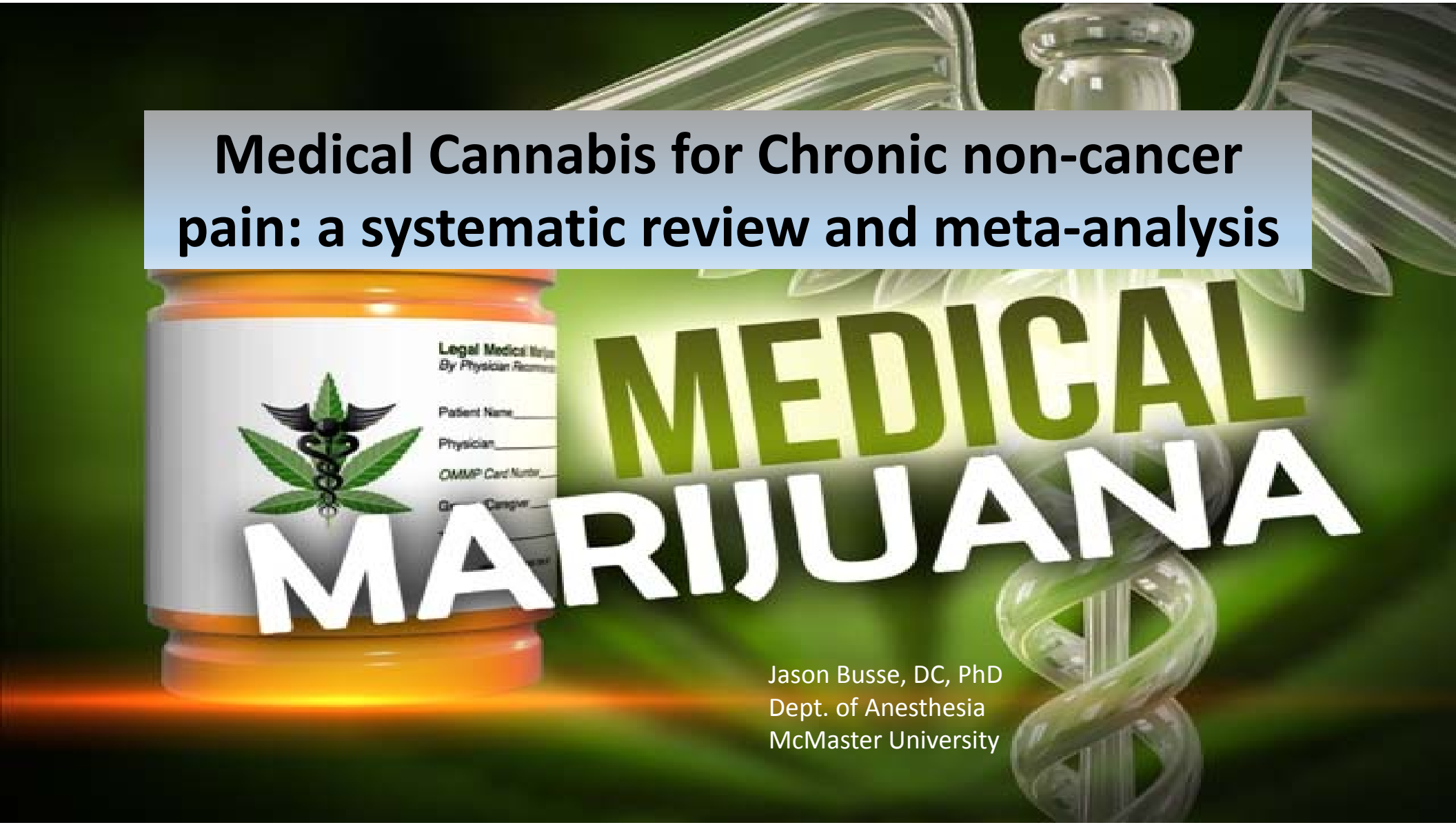
# Medical Cannabis for Chronic non-cancer pain: a systematic review and meta-analysis

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# Conflicts of Interest

- Our systematic review is supported by a grant from the Canadian Institutes of Health Research

- I have no actual or potential conflicts of interest in relation to this presentation

