Common Threads: Session 7

Unleashing the Dragon: Update on Impact of RELAXING OF STATE CANNABIS LAWS

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Co-Director, Overdose Prevention Engagement Network (OPEN)
University of Michigan Medical School
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Disclosures

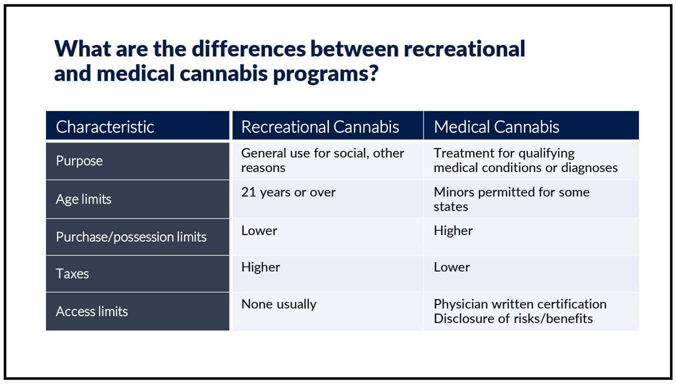
- Research reported in this presentation was supported by the National Institute of Drug Abuse of the National Institutes of Health under award number R01DA049789.
  - The content is solely the responsibility of the authors and does not necessarily represent the official views of the National Institutes of Health.
- *No other disclosures.*

Session Learning Objectives

01 | Interpret how changes to state cannabis laws have impacted health outcomes related to cannabis use.

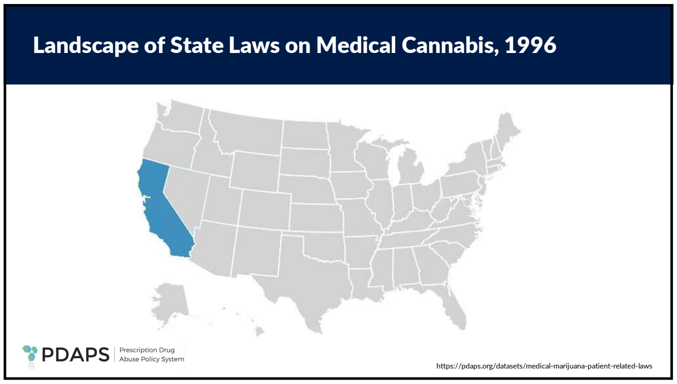
02 | Analyze patient attitudes and outcomes related to cannabis use since the implementation of several medical cannabis laws.

What are the differences between recreational and medical cannabis programs?



What are the differences between recreational and medical cannabis programs?

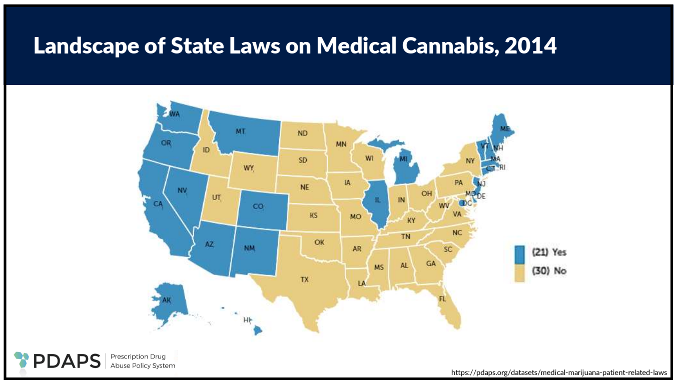
Characteristic	Recreational Cannabis	Medical Cannabis
Purpose	General use for social, other reasons	Treatment for qualifying medical conditions or diagnoses
Age limits	21 years or over	Minors permitted for some states
Purchase/possession limits	Lower	Higher
Taxes	Higher	Lower
Access limits	None usually	Physician written certification Disclosure of risks/benefits



Landscape of State Laws on Medical Cannabis, 1996

PDAPS
Prescription Drug
Abuse Policy System

https://pdaps.org/datasets/medical-marijuana-patient-related-laws



Landscape of State Laws on Medical Cannabis, 2014

WA
MT
ND
MN
ME
OR
ID
SD
WI
MI
VT
NH
NY
MA
CT
RI
WY
IA
PA
NJ
NV
NE
UT
IL
IN
OH
MD
DE
CA
CO
DC
WV
KS
MO
KY
VA
TN
NC
OK
AR
SC
AZ
NM
MS
AL
GA
TX
LA
FL
AK
HI
(21) Yes
(30) No
PDAPS
Prescription Drug
Abuse Policy System

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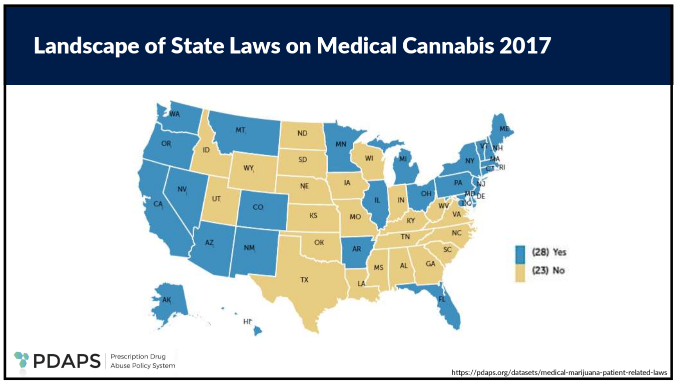

Landscape of State Laws on Medical Cannabis 2017

WA
MT
ND
MN
ME
OR
ID
SD
WI
MI
VT
NH
NY
MA
CT
RI
WY
IA
PA
NJ
NV
NE
UT
IL
IN
OH
MD
DE
CA
CO
DC
WV
KS
MO
KY
VA
TN
NC
OK
AR
SC
AZ
NM
MS
AL
GA
TX
LA
FL
AK
HI
(28) Yes
(23) No
PDAPS
Prescription Drug
Abuse Policy System

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Mixed Messages on Cannabis for Chronic Pain

The National Academies of
SCIENCES · ENGINEERING · MEDICINE

REPORT

The Health Effects of Cannabis and Cannabinoids

THE CURRENT STATE OF EVIDENCE AND RECOMMENDATIONS FOR RESEARCH

"There is conclusive or substantial evidence that cannabis or cannabinoids are effective … for the treatment of chronic pain in adults."

