TACKLING DRUG DRIVING IN FINLAND: FACTS, RESEARCH, AND POLICY

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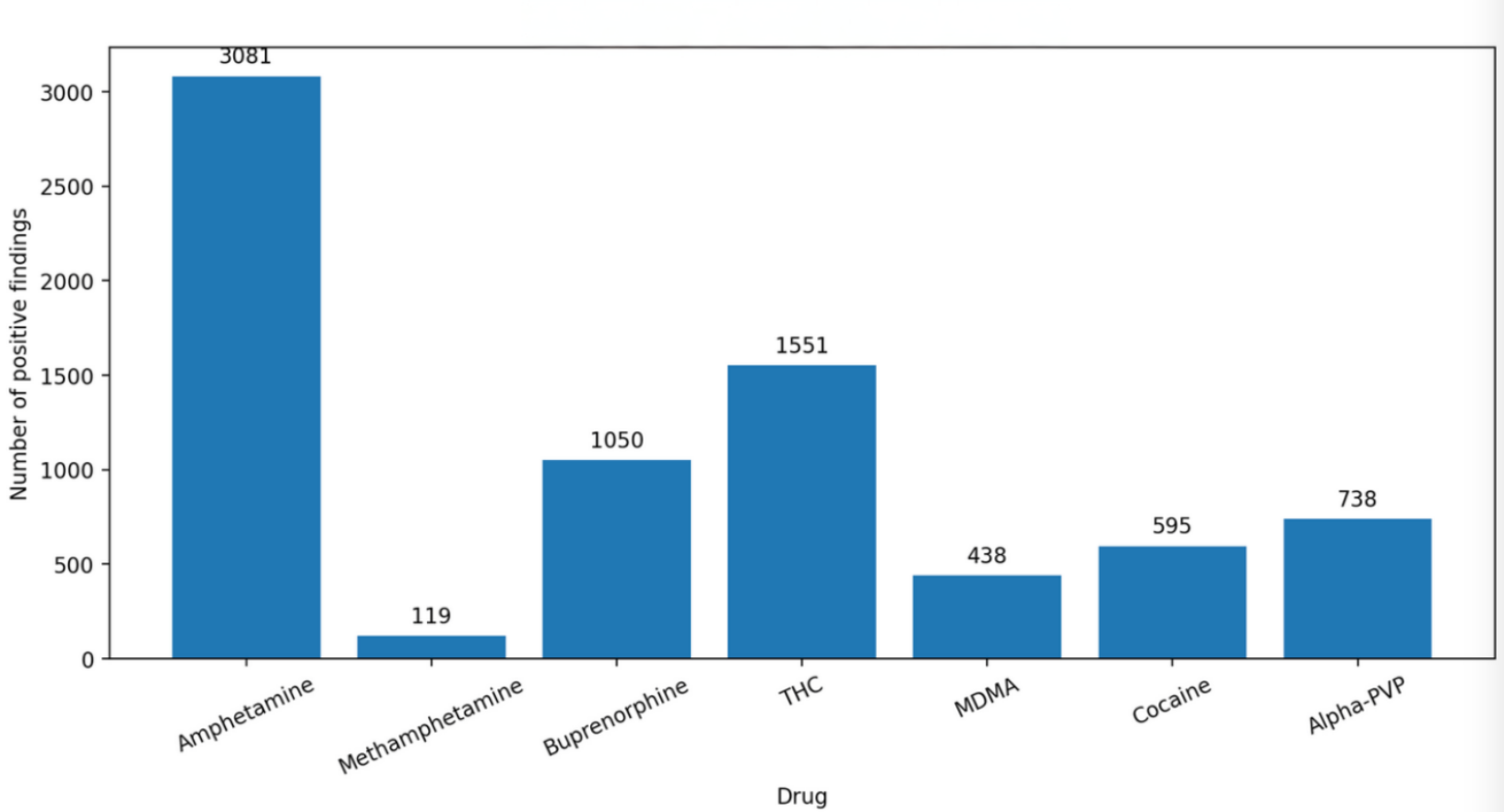
WHY RESEARCH MATTERS

- Drug-impaired driving is a growing threat to road safety
  - **Depressants** (cannabis, opioids) slow down reaction time, distort perception of distances and speed, and impair concentration.
  - **Stimulants** (amphetamine, methamphetamine, cocaine) may increase risk-taking and aggressive behaviour and distort visual perception.
  - **Hallucinogens** (LSD) can cause visual and auditory hallucinations that make it difficult to judge speed and distance.
- Different drugs impair driving in different ways, but all can seriously reduce the ability to drive safely.
- Research supports legislation, enforcement, prevention, and public health communication

MOST COMMONLY DETECTED DRUGS IN 2024



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POLIISI
KESKUSRIKOSPOLIISI
Centralkriminalpolisen
National Bureau of Investigation

Why cannabis?

