



Use of Kratom as an Alternative Pain Treatment

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**ASAM Pain and Addiction Common Threads Course
Thursday, March 31, 2022**

Disclosure Information

Use of Kratom as an Alternative Pain Treatment

- ◆ March 31, 2022 – 14:00
- ◆ Stephanie T. Weiss, MD PhD
- ◆ I have no conflicts of interest to disclose.



Learning Objectives

- ◆ Describe the non-medically supervised use of kratom by patients as an unregulated and mostly legal alternative method of self-treatment for pain
- ◆ Analyze the preclinical and clinical literature evidence regarding the use of kratom to treat pain
- ◆ Identify the role of the internet and social networks as information sources for patients to learn about kratom

What Is Kratom?

- ◆ Tropical tree that is indigenous to SE Asia (Thailand, Malaysia)
- ◆ Like coca or khat, kratom leaves are chewed or prepared as a powder or juice
 - ◆ Low dose (1-5 g): stimulant effects used to reduce fatigue in laborers
 - ◆ Moderate dose (5-15 g): opioid effects
 - ◆ High dose (> 15 g): severe opioid effects including stupor



Kratom Use in SE Asia

- ◆ Traditional uses
 - ◆ Laborers (stimulant activity)
 - ◆ Pain and other ailments
- ◆ Additional uses
 - ◆ Self-treat opioid and stimulant withdrawal
 - ◆ Recreational use