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Cochrane Library

Cochrane Database of Systematic Reviews

Cannabis-based medicines for chronic neuropathic pain in adults (Review)

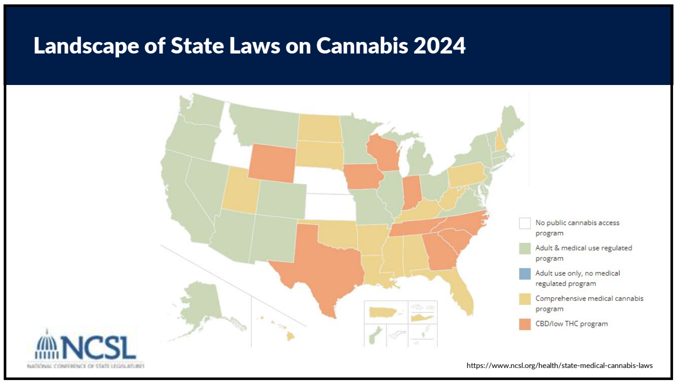
Mücke M, Phillips T, Radbruch L, Petzke F, Häuser W

"The potential benefits … might be outweighed by their potential harms."

www.cochranelibrary.com

Cannabis-based medicines for chronic neuropathic pain in adults (Review)
Copyright © 2018 The Cochrane Collaboration. Published by John Wiley & Sons, Ltd.

WILEY

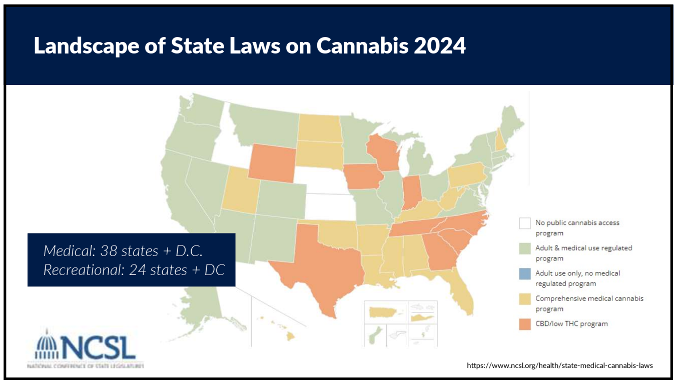


Landscape of State Laws on Cannabis 2024

☐ No public cannabis access program
🟩 Adult & medical use regulated program
🟦 Adult use only, no medical regulated program
🟨 Comprehensive medical cannabis program
🟧 CBD/low THC program

NCSL
NATIONAL CONFERENCE OF STATE LEGISLATURES

https://www.ncsl.org/health/state-medical-cannabis-laws



Landscape of State Laws on Cannabis 2024

Medical: 38 states + D.C.
Recreational: 24 states + DC

☐ No public cannabis access program
🟩 Adult & medical use regulated program
🟦 Adult use only, no medical regulated program
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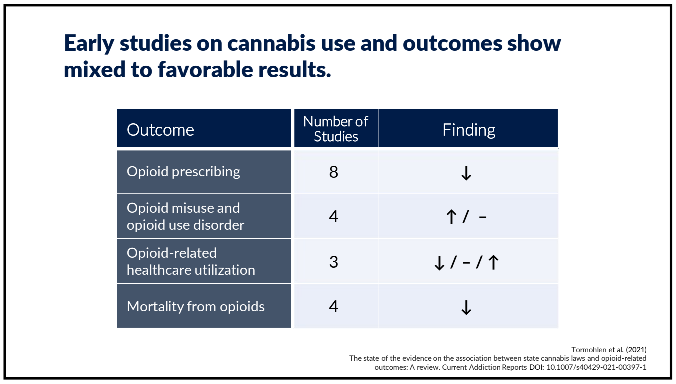
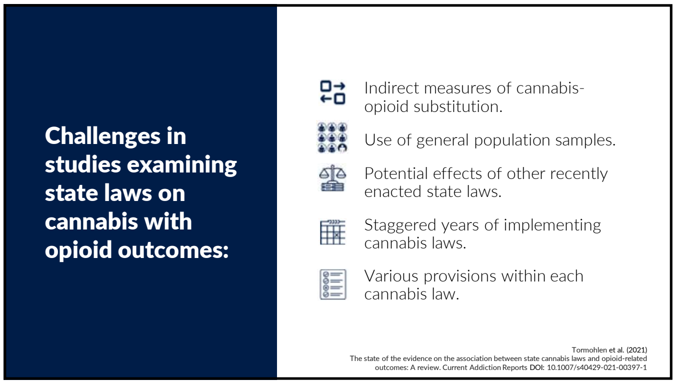


Early studies on cannabis use and outcomes show mixed to favorable results.

Outcome	Number of Studies	Finding
Opioid prescribing	8	↓
Opioid misuse and opioid use disorder	4	↑ / –
Opioid-related healthcare utilization	3	↓ / – / ↑
Mortality from opioids	4	↓

Tormohlen et al. (2021)
The state of the evidence on the association between state cannabis laws and opioid-related outcomes: A review. Current Addiction Reports DOI: 10.1007/s40429-021-00397-1



Challenges in studies examining state laws on cannabis with opioid outcomes:

- Indirect measures of cannabis-opioid substitution.
- Use of general population samples.
- Potential effects of other recently enacted state laws.
- Staggered years of implementing cannabis laws.
- Various provisions within each cannabis law.

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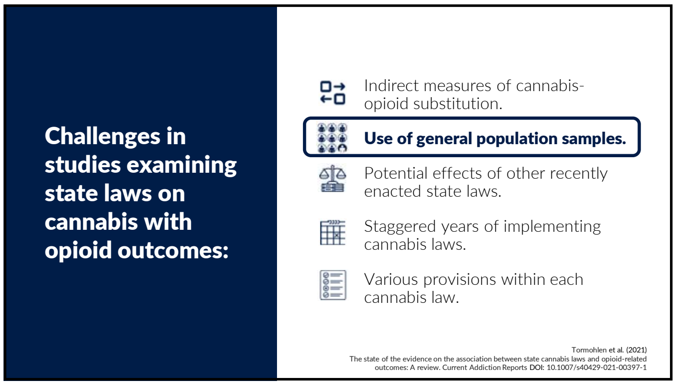

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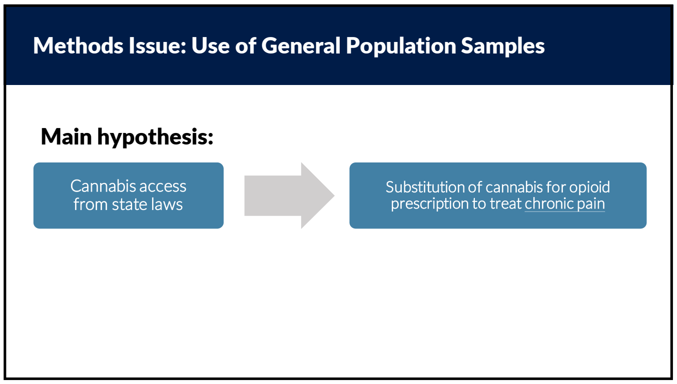
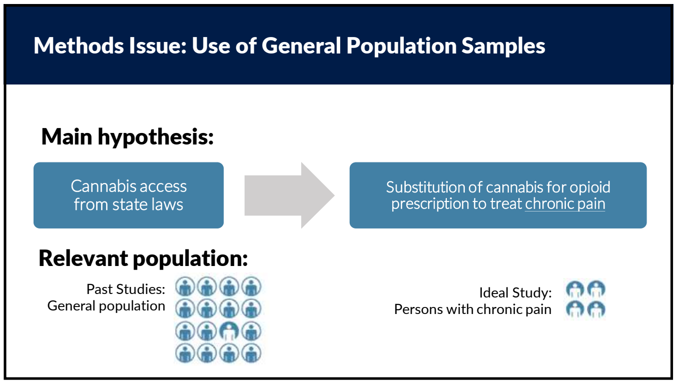