LEGISLATIVE PROPOSAL FOR THE DECRIMINALISATION AND LEGALISATION OF CANNABIS

Citizen's initiative details

Title of the citizens' initiative
Legalize, regulate and tax cannabis

Date of the initiative
20.10.2022

Type of initiative
Proposal to commence legislative drafting

Content of the initiative
We propose initiating legislative drafting to repeal the illegality of cannabis and replace it with the following:

- The use, possession, cultivation for personal use, production and sale of cannabis shall be permitted subject to age limits.
- A regulatory system for the production and sale of cannabis, comparable to those for other intoxicants, shall be created, drawing on the experiences of countries and states that have already legalized cannabis. The regulation aims to minimize harm to individuals and society, in a manner similar to alcohol and tobacco legislation.
- A tax shall be imposed on cannabis to offset the harms it causes to society.
- A clear distinction shall be defined between intoxicating cannabis and non-intoxicating cannabis, i.e. hemp, so that agricultural entrepreneurs who grow hemp can operate in their field.
- Records of cannabis use offenses, as well as criminal record entries and other similar markings resulting from minor cultivation and sale, shall be removed.

HELSINGIN SANOMAT

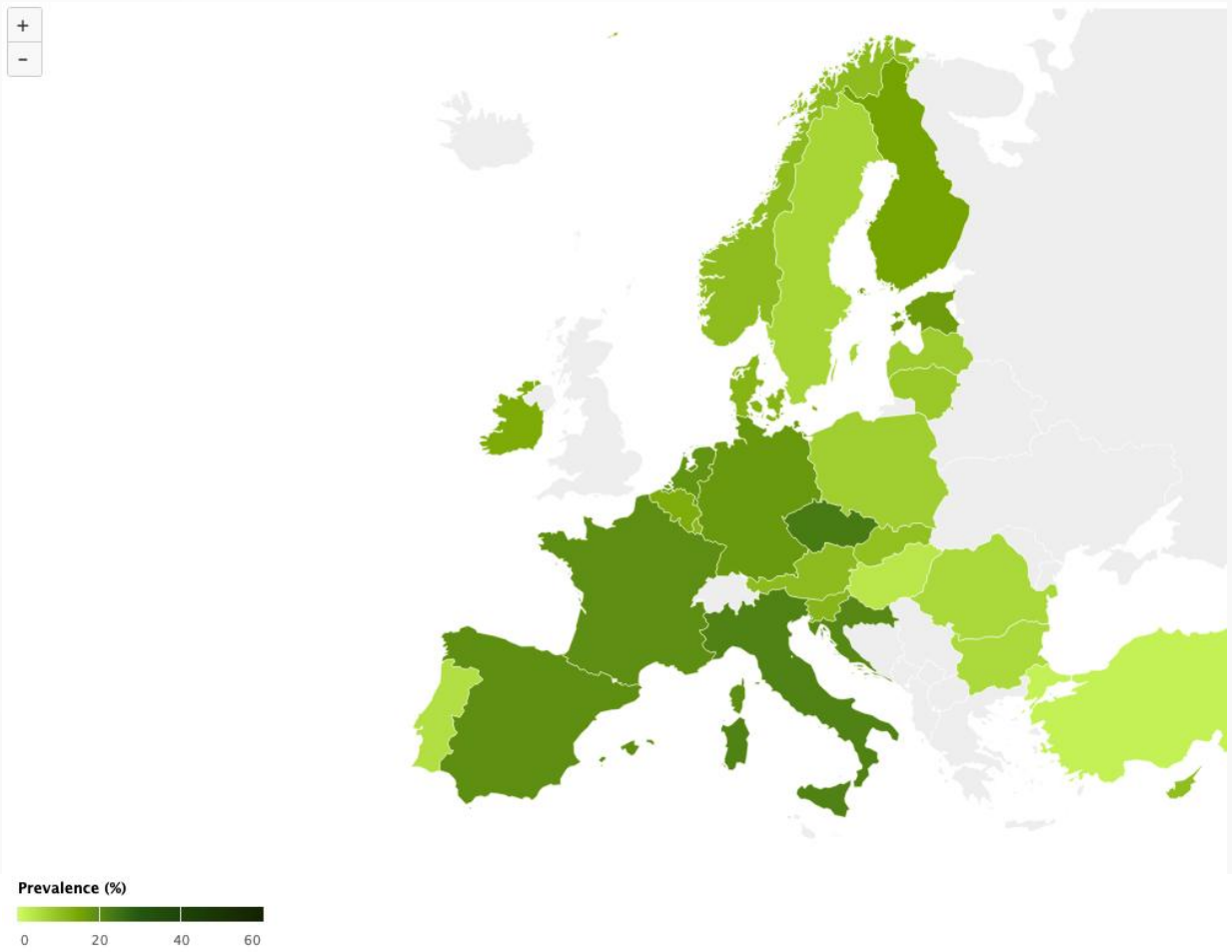
Nearly 140 doctors wanted cannabis legalized, including dozens of psychiatrists

