

The evidence is growing for Tilray medical cannabis in patients with chronic pain.

Tilray Observational Patient Study (TOPS)

TOPS enrolled over 1600 Tilray patients at 20 medical clinics in 5 provinces, the largest Canadian national longitudinal cannabis study to date.

Detailed baseline characteristics are gathered in person during an initial patient clinic visit, with follow up at 1, 3, 6 and 12 months.

A comprehensive cannabis use inventory and the World Health Organization Quality of Life BREF (WHOQOL-BREF) are self-administered by patients.

A prescription drug use questionnaire is completed by the physicians at each visit.

Analyses done at Centre for Health Evaluation and Outcome Sciences at the University of British Columbia.

Ethics approved by the University of Victoria, Alberta HREB, and IRBS.

Consider the evidence for Tilray medical cannabis in chronic pain management

The ongoing Tilray Observational Patient Study (TOPS) is providing **current, accurate patient data** about cannabis use.

Data shows that use of medical cannabis is associated with a **significant decrease in opioid use**.

Data shows that use of medical cannabis is associated with a **significant decrease in opioid dosage**.

Patients reported significant **improvements in their quality of life**.

Using cannabis as a substitution and/or adjunct for other agents may **lead to significant harm reduction**.

WE ARE IN CRISIS.



Most people access and become addicted to opioid painkillers through written prescriptions.

Yet, the number of opioid prescriptions written in Canada continues to increase — up to **21.5 million** a year.¹

It's time to consider a better option.

You can help avert tragedy one patient at a time.



References:

1. CBC News. <http://www.cbc.ca/news/thenational/national-today-newsletter-opioid-fentanyl-cricket-colombia-1.4593667>, Accessed May 2018.
2. Lucas, P. Tilray Observational Patient Study (TOPS); Preliminary Analysis. 2018
3. Lucas P, et al. Cannabis as a Substitute for Opioids, Alcohol, Tobacco and Other Substances; Results of a large survey of Canadian Medical Cannabis Patients. 2018 [In Press]
4. Lucas, Philippe. Rationale for cannabis-based interventions in the opioid overdose crisis. Harm Reduction Journal 14.1(2017):58

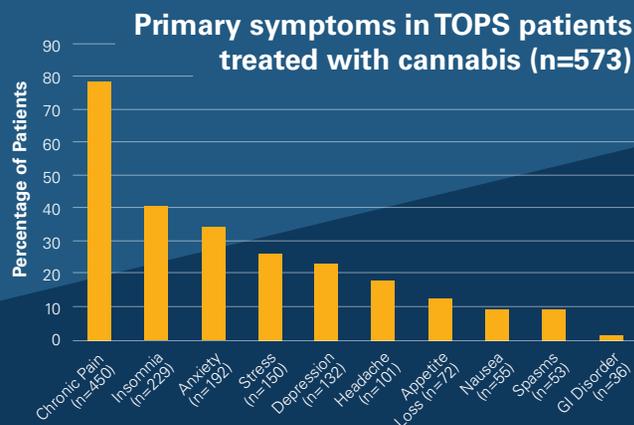
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This preliminary data based on 573 patients enrolled before December 1, 2017. Median cannabis use was 7 g per week (month 1).

The patient male/female ratio was 45%:55% with a mean age of 49 years.

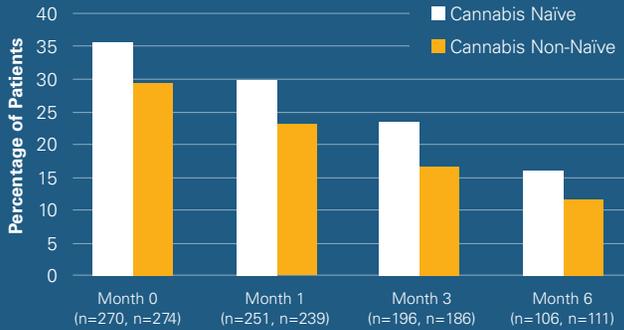
The most common method of use was oral ingestion (37.2%) followed by smoking joints (28.8%) and vaporization (21%).



Use of Tilray medical cannabis in patients with chronic pain decreases their use of opioids.