Methods Issue: Use of General Population Samples

Main hypothesis:

Cannabis access from state laws → Substitution of cannabis for opioid prescription to treat chronic pain



Methods Issue: Use of General Population Samples

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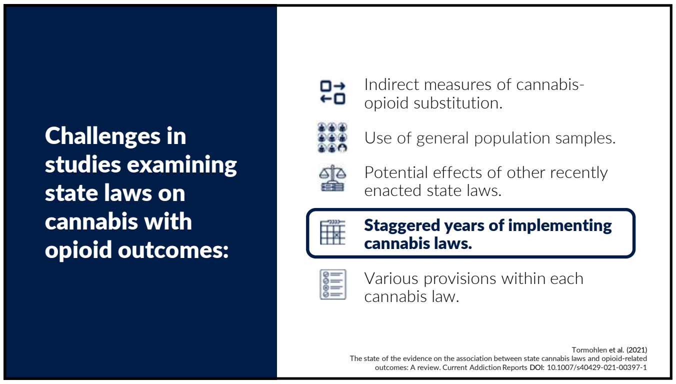
Cannabis access from state laws → Substitution of cannabis for opioid prescription to treat chronic pain

Relevant population:

Past Studies:
General population

Ideal Study:
Persons with chronic pain



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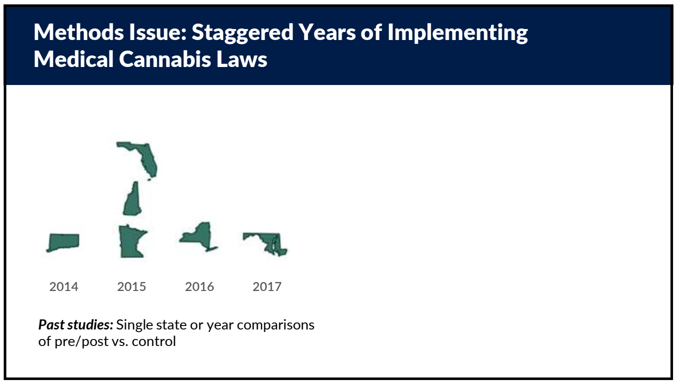
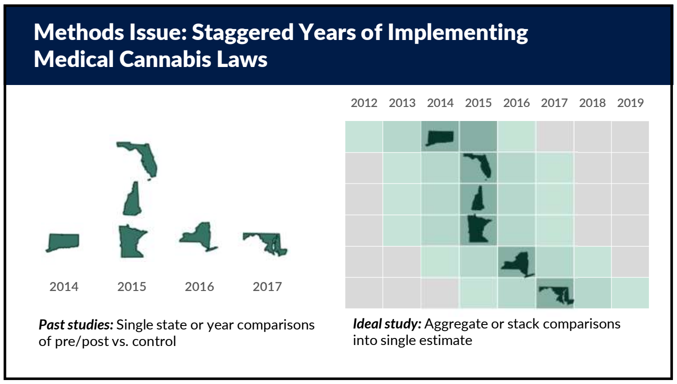


Methods Issue: Staggered Years of Implementing Medical Cannabis Laws

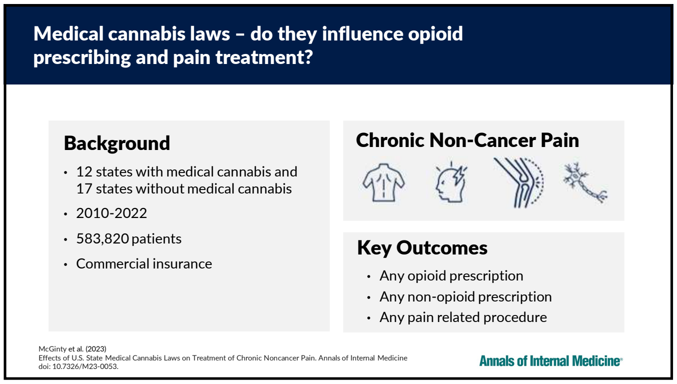
Past studies: Single state or year comparisons of pre/post vs. control



Methods Issue: Staggered Years of Implementing Medical Cannabis Laws

Past studies: Single state or year comparisons of pre/post vs. control

Ideal study: Aggregate or stack comparisons into single estimate



Medical cannabis laws – do they influence opioid prescribing and pain treatment?

Background

- 12 states with medical cannabis and 17 states without medical cannabis
- 2010-2022
- 583,820 patients
- Commercial insurance

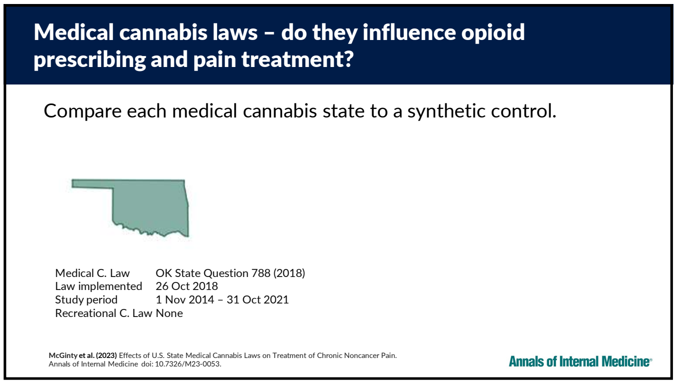
Chronic Non-Cancer Pain

Key Outcomes

- Any opioid prescription
- Any non-opioid prescription
- Any pain related procedure

McGinty et al. (2023)
Effects of U.S. State Medical Cannabis Laws on Treatment of Chronic Noncancer Pain. Annals of Internal Medicine
doi: 10.7326/M23-0053.

Annals of Internal Medicine



Medical cannabis laws – do they influence opioid prescribing and pain treatment?

Compare each medical cannabis state to a synthetic control.

