



Kratom: a Safe Alternative to Opioids?

Kratom has come to our attention due to a number of consumer queries regarding its possible use for pain relief and opioid substitution. One elderly woman had been experiencing cognitive impairment thought to be due to use of kratom tea.

Kratom comes from the leaves of a tropical tree (*Mitragyna speciosa*) native to Southeast Asia. For years locals have chewed the leaves for their stimulant and pain relieving qualities.¹⁻⁴ It is promoted as a natural and legal alternative to opioids, sedatives and stimulant drugs² and there is evidence that people with opioid use disorder use it to prevent/lessen opioid withdrawal and to help reduce use or abstain from use of non-prescription opioids.^{2,3,5-8}

Although more than 25 alkaloids have been identified in kratom, mitragynine and 7-hydroxymitragynine are thought to be the main active substances. Both are partial mu-opioid receptor agonists.^{1-3,5,7} Mitragynine is estimated to be 25% as potent as morphine and 7-hydroxymitragynine, which is present in smaller quantities, has been estimated to be 10 times as potent as morphine.¹ It is, therefore, not surprising that kratom has the potential for abuse, dependence, addiction and withdrawal effects¹⁻⁷ although this information is not readily available to the consumer.

Mitragynine also has serotonergic, dopaminergic, and adrenergic effects. At lower doses, kratom has stimulating activity while at higher doses, it possesses opioid-like effects.^{1,2,5-7} Effects of kratom can also vary depending on the plant strain. The red vein strain is thought to have more opioid effects whereas the white or green vein strain may have more stimulating effects.^{2,4,5} Because of these mixed effects, overdose presentation may be different than that with opioids (but has been shown to be similar to tramadol) and it is important to note that not all overdose effects are reversed by opioid antagonists.⁷

Although kratom has been used for centuries, evidence regarding therapeutic effect and safety in low doses is limited and only started to become available in the last few years.⁹ Use is likely safe in many cases, but side effects can be serious and include drowsiness, nausea, vomiting, seizures, tachycardia, hallucinations, and liver toxicity.¹⁻⁷ Kratom has been linked to multiple deaths, although most have involved high doses or combination with other substances.^{2,7,8} Withdrawal has been seen in neonates and kratom has been found to be secreted in breast milk.⁷ Drug Interactions can be a concern as kratom inhibits CYP3A4, 2D6, 1A2 and 2C19.¹⁻⁴

It is not illegal to possess kratom for personal consumption, as it is regulated under Schedule 1 of the Natural Health Products Regulations because it is “a plant or a plant material”.^{11,12} However, Health Canada had not authorized any products containing kratom for consumption.^{10,13} Retailers may get around this by marketing their products as non-consumables, e.g. incense or aromatherapy.^{8,14} Canadians are also able to import (e.g. order online) no more than a 90 day supply of health products for personal use whether they are approved by Health Canada or not, so long as they are not listed in Schedule F.¹⁵ That said, the Inspectorate can exercise discretion to deny entry of products.¹⁵

While it is possible to acquire kratom legally, it is NOT without safety concerns. Pharmacists should be aware of this and advise against use of kratom until more information becomes available.

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