



TBI-BH ECHO

Traumatic Brain Injury – Behavioral Health ECHO
UW Medicine | Psychiatry and Behavioral Sciences

Cannabis and TBI

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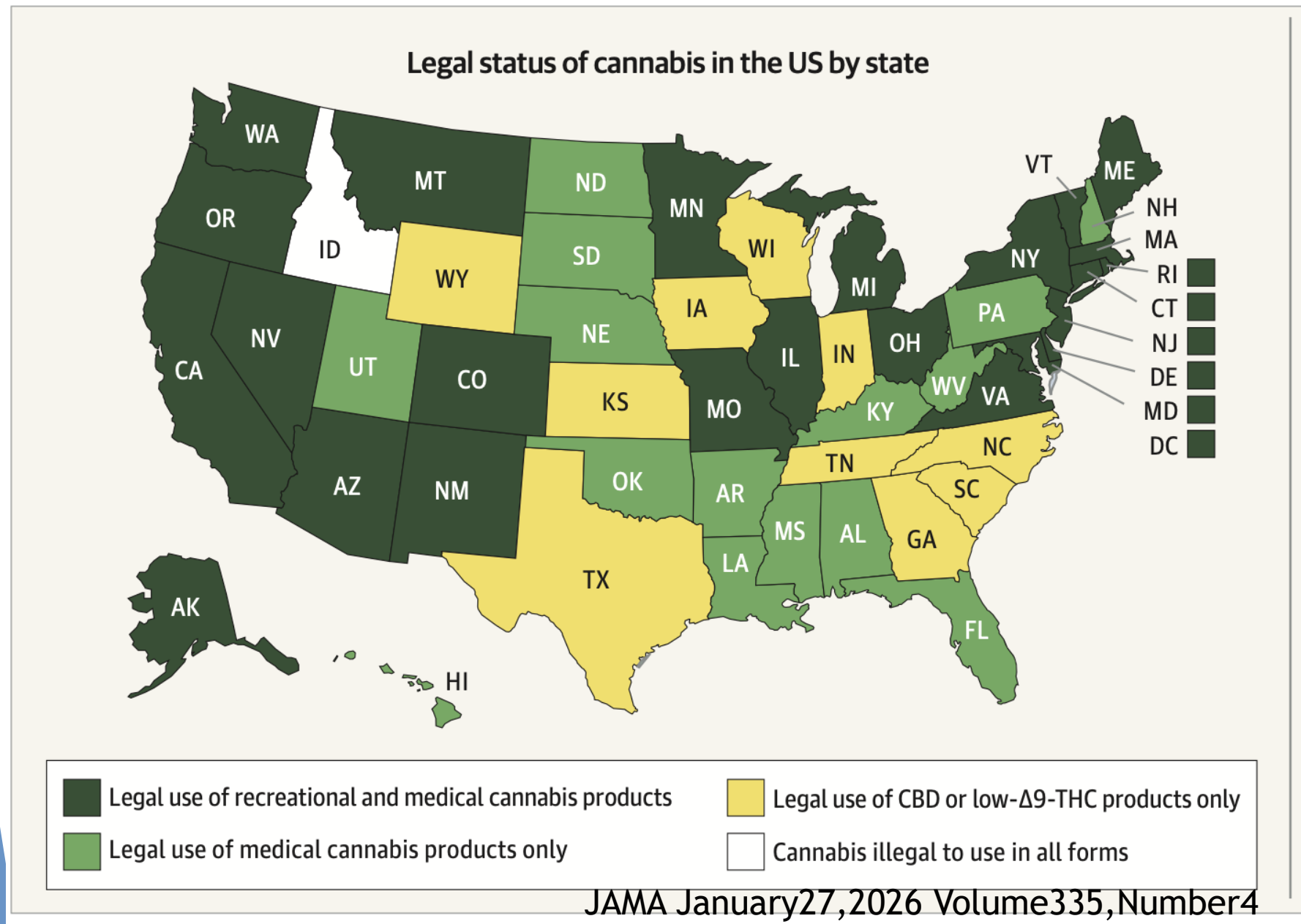


Objectives

1. Provide an overview of cannabis
2. Describe the evidence for the therapeutic and harmful health effects of cannabis
3. Describe the limited evidence related to the health effects of cannabis in TBI
4. Describe approaches to treating cannabis use disorder
5. Questions

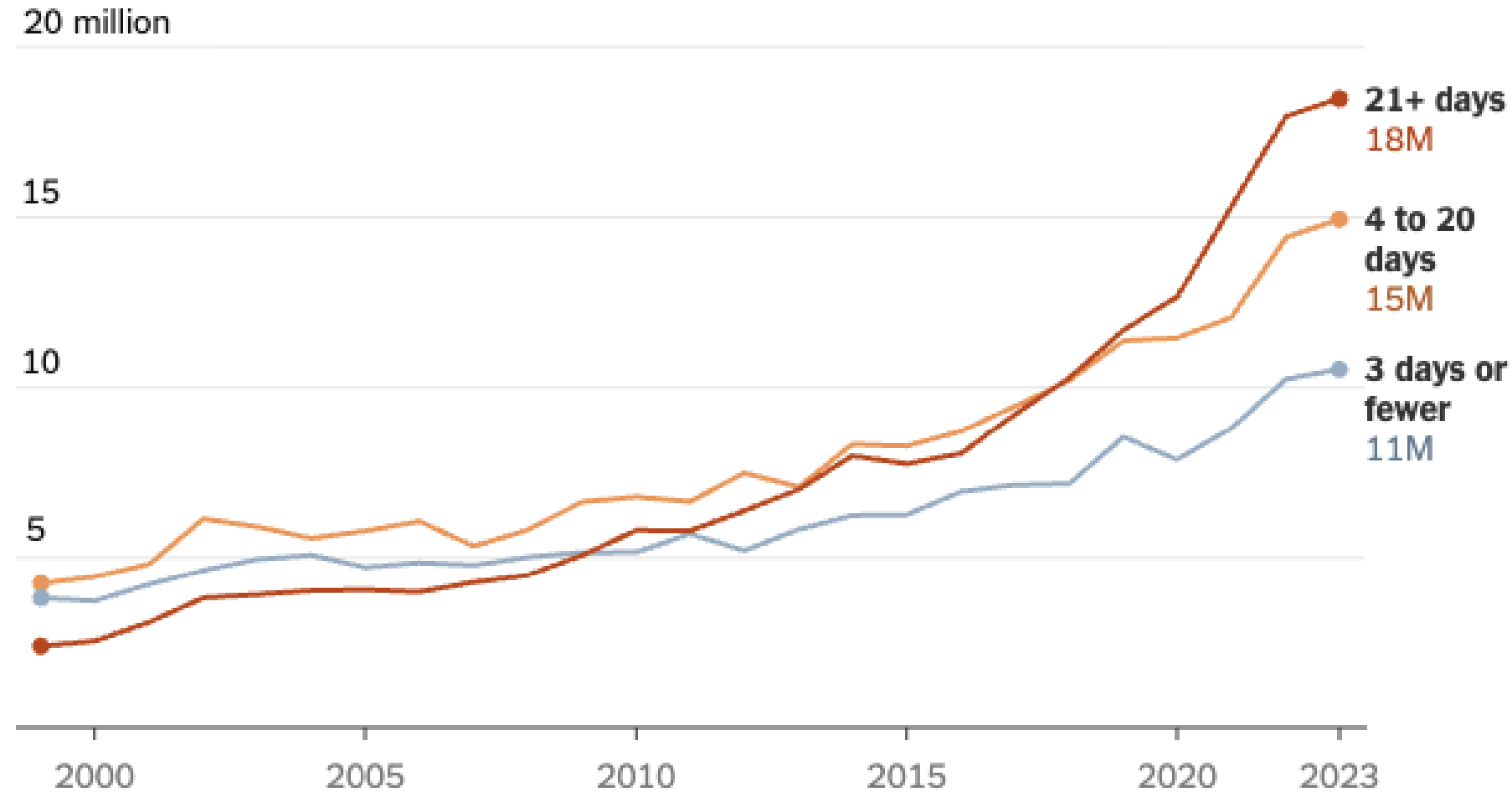


Figure 2. Cannabis Regulations in the US and Internationally as of August 1, 2025



