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# Is Cannabis a Treatment for PTSD and Anxiety?

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# Objectives

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Review cannabis, cannabinoids, and the endocannabinoid system

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Evaluate current evidence for cannabis in PTSD & anxiety disorders

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Appreciate side effects and potential risks of cannabis

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Employ useful clinical knowledge on cannabis use

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# Cannabis

Schedule 1 → Schedule 3



Contain:

- Cannabinoids
- Flavonoids
- Terpenes



# Cannabinoids

## Exogenous

### Phytocannabinoids

- THC ★
- CBD ★
- CBG
- CBN
- 100+ more

### Synthetic

- Dronabinol & Nabilone (THC)
- K2/Spice (CP55940, JWH-018)

## Endogenous

- Anandamide
- 2-arachidonoylglycerol

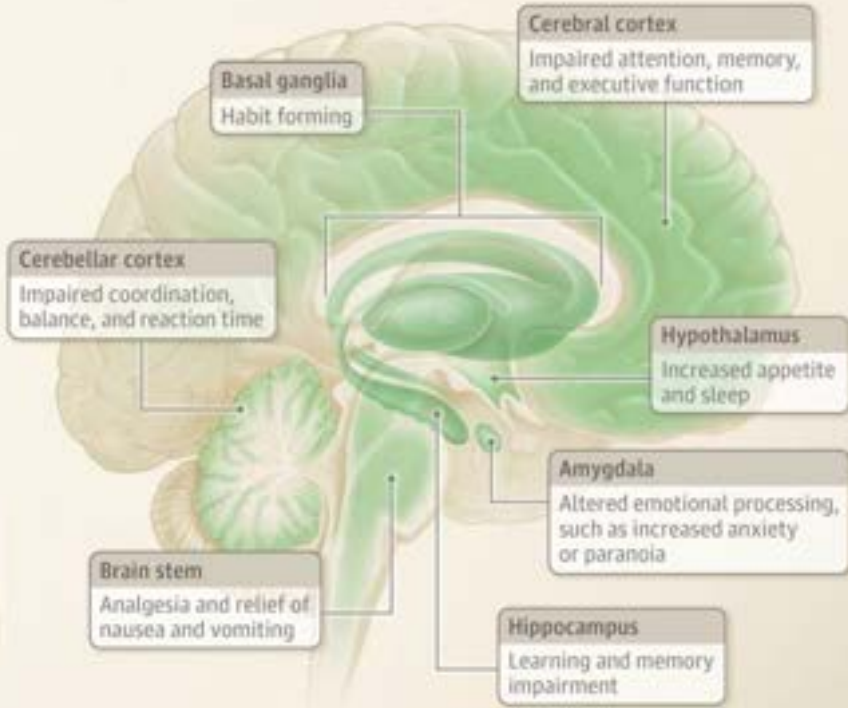
# Endocannabinoid System

**A** Concentration of cannabinoid type 1 (CB1) and cannabinoid type 2 (CB2) receptors in the body

Region	CB1	CB2
Central nervous system	●	
Lungs	●	
Bone		●
Bone marrow	●	●
Liver	●	●
Spleen		●
Pancreas	●	●
Vasculature	●	
Muscles	●	
Immune system	●	●



**B** CB1 receptor concentration in the brain and clinical effects of exogenous cannabinoids



# Cannabis Use Among Individuals with PTSD & Anxiety

- 1 in 5 adults with PTSD report daily cannabis use
- ½ of people using cannabis for mental health endorse using for anxiety