“4 x 100” Cocktail



<https://www.cbc.ca/fifth/blog/more-on-4-x-100>

Kratom Use in the West

Green

Vein



Red Vein



White Vein



Effects

Gentle stimulation
Better concentration
Mood lifting

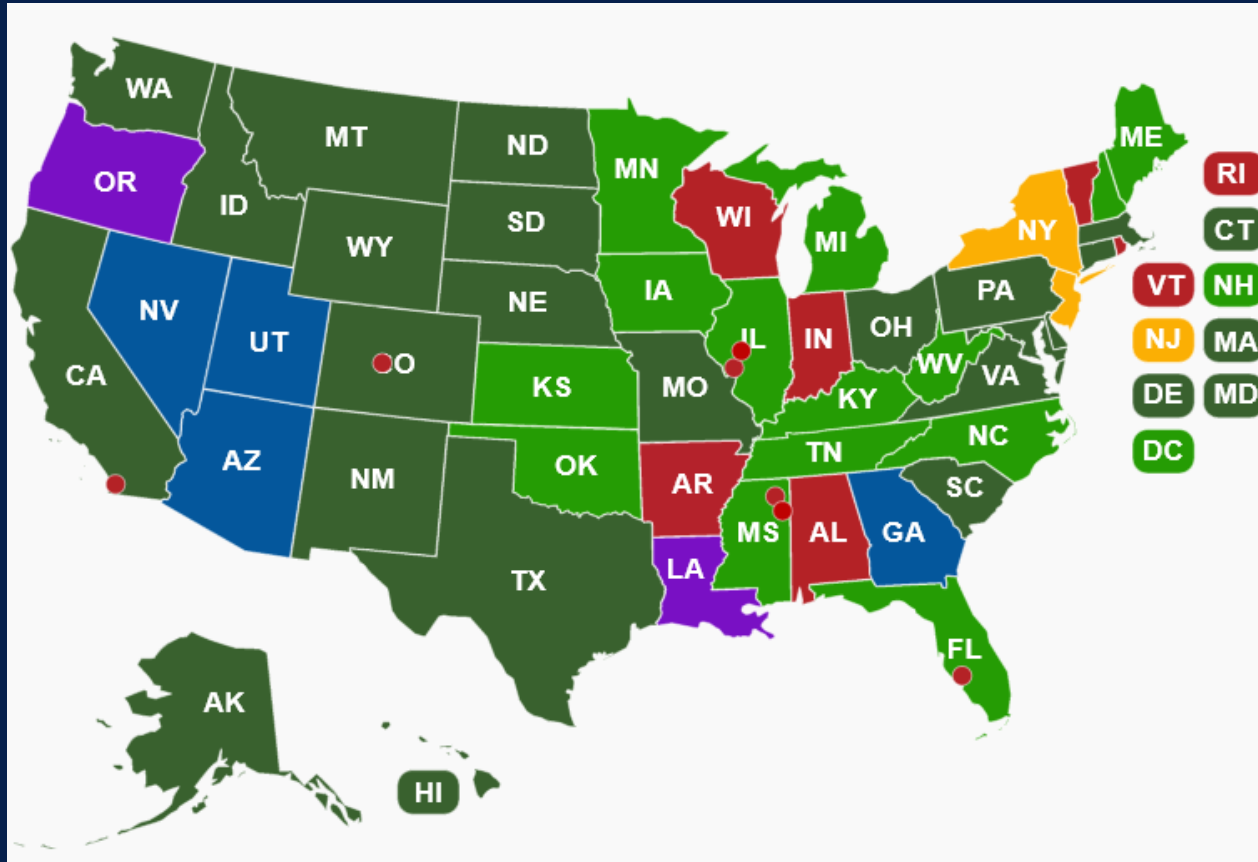
Effects

Pain killing
Sedating/relaxing
Insomnia

Effects

High energy
Better productivity
Help with depression

Kratom Legality in the United States



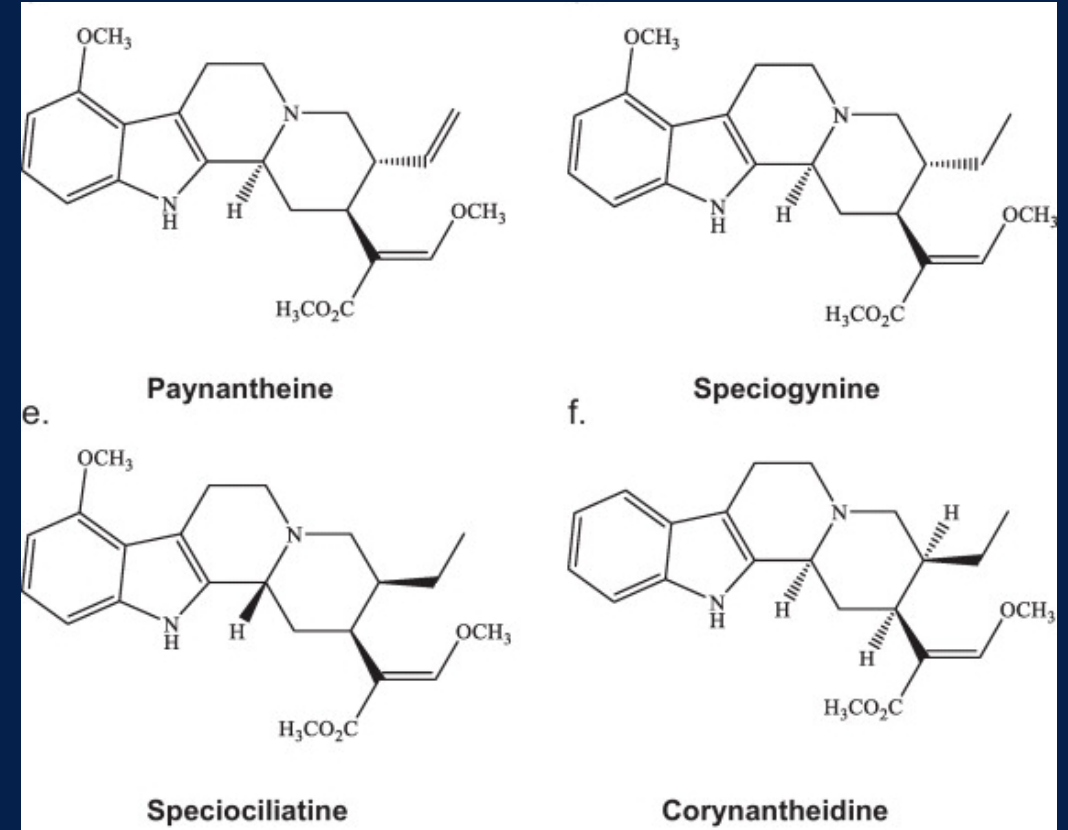
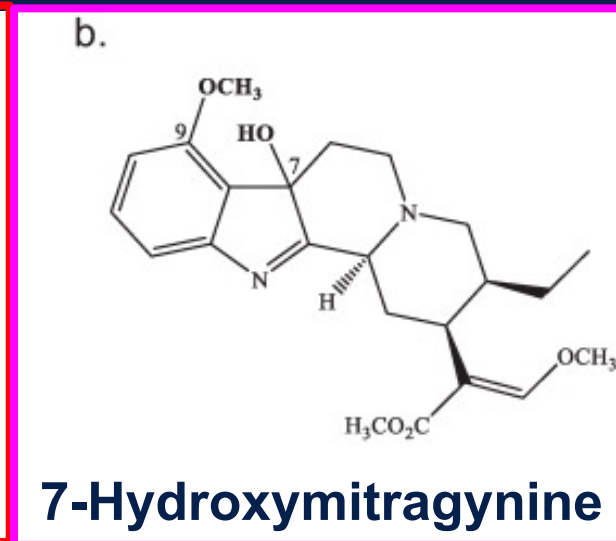
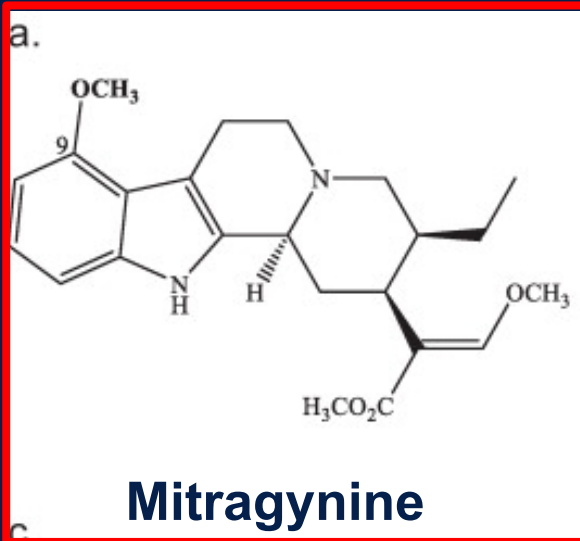
- ✓ Green: Kratom is legal and no restrictions
- ♥ Light Green : Legislation in these states have failed or been amended
- ✱ Orange: There is pending legislation on Kratom in these states
- ⊘ Red: banned states schedule 1 for Kratom
- ✓ Purple: Study involving Kratom
- Red Dot: banned city for Kratom
- ♥ Blue: States that have adopted the Kratom Consumer Protection Act Bill

Kratom Use Surveys

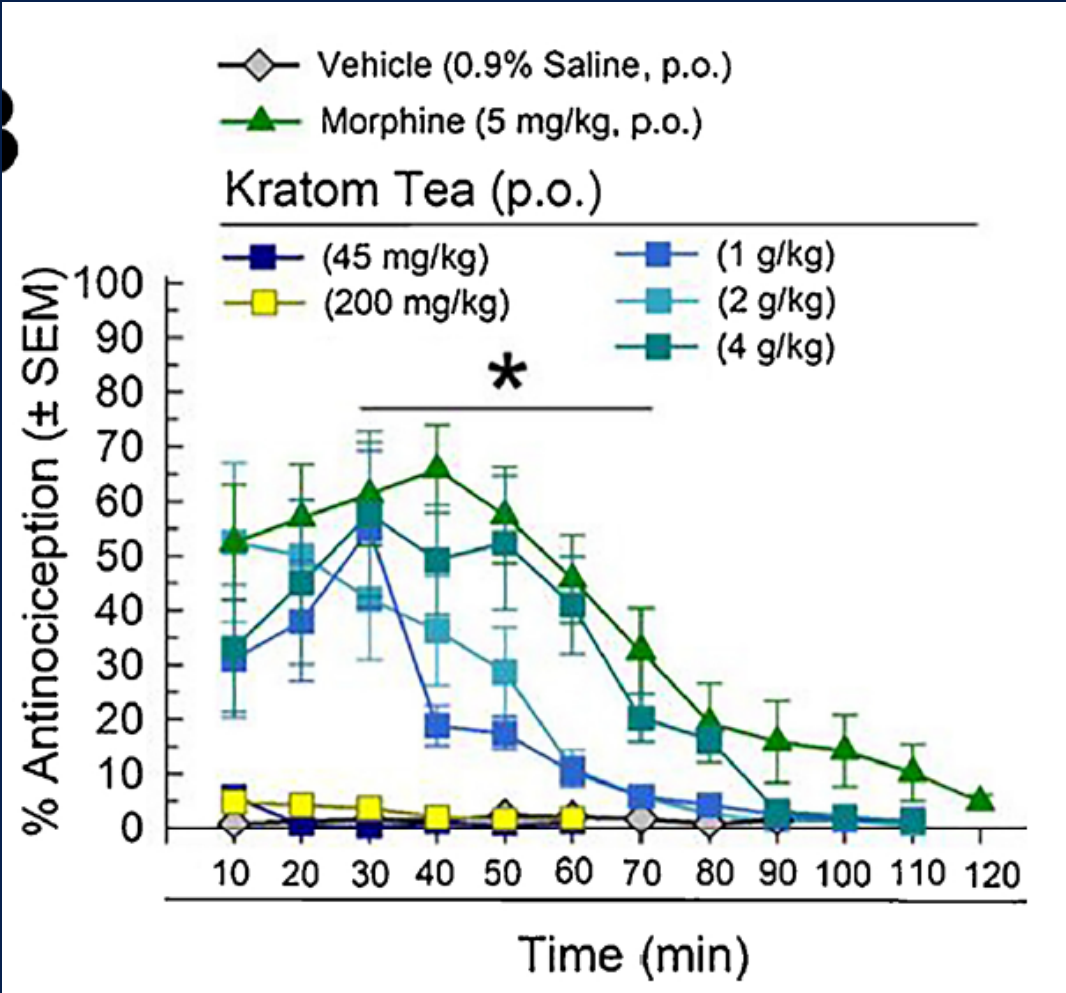
Reference	# Respondents Taking Kratom for Pain	Demographics	Type of Pain
Grundman n (2017)	68% (4811/7060 respondents)	57% male, 89% white Solicited online (AKA)	Not specified
Coe (2019)	48% (1451/3024 respondents)	54% male, 93% white Solicited online (AKA)	Spine/back pain (n=596) Fibromyalgia (n=165) Injury-related (n=138) Osteoarthritis (n=95)
Garcia-Romeu (2020)	69% (1924/2798 respondents)	61% female, 90% white Solicited online (multiple sites including AKA website)	Back pain (72%) Muscle pain (63%) Neck pain (55%) Joint pain (54%) Arthritis (44%)