Medical C. Law	OK State Question 788 (2018)
Law implemented	26 Oct 2018
Study period	1 Nov 2014 – 31 Oct 2021
Recreational C. Law	None

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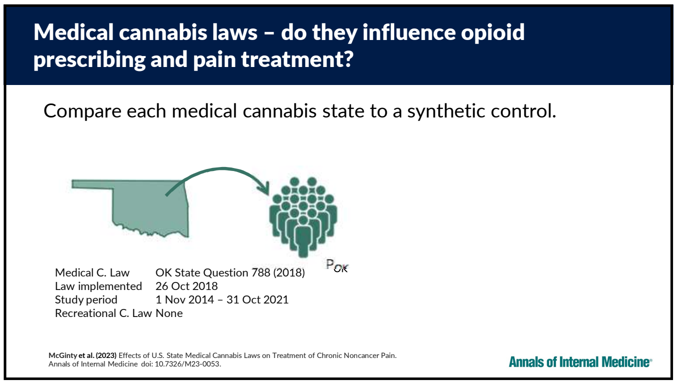

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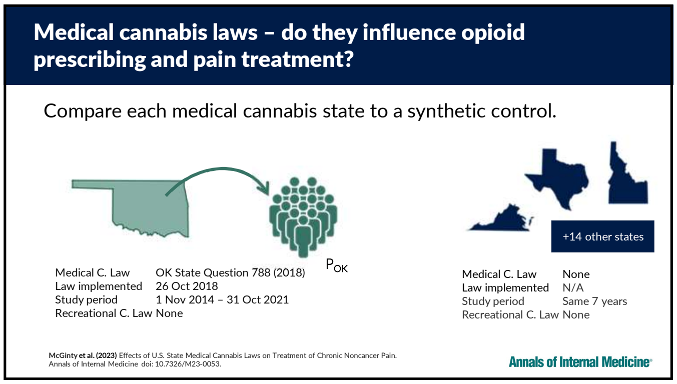

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P_{OK}
+14 other states

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Study period	Same 7 years
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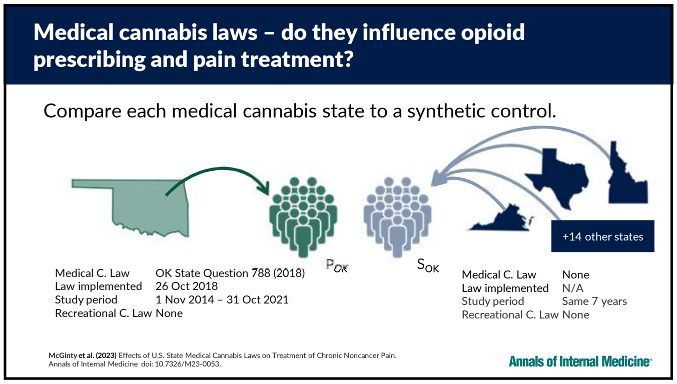

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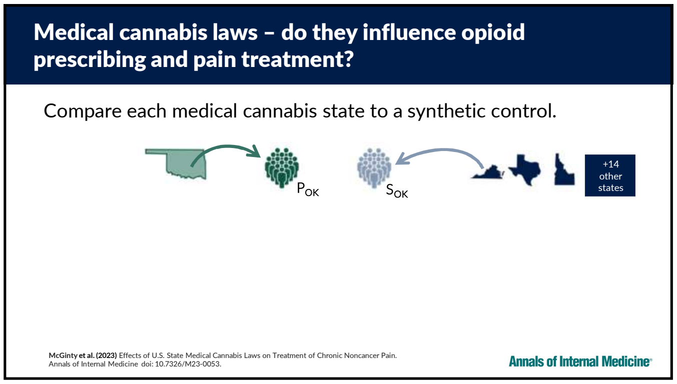

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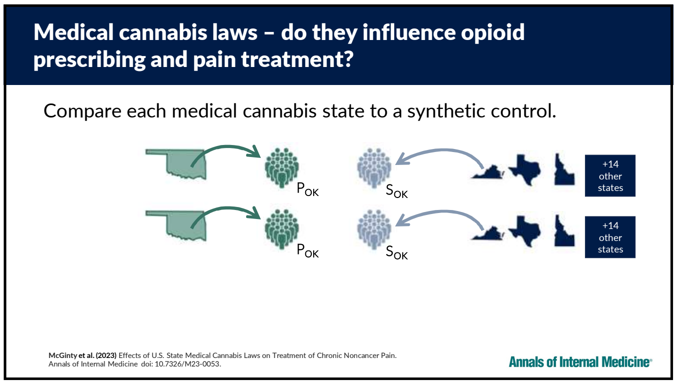

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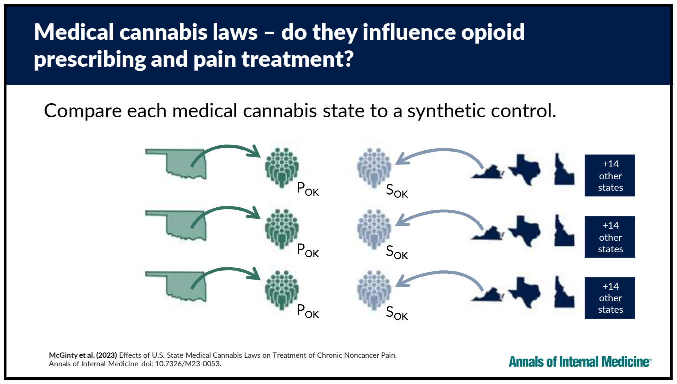

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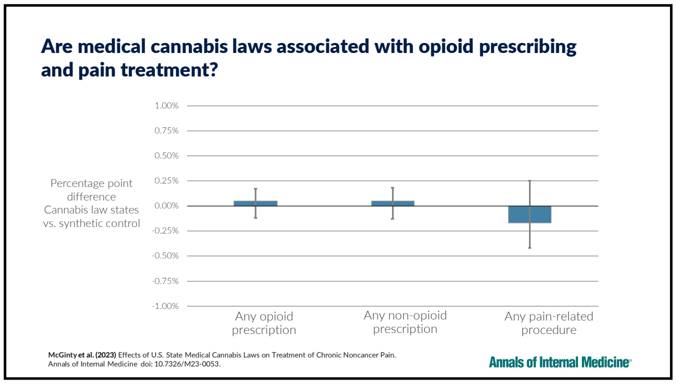

Are medical cannabis laws associated with opioid prescribing and pain treatment?

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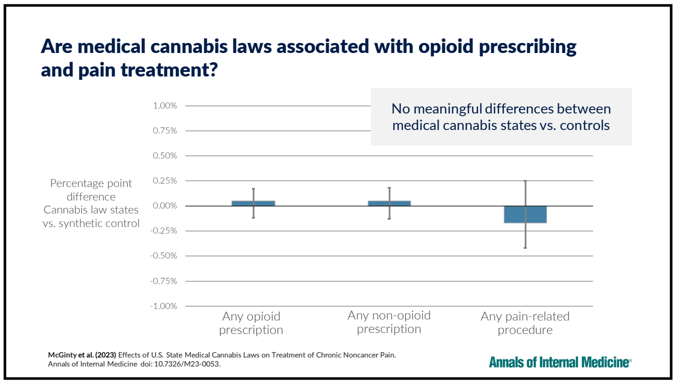

Are medical cannabis laws associated with opioid prescribing and pain treatment?