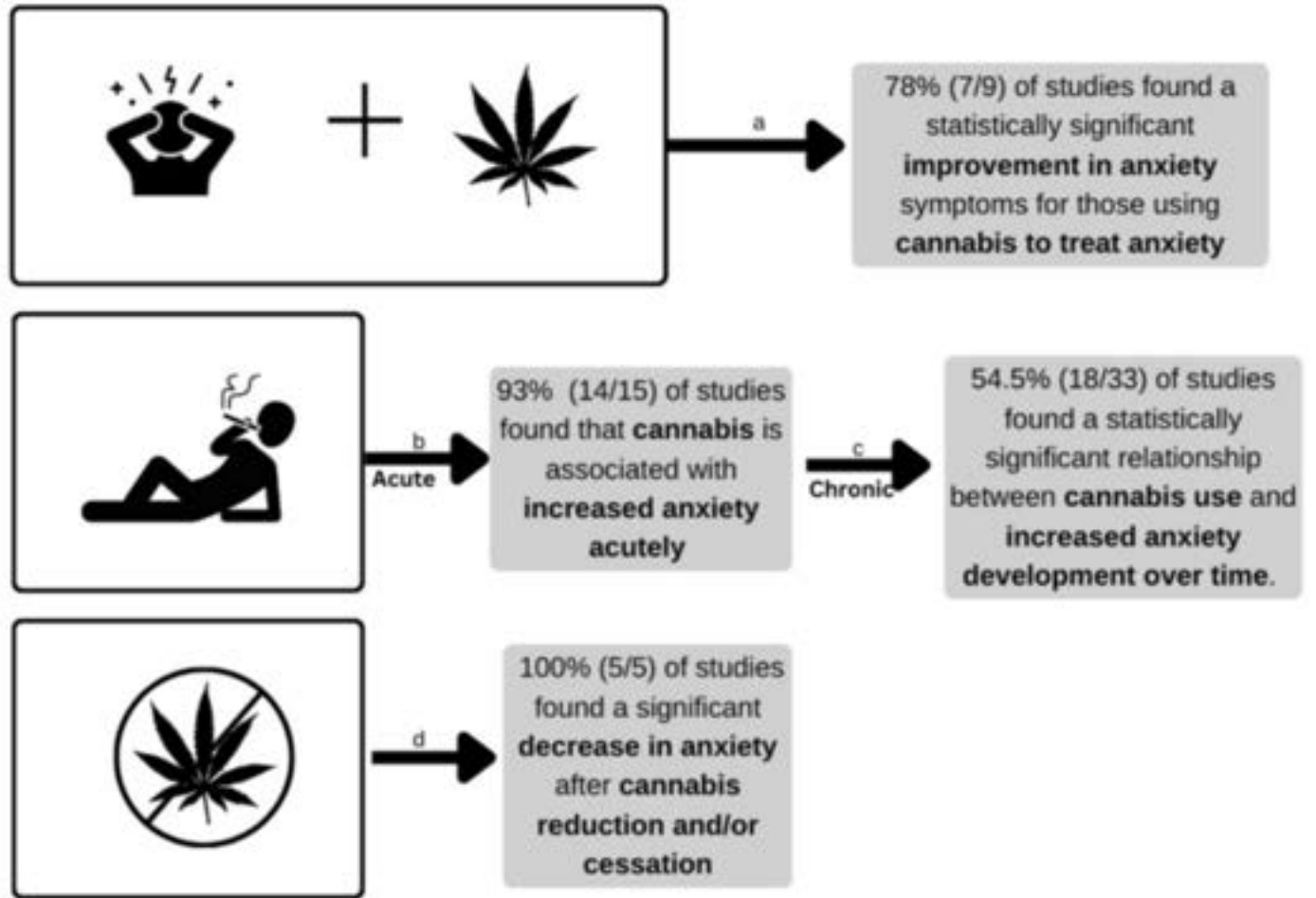
Use Commonly Reported for:

- Sleep
- Nightmares
- Hyperarousal



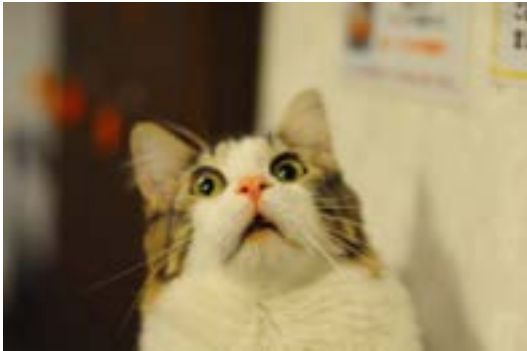
# Cannabis and Anxiety

The complicated relationship





THC vs CBD



# High-Quality Evidence for Anxiety?

GRADE Certainty of Evidence:

- Very Low
- Low
- Moderate
- High

Outcomes:			
Conditions	Outcome	Relationship with Cannabis Use	GRADE
<b>Anxiety Disorders</b>			
CBD	Symptom Control	Improved anxiety, depression, and other anxiety-related symptoms	●●○○
	QoL / Functioning	Improved functioning	●○○○
	Healthcare Utilization	No evidence	
	Safety	No association	●○○○
THC	Symptom Control	Mixed findings	●○○○
	QoL / Functioning	No evidence	
	Healthcare Utilization	No evidence	
	Safety	No association	●○○○

For further details, visit us at [www.CannabisEvidence.org](http://www.CannabisEvidence.org)

Ayers et al. Cannabis for anxiety and mood disorders. The Systematically Testing the Evidence on Marijuana Project; 2025.

Funding provided by the U.S. Department of Veterans Affairs (VA) Office of Rural Health. Go to [www.RuralHealth.va.gov](http://www.RuralHealth.va.gov) to learn more.

# Evidence for PTSD?



Outcome Studies; Sample Size	Certainty of Evidence (CoE)	Relationship	Rationale for CoE rating
PTSD symptom severity 1 RCT <sup>1</sup> ; N = 80 5 cohort studies <sup>4-6</sup> ; N = 4,315	⊕⊕○○ Low	No difference: Cannabis was not associated with clinically significant improvement in symptom severity in the trial or cohort studies	Downgraded 1 level each for RoB and indirectness
PTSD-related nightmares 1 RCT <sup>2</sup> ; N = 10	⊕○○○ Very low	Nabilone significantly reduced frequency and intensity of recurring and distressing dreams	Downgraded 1 level each for RoB, imprecision, and indirectness
Sleep quality 2 RCTs <sup>3,5</sup> ; N = 90 1 cohort study <sup>7</sup> ; N = 150	⊕○○○ Very low	No difference: No difference in insomnia, or sleep quality or quantity with cannabinoids compared to placebo in RCTs and no association with any sleep quality measures in the cohort study	Downgraded 1 level each for RoB, imprecision, and indirectness
Functional status 2 RCTs <sup>2,5</sup> ; N = 90 1 cohort study <sup>7</sup> ; N = 150	⊕○○○ Very low	No difference: No difference in global functioning or psychosocial functioning in RCTs or cohort study	Downgraded 1 level each for RoB, imprecision, and indirectness
Mental health symptoms 1 RCT <sup>3</sup> ; N = 80	⊕⊕○○ Low	No difference: Smoked cannabis was no different than placebo for reduction in general depression or social anxiety	Downgraded 1 level each for imprecision and indirectness