Kratom Alkaloids

◆ >40 kratom alkaloids have been identified

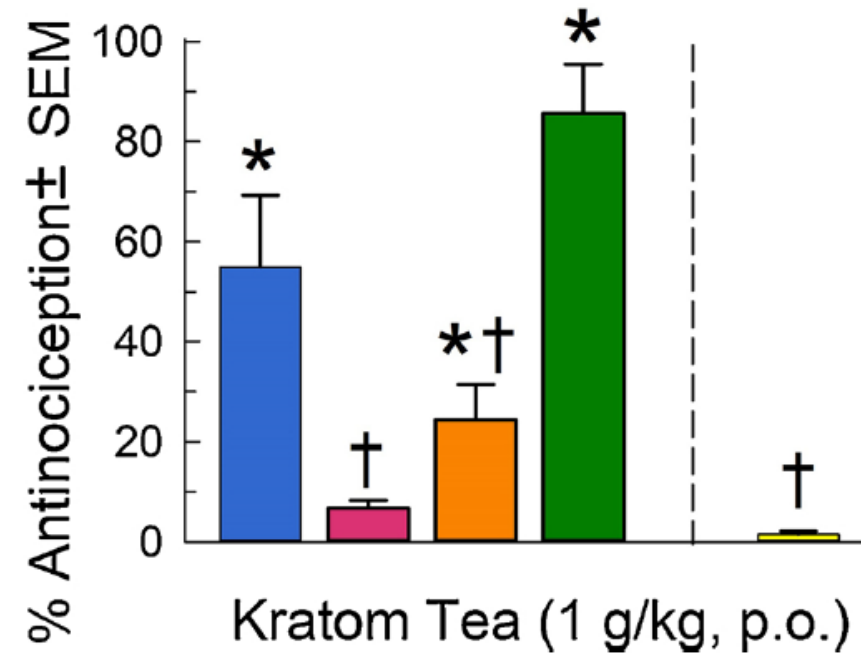


Animal Data: MOR and KOR Agonism



Kratom Tea (1 g/kg, p.o.)

- in C57BL/6J (wild-type) mice
- in MOR KO mice
- in KOR KO mice
- in DOR KO mice
- MOR KO mice + nor-BNI treatment



Earlier Rodent Studies of Antinociception

Reference	Kratom Form	Type of Pain	Mechanism
Macko (1972)	PO, SQ, intraperitoneal mitragynine	Acute (tail flick, hot plate and paw inflammation assays)	Not solely a MOR agonist
Matsumoto (1996a)	Intraperitoneal and intraventricular mitragynine	Acute (tail pinch and hot plate assays)	MOR agonist
Matsumoto (1996b)	Intraventricular and intrathecal mitragynine	Acute (tail pinch and hot plate assays)	5-HT ₂ and α_2 agonist
Thongpradichote (1998)	Intraventricular mitragynine	Acute (tail pinch and hot plate assays)	Mostly MOR, DOR agonism
Raja Aziddin (2005)	Intraperitoneal kratom alkaloid extracts	Acute (carrageenan-induced paw edema assay)	Likely multifactorial
Matsumoto (2005)	SQ 7-hydroxymitragynine	Acute (tail flick assay)	MOR, some KOR agonism
Matsumoto	SQ 7-hydroxymitragynine	Acute (tail flick and hot plate	MOR agonism,

Recent Rodent Studies of Antinociception

Reference	Kratom Form	Type of Pain	Mechanism
Sabetghadam (2010)	PO organic/aqueous kratom extracts	Acute (tail flick and hot plate assays)	MOR agonist (both extracts)
Shamima (2012)	Intraperitoneal mitragynine	Acute (hot plate assay)	DOR agonist, some KOR and MOR activity, not a CB1 agonist
Hiranita (2019)	Intraperitoneal mitragynine	Acute (hot plate assay)	No reversal with naltrexone
Foss (2020)	Intraperitoneal mitragynine	Acute (oxaliplatin-induced neuropathic allodynia)	Primarily α_2 , some MOR and α_1 agonism
Obeng (2020)	IV mitragynine	Acute (hot plate assay)	MOR partial agonist, α_1 antagonist/partial agonist
Wilson (2020)	PO lyophilized kratom tea	Acute (warm water tail withdrawal assay)	MOR agonist
Leon (2021)	IV mitragynine	Acute (hot plate assay)	No antinociception but weak 5-

Case Report: Kratom for Acute Pain

- ◆ 29 y/o male w/ PMH ulcerative colitis and primary sclerosing cholangitis who contracted COVID19

- ◆ Clinical Course

- ◆ Sx: fever, malaise, weakness, body aches, muscle pain
- ◆ Pt took APAP x 4 days w/out relief, then tried kratom
- ◆ Regimen: 2.75 g TID x 3 days (total 9 doses)
- ◆ No withdrawal noted after stopping this short-term use

Case Report: Kratom for Chronic Pain

- ◆ 26 y/o male w/ chronic heel pain after fracture
- ◆ Clinical Course
 - ◆ Initially took 4 g kratom/day (divided QID)
 - ◆ Developed tolerance over 3 months => 30 g/day
 - ◆ After 3 yrs, pt sought help d/t inability to abstain

“The Effect of Mitragynine on Man”

illumination. The subject's hand was warmed by placing it in water at 40° C. and wiped dry. He was asked to hold the resistance wire with firm pressure; and the electric current was passed through the wire. The time the subject could hold the resistance wire after the current was passed was registered by a stop-watch. Great care was exercised that the subject held the wire as firmly after the drug as before it, and did not relax the hold during the experiment. The results are tabulated in Table II.

Table II. *Shows the effect of mitragynine acetate on heat tolerance (time in minutes and seconds).*

	Before the drug		After the drug	
	Right hand	Left hand	Right hand	Left hand
C.	18"	14"	2' 15"	1' 17"
C.	47"	15"	1' 37"	32"
F.	27"	16"	1' 22"	43"
A.	31"	15"	20"	11"
S.	12"	7"	32"	13"
K.	19.4"	14"	33"	25"

It will be seen from the table that with the exception of A. all the subjects could hold the wire for a much longer time after the drug.

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Grewal, K.S. (1932) *British Journal of Medical Psychology*, 12(1): 41-58.