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# Background

## US States in which medicinal cannabis is legal have reported a significant reduction in the use of prescription drugs:

- E.g. anxiety, depression, nausea, pain, sleep disorders, and spasticity
- Users may substitute cannabis for prescription medication, suggesting the possibility of therapeutic benefits

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# Background

- Approximately 1 in 5 Canadians suffer from chronic non-cancer pain (CNCP)

- Medical cannabis is a potential alternative for chronic pain relief and the Canadian Pain Society has listed cannabinoids as a third line of treatment for neuropathic pain

- New therapies need to be evaluated for their potential role in treatment of CNCP as current treatment strategies are limited and clinicians often resort to opioids

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VIEWPOINT

# Opioids Out, Cannabis In
## Negotiating the Unknowns in Patient Care for Chronic Pain

JAMA November 1, 2016 Volume 316, Number 17

The mandated transition to limit use of opioids, paired with the current climate around liberalizing cannabis, may lead to patients' formal and informal substitution of cannabis for opioids.

# Eligibility Criteria

- Studies eligible for our review are therapeutic trials, in any language, that:
  - randomly allocated patients presenting with chronic non-cancer pain to cannabis or a non-cannabis control,
  - Enrolled at least 10 patients, and
  - reported outcomes at ≥2 weeks' follow-up

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# Pooling Continuous Data

## Optimal Strategies for Reporting Pain in Clinical Trials and Systematic Reviews: Recommendations from an OMERACT 12 Workshop

Jason W. Busse, Susan J. Bartlett, Maxime Dougados, Bradley C. Johnston, Gordon H. Guyatt, John R. Kirwan, Kent Kwoh, Lara J. Maxwell, Andrew Moore, Jasvinder A. Singh, Randall Stevens, Vibeke Strand, Maria E. Suarez-Almazor, Peter Tugwell, and George A. Wells

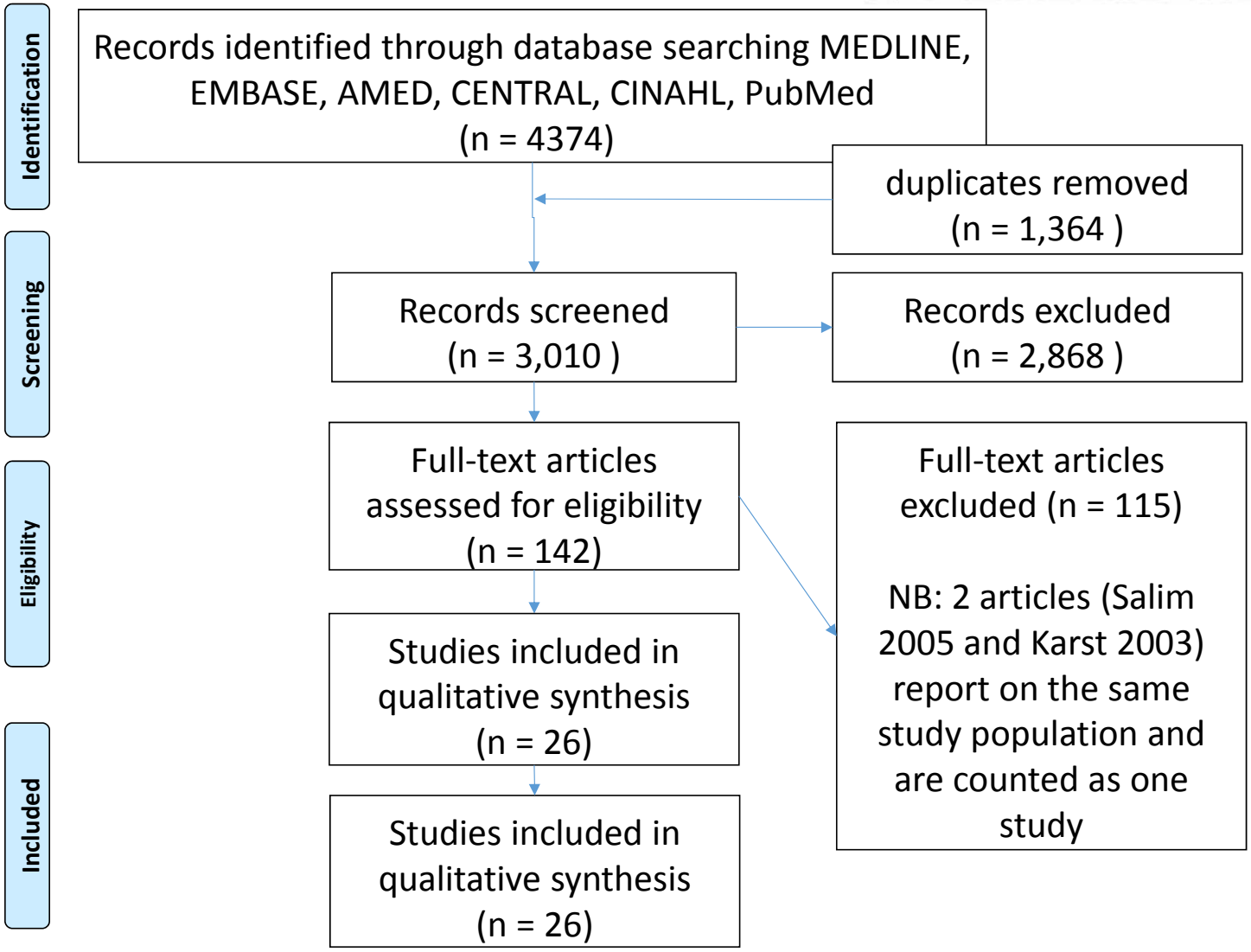
*The Journal of Rheumatology 2015; 42:6; doi:10.3899/jrheum.141440* misleading