No meaningful differences between medical cannabis states vs. controls

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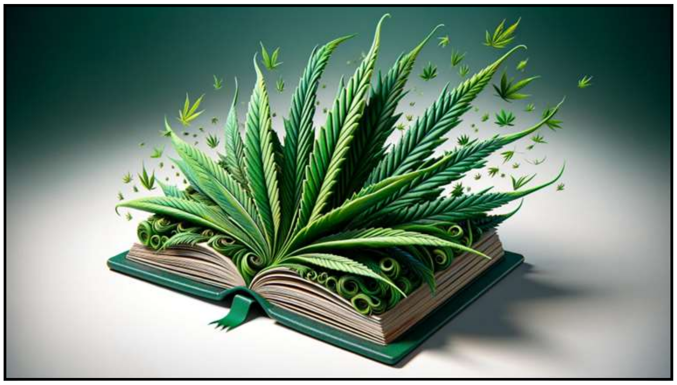
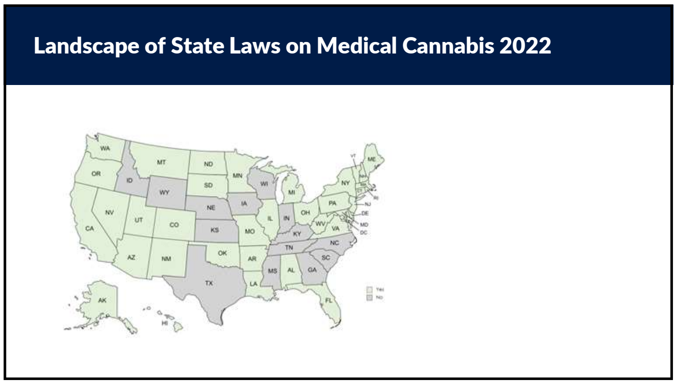
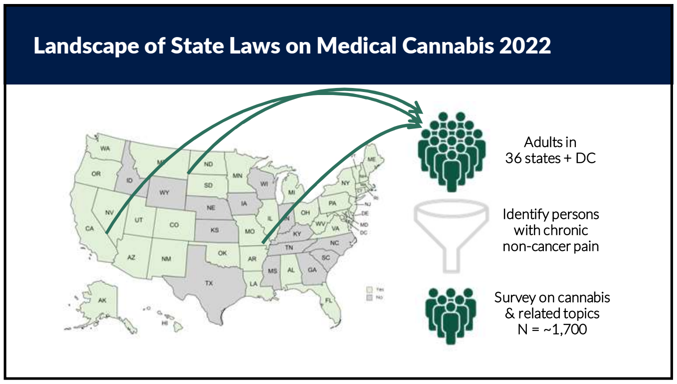




Landscape of State Laws on Medical Cannabis 2022

WA
OR
CA
NV
ID
MT
WY
UT
CO
AZ
NM
ND
SD
NE
KS
OK
TX
MN
IA
MO
AR
LA
WI
IL
MI
IN
OH
KY
TN
MS
AL
GA
FL
WV
VA
NC
SC
PA
NY
ME
NJ
DE
MD
DC
AK
HI
Yes
No

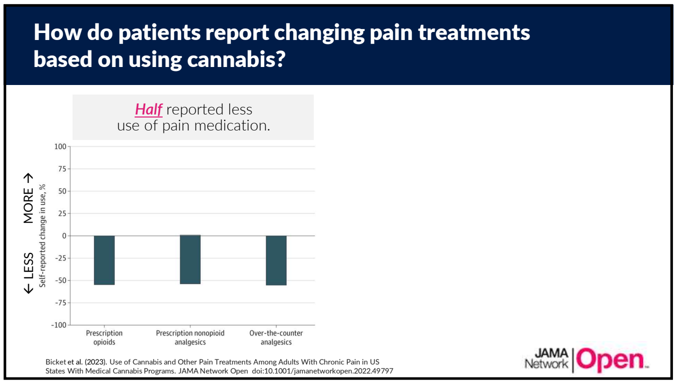


Landscape of State Laws on Medical Cannabis 2022

Adults in
36 states + DC

Identify persons
with chronic
non-cancer pain

Survey on cannabis
& related topics
N = ~1,700



How do patients report changing pain treatments based on using cannabis?

Half reported less
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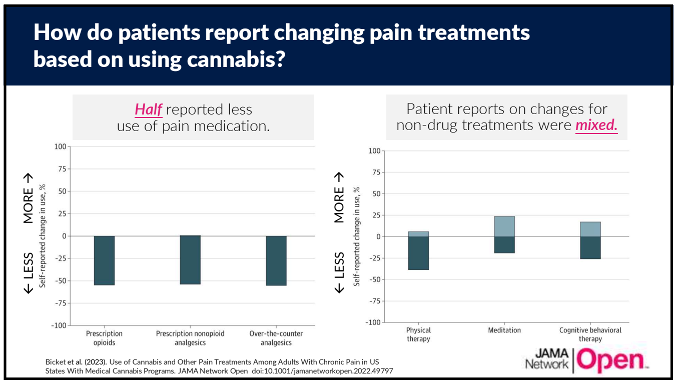
JAMA Network Open



How do patients report changing pain treatments based on using cannabis?

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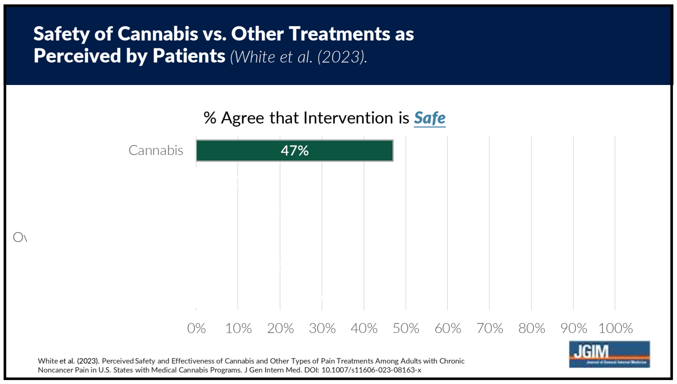
Patient reports on changes for
non-drug treatments were *mixed.*

Bicket et al. (2023). Use of Cannabis and Other Pain Treatments Among Adults With Chronic Pain in US States With Medical Cannabis Programs. JAMA Network Open doi:10.1001/jamanetworkopen.2022.49797