“The Effect of Mitragynine on Man”

(2) *The effect of powdered leaves on the heat tolerance test.*

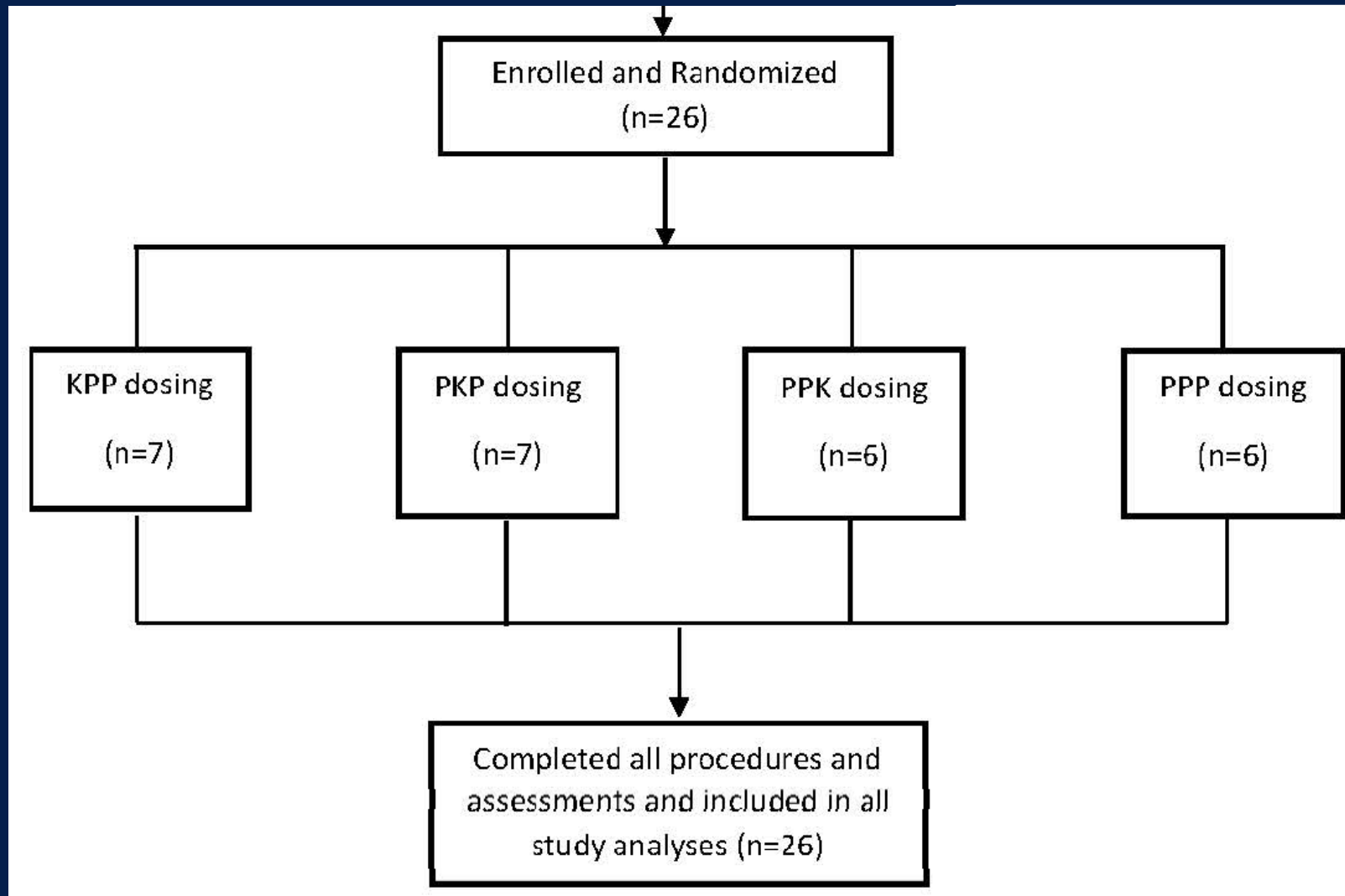
The technique is described on p. 46. The subject was given powdered leaves instead of the salt of the alkaloid mitragynine. The results of the experiment are given in Table VIII.

Table VIII. *Shows the effect of Mitragyne leaves on heat tolerance test.*

	Time before the drug		Time after the drug	
	Right hand	Left hand	Right hand	Left hand
C.	3' 49"	3' 12"	11' 42"	15' 10"
C.	4' 27"	2' 37"	5' 5"	3' 47"
L.	6' 46"	4' 13"	6' 5"	4' 0"
F.	5' 7"	2' 37"	4' 50"	2' 28"
F.	1' 49"	1' 17"	4' 7"	2' 23"
S.	3' 46"	5' 13"	5' 40"	4' 32"
K.	3' 47"	2' 24"	3' 35"	2' 43"
K.	4' 47"	2' 37"	4' 24"	3' 5"

The table shows that all subjects but C. showed very slight change in heat tolerance after taking the powdered leaves.

“Kratom and Pain Tolerance” RCT



https://souseikaiglobal.com/cold_pressor_test.php

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Vicknasingam, B. *et al.* (2020) *The Yale Journal of Biology and Medicine*, 93(2): 229.