- Calculated the risk difference of achieving the MID

# Results

Study selection:

Flow diagram



# Study characteristics

- 26 trials, with a total of 1,915 patients
- Most trials were conducted in the UK (n=7) or Canada (n=5)
- Median patient age: 50.1 years
- Median duration of pain upon enrollment: 10.3 years
- Median duration of follow-up: 28 days

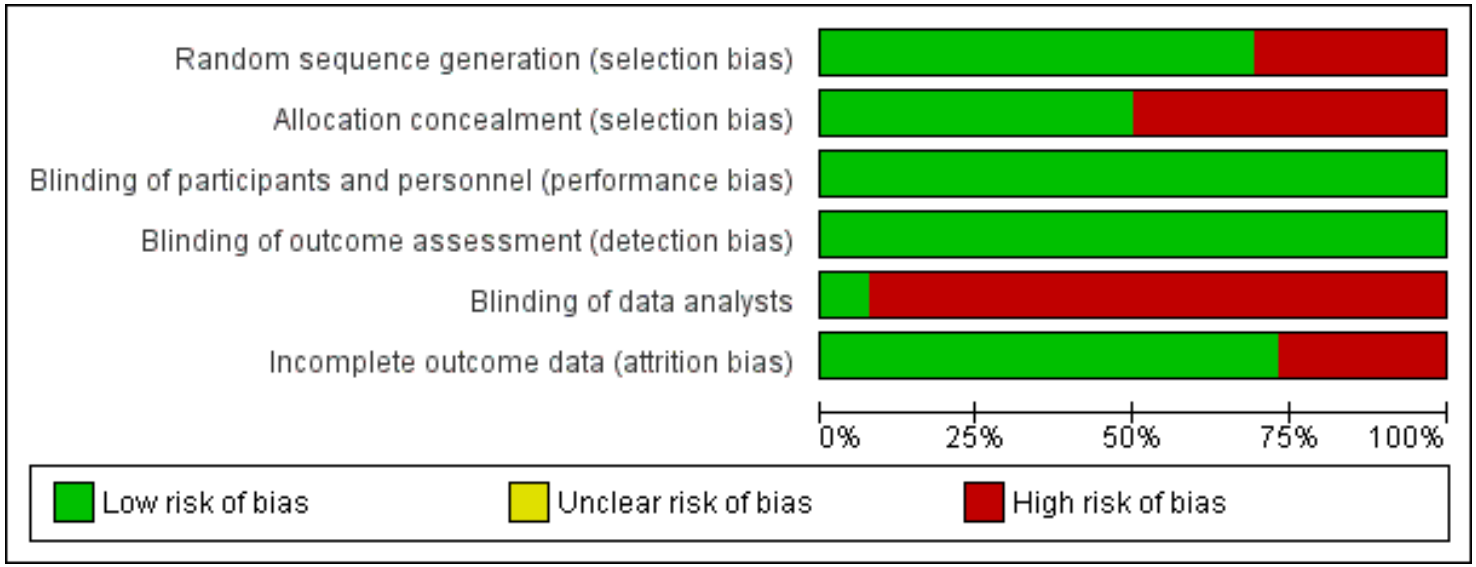
# Treatment and control characteristics

- Interventions
  - THC+CBD (n=8)
  - Nabilone (n=7)
  - THC only (n=5)
