial μ -opioid receptor agonists and also affect adrenergic and serotonergic systems.
- **Use patterns:** In the US, kratom is most commonly used for self-management of chronic pain, anxiety, or opioid withdrawal. Use has increased among younger adults, often obtained from vape shops, smoke shops, or online vendors.
- **7-Hydroxymitragynine (7-OH):** A potent metabolite of mitragynine, 7-OH is responsible for most of kratom’s opioid-like activity. While naturally present at low concentrations, some commercial products are adulterated with synthetic or concentrated 7-OH, markedly increasing toxicity risk.

Clinical Concerns

Toxicity

- Adverse effects include nausea, vomiting, agitation, tachycardia, hypertension, seizures, hepatotoxicity, and respiratory depression.
- Severe cases and fatalities have involved concurrent use with opioids, benzodiazepines, or alcohol.
- Naloxone may be beneficial for suspected opioid-related respiratory depression.

Dependence and Withdrawal

- Chronic use can lead to tolerance, craving, and withdrawal symptoms similar to opioid withdrawal (irritability, anxiety, muscle aches, insomnia, diarrhea).
- Case reports and local practitioners describe successful treatment with buprenorphine for kratom use disorder.

Drug Interactions

- Kratom inhibits CYP2D6 and CYP3A4 and may increase serum levels of co-administered medications, particularly CNS depressants and serotonergic drugs.

Product Variability

- Unregulated products vary widely in alkaloid content.
- Contamination with heavy metals and bacteria has been documented.
- Synthetic or highly concentrated formulations pose the highest overdose risk.

Regulatory Status

- Kratom is not currently a controlled substance under the Controlled Substances Act. The FDA has issued multiple warnings, and the DEA continues to evaluate scheduling recommendations for 7-OH.
- In California:
 - As of October 2025, the sale of 7-OH products is prohibited statewide, with product embargoes enacted under California's Health and Safety Code.
 - The California Department of Public Health is requesting information on the sales of 7-OH containing products so that it may take action and remove them from stores. Reports of kratom or 7-OH containing products being sold can be made to the California Department of Public Health (CDPH) Consumer Hotline: 1-800-495-3232

Recommendations for Clinicians

Assessment and Testing

- Ask specifically about kratom and herbal product use in patients presenting with unexplained CNS depression, agitation, or withdrawal.

- Consider toxicology testing for mitragynine and 7-OH if specifically concerned (not included in standard urine drug screens).
- Report cases of suspected toxicity or adverse effects to the local poison control center and public health department.

Treatment

- Manage acute intoxication supportively.
- Administer naloxone for respiratory depression when opioid effect is suspected.
- For dependence, consider referral to addiction medicine; buprenorphine has been used with success in case reports.

Counseling and Prevention

- Inform patients that kratom and 7-OH are unregulated and potentially addictive.
- Advise against combining kratom with opioids, alcohol, or sedative medications.
- Encourage individuals using kratom or other opioid receptor-acting products to carry and know how to use naloxone.

Reporting

Please report adverse events or suspected poisonings to:

- California Poison Control System: 1-800-222-1222
- Local Health Department Contact: overdoseprevention@sfdph.org