“Kratom and Pain Tolerance” RCT

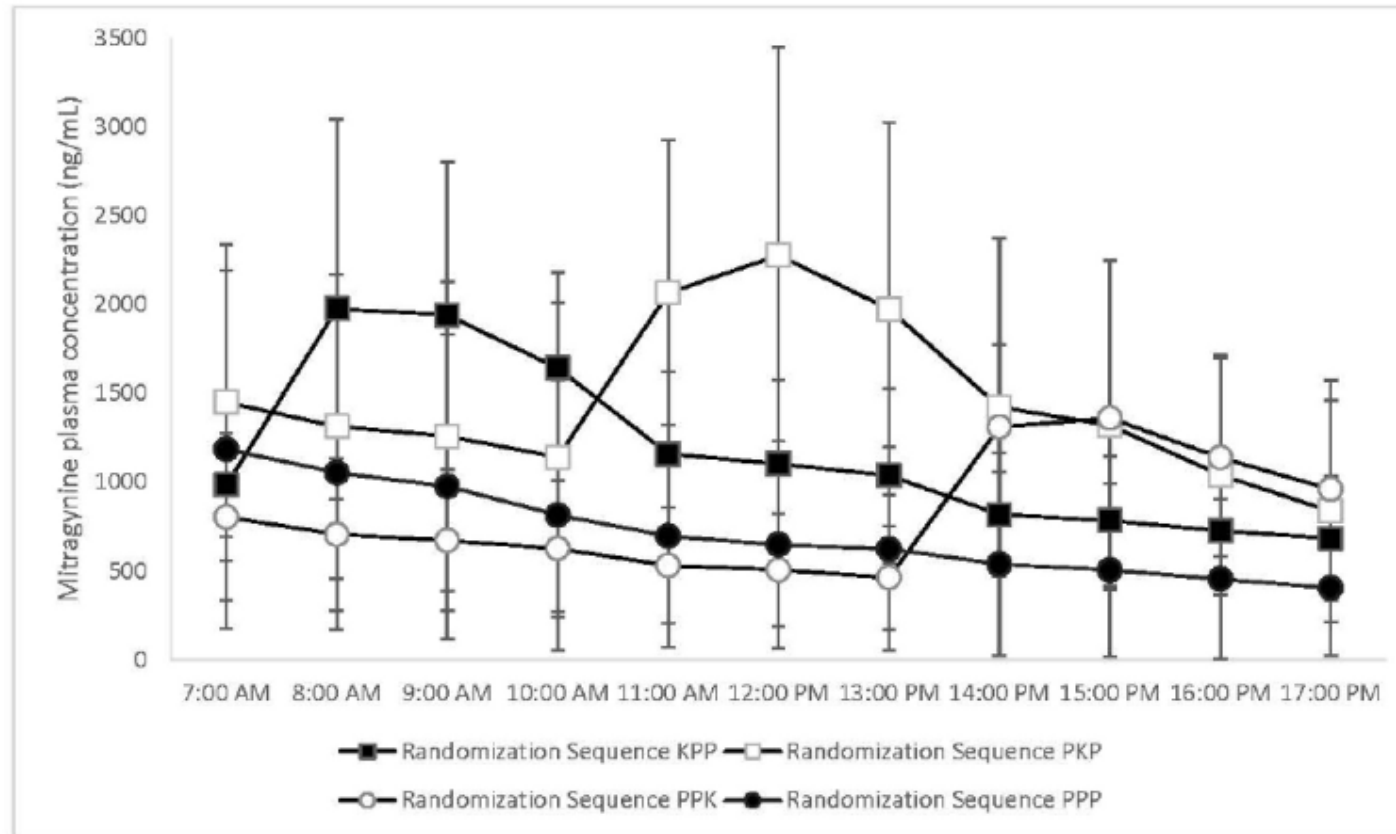


Figure 2. Hourly means of mitragynine plasma concentrations for each of the four study randomization groups. The error bars represent 95% confidence intervals.

“Kratom and Pain Tolerance” RCT

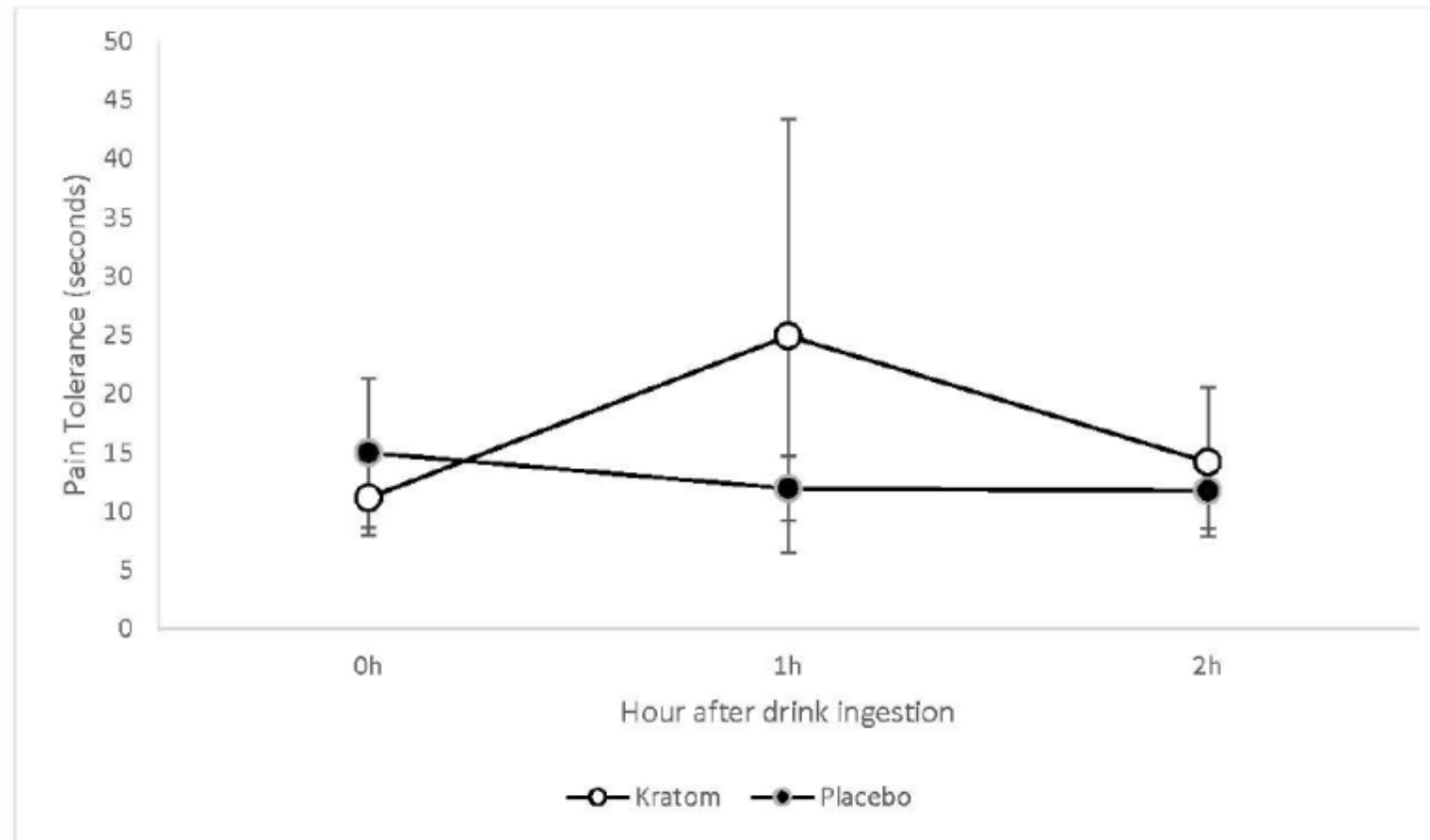
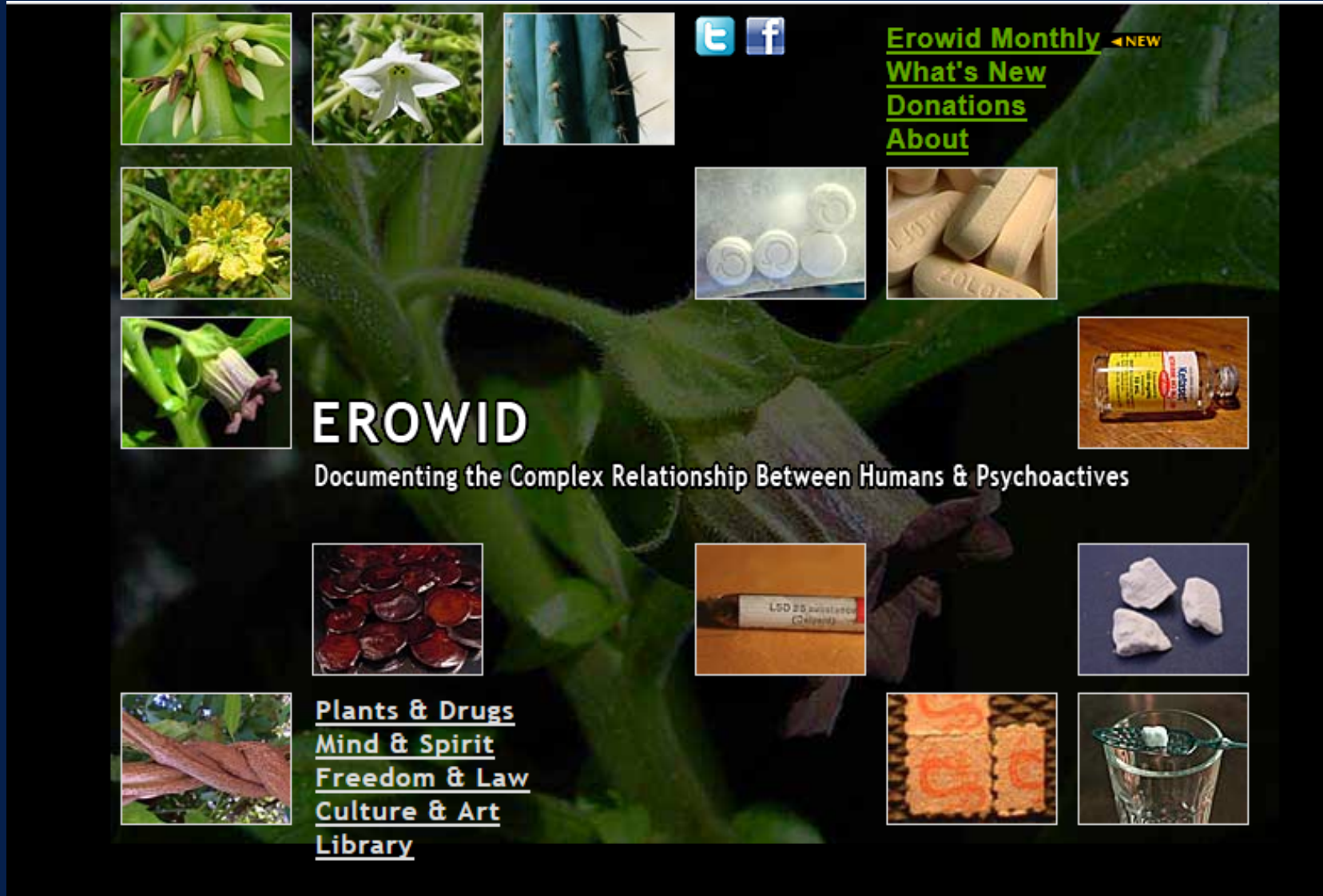