A citizens' initiative supported by physicians and other health professionals argued that a cannabis initiative would help patients. The initiative was rejected by Parliament in February.

Tiia Jylhä
May 14, 2024 | 14:35

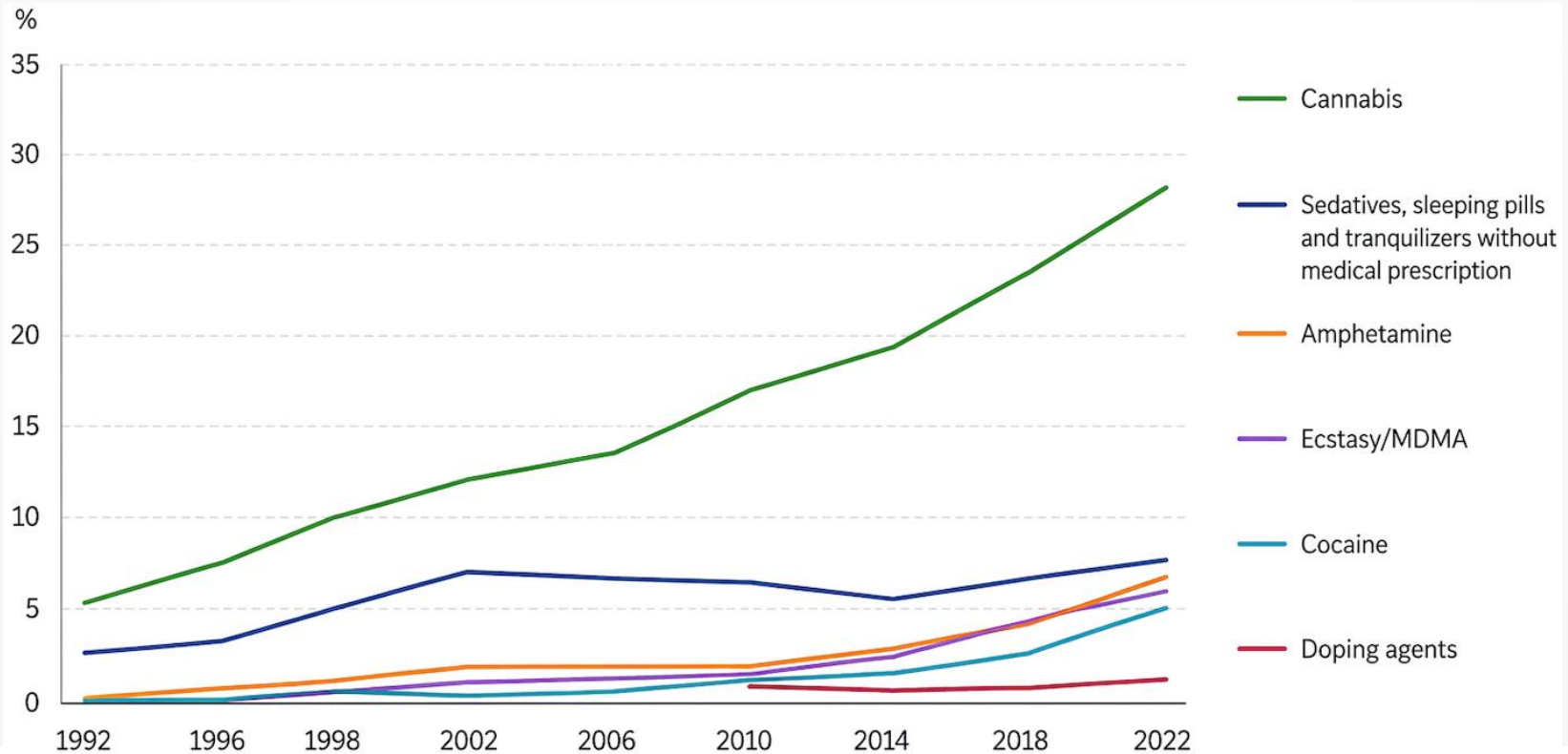
Campaigns supporting the legalization of cannabis have continued in Finland for decades. Photo from a demonstration in May 2006. Photo: Tatu Paalanjärvi.