  - Dronabinol (n=2)
  - Multiple Interventions (n=2)
  - CBD only (n=1)
  - CT-3 (n=1)

- Mode of Administration
  - Pill (n=14)
  - Spray (n=8)
  - Smoke (n=4)

- Control Used
  - Placebo (n=23)
  - Amitriptyline (n=1)
  - Dihydrocodeine (n=1)
  - Ibuprofen (n=1)

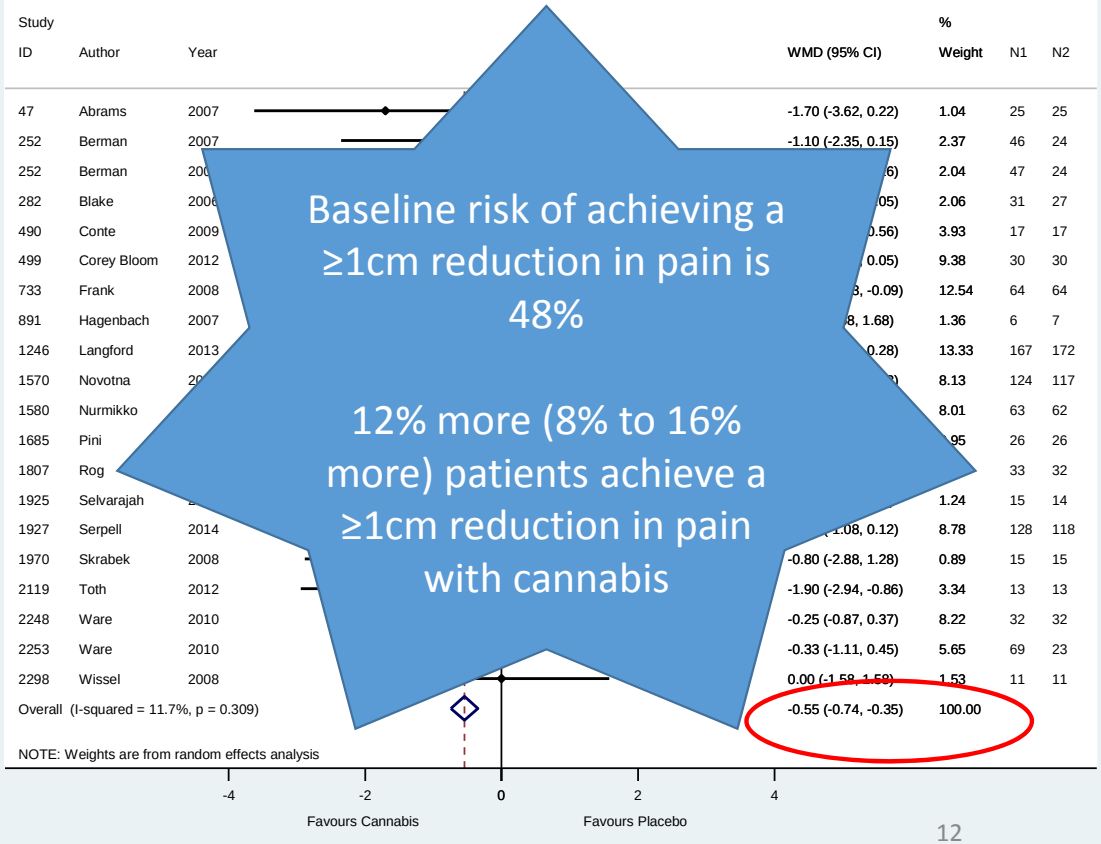
# Risk of bias assessment



# Pain

- 20 studies with 1,815 patients
- Follow-up ranged from 14-98 days
- Medicinal cannabis, versus placebo, results in a small but important improvement in pain
- MODERATE quality evidence