Surging pot use

Number of U.S. residents consuming marijuana, by frequency of use per month

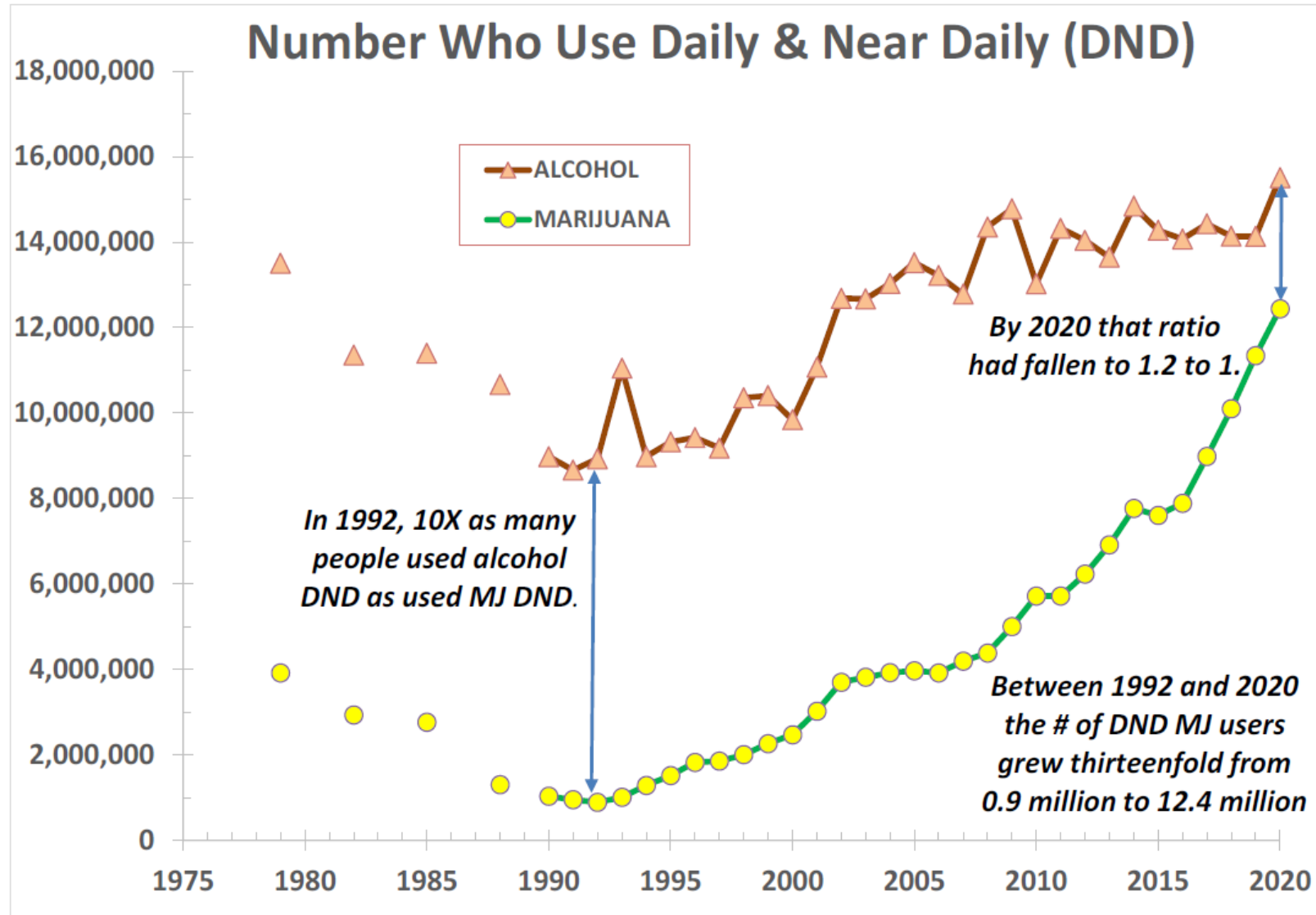


Source: Jonathan Caulkins (Carnegie Mellon), based on National Survey on Drug Use and Health By THE NEW YORK TIMES Feb 9, 2026



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High-Frequency Use Approaching that of Alcohol

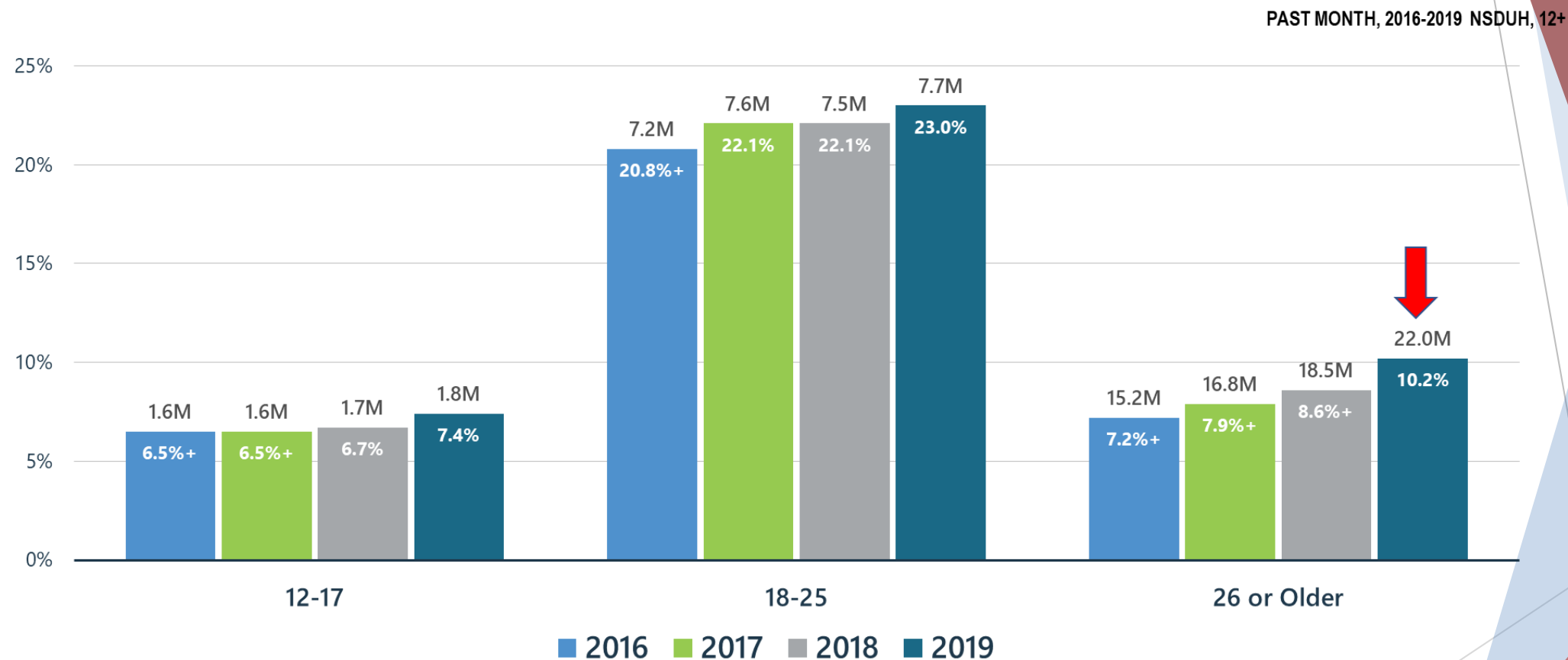


~80% of MJ consumption now by daily or near daily users (Caulkins J, 2022)



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Marijuana use is increasing in all age groups