# Research Limitations

- Variations in cannabinoid & terpene composition
- Limited current measurement/assessment standards
- Expectancy Bias
- Lack of longitudinal studies
- Underrepresentation



# Guideline Recommendations

- Department of Veterans Affairs & Department of Defense
- American Psychiatric Association
- National Academies of Science, Engineering, and Medicine
- Cochrane



**Not enough evidence to recommend cannabis as a treatment for PTSD or anxiety**

# Patient Counseling



## Should someone stop using cannabis?

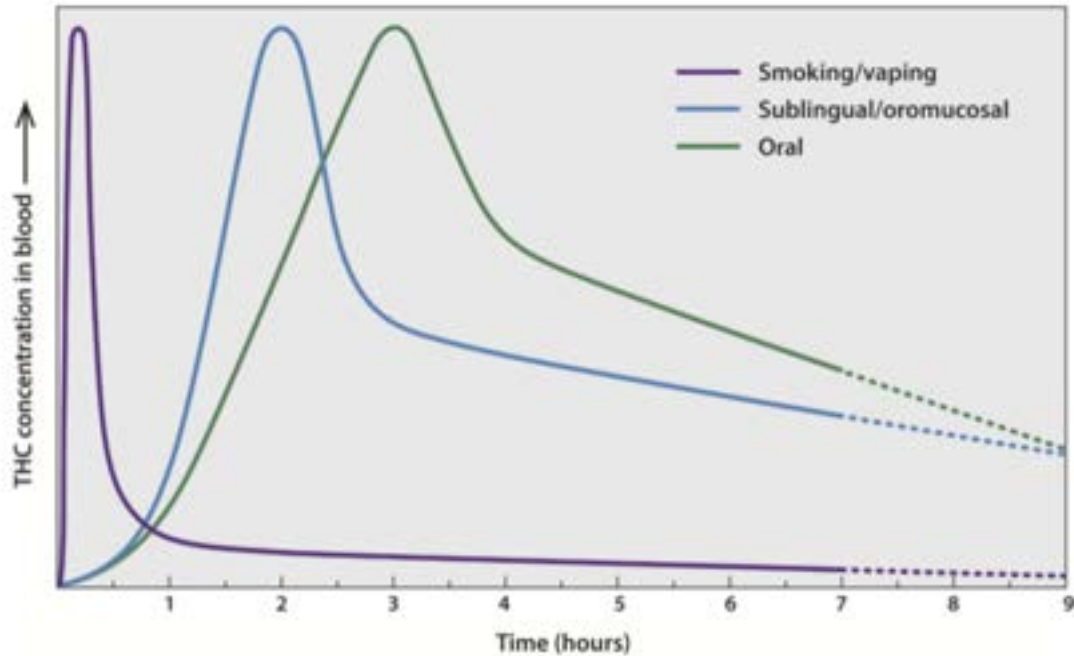
- Continue to offer gold-standard treatments
- Risks/Adverse effects
- Cannabis Use Disorder
- Withdrawal
- Contraindications
- Harm Reduction



# Patient Counseling



The pharmacology of cannabis



# Patient Counseling



## Drug-drug interactions

- Penn State CANN-DIR
- Hepatic CYP450 metabolism
- High-dose CBD
  - >300mg daily
- THC
  - >30mg daily

Table 4. Cannabinoid Interactions With Psychoactive Medications

Medication	Cannabis/THC/CBD effect on the drug
<b>Antidepressants</b>	
Amitriptyline, desipramine, and imipramine	Inhibits cytochrome P450 2C19 and cytochrome P450 2D6, increases drug level; drug and THC both increase anticholinergic effects (eg, tachycardia)
Citalopram and escitalopram	Increase adverse effects, presumably via cytochrome P450 2C19 inhibition
<b>Antiepileptics</b>	
Carbamazepine	Inhibits metabolism and increases drug level
Clobazam	CBD inhibits cytochrome P450 2C19, increases drug level
Valproic acid	Elevated liver enzymes, variable change in drug level
<b>Benzodiazepines</b>	
Clonazepam, diazepam, and lorazepam	Both THC and CBD inhibit cytochrome P450 3A4, while CBD inhibits UDP-glucuronosyltransferase 2B7, increases drug level and risk of sedation
<b>Opioids</b>	
Buprenorphine	Inhibits cytochrome P450 3A4 and increases drug levels

Thank



You