Medicinal Cannabis vs. Placebo



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# GRADE Evidence Profile

| No. of RCTs (# of Pts.) | Risk of bias | Inconsis-tency | Indirectness | Imprecision | Publication bias | Risk Difference (95%CI) | Weighted Mean Difference (95%CI) | Quality of Evidence |
|---|---|---|---|---|---|---|---|---|
| Pain: Measured by 10 cm VAS Scale, Lower indicates better | | | | | | | | |
| 20 studies (1,815 pts.) | Serious risk of bias | Not serious | Not serious | Not serious | Undetected; Symmetric funnel plot; Egger's test p =0.41 | The RD of achieving ≥1cm is 12% (95%CI 8%, 16%)<br><br>NNT=8 | WMD of 0.55 points lower (0.74 lower to 0.35 lower) | MODERATE |

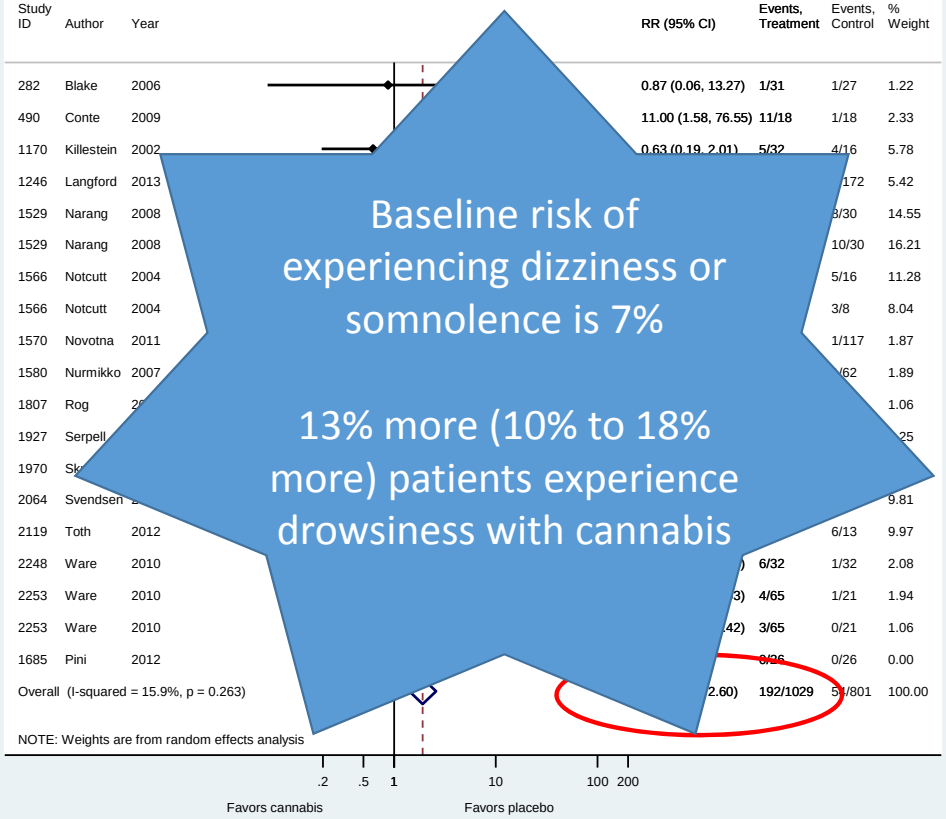
# Reporting of Adverse Events

- Adverse Events
  - Drowsiness or somnolence (n=19)
  - Headache or migraine (n=18)
  - Dizziness or vertigo (n=17)
  - Dry mouth (n=17)
  - Fatigue (n=13)
  - Nausea (n=13)
  - Euphoria (n=10)

# Drowsiness

- 19 studies with 1,830 patients
- Follow-up ranged from 27-140 days
- Medicinal cannabis results in a moderate increase in drowsiness or somnolence vs. placebo
- MODERATE quality evidence

