

# Cannabis Legalization and Detection of Tetrahydrocannabinol in Injured Drivers

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## CLINICAL PROBLEM

Recreational cannabis use was legalized in Canada in 2018. The effects of legalization on cannabis-impaired driving are not well studied.

## STUDY DESIGN

4339 drivers who presented to four British Columbia urban trauma centers for moderate injuries from motor vehicle collisions submitted blood samples as part of routine care from 2013 to 2020. Blood samples were tested for tetrahydrocannabinol (THC), the main psychoactive ingredient in cannabis. The primary outcomes — a THC level greater than 0, a THC level of at least 2 ng per milliliter (Canadian legal limit), and a THC level of at least 5 ng per milliliter — were compared between the pre- and postlegalization periods.

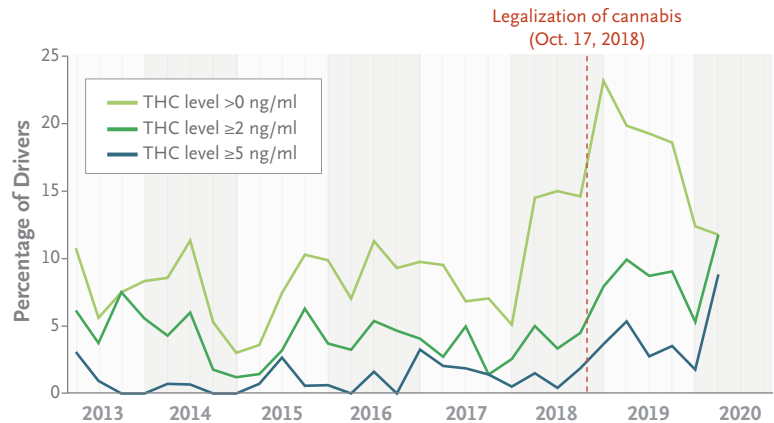
## RESULTS

After legalization, the percentage of injured drivers who met the THC thresholds increased; specifically, the percentage who tested above the legal limit more than doubled. Drivers 50 years of age or older and male drivers had the largest increases in THC above the legal limit.

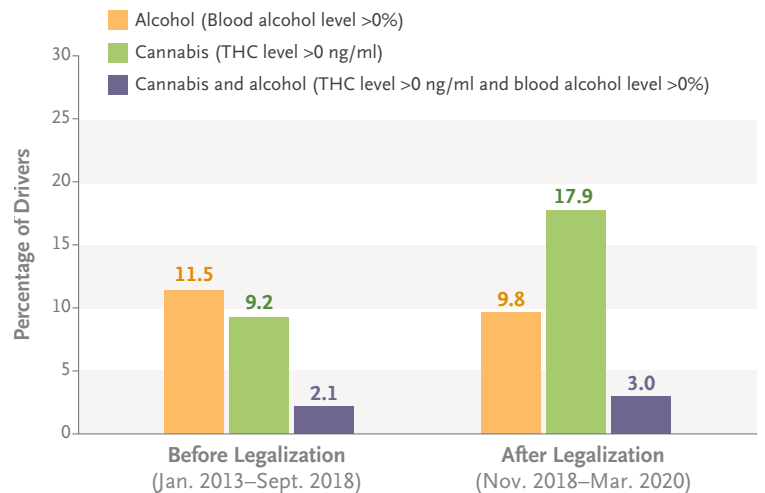
## LIMITATIONS AND REMAINING QUESTIONS

- Blood samples were collected an average of 116 minutes after the collision, so measured THC levels were lower than the levels at the time of the collision.
- Results may not apply to minor-injury collisions, fatal collisions, collisions in remote areas, or collisions in other provinces where patterns of cannabis use may differ.

Time Series Showing THC Levels in Moderately Injured Drivers



Substance Levels in Moderately Injured Drivers before and after Cannabis Legalization



## CONCLUSIONS

The percentage of moderately injured drivers who had THC levels above the legal limit more than doubled after cannabis legalization in Canada.

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