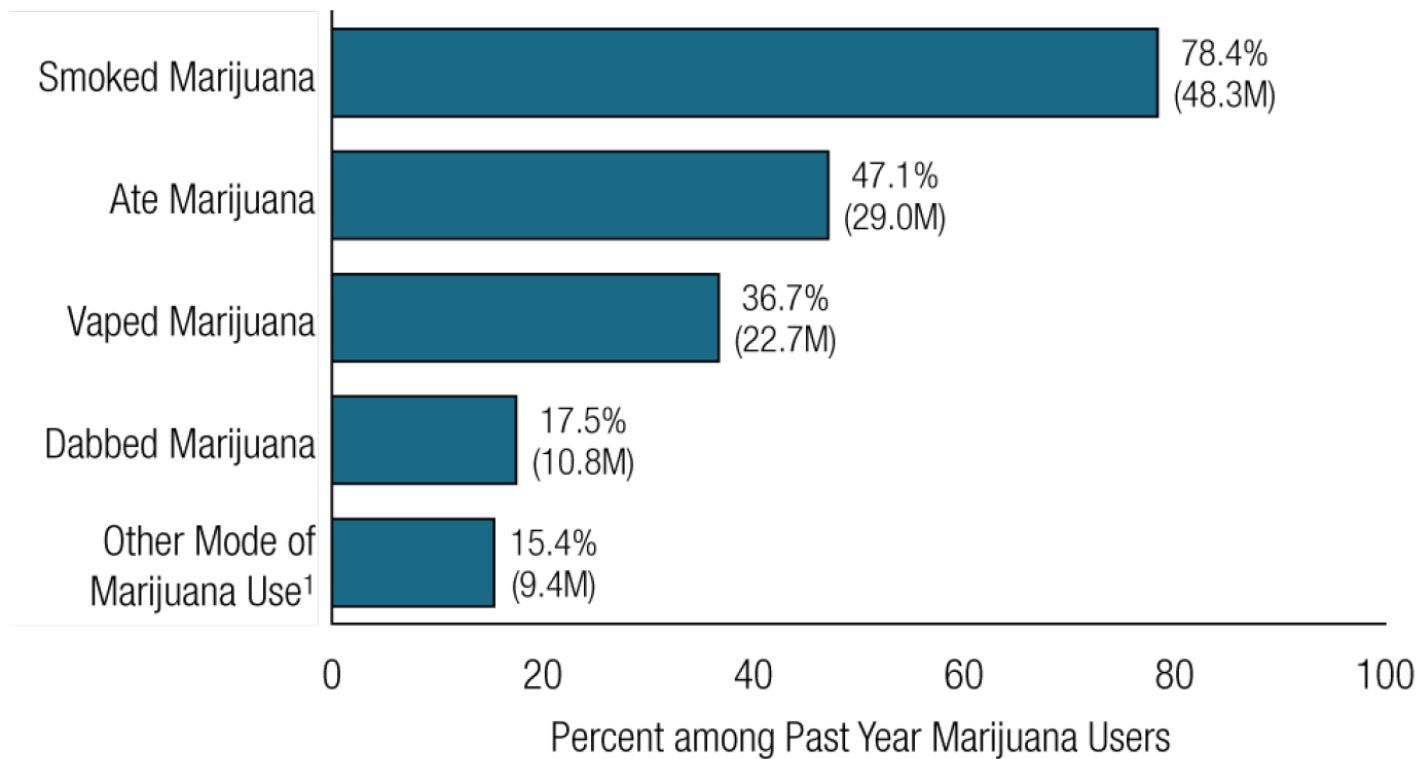
+ Difference between this estimate and the 2019 estimate is statistically significant at the .05 level.

Methods for cannabis delivery

- ▶ Rolled cigarette “joint”, blunt
 - With or without tobacco
- ▶ Water pipe “bong”
- ▶ Concentrates (>60-90%+ THC)
- ▶ Vaporizers (Vapes)
- ▶ Edibles - slow, prolonged effects
 - ▶ Oils
 - ▶ Baked goods
 - ▶ Candy
 - ▶ Drinks
- ▶ Tinctures, lozenges
- ▶ Lotions, creams, Rick Simpson Oil
- ▶ Synthetic THC preparations



Modes of Past Year Marijuana Use - 12 or older who used in past year (2022)



Note: Respondents could indicate multiple modes of marijuana use; thus, these response categories are not mutually exclusive.

¹ Includes applying lotion, cream, or patches to skin; putting drops, strips, lozenges, or sprays in mouth or under tongue; taking pills; or some other way not already listed in this figure.

Cannabinoids

- ▶ **Endocannabinoids** - naturally occurring (CB1, CB2 receptors, help regulate stress, pain, immunity)
- ▶ **Phytocannabinoids**- plant-based cannabinoids from the flowering parts of the plant genus Cannabis including sativa, indica and hybrid types (>100 cannabinoids)
 - **Tetrahydrocannabinol (THC)** - psychoactive, analgesic, anti-spasmodic, muscle relaxant, appetite stimulant, antiemetic properties
 - **Cannabidiol (CBD)** - no 'high', neuroprotective, anti-inflammatory, analgesic, anticonvulsant, buffers THC effects
- ▶ **Synthetic cannabinoids** - e.g., Dronabinol (synthetic THC) indicated to treat HIV/AIDS anorexia and chemotherapy related nausea and vomiting



Cannabis Plant Types

SATIVA



HIGH THC LEVEL

Energizing
Stimulating
Reduce anxiety
Increase creativity
Increase focus



INDICA



HIGH CBD LEVEL

Relaxing
Relief of pain
Decreases nausea
Increases appetite
Better sleep



HYBRID



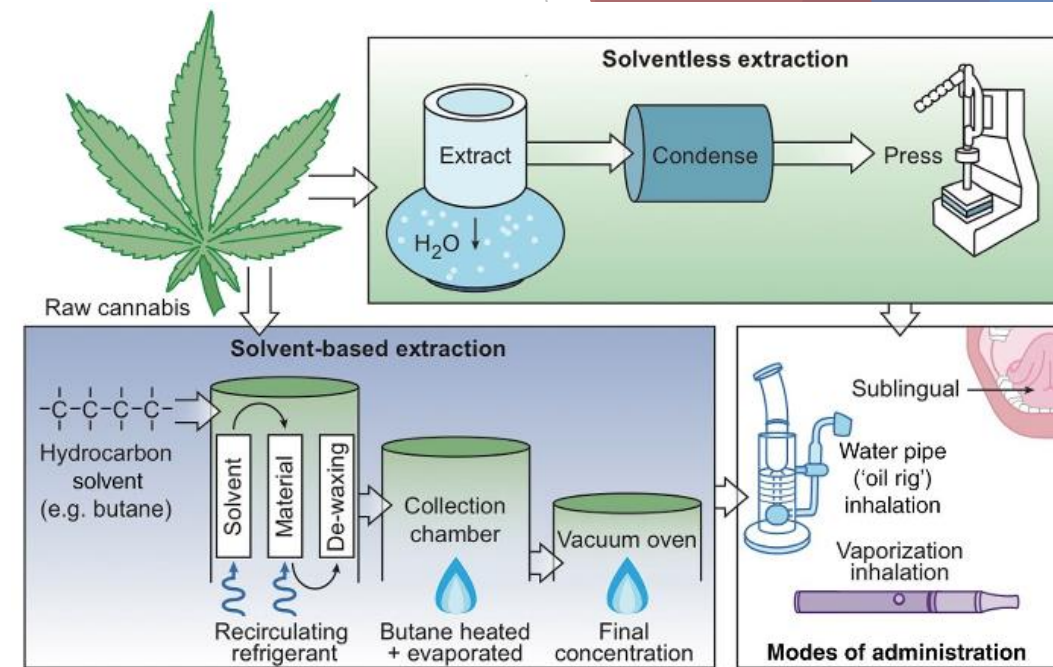
MIX

Sativa and indica
effects depending
on the traits
from both
parent strains

Many strains / “chemovars” / cannabinoid profiles ...

Concentrates

- ▶ Concentrates e.g., Butane hash oil, wax, live resin, shatter, hash, and bubble oil are extracted via **solvent-based** and **solvent-less** methods
- ▶ Concentrate potency usually ranges from 52-69% but can be as high as 90-95% whereas potency of flower products is typically 16-21% THC
- ▶ Contaminants are more of an issue in concentrates
- ▶ Solvent-based concentrates have been found to contain residual solvents (isopentane), pesticides (paclobutrazol), methacrolein, and benzene.
- ▶ A review of concentrate studies found unsafe levels of fungi, mold, and bacteria, as well as heavy metals, pesticides, and fertilizers



Concentrates (Dabbing)

aka: Butane Hash Oil

- ▶ **58-66%** of cannabis users have used concentrates
- ▶ **13-37%** use on a regular basis
- ▶ Sale of concentrates increased 444% from 2014-2017 in Colorado
- ▶ Potential risks:
 - ▶ Higher rate of reported **cannabis use disorder (CUD)**
 - ▶ Increase in **tolerance** and **withdrawal**
 - ▶ Stronger **cognitive effects**
 - ▶ Severe **psychosis**, esp. in youth
 - ▶ Orthostatic hypotension and **falls**
 - ▶ More likely to use **other substances**
 - ▶ More likely to have a **mental health diagnosis**



Case Study

- ▶ 43 y.o. married White male, web-designer
- ▶ Hospitalized on inpatient rehabilitation 5 days after he sustained mod-severe TBI in single EV (scooter) crash on his way to work at noon. No recall of crash.
- ▶ Positive toxicology screen for THC.
- ▶ Poor awareness of impairment. Wants to return home ASAP and return to work despite mild to moderate impairments in attention, concentration, memory, problem-solving, and thinking flexibility
- ▶ What questions do you have about how THC may relate to this case in terms of causation, prognosis, patient education, etc?