PREVALENCE OF CANNABIS USE IN EUROPE, LAST YEAR, 15-34 YEAR OLDS (UPDATED JUNE 2024)



DRUG USE AND ATTITUDES TOWARD DRUGS AMONG FINNS, 2022

Proportion of the Finnish population aged 15–69 who have at some point in their lives experimented with or used cannabis or other substances, 1992–2022, %



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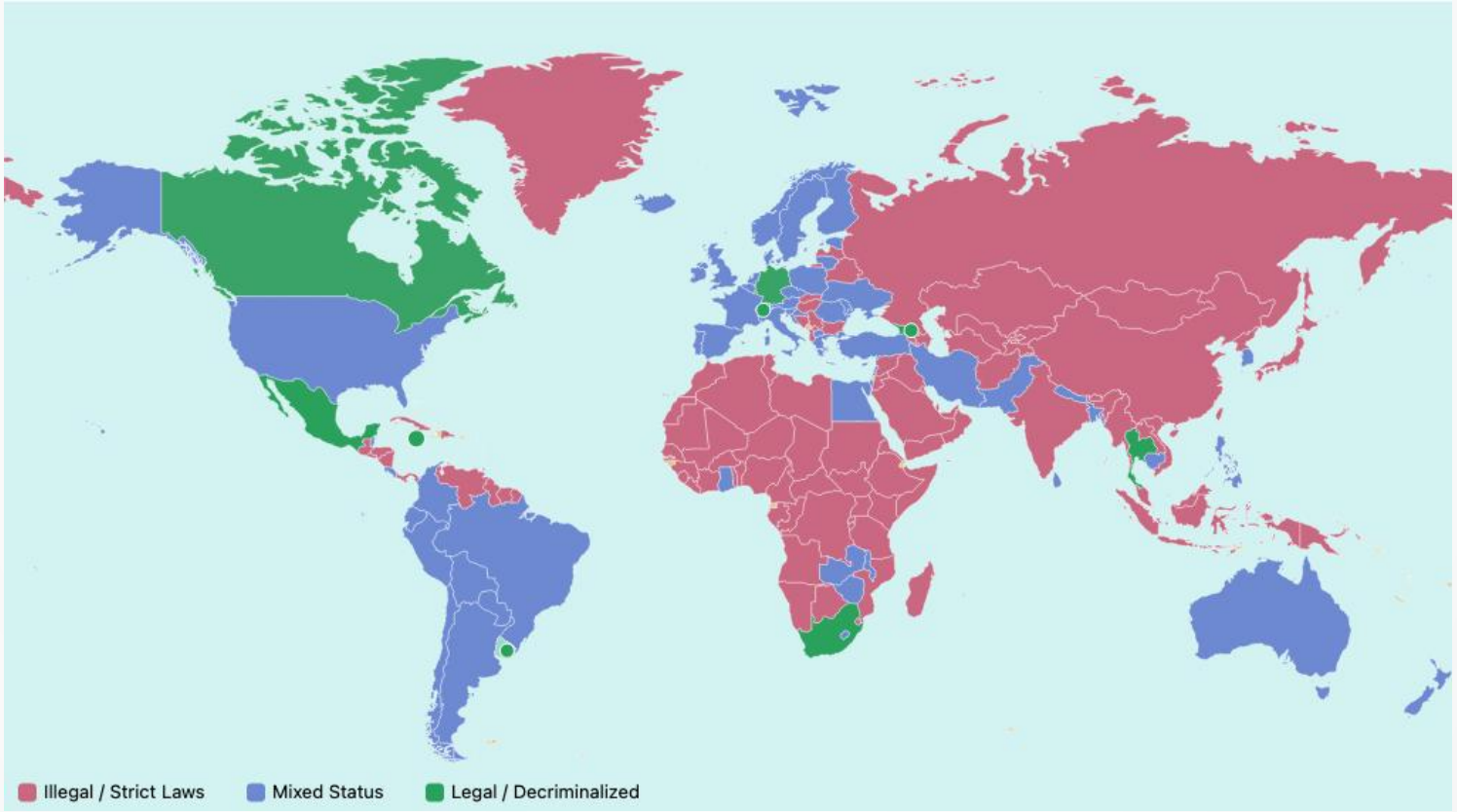
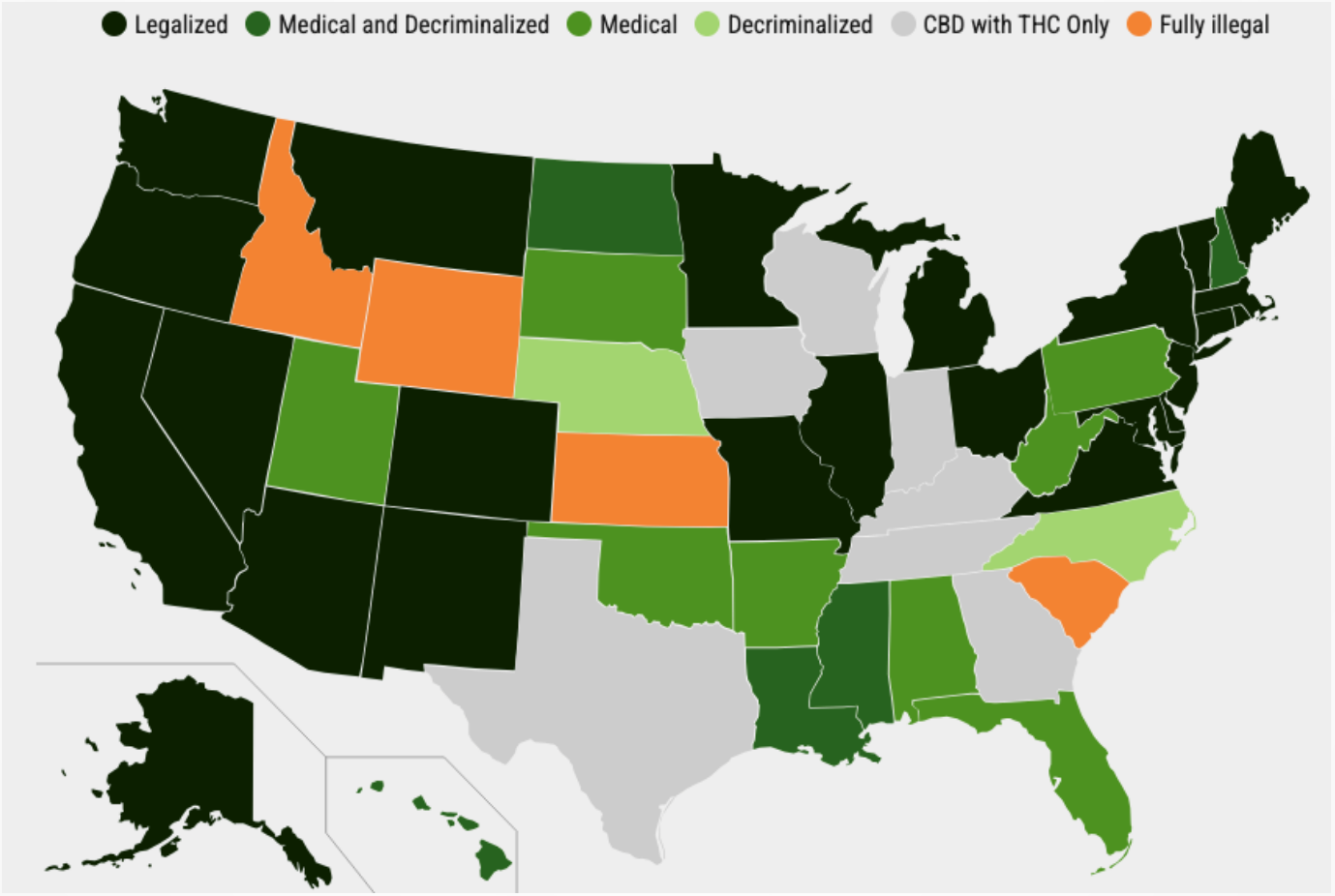
Reference: Suomalaisten huumeiden käyttö ja huumeasenteet 2022. Tilastoraportti 15/2023, 14.4.2023. THL.