JAMA Network Open

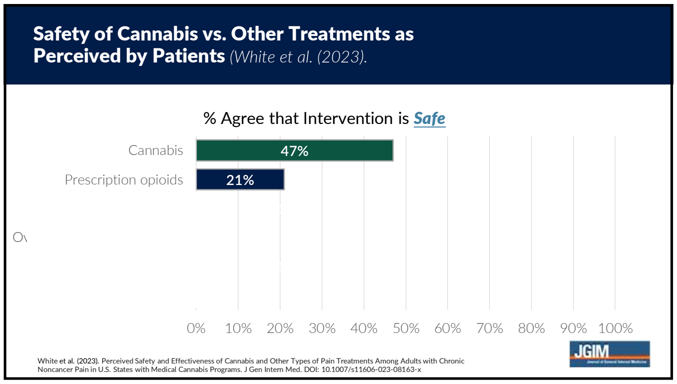


Safety of Cannabis vs. Other Treatments as Perceived by Patients *(White et al. (2023).*

% Agree that Intervention is ***Safe***

White et al. (2023). Perceived Safety and Effectiveness of Cannabis and Other Types of Pain Treatments Among Adults with Chronic Noncancer Pain in U.S. States with Medical Cannabis Programs. J Gen Intern Med. DOI: 10.1007/s11606-023-08163-x

JGIM



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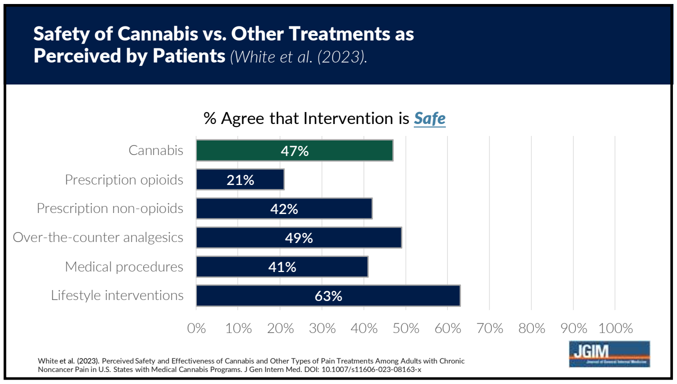

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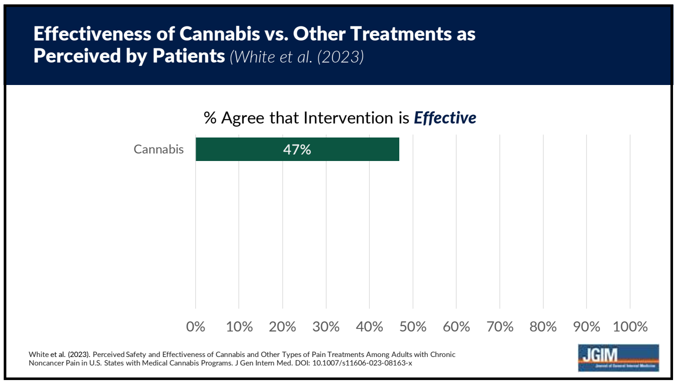

Effectiveness of Cannabis vs. Other Treatments as Perceived by Patients *(White et al. (2023)*

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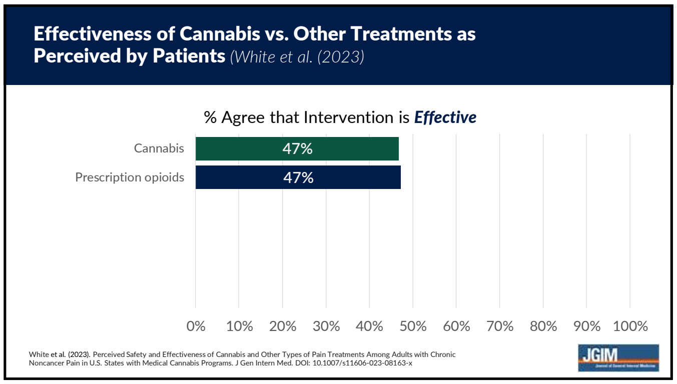

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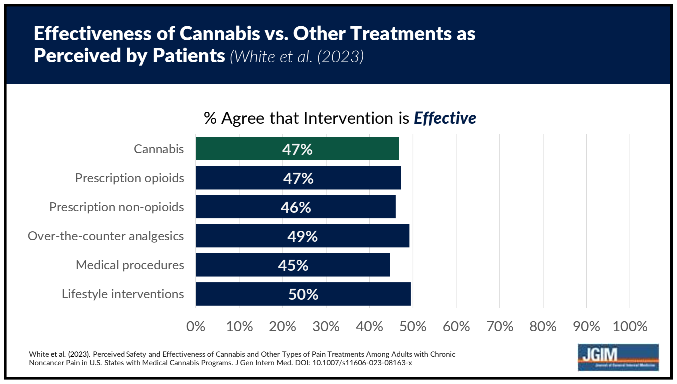

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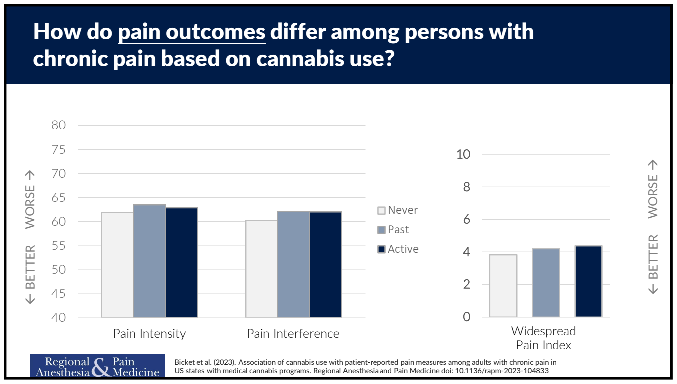
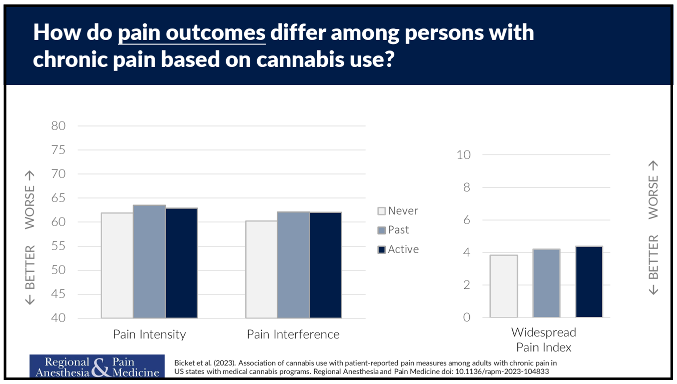


How do pain outcomes differ among persons with chronic pain based on cannabis use?