The patient's urine toxicology result was positive for THC which definitely indicates acute intoxication at the time of injury



True



False



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True



False



TBI-BH ECHO

Cannabis use screening

Depending on the type of test and other parameters, THC can be detected for the past few hours up to the past few months

- ▶ Blood tests detect THC for a few hours
- ▶ Saliva tests can detect THC for up to 24 hours
- ▶ Hair tests can detect THC for up to 90 days
- ▶ Urine test (most common) can detect THC for up to 30 days
 - ▶ THC is sequestered in fat cells so people with higher body fat will metabolize THC more slowly; for the same reason females may metabolize THC more slowly
 - ▶ In first time user, test may detect THC for up to 3 days
 - ▶ In someone who uses 3-4 times per week, detection window is 5-7 days
 - ▶ In daily or more users, THC may be detectable for 30 days or longer



The patient last used marijuana when he got up at 8:00 AM and was injured at noon. Did he decide to ride his EV scooter sooner than he should have?



Yes



No



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Yes



No



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Cannabis effects on short-term cognition and driving

- ▶ Meta-analysis of 80 publications, 3454 participants, 1534 outcomes assessed less than 12 hours after dosing
- ▶ There is a “window of impairment” lasting 3-10 hours after THC use with the duration dependent on dose, route, and usual use of cannabis
 - ▶ Higher THC doses produced longer lasting impairment
 - ▶ Oral THC produced longer lasting impairment than inhaled
 - ▶ Occasional users were more impaired than regular users who seem to be more tolerant to impairment from cannabis
- ▶ Short term negative effects of cannabis on cognition were observed for: divided attention, tracking performance, conflict control, fluid intelligence, information processing speed, reaction time, fine and gross motor function, sustained attention, and working memory.
- ▶ Short term negative effects of cannabis on driving were found on lateral control, standard deviation of lane position, and reaction time
- ▶ **Recommend waiting at least 5 hours following inhaled cannabis before performing safety sensitive tasks**

McCartney et al Neurosci and Biobehavioral Rev 2021



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Cannabis and Pregnancy, Driving and Psychosis

Author, year	Cannabinoid specific exposure	Outcome	Studies		CE/CES		eOR (95% CI)	eOR (95% CI)
			(k)	n/No				
Pregnant women								
Marchant 2022	Marijuana use	Small for gestational age	6	2078/22 921	I/I		◆	1.61 (1.41 to 1.83)
Conner 2016	Marijuana use	Low birth weight	12	6204/57 438	I/I		◆	1.43 (1.27 to 1.62)
Marchant 2022	Marijuana use	Neonatal ICU admission	6	1315/18 615	III/III		◆	1.41 (1.15 to 1.71)
Conner 2016	Marijuana use	Pre-term delivery	14	8060/81 326	III/III		◆	1.32 (1.14 to 1.54)
Drivers								
Rogeberg 2019	THC positive	Car crash, culpability	13	NR/78 025	IV/I		◆	1.53 (1.39 to 1.67)
Rogeberg 2019	THC positive	Car crash	13	NR/78 025	IV/I		◆	1.27 (1.21 to 1.34)
Hostiuc 2018	Cannabis use	Car unfavourable traffic events	23	NR/245 021	IV/II		◆	1.89 (1.58 to 2.26)
Hostiuc 2018	Cannabis use	Car death after car crash	5	NR/66 705	IV/II		◆	1.72 (1.40 to 2.10)
Hostiuc 2018	Cannabis use	Car injury	12	NR/95 441	IV/III		◆	2.15 (1.42 to 3.28)
Hostiuc 2018	Cannabis use	Car collision	6	NR/82 875	IV/III		◆	1.91 (1.34 to 2.72)
Psychosis								
Foglia 2017	Cannabis current use	Adherence to antipsychotic treatment	3	NR/259	IV/III		◆	5.78 (2.68 to 12.46)
Foglia 2017	Cannabis any use	Adherence to antipsychotic treatment	11	NR/3055	IV/III		◆	2.46 (1.97 to 3.07)
Bogaty 2018	Cannabis current use	Premorbid IQ	7	NR/515	IV/III		◆	1.99 (1.34 to 2.96)
Schoeler 2016	Cannabis continued use	Psychosis relapse	24	NR/16 257	IV/III		◆	1.88 (1.34 to 2.71)
Schoeler 2016	Cannabis use	Working memory	19	NR/2468	IV/III		◆	1.44 (1.21 to 1.71)
						0.0625	1	16
						Beneficial		Harmful

Solmi et al [BMJ 2023;382:e072348](#)

Next-day effects of cannabis on cognition

- ▶ Systematic review of 20 studies, n=458 participants (cannabis users), 345 performance tests administered 12-24 hours post-dosing;
- ▶ No next day effects found in 16 studies, tended to be be higher quality, though only 20% of studies also found acute effects (short-term impairment); no effects found on : executive functioning, information processing, tracking performance, reaction time, motor function, sustained attention, working memory, perception, learning/memory, and simulated driving.
- ▶ Negative next day effects were found on 10 neuropsychological tests from 5 studies in which testing was conducted 8-12 hours after dosing including: learning/memory, perception, working memory, divided attention, simulated flying



Chronic effects of cannabis on cognition

- ▶ National survey (n=36,309) found that current and former users of cannabis reported significantly worse cognitive functioning than never users; cognition in former users was in-between that of never and current users (note potential self-selection bias)
- ▶ Meta-analysis of 30 studies (n=849 users and n=764 controls) on cognition in long term (> 2 years), regular (>3 days/week) recreational cannabis users during abstinence (m=12 hours)
 - ▶ **moderate deficits in decision making**
 - ▶ as well as statistically significant but small decreases in executive functioning, learning and memory, and global cognition.
 - ▶ Information processing speed, working memory and attention were not consistently affected



The patient reports using daily cannabis to help his depression and anxiety. Is that a good idea?



YES



NO



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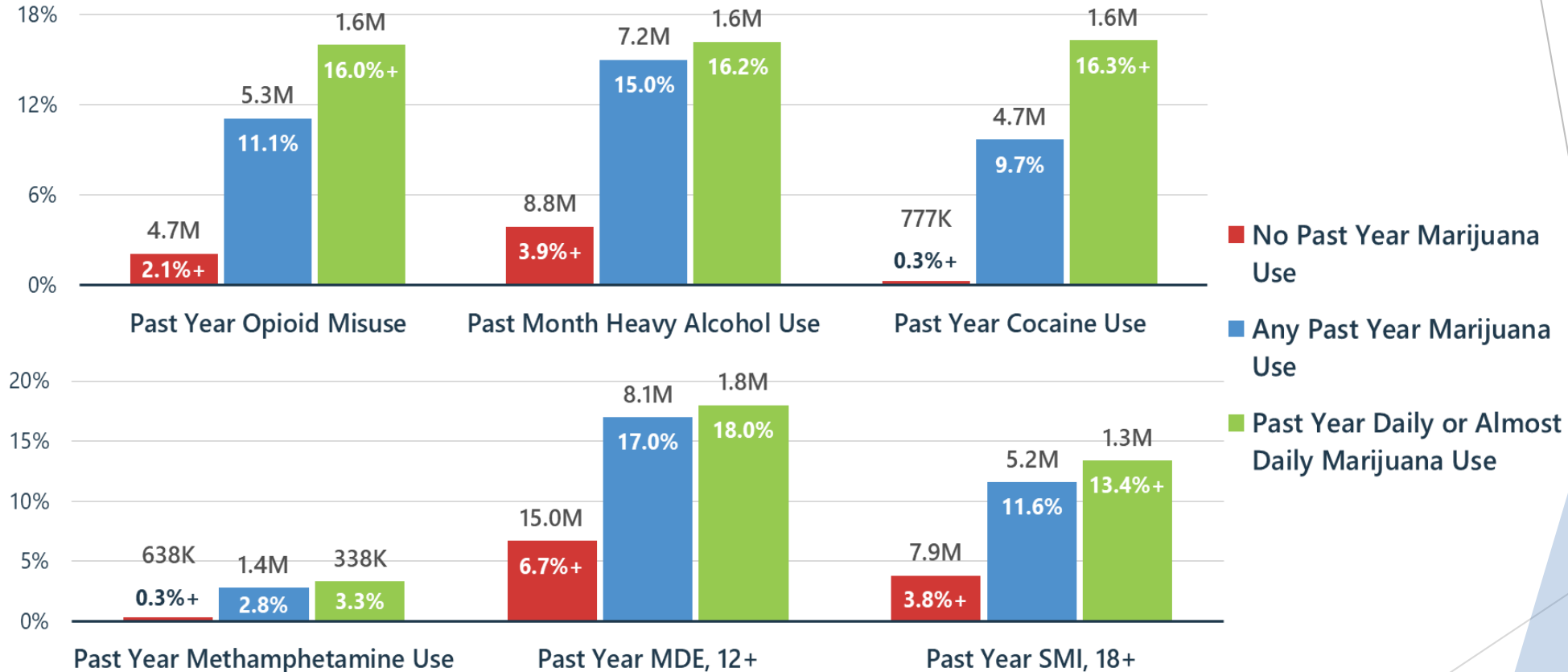
Harmful Effects of Cannabis