Medicinal Cannabis vs. Placebo



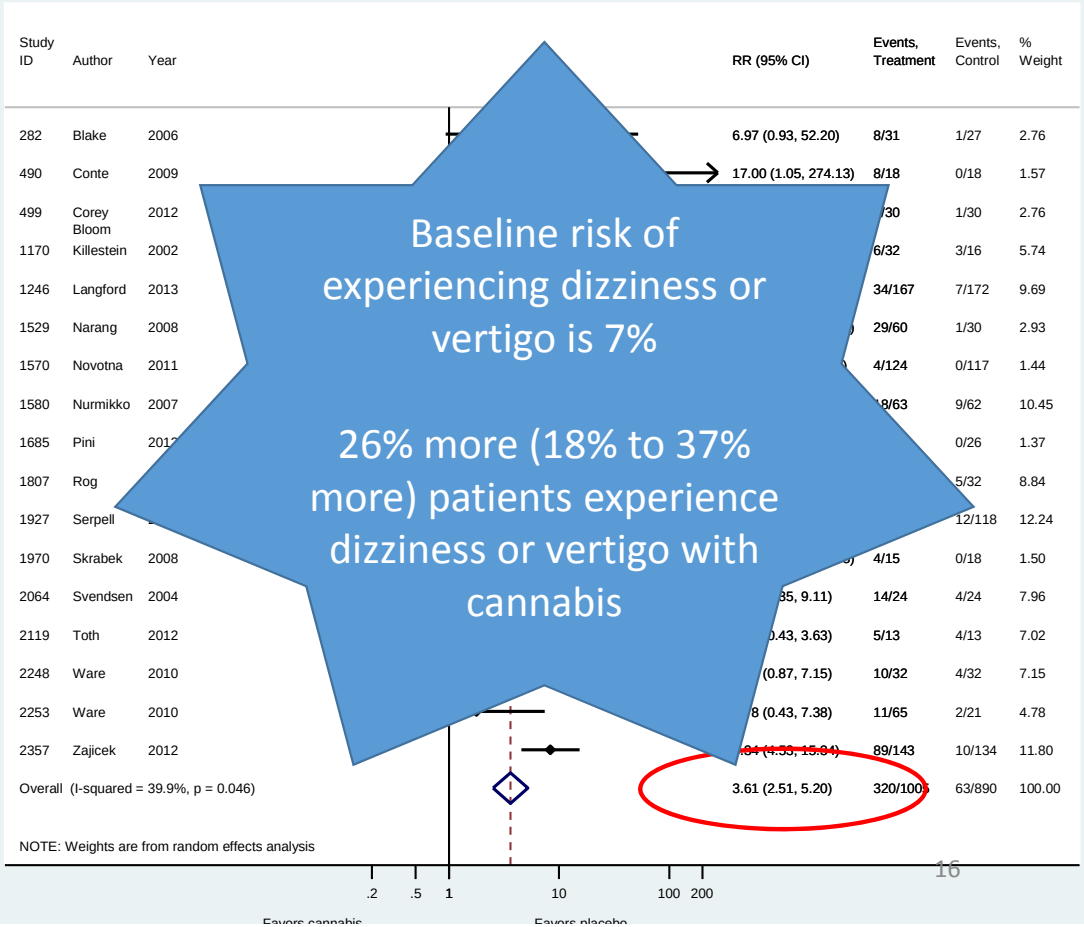

Baseline risk of experiencing dizziness or somnolence is 7%

13% more (10% to 18% more) patients experience drowsiness with cannabis

# Dizziness or Vertigo

- 17 studies with 1,895 patients
- Follow-up ranged from 27-140 days
- Medicinal cannabis results in a large increase in dizziness or vertigo vs. placebo
- MODERATE quality evidence

Medicinal Cannabis vs. Placebo



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# Summary of Results to Date

- Moderate quality evidence shows that cannabis provides small, but important pain relief versus placebo
- Moderate quality evidence shows that use of medicinal cannabis results in an increase in drowsiness and dizziness versus placebo
- Results are limited by short follow-up times

# Acknowledgements

## Study Team

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