Regional Anesthesia & Pain Medicine

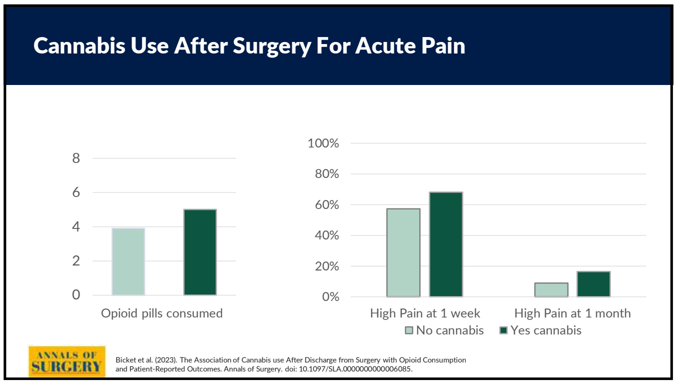
Bicket et al. (2023). Association of cannabis use with patient-reported pain measures among adults with chronic pain in US states with medical cannabis programs. Regional Anesthesia and Pain Medicine doi: 10.1136/rapm-2023-104833



How do pain outcomes differ among persons with chronic pain based on cannabis use?

Regional Anesthesia & Pain Medicine

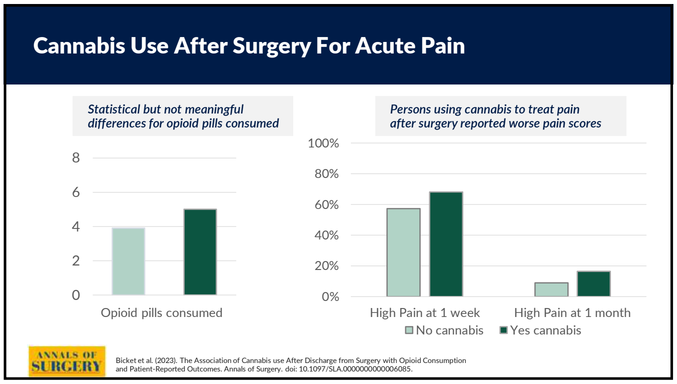
Bicket et al. (2023). Association of cannabis use with patient-reported pain measures among adults with chronic pain in US states with medical cannabis programs. Regional Anesthesia and Pain Medicine doi: 10.1136/rapm-2023-104833



Cannabis Use After Surgery For Acute Pain

ANNALS OF SURGERY

Bicket et al. (2023). The Association of Cannabis use After Discharge from Surgery with Opioid Consumption and Patient-Reported Outcomes. Annals of Surgery. doi: 10.1097/SLA.0000000000006085.

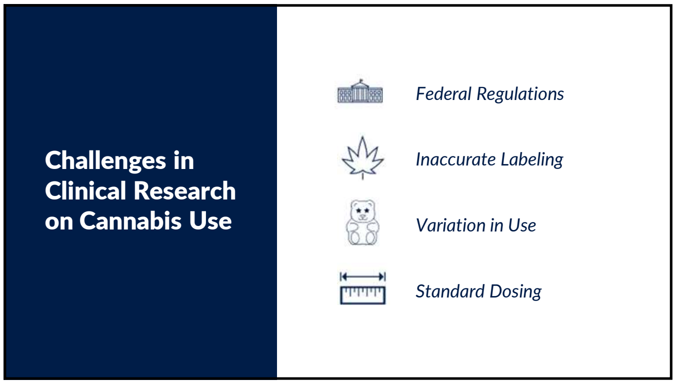


Cannabis Use After Surgery For Acute Pain

Statistical but not meaningful differences for opioid pills consumed

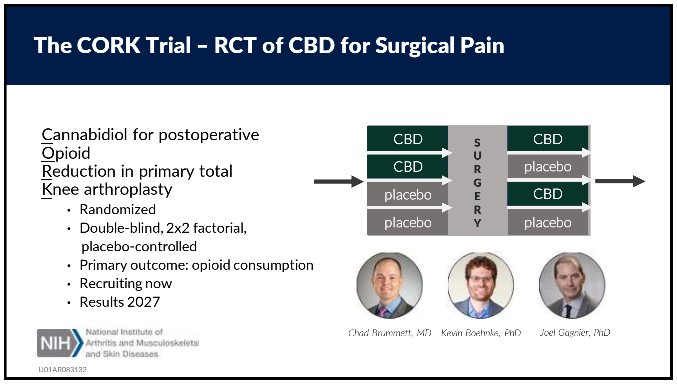
Persons using cannabis to treat pain after surgery reported worse pain scores

Bicket et al. (2023). The Association of Cannabis use After Discharge from Surgery with Opioid Consumption and Patient-Reported Outcomes. Annals of Surgery. doi: 10.1097/SLA.0000000000006085.



Challenges in Clinical Research on Cannabis Use

- *Federal Regulations*
- *Inaccurate Labeling*
- *Variation in Use*
- *Standard Dosing*



The CORK Trial – RCT of CBD for Surgical Pain

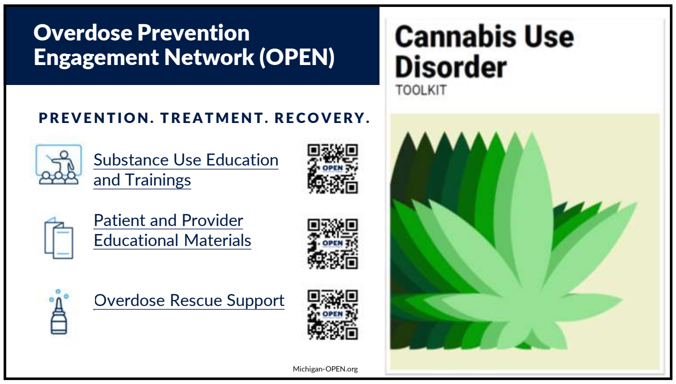
Cannabidiol for postoperative
Opioid
Reduction in primary total
Knee arthroplasty

- Randomized
- Double-blind, 2x2 factorial, placebo-controlled
- Primary outcome: opioid consumption
- Recruiting now
- Results 2027

Chad Brummett, MD *Kevin Boehnke, PhD* *Joel Gagnier, PhD*

National Institute of Arthritis and Musculoskeletal and Skin Diseases

U01AR083132



Overdose Prevention Engagement Network (OPEN)

PREVENTION. TREATMENT. RECOVERY.

- Substance Use Education and Trainings
- Patient and Provider Educational Materials
- Overdose Rescue Support

Michigan-OPEN.org

Cannabis Use Disorder
TOOLKIT

The Team

Key Points

1. Cannabis has become more accessible with the implementation of state laws that permit two different channels for access.
2. Medical cannabis programs differ from recreational programs in key features.
3. While early studies on cannabis laws suggested changes in opioid prescribing and pain outcomes, controlling for bias has led to more accurate estimates of their potential impact.
4. Cannabis is viewed by patients as a safer treatment than some commonly offered treatments for pain.
5. Some pain outcomes may be worse among active and past users of cannabis, though differences don't seem to be clinically meaningful.