- ▶ **There is Moderate evidence that cannabis use is related to**
 - Increased **depression**
 - Increased **social anxiety** disorder
 - Increased **suicide** ideation, attempts, completion
 - Increased **mania** among bipolar patients
 - Development of **schizophrenia / psychosis**
 - Increased **abuse** of alcohol, tobacco, other drugs
 - **Cannabis overdose** among children
 - Major depression, being male are **risks for problem cannabis use**
 - **Problem cannabis use** associated with **severe PTSD**



Marijuana Use Related to Other Substance Use, MDE and SMI

PAST YEAR/MONTH, 2019 NSDUH, 12+



+ Difference between this estimate and the estimate for people with past year marijuana use is statistically significant at the .05 level.

MDE = Major Depressive Episode
SMI = Serious Mental Illness

SAMHSA
Substance Abuse and Mental Health
Services Administration



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Cannabis and Pregnancy, Driving and Psychosis

Author, year	Cannabinoid specific exposure	Outcome	Studies		CE/CES	eOR (95% CI)	eOR (95% CI)
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						0.0625 1 16	
						Beneficial	Harmful

Solmi et al [BMJ 2023;382:e072348](#)

Cannabis and General Population and Healthy People

Author, year	Cannabinoid specific exposure	Outcome	Studies		CE/CES		eOR (95% CI)	eOR (95% CI)
			(k)	n/No				
General population								
Kiburi 2021	Cannabis	Psychosis	18	2512/67 684	II/II			1.71 (1.47 to 2.00)
Borges 2016	Cannabis heavy use	Suicide attempt	12	1066/21 956	III/III			3.20 (1.72 to 5.94)
Moore 2007	Cannabis most frequent use	Psychotic symptoms	6	1465/59 671	III/III			2.18 (1.45 to 3.27)
Gibbs 2015	Cannabis use	Mania symptoms	2	NR/5520	IV/III			3.00 (1.73 to 5.23)
Gurney 2015	Cannabis weekly use	Testicular cancer non-seminoma	3	719/2138	IV/III			2.82 (1.77 to 4.48)
Gurney 2015	Cannabis >10 years use	Testicular cancer non-seminoma	3	719/2138	IV/III			2.39 (1.47 to 3.86)
Gurney 2015	Cannabis current use	Testicular cancer non-seminoma	2	532/1803	IV/III			2.20 (1.57 to 3.07)
Lorenzetti 2019	Cannabis regular use	Medial orbitofrontal cortex volume	6	NR/356	IV/III			1.72 (1.29 to 2.30)
Lorenzetti 2019	Cannabis regular use	Total orbitofrontal cortex volume	7	NR/472	IV/III			1.63 (1.31 to 2.03)
Johnson 2017	Cannabis use	Physical dating violence perpetuation	13	NR/17 356	IV/III			1.45 (1.19 to 1.77)
Moore 2007	Cannabis use	Depression	11	NR/17 628	IV/III			1.21 (1.11 to 1.31)
Healthy people								
Schoeler 2016	Cannabis use	Visual immediate recall	2	NR/89	IV/II			3.76 (2.64 to 5.34)
Schoeler 2016	Cannabis use	Prospective memory	5	NR/294	IV/II			3.43 (2.23 to 5.28)
Schoeler 2016	Cannabis use	Verbal learning	41	NR/3085	IV/II			2.03 (1.72 to 2.39)
Schoeler 2016	Cannabis use	Verbal delayed recall	38	NR/3368	IV/II			1.95 (1.63 to 2.34)
Schoeler 2016	Cannabis use	Verbal immediate recall	40	NR/3169	IV/III			2.10 (1.52 to 2.97)
Schoeler 2016	Cannabis use	Verbal recognition	21	NR/1485	IV/III			1.69 (1.36 to 2.07)
Schoeler 2016	Cannabis use	Working memory	39	NR/4550	IV/III			1.29 (1.14 to 1.46)
						0.125	1	8
						Beneficial		Harmful

0.125 1 8
Beneficial Harmful

For a few years he has also been using cannabis before bed to help him sleep

- ▶ Does long term cannabis use improve sleep?



YES



NO



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- ▶ Does long term cannabis use improve sleep?



YES



NO



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Cannabis and Sleep

- ▶ Cannabis may be a viable treatment for insomnia (onset, maintenance and late) but not hypersomnia and may improve sleep quality
- ▶ Cannabis may improve sleep by reducing physical discomfort such as pain
- ▶ However, long term regular cannabis use leads to tolerance to sleep-inducing effects
- ▶ Chronic use of cannabis produces tolerance and dependence and is associated with sleep deficits such as poor sleep quality, sleep disturbances, delayed sleep onset, reduced sleep duration, and more insomnia symptoms
- ▶ The 2022 World Sleep Society and Kaiser Permanente Insomnia Guidelines do not recommend use of cannabis or cannabinoids for treatment of insomnia



He complains of pain that seems neuropathic in nature.

- ▶ If that pain becomes chronic, might cannabis be an option to treat it?



YES



NO



TBI-BH ECHO

He complains of pain that seems neuropathic in nature.

- ▶ If that pain becomes chronic, might cannabis be an option to treat it?



YES



NO



TBI-BH ECHO

Cannabis and pain

- ▶ Headache (no level or grade) lower pain intensity and lower analgesic use observed in people with intractable medication overuse headache treated with nabilone (synthetic cannabinoid) vs. ibuprofen. However, greater medication overuse headache found in 81% of cannabis users vs 41% of non-users
- ▶ Musculoskeletal (no level or grade) some evidence that medical cannabis is effective for MSK pain, especially nabiximols (1:1 THC:CBD)
- ▶ Cancer (level II, conflicting) two RCTs showed nabiximols were more effective than placebo for cancer pain that was refractory to opioid treatment; one RCT showed nabiximols not effective for chemotherapy-induced peripheral neuropathy
- ▶ Neuropathic pain (level I, weak) multiple small RCTs report improved pain in HIV- and diabetes-related neuropathic pain
- ▶ Safety
 - ▶ Cannabis may potentiate antinociceptive effects of opioids possibly leading to reduced opioid dosing
 - ▶ Cannabis alone or in combination with opioids is associated with increased risk of opioid misuse especially by persons with SUD



Cannabis and Pain, MS, IBD, Cancer

Author, year	Cannabinoid specific exposure	Outcome	Studies			eOR (95% CI)	eOR (95% CI)
			(k)	No	Certainty		
Chronic pain							
Mucke 2018	CBM	Psychological distress	10	751	M		1.76 (1.03 to 3.05)
Stockings 2018	CBM	Pain 30% reduction	9	1734	H		0.59 (0.37 to 0.93)
Stockings 2018	CBM	Pain, change in pain scores	34	3866	M		0.73 (0.60 to 0.90)
Andreae 2015	Cannabis (inhaled)	Pain reduction	9	520	M		0.32 (0.19 to 0.52)
Multiple sclerosis							
Da Rovare 2017	Cannabiods	Dizziness	14	2763	M		3.45 (2.72 to 4.37)
Da Rovare 2017	Cannabiods	Somnolence	11	1911	M		2.90 (1.98 to 4.23)
Da Rovare 2017	Cannabiods	Dry mouth	10	2390	M		2.82 (2.06 to 3.85)
Da Rovare 2017	Cannabiods	Nausea	11	1797	M		2.24 (1.61 to 3.12)
Torres-Moreno 2018	CBM	Pain reduction	12	2692	M		0.71 (0.53 to 0.94)
Torres-Moreno 2018	CBM	Spasticity (subjective)	12	2909	M		0.63 (0.51 to 0.80)
Inflammatory bowel disease							
Doeve 2020	Cannabiods	Quality of life	5	2444	H		0.34 (0.22 to 0.53)
Cancer							
Noori 2021	CBM	Vomiting	4	1334	M		1.50 (0.99 to 2.27)
Noori 2021	CBM	Nausea	4	1334	M		1.43 (1.03 to 1.96)
Noori 2021	CBM	Constipation	3	1157	M		0.85 (0.54 to 1.35)
Hauser 2019	CBM	Daily break-through opioid dosage	4	971	M		0.82 (0.64 to 1.05)
Hauser 2019	CBM	Pain intensity	7	1331	M		0.81 (0.61 to 1.06)

He is wondering whether using cannabis before and after his TBI might have beneficial effects

- ▶ There is no evidence that cannabis use before and after TBI might lead to improved outcomes



TRUE



FALSE



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He is wondering whether using cannabis before and after his TBI might have beneficial effects

- ▶ There is no evidence that cannabis use before and after TBI might lead to improved outcomes



TRUE



FALSE



TBI-BH ECHO

Can Cannabinoids Improve TBI Outcomes?