Figure 3. The means of pain tolerance, in seconds, immediately before the drink consumption and at 1 and 2 hours after consumption for kratom and placebo drinks. The error bars represent 95% confidence intervals.

Vicknasingam, B. *et al.* (2020) *The Yale Journal of Biology and Medicine*, 93(2): 229.

Erowid: www.erowid.org



The screenshot shows the Erowid website homepage with a dark background and a large, detailed image of a green plant stem with leaves. The layout includes a top navigation bar with social media icons (Twitter and Facebook) and links to 'Erowid Monthly', 'What's New', 'Donations', and 'About'. Below this is a grid of small images: a green plant with white flowers, a white star-shaped flower, a green cactus with spines, a yellow flower, a purple flower, a white pill, a yellow pill, a small glass bottle, a pile of red pills, a small box labeled 'LSD 25 substandard (Gelgard)', and three white pills. The central text reads 'EROWID' in large white letters, followed by the tagline 'Documenting the Complex Relationship Between Humans & Psychoactives'. At the bottom left, there is a list of links: 'Plants & Drugs', 'Mind & Spirit', 'Freedom & Law', 'Culture & Art', and 'Library'. At the bottom right, there are two more images: a stack of orange pills and a glass with a white pill being crushed.

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Documenting the Complex Relationship Between Humans & Psychoactives

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Vaults of Erowid



THE VAULTS OF
EROWID

Plants & Drugs ▾ Mind & Spirit ▾ Freedom & Law ▾ Culture & Art ▾ Library ▾

Psychoactive Plants and Drugs

ALCOHOL	ALPRAZOLAM	AYAHUASCA	CACTI	CAFFEINE	KRATOM
COCAINE	D M T	D X M	G H B	KETAMINE	MUSHROOMS
L S D	MDMA (MOLLY)	MDPV	METH	MXE	MORE ...
PEYOTE	SALVIA D.	ZOLPIDEM	25I-NBOMe	2C-B	

OPIATE CLASS	FENTANYL	MORPHINE	OXYMORPHONE	OXYCODONE
TRAMADOL	HEROIN	BUPRENORPHINE	OPIUM	POPPIES
NALOXONE	CODEINE	HYDROCODONE	METHADONE	HYDROMORPHONE

Common Psychoactives ▾ Go Chemicals ▾ Go Plants ▾ Go

Smart Drugs ▾ Go Pharmaceuticals ▾ Go Herbs ▾ Go

Vaults of Erowid

Kratom

BOTANICAL CLASSIFICATION

Family : Rubiaceae
Genus : Mitragyna
Species : speciosa

COMMON NAMES

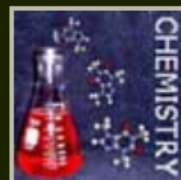
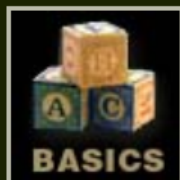
Kratom; Ketum; Kakuam; Ithang; Thom; Mambog

EFFECTS CLASSIFICATION

Stimulant; Depressant; Intoxicant

DESCRIPTION

Mitragyna speciosa is a leafy tree that grows from 3-20 meters tall. Its leaves contain 7-Hydroxymitragynine and mitragynine. The leaves are chewed as an opiate substitute and stimulant in Thailand and South-East Asia, primarily among the working class. It has a relatively long history of human use.



Erowid Experiences

For Chronic Pain

Kratom

by [Hartrench](#)

Citation: Hartrench. "For Chronic Pain: An Experience with Kratom (exp99200)". [Erowid.org](#). Aug 19, 2015. [erowid.org/exp/99200](#)

DOSE:	1/4 cup	oral	Kratom	(ground / crushed)
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BODY WEIGHT:	145 lb
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I became interested in Kratom while looking for new ways to help manage my chronic low back pain. I purchased crushed leaf and spent a few days allergy testing before I took a large quantity for the drug effect. I made a paste and rubbed some on the skin on my inner forearm near my elbow. after 24 hours with no reaction I made a weak tea with the leaves, about 1 tsp in a cup of boiling water, I drank the liquid only, it was very bitter. I felt no effect. After 48 hours I had no digestive issues or allergic symptoms. I decided to take a dose for drug effects the following day.

I soaked 1/4 cup of leaf in boiling water and left it overnight in the refrigerator. The next afternoon I was home alone and I mixed the leaf and the tea with frozen blueberries and vanilla yogurt in a smoothy blender. I ended up adding extra honey to cover the bitter taste. After drinking the whole smoothy I started organizing my schoolwork and checking my email. Normally I can only sit for about 30 minutes before my pain is distracting and about 45 minutes before the pain is so bad I have to stand up and move around. That day I sat at the computer, focused and productive for over an hour before looking at the clock again. This was shocking to me. I was feeling very good, in very little pain, able to focus, productive and feeling just a little bit fearless. I hadn't felt this free of the chronic pain in many years.