CANNABIS LEGALITY (MARCH 26, 2024)



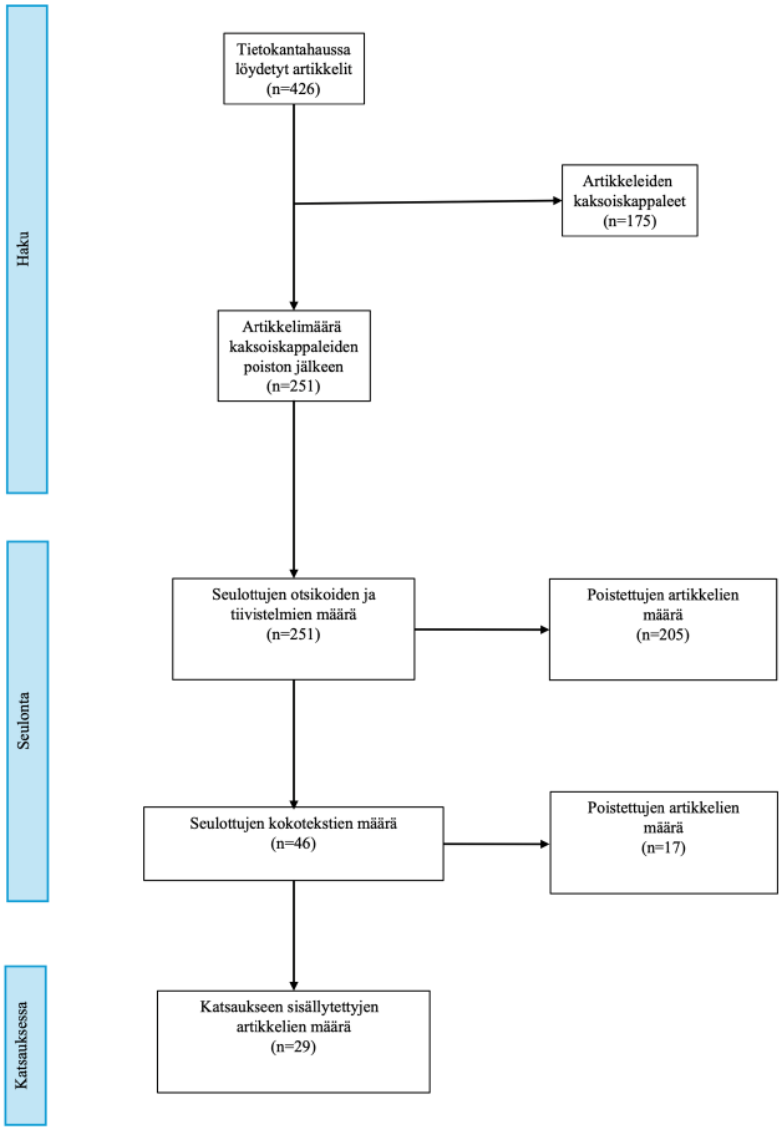
CANNABIS LEGALITY IN USA (APRIL 28, 2025)



SYSTEMATIC REVIEW OF STUDIES

- The literature search was conducted using the Web of Science, PsycINFO (Ovid), MEDLINE, SafetyLit, and Scopus databases.
- There were no time restrictions applied; all studies published up to 9 November 2023 were included.
- The search used the keyword combination:
  (driver OR motor vehicle OR road safety* OR "car accident*" OR "crash fatalit*" OR "driving risk*" OR "injured driver*" OR vehicle*) AND (legalization* OR decriminalization OR de-criminalization) AND (marijuana OR cannabis)**,*
  with various modified versions of the search string also tested.
- PRISMA-procedure (Preferred Reporting Items for Systematic Reviews and Meta-Analysis).
- Selection of studies based on PICO-framework (Participants, Interventions, Comparators, and Outcomes).