- ▶ Potential mechanisms found in **animal studies**
 - Neurogenesis, neuroplasticity, anti-inflammation
- ▶ Conflicting human neuroimaging studies
- ▶ 2 observational **human studies** suggest a possible association between cannabis and:
 - Higher TBI survival (Nguyen et al, 2014)
 - Lower disability after intracranial hemorrhage (di Napoli 2016)
- ▶ However, a large (N=861) **randomized placebo-controlled trial** of dexamabinol (a synthetic cannabinoid) within 6 hrs after severe TBI showed no improvement in 6-month functional outcomes, survival, or quality of life (Maas 2005)



Cannabis Use after TBI

- ▶ Survey of 65 people with moderate to severe TBI
 - 74% used before TBI, 45% used after
 - **Reasons for use:**
 - 72% for Recreation
 - 62% to Reduce Stress / Anxiety
 - 55% to Improve Sleep
 - **Among those with Negative Side Effects (n=29)**
 - 28% had Decreased Motivation
 - 21% had Paranoia
 - 21% felt Hazy or Dull
 - 21% felt Fatigued

Hawley et al, 2018



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Cannabis use disorder and cognitive dysfunction in Veterans with TBI

- ▶ Retrospective cohort study of 1,560,556 Veterans with either 1) no CUD or TBI (control group), (2) CUD only, (3) TBI only, and (4) comorbid TBI+CUD.
- ▶ Examined incidence of cognitive disorder diagnosis at 5, 10, 15 years
- ▶ Incidence of cognitive disorder diagnosis (per 10,000 person months) was 0.30 (95% CI, 0.29,0.31) for controls, 0.68 (95% CI, 0.62, 0.75) for CUD only, 1.03 (95% CI, 1.00, 1.06) for TBI only and in 1.83 (95% CI, 1.72, 1.95) for participants with TBI+CUD
- ▶ Relative to controls, the incidence of cognitive disorder diagnosis was 3.6 times higher in the TBI+CUD group, 2.32 times higher in the TBI only group, and 1.79 higher in the CUD only group
- ▶ The types of cognitive disorder diagnoses associated with CUD tended not to be Alzheimer's dementia or frontotemporal dementia.



How much is too much?

- ▶ **Daily or near daily use**
- ▶ Daily use leads to:
 - ▶ Increase risk of **other illicit drug use**, $RR > 50\%$
 - ▶ More likely to be involved in **MVAs**
 - ▶ Increase risk of developing a **cannabis use disorder**
 - ▶ Daily: 75% had a CUD
 - ▶ 2x/wk or less: 13% had a CUD
 - ▶ Increase in **cognitive problems**
 - ▶ Increase in **mental and physical health problems**



Overall Risks and Benefits of Cannabis

- ▶ Umbrella review of meta-analyses of randomized controlled trials and observational studies
- ▶ 101 meta-analyses included (50 observational, 51 RCTs)
- ▶ Convincing or converging evidence supports
 - ▶ avoidance of cannabis during adolescence and early adulthood, in people prone to or with mental health disorders, in pregnancy and before and while driving.
 - ▶ Cannabidiol is effective in people with epilepsy.
 - ▶ Cannabis based medicines are effective in people with multiple sclerosis, chronic pain, inflammatory bowel disease, and in palliative medicine, but not without adverse events.



Takeaways

- Cannabis has some benefits (esp. neuropathic pain) and several potential harms in **non-TBI individuals**
- **Individuals with TBI are likely more vulnerable** to the adverse effects of cannabis, including repeat injury, cognitive impairment, depression, anxiety, substance use, psychotic disorders, and early cognitive disorder diagnoses
- Before using cannabis, people with TBI should **discuss with their health care providers** individual potential risks & benefits of cannabis, particularly regarding frequency & concentrates
- **More quality research is needed** on potential neuroprotective, therapeutic (e.g., headache), & harmful properties of cannabis after TBI



Screening & Assessment

Patient: “Cannabis is not a problem for me”

Provider: “You want to use cannabis in a way that does not cause you any problems.”



Problems that should prompt screening for cannabis use after TBI

- ▶ Depression
- ▶ Anxiety
- ▶ PTSD
- ▶ Psychosis
- ▶ Mania
- ▶ Persistent sleep disturbances
- ▶ Other substance use
- ▶ Worsening cognitive status
- ▶ Respiratory infections
- ▶ Chronic cough
- ▶ Poor school or work performance
- ▶ MVAs, falls
- ▶ Relationship difficulties
- ▶ Nausea and vomiting



Screening for a cannabis use disorder

▶ Cannabis Use Disorder Identification Test-Revised (CUDIT-R)

- ▶ Asks about use over past 6 months
- ▶ 8 items
- ▶ Stratifies: low risk → high risk → use disorder
 - ▶ PPV for CUD: 0.960
 - ▶ Sens: 0.913
 - ▶ Spec: 0.900
- ▶ Free to use, works with DSM-5
- ▶ Not widely validated



The Cannabis Use Disorder Identification Test - Revised (CUDIT-R)

Have you used any cannabis over the past six months? YES / NO

If YES, please answer the following questions about your cannabis use. Circle the response that is most correct for you in relation to your cannabis use *over the past six months*

1.	How often do you use cannabis?				
	Never	Monthly or less	2-4 times a month	2-3 times a week	4 or more times a week
	0	1	2	3	4
2.	How many hours were you "stoned" on a typical day when you had been using cannabis?				
	Less than 1	1 or 2	3 or 4	5 or 6	7 or more
	0	1	2	3	4
3.	How often during the past 6 months did you find that you were not able to stop using cannabis once you had started?				
	Never	Less than monthly	Monthly	Weekly	Daily or almost daily
	0	1	2	3	4
4.	How often during the past 6 months did you fail to do what was normally expected from you because of using cannabis?				
	Never	Less than monthly	Monthly	Weekly	Daily or almost daily
	0	1	2	3	4
5.	How often in the past 6 months have you devoted a great deal of your time to getting, using, or recovering from cannabis?				
	Never	Less than monthly	Monthly	Weekly	Daily or almost daily
	0	1	2	3	4
6.	How often in the past 6 months have you had a problem with your memory or concentration after using cannabis?				
	Never	Less than monthly	Monthly	Weekly	Daily or almost daily
	0	1	2	3	4
7.	How often do you use cannabis in situations that could be physically hazardous, such as driving, operating machinery, or caring for children:				
	Never	Less than monthly	Monthly	Weekly	Daily or almost daily
	0	1	2	3	4
8.	Have you ever thought about cutting down, or stopping, your use of cannabis?				
	Never	Yes, but not in the past 6 months		Yes, during the past 6 months	
	0	2		4	

Scores

- 8+ hazardous use
- 12+ CUD?