Bluelight: <https://bluelight.org/xf/>

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	MDMA & Empathogenic Drugs MDMA, MDA and other empathogenic drugs	Threads 13.4K	Messages 284.1K		What is wrong with the MDMA avai... Today at 11:20 AM · unodelacosa
	Pillreports.net - Testing Q&A and Discussion Discussion of testing kit results	Threads 5.4K	Messages 39.1K		Is this fake oxy? Yesterday at 8:27 AM · Opi_Kid_Rock
	Cannabis Discussion Intelligent discussion of cannabis related topics	Threads 8.6K	Messages 186.5K		Insomnia / Knockout strains (im fro... Today at 3:36 PM · SmokinBuddha
	Sports & Image Enhancing Drugs Bodybuilding, sports and image-enhancing drugs and supplements	Threads 2.6K	Messages 44.1K		does it make sense to take roids as ... Yesterday at 5:11 AM · hardtack
	Psychedelic Drugs Advanced discussion of psychedelics and dissociatives	Threads 20.1K	Messages 546.9K		Miscellaneous Amanita pantherina. 52 minutes ago · Kaleida
	Other Drugs In-depth HR focused discussion about all other drugs	Threads 48.7K	Messages 698.6K		Opioids Questions about injecting ... Today at 2:06 PM · Just a little pinprick

Online statistics

Members online: 38
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Totals may include hidden visitors.

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Bluelight Forums: Use the Filter

The screenshot displays the Bluelight Forums website. The top navigation bar includes links for Home, Forums, What's new, Donations (via MAPS), Research Portal, and About Us. On the right, there are links for Log in, Register, and a Search bar. A red circle highlights the Search bar and a dropdown menu labeled 'Filters'. The main content area shows a list of forum threads, each with a profile picture, a red 'Harm Reduction' tag, a title, a user name, a date, and a page number. A red circle highlights the 'Prefix:' dropdown menu in the filter panel, which is set to 'Kratom'. Other filter options include 'Show only:', 'Started by:', 'Last updated:', 'Thread type:', and 'Sort by:'. The 'Sort by:' dropdown is set to 'Last message' and 'Descending'. A 'Filter' button is located at the bottom of the filter panel.

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Harm Reduction 2methylap237: a WARNING
deficiT · May 8, 2021 5 6 7

Harm Reduction » Official Plugging/Rectal Administration Megathread «
PhorIndicator · Jun 16, 2005 37 38 39

Harm Reduction » Methamphetamine Info & IV Megathread «
linzlandexpress · Aug 16, 2010 48 49 50

Harm Reduction » INJECTIONS: I.V. FAQs & Info MEGATHREAD «
Znegative · Apr 1, 2016 9 10 11

Harm Reduction » Personal Accounts of Addiction: What's YOUR Story? «
brutus · Feb 23, 2013 21 22 23

Harm Reduction » Should I Try HEROIN? «
Mr.Scagnattie · Jan 4, 2014 145 146 147

Harm Reduction » DANGEROUS Drug Combos «
kleinerkiffer · Jun 5, 2016 10 11 12

Harm Reduction » CASE STUDIES - It could happen to YOU! «
djsim · Jun 13, 2009 22 23 24

Replies: 479
Views: 573K
Nov 21, 2021
fastandbulbous


















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Prefix: Kratom Filters

	Kratom Please post any negative side effects from kratom usage. 6am-64-14m · Wednesday at 8:20 PM 2		Replies: 25 Views: 292	Yesterday at 10:44 PM 6am-64-14m 
	Kratom Kratom vitamin content? Anonymous Dissident · Tuesday at 4:59 AM 2		Replies: 20 Views: 176	Yesterday at 2:39 PM JackARoe 
	Kratom Kratom for low-dose Suboxone user? magickmarck · Jan 30, 2022		Replies: 5 Views: 85	Friday at 3:07 PM Xorkoth 
	Kratom The mystery of Kratom dosage for optimal results, why no reports of positivity from more? xbandit07x · Sep 22, 2020 3 4 5		Replies: 94 Views: 4K	Jan 23, 2022 BWG707 
	Kratom Various binding affinities of mu antagonists in kratom polarthedog · Jan 21, 2022		Replies: 2 Views: 67	Jan 22, 2022 negrogesic 
	Kratom Kratom for days off heroin? menidiatis · Oct 19, 2021 2 3		Replies: 59 Views: 982	Jan 4, 2022 darvocet21 
	Kratom Supplementing with Kratom to reduce heroin dosage?		Replies: 6	Dec 18, 2021 

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6am-64-14m
Bluelight Crew
Joined: Mar 18, 2018
Messages: 9,390
Location: Onda Cona

I use to get mine from benni I believe

Dec 27, 2021 #31

went to doc for non narc pain meds and he tried celebrex. for chronic old people pain. lol it doesnt do a fuckin thing... this is not avout celebrex. 1 1/2 g of kratom every 4-5 hrs not only keeps my pain at bay rather reliably it gives me a bit of a mood boost. i may ask for something else from doc but after ~3 yrs replacing opiods with kratom i doubt ill go back to narc. just has taken too much from me (or rather, i gave it away). fuck, a half a gram does great if that is all i have. 1/2 g is where i started when i came off opiods and it worked for me for a uear or so. i used it for maintenance and i still do. i have been as high as 4g but i get more from it at lower doses and appreciate it more. 1 1/2 to 2 g a few times a day and golden... unless im trying to catxh a buzz; just not that kinda thing for me. if i wanna buzz i get one from a different source. best wishes and hopes of finding what works best for you peace