SYSTEMATIC REVIEW OF STUDIES



1. QUASI-EXPERIMENTAL DESIGNS

- Most commonly used design
- Interrupted Time-Series Analysis: compares crash trends **before** and **after** legal changes
- Outcome variables often include:
  - Traffic fatalities
  - Injury rates
  - Emergency department visits
- Helps identify temporal effects of decriminalisation or legalisation
- Limitations:
  - Cannot rule out other events happening at the same time (confounders).
  - Requires enough data before and after the intervention.
  - Assumes the pre-trend would have continued unchanged.

2. DIFFERENCE-IN-DIFFERENCES (DID)

- Compares changes over time between:
  - “Treatment group” (e.g. states that legalised cannabis)
  - “Control group” (e.g. states that did not)
- Controls for general time trends and unobserved confounders
- Widely used in U.S.-based traffic safety studies

3. SYNTHETIC CONTROL METHODS

- Used when a comparable real control group is not available.
- Creates a 'synthetic state' by combining data from multiple non-treated units
- Allows more accurate isolation of policy effects.
- Advantages
  - More credible counterfactual than choosing a single comparison group
  - Transparent and replicable
  - Works with small numbers of units
- Limitations
  - Requires good quality pre-intervention data
  - Sensitive to choice of donor pool
  - Cannot estimate standard errors as easily as regression models
  - No spillovers allowed (e.g., policy in one state influencing others)

4. TRAUMA AND EMERGENCY ROOM DATA

- Focus on THC presence in injured drivers
- Measures used: blood tests, toxicology reports
- Limitations: inconsistent testing, limited geographic scope, and small samples

COMMON DATA SOURCES

- FARS – Fatality Analysis Reporting System (USA)
- Hospital and trauma center databases
- Roadside surveys (less common due to limitations)
- Uruguay’s national road safety data

THE IMPACT OF DECRIMINALIZATION AND LEGALIZATION OF CANNABIS ON TRAFFIC SAFETY: A SYSTEMATIC LITERATURE REVIEW

- General:
  - Systematic review of 29 studies
  - Mostly based on US and Canadian data, two studies from Uruguay
  - Focus on cannabis decriminalisation, legalisation, and retail availability
- Data sources:
  - Majority used national or regional traffic accident statistics.
  - Six studies used patient data from trauma centres or emergency departments.
- Research designs:
  - Most studies used quasi-experimental time-series analysis.
  - Compared periods before and after cannabis law changes.
  - Often included comparison states with no change in legislation.

MAIN FINDINGS FROM THE REVIEW

- Medical cannabis:
  - 3 literature reviews and 3 empirical studies
  - No significant increase in traffic risk
- Decriminalisation:
  - Studied in only 3 studies
  - Increased cannabis use > impaired driving > traffic fatalities
- Legalisation and commercialisation of recreational cannabis:
  - Most studies focused on this
  - Likely rise in usage and impaired driving (especially young men)
  - Over 3x more studies found negative traffic safety effects than those that did not
  - Increased availability and sales associated with higher traffic risks
  - Strong evidence of increased traffic deaths and injuries

KEY INTERNATIONAL LESSONS

- USA: fatal crashes rose post-legalisation (2+ years).
- Canada: more ER visits due to cannabis-impaired driving.
- Uruguay: links between cultivation and traffic harm.
- Europe? Finland?
    - Can US/Canada results be applied to Finland?

RESEARCH CHALLENGES & FUTURE DIRECTIONS

- THC detection ≠ impairment duration.
  - We need better methods to measure **current functional impairment**, not just past cannabis use.
- Polydrug use complicates assessment.
- Need for standardised data and testing methods.
- Promote natural experiments and hospital-based screening.

POLICY IMPLICATIONS & RECOMMENDATIONS

- From a traffic safety perspective, any legal changes that increase cannabis use in Finland are likely to be harmful, although the exact magnitude of their effects is difficult to determine based on North American studies
  - Legalisation and availability increase drug driving and crashes
  - Decriminalisation effects are negative but difficult to estimate
- High-risk groups: young men, weekends
- Policies should rely on robust, ongoing research
  - No policy on drug driving should be made without evidence
- Finally, why should we make any policy changes which has potential to increase the burden of intoxication while in traffic?

THANK YOU

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