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Intervention Options

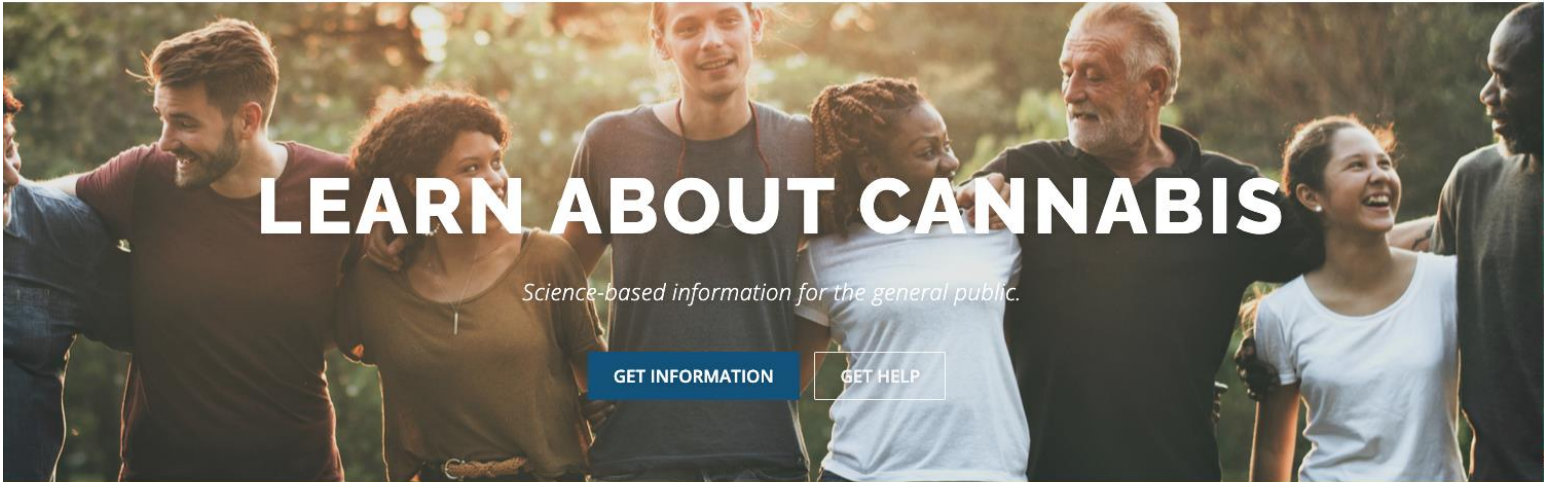


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Education

LEARN ABOUT CANNABIS
Science-based information for the general public.

TOPICS PARENTS TEENS CONSUMER FAQ VIDEO EDUCATION GET HELP



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Why we changed "marijuana" to "cannabis" on our website. [READ MORE](#)

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Topics



Consumer FAQ



Video Education



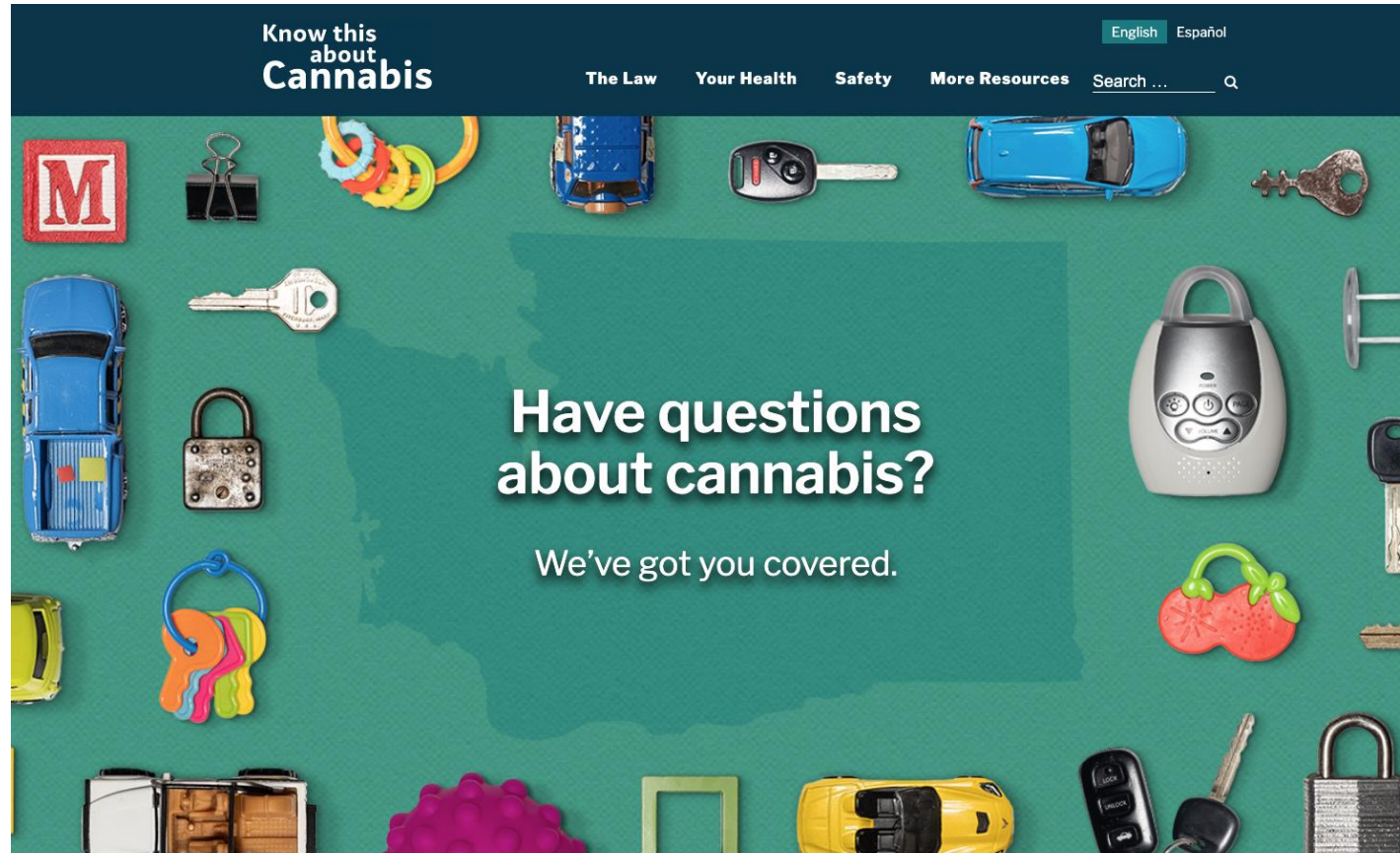
Medicinal Cannabis Online Training

<https://www.learnaboutcannabiswa.org/>



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Education



What we're talking about.

Washington state legalized retail—sometimes called recreational or non-medical—cannabis for adults 21 and over.

[Learn more about this campaign >](#)

The Law

When it comes to retail—or non-medical—cannabis in our state, there's a lot to know.

[Learn more about the law >](#) ✨

<https://www.knowthisaboutcannabis.org/>



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Stepped Treatment

Step 1: Treatment engagement

- ▶ Motivational interviewing
- ▶ Elicit pros and cons of cannabis use
- ▶ Provide information with permission, if needed

Step 2: Goals setting

- ▶ Menu of options e.g., small reduction in frequency of use; small reduction in amount used; limit use to low-risk situations; mitigate psychological, social or occupational impairment from use

Stepped Treatment

Step 3: Cognitive behavioral strategies

- ▶ Identify triggers for use
- ▶ Develop skills to avoid or cope with triggers
- ▶ Learn strategies to manage negative mood
- ▶ Engage in pleasant/meaningful activities
- ▶ Identify and challenge depressive thinking
- ▶ Learn assertiveness (refusal) skills to deal with people who offer cannabis

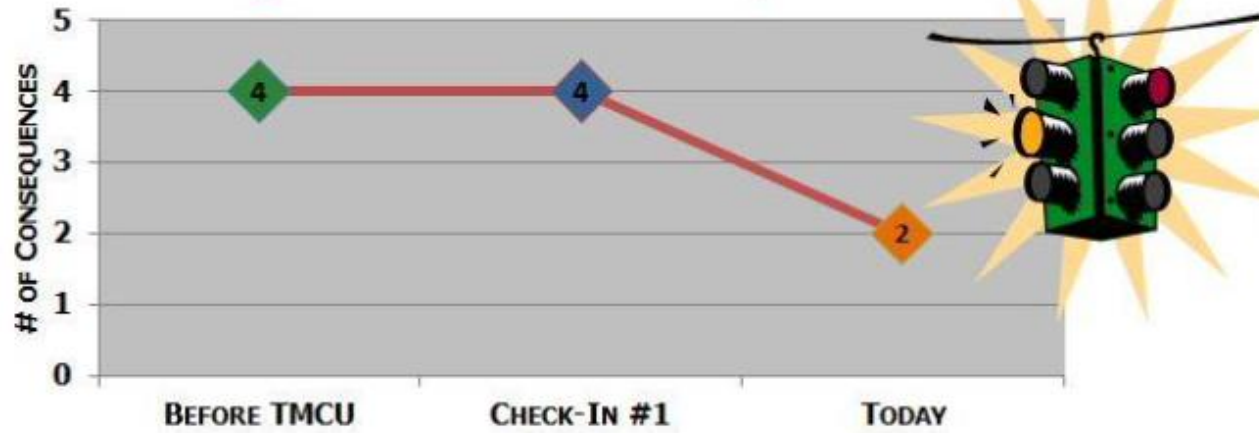


Marijuana Check-up

- ▶ Brief intervention designed to attract users who would not seek treatment
- ▶ Advertised as an opportunity to receive objective feedback about marijuana use; not offered as treatment.
- ▶ Successful studies have involved 1-6 sessions of assessment, *personalized* feedback, and motivational interviewing (no pressure, no judgement)