Significant decrease in opioid use

Change in opioid use over 6 months (by cannabis usage at baseline, all patients)

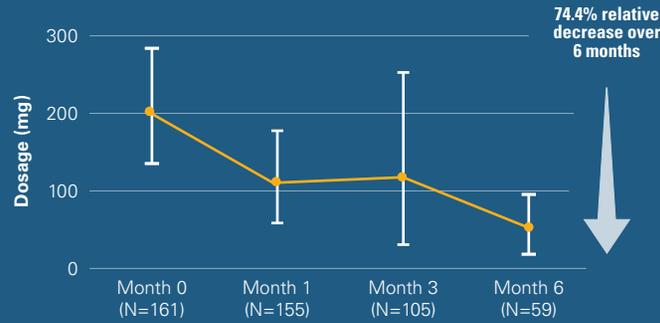


The majority of patients using an opioid — **over 60%** — stopped opioid use completely.

Odds ratio of using opioids relative to baseline was 0.12 at 6 months (p<0.001).

Significant decrease in opioid dosage

Mean daily opioid dosage (95% CI) over 6 months (users at baseline)

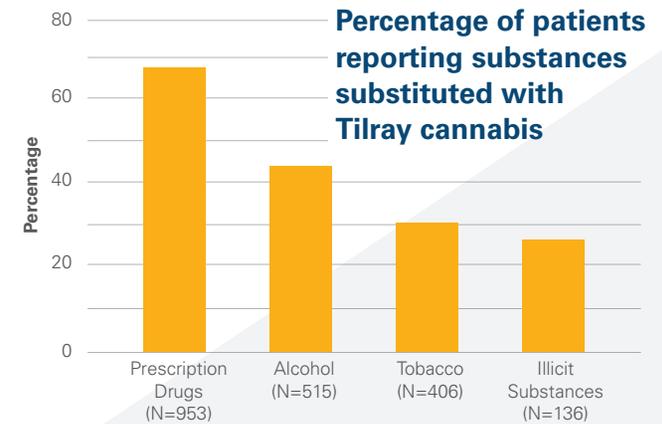


Mean daily dosage decreased from 187 mg/day to 48 mg/day*

*mg per dose (as recorded in the database) was converted to mg per day by multiplying mg per dose with the frequency per day; oral morphine equivalence dose was calculated based on the Opioid Oral Morphine Milligram Equivalent (MME) Conversion Factor

Patients accepted cannabis as an effective substitute and/or adjunct for other substances.*

Cannabis may play a significant role in harm reduction



*From Cannabis as a Substitute for Opioids, Alcohol, Tobacco and Other Substances; Results of a large survey of Canadian Medical Cannabis Patients, a 239-question patient feedback questionnaire of 2032 medical cannabis patients registered with Tilray, 2017.

Substitution for prescription drugs was reported by 69% of respondents (n=953), and the most cited drugs were opioids (35.3%; n=610), antidepressants (21.4%; n=371), non-opioid pain medications (10.9%; n=189), anti-seizure medications (8.6%; n=149), muscle relaxants/sleep aids (8%; n=140) and benzodiazepines (4.3%; n=75).

Patients cited reasons for substitution included: "safer alternative," "fewer side effects," "better symptom management," and "fewer withdrawal symptoms."

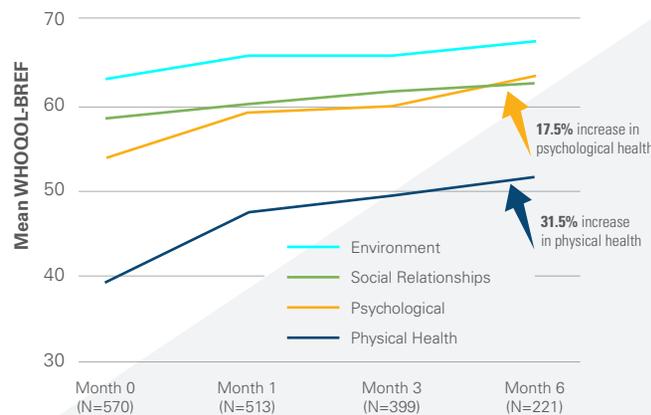
Substitution for illicit agents included crack/cocaine, psychedelics, non-prescription opioids, stimulants, and depressants.

Tilray patients report significant improvements in their quality of life with the use of Tilray medical cannabis.*

WHOQOL-BREF was completed by patients, at baseline, 1 month, 3 months, 6 months and 12 months.

Most significant improvements were reported in physical health (12.3 points) and psychological health (9.4 points) but all measures, including environment and social relationships showed statistically significant improvement.

World Health Organization Quality of Life—BREF scores (all patients)



*Longitudinal study of >1600 Tilray patients at 20 medical clinics in 5 provinces, the largest Canadian national longitudinal cannabis study to date. This preliminary data based on 573 patients enrolled before December 1, 2017. Median cannabis use was 7 g per week (month 1).