Knowledge Check

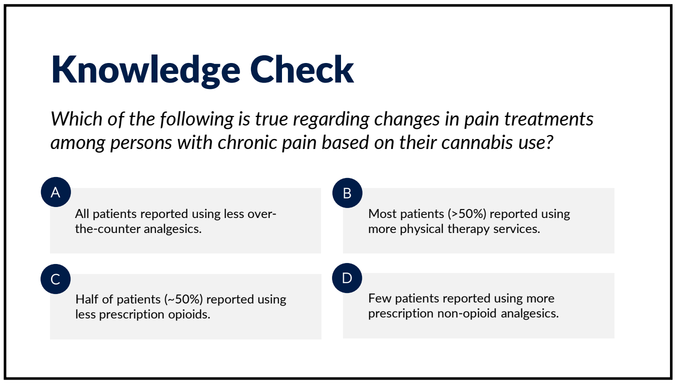
The clinical effects of classic psychedelics in cluster headache are reported for:

- A. No meaningful differences appear for opioid and pain outcomes
- B. Opioid prescriptions increased while non-opioid prescriptions decreased significantly
- C. The rate of pain related procedures decreased significantly
- D. Non-opioid prescribing increased significantly

Knowledge Check

The clinical effects of classic psychedelics in cluster headache are reported for:

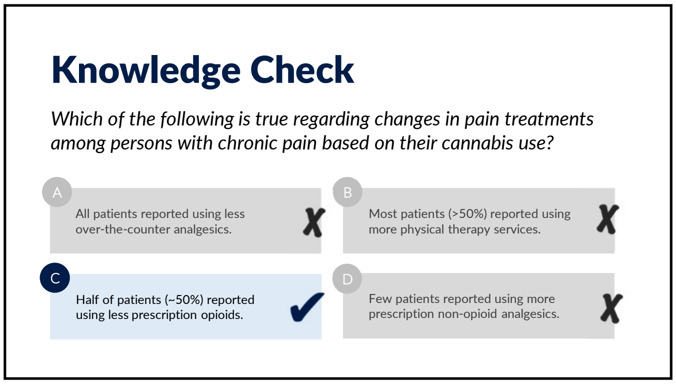
- A. No meaningful differences appear for opioid and pain outcomes ✓
- B. Opioid prescriptions increased while non-opioid prescriptions decreased significantly ✗
- C. The rate of pain related procedures decreased significantly ✗
- D. Non-opioid prescribing increased significantly ✗



Knowledge Check

Which of the following is true regarding changes in pain treatments among persons with chronic pain based on their cannabis use?

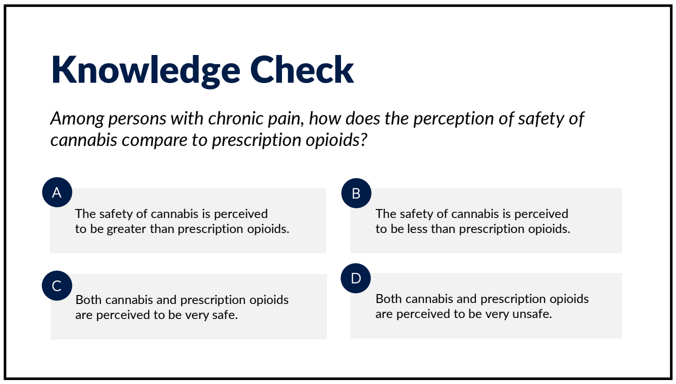
- A All patients reported using less over-the-counter analgesics.
- B Most patients (>50%) reported using more physical therapy services.
- C Half of patients (~50%) reported using less prescription opioids.
- D Few patients reported using more prescription non-opioid analgesics.



Knowledge Check

Which of the following is true regarding changes in pain treatments among persons with chronic pain based on their cannabis use?

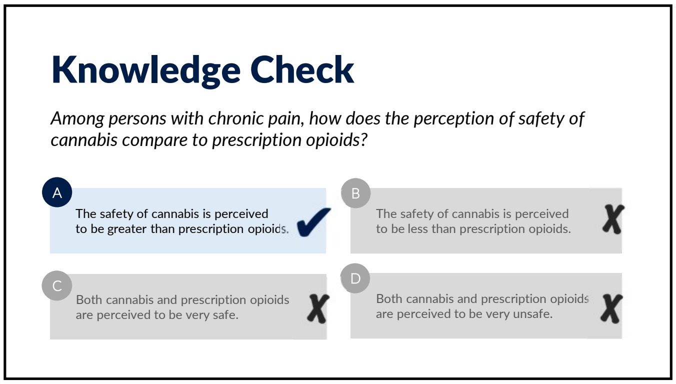
- A All patients reported using less over-the-counter analgesics. ✗
- B Most patients (>50%) reported using more physical therapy services. ✗
- C Half of patients (~50%) reported using less prescription opioids. ✓
- D Few patients reported using more prescription non-opioid analgesics. ✗



Knowledge Check

Among persons with chronic pain, how does the perception of safety of cannabis compare to prescription opioids?

- A The safety of cannabis is perceived to be greater than prescription opioids.
- B The safety of cannabis is perceived to be less than prescription opioids.
- C Both cannabis and prescription opioids are perceived to be very safe.
- D Both cannabis and prescription opioids are perceived to be very unsafe.



Knowledge Check

Among persons with chronic pain, how does the perception of safety of cannabis compare to prescription opioids?

- A The safety of cannabis is perceived to be greater than prescription opioids. ✓
- B The safety of cannabis is perceived to be less than prescription opioids. ✗
- C Both cannabis and prescription opioids are perceived to be very safe. ✗
- D Both cannabis and prescription opioids are perceived to be very unsafe. ✗

Knowledge Check

Among persons with chronic pain, how does the perception of effectiveness of cannabis compare to prescription opioids for treating chronic pain?

- A The effectiveness of cannabis is perceived to be greater than prescription opioids.
- B Both cannabis and prescription opioids are perceived to be moderately effective.
- C Both cannabis and prescription opioids are perceived to be very safe.
- D Both cannabis and prescription opioids are perceived to be not effective.

Knowledge Check

Among persons with chronic pain, how does the perception of effectiveness of cannabis compare to prescription opioids for treating chronic pain?

- A The effectiveness of cannabis is perceived to be greater than prescription opioids. ✓
- B Both cannabis and prescription opioids are perceived to be moderately effective. ✗
- C Both cannabis and prescription opioids are perceived to be very safe. ✗
- D Both cannabis and prescription opioids are perceived to be not effective. ✗

Thank You!

OPEN

Evidence. Resources. Engagement.

http://michigan-open.org

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SESSION SEVEN

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Q&A Panel

Deondra Asike, MD &
Mark Bicket MD, PhD

Break

SESSION WILL RESUME IN 15 MINUTES