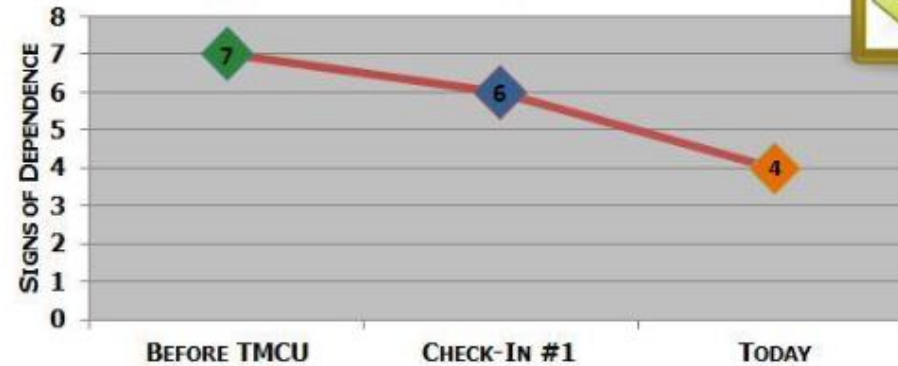
Marijuana Consequences



	1. You kept using marijuana even though it kept you from meeting your responsibilities at: • Home (like doing chores or coming home on time) ⚠️ • School (like going to classes, doing homework or studying for tests) ⚠️ • Work (like doing a good job or arriving on time)
	2. You used marijuana where it made the situation unsafe or dangerous for you, like when: • You were driving a car or using a machine ⚠️ • You were in a situation where you might have been forced into sex or hurt
	3. You had problems with the law because of your marijuana use.
	4. You kept using even after you knew it was causing problems between you and the people around you.
Today, you reported 2 of 4 types of consequences.	



Signs of Dependence



1.	You used marijuana in larger amounts, more often or for a longer time than you meant to.	
2.	You were unable to cut down or stop using marijuana.	
3.	You spent a lot of time either getting marijuana, using marijuana, feeling the effects of marijuana, or waiting for the effects to wear off.	
4.	Your use of marijuana caused you to give up, reduce or have problems at important activities at work, school, home, or social events.	
5.	You kept using marijuana even after you knew it was causing you problems with: - your health (breathing, coughing) - your emotions (feeling less motivated, depressed, or anxious) - your memory or concentration	
6.	You needed more marijuana to get the same high or found that the same amount did not get you as high as it used to.	
7.	You had withdrawal problems from marijuana (like being irritable, anxious, having trouble sitting still or sleeping). You continued to use to avoid or stop withdrawal problems.	
Total		4
Current risk of marijuana dependence: High		



Efficacy of marijuana check-up (2-6 sessions)

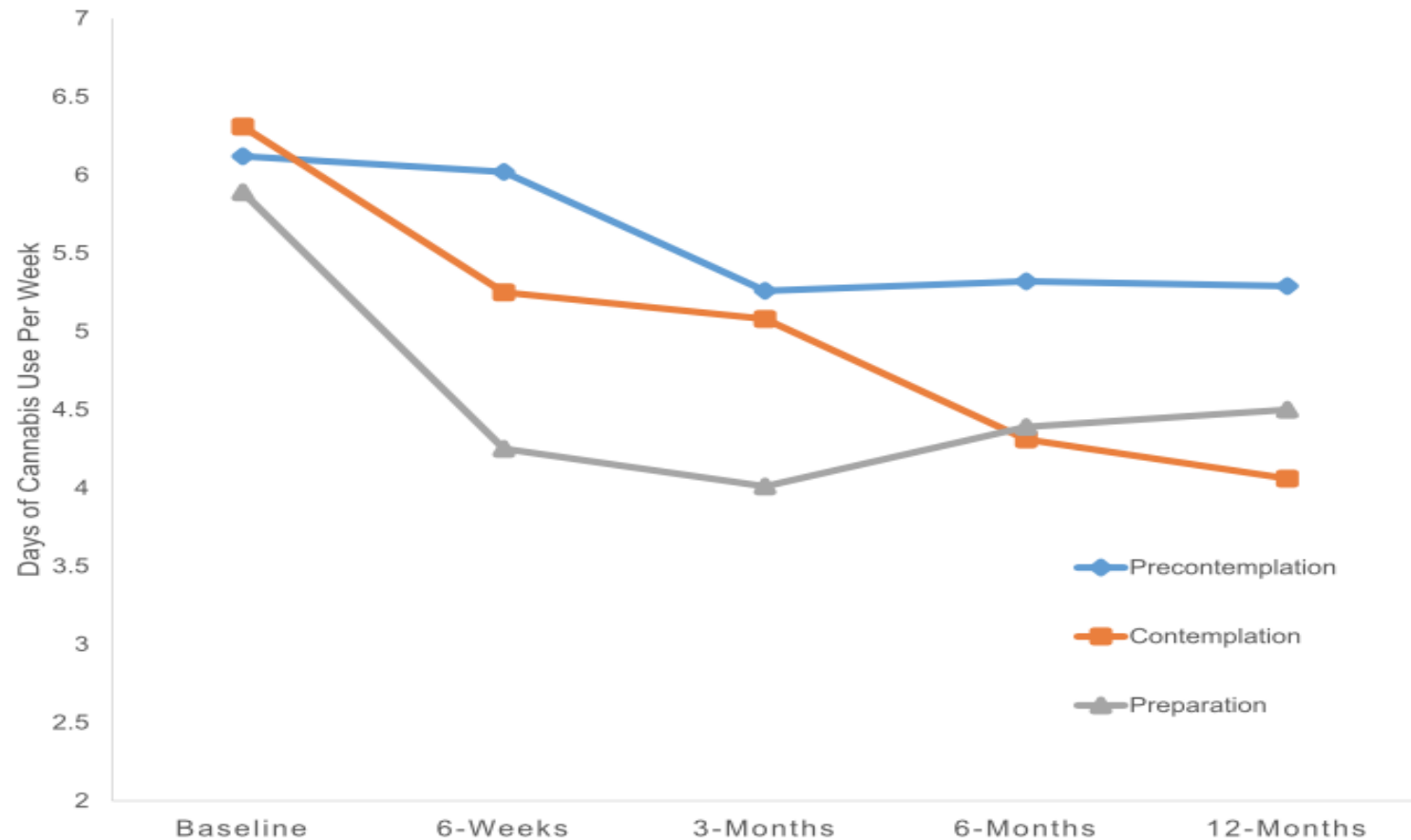


Fig. 2. Days of cannabis use per week by stage of change.

Stephens et al., J Subst Abuse Treat 2021



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Treatment efficacy

- ▶ **Interventions in non-treatment seeking persons**
- ▶ Meta-analysis of 26 studies in 15-30 year-olds comparing brief interventions to passive controls showed that treatment increased the odds of abstinence 1-3 months later (odds ratio 1.73, 95% CI 1.13-2.66) and significantly reduced symptoms of CUD (Halladay et al *Drug Alcohol Depend* 2019)
- ▶ **Interventions in treatment seeking persons**
- ▶ Meta-analysis of 7 controlled trials of people with CUD, those receiving treatment were twice as likely to be abstinent (21% vs.10%) (Patnode et al *JAMA* 2020)



T-BREAK

A T-break generally involves a self-directed process of abstaining from cannabis for a predetermined amount of time, with the aim of using less cannabis after the break and developing a balance in cannabis use. A break from cannabis use may also comprise a “practice quit attempt” identified in tobacco literature as a key pre-cessation target to increase coping skills and self-efficacy for future quit success.



T-BREAK Pilot results

- ▶ Results: Compared to non-Guide users, participants who used the Guide “a lot” were more likely to complete the 21-day abstinence break (84% vs. 57%), revise their personal definition of balance to mean less cannabis (84% vs. 62%) and plan a future break (32% vs. 11%).
- ▶ Conclusion: Use of this self-directed T-Break Guide may help young adults take a break from cannabis use and reduce future use. Further research using more rigorous designs to test the Guide’s efficacy and assess longer-term maintenance of effects is needed.



Thank you

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