 Nurse Rated



Negentropic
Bluelight Crew
Joined: May 27, 2020
Messages: 13,442

I use to get mine from benni I believe

Dec 27, 2021 #32

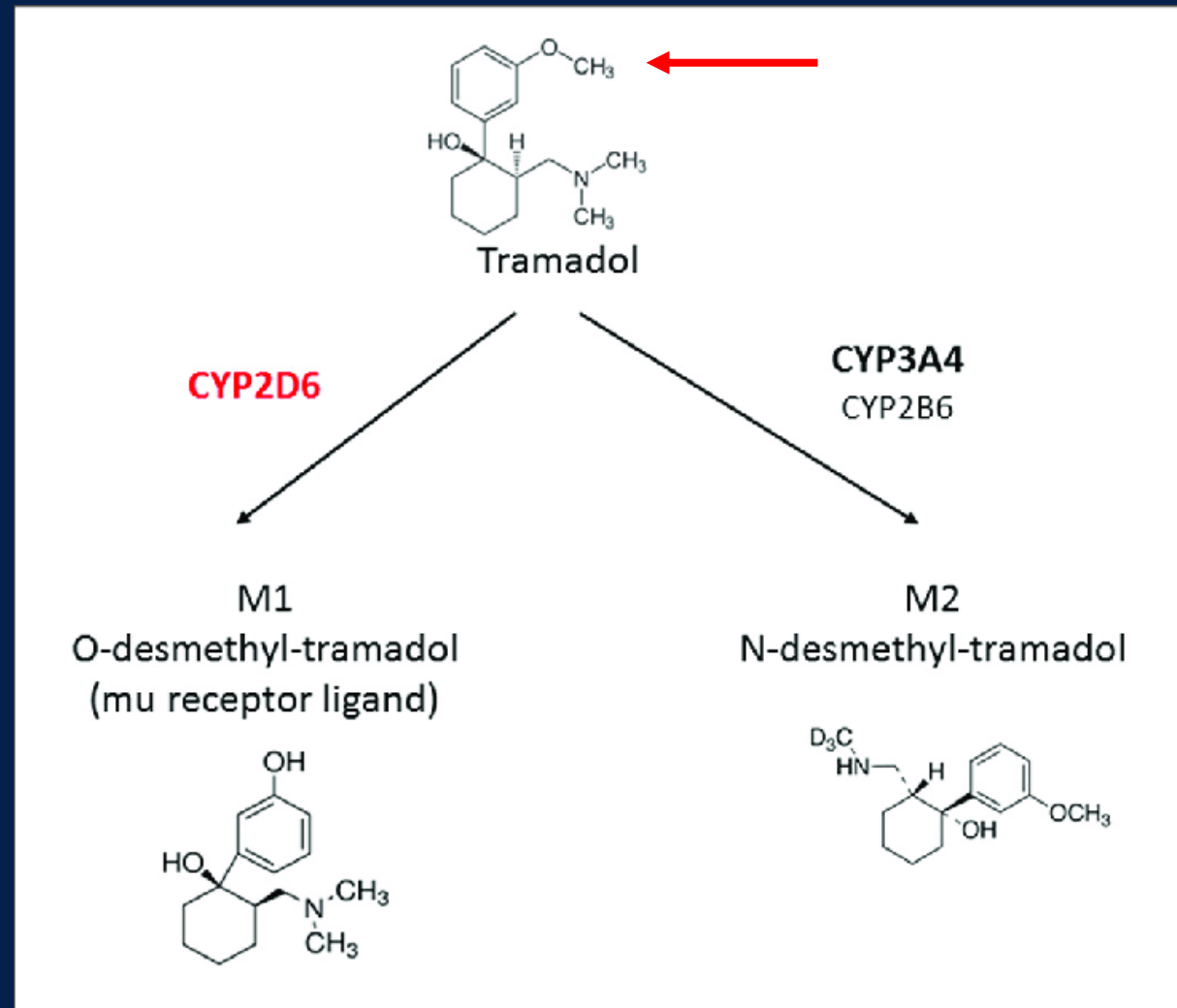
sewerslide.666mg said: 

Nice, always good to get fresh brands,

I'm telling you bro, order some from NJOY you can find it online

Adulteration of Kratom: A Case Study

- ◆ **Krypton = mixture of kratom + O-desmethyltramadol, the active metabolite of tramadol**
 - ◆ O-desmethyltramadol is twice as potent as tramadol
- ◆ **Case series of nine deaths from Sweden from krypton**
 - ◆ All had evidence of opioid overdose, including 8 with pulmonary edema
 - ◆ No parent drug (tramadol) and no other metabolites found



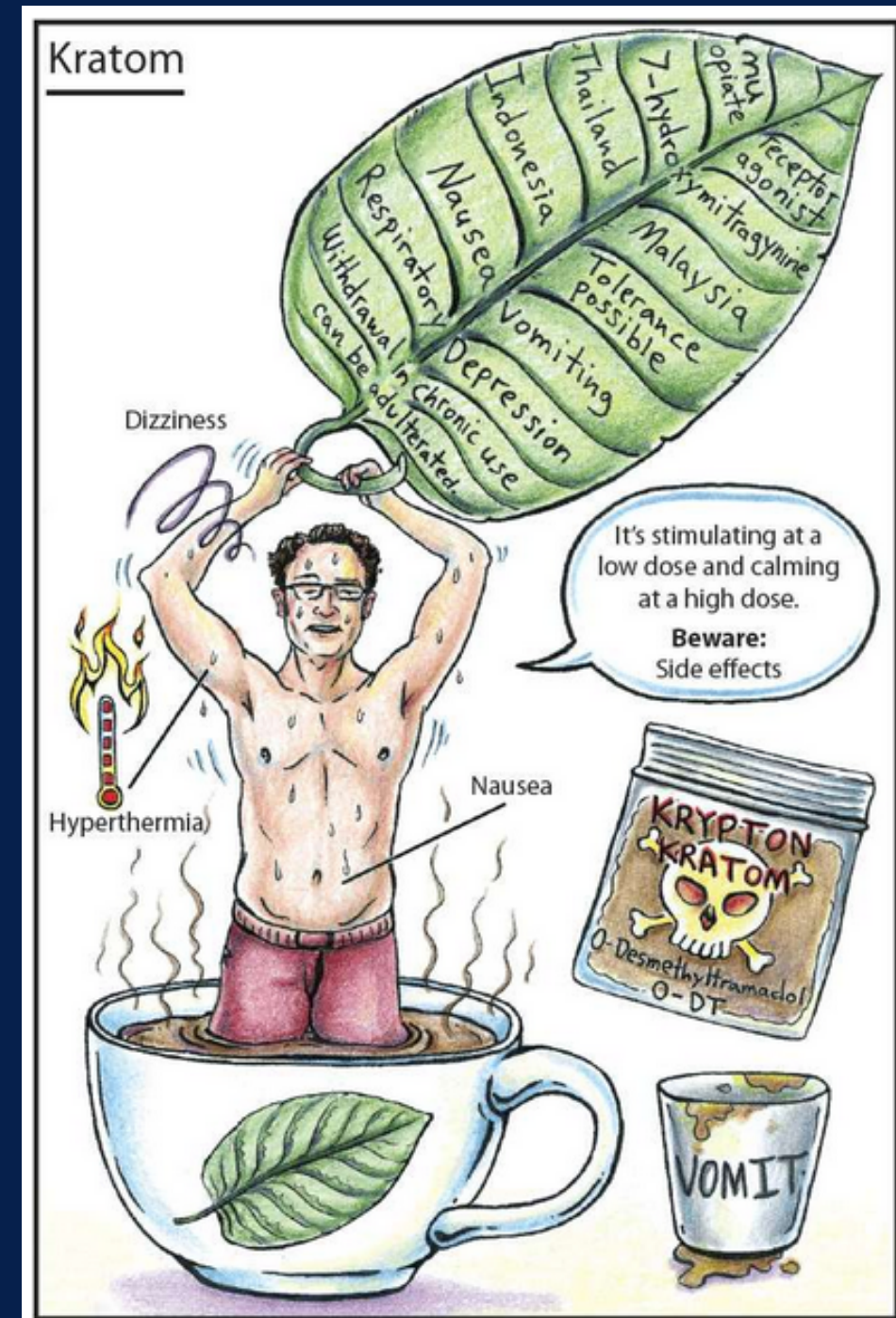
Kronstrand, R. *et al.* (2011) *J. Anal. Tox.*; 35: 242-247.
Rodieux, F., *et al.* (2018) *Frontiers in Pharmacology*; 9: 148.

Kratom for Pain

- ◆ Kratom is mostly legal and readily available over the internet/in local stores but is NOT FDA-approved
- ◆ It has multiple effects
 - ◆ Stimulant + opioid
 - ◆ Receptor effects (μ -opioid, δ -opioid, 5-HT, α -adrenergic)
 - ◆ Anti-inflammatory effects
- ◆ Most data is preclinical and based on pure mitragynine, not kratom



Kloss, B. T. (2014) Toxicology in a Box. McGraw Hill Education, NY.



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