



JUNE 2021 REPORT

PAIN PATIENTS: A CLOSER LOOK

"Introducing RYAH Data, our new data analytics report leveraging insights from our proprietary data lake."

*- Gregory Wagner,
CEO, Ryah Medtech, Inc.*

THE QUESTION

Increasingly, studies show that access to medical cannabis reduces problems related to opioid use and misuse.

With an aim to reduce opioid use and misuse, what pain conditions benefit most from local access to medical cannabis?

FOR MORE INFORMATION CONTACT

 205 East 42nd Street 14th floor
New York, NY 10017

 +1 917.210.0543

 info@ryah.com

 <https://ryah.com>
<https://ryahgroup.com/>

THE ANSWER

Between January 1, 2018, and February 15, 2021, more than 41,260 patients reported medical cannabis use for the treatment of pain conditions in the RYAH Data ecosystem.

Generalized chronic pain was the most common pain condition treated among all patients, followed by headaches, migraines, and inflammation.

Men typically treat pain conditions with medical cannabis more than women, especially for headaches and migraines.

For patients treating arthritis, headaches, migraines, and inflammatory pain, CBD-rich strains were most preferred. Top strains for the management of pain included AC/DC and Charlotte's Web.

28.4% OF PATIENTS USE
MEDICAL CANNABIS
FOR PAIN CONDITIONS

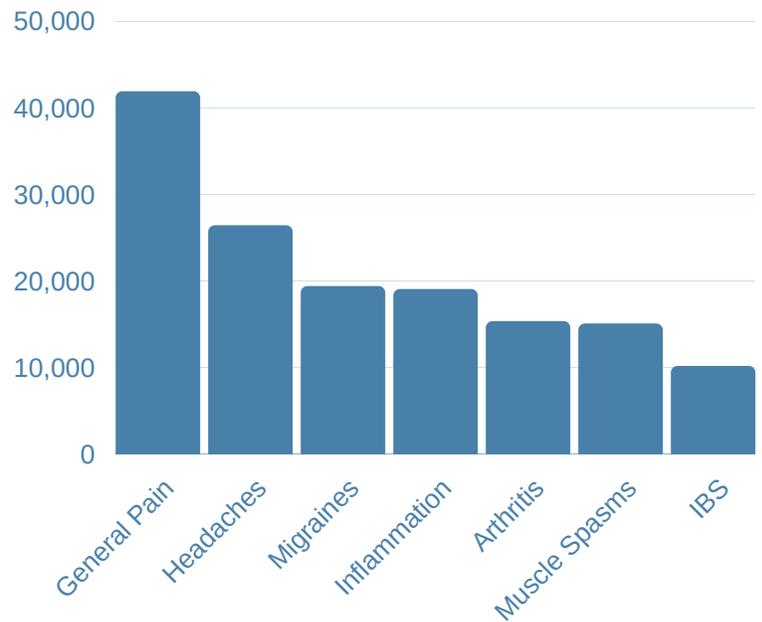
ANALYSIS

As outlined in a 2017 review, "Multiple studies have reported an increased risk of new persistent opioid use after prescription of opioids for acute pain in opioid naïve patients."

In several previous studies, the authors found "the total duration of opioid prescription was the strongest predictor of misuse," and that "each prescription refill was associated with a 44 percent increase in the rate of misuse, and each additional week of opioid use increased the risk of misuse by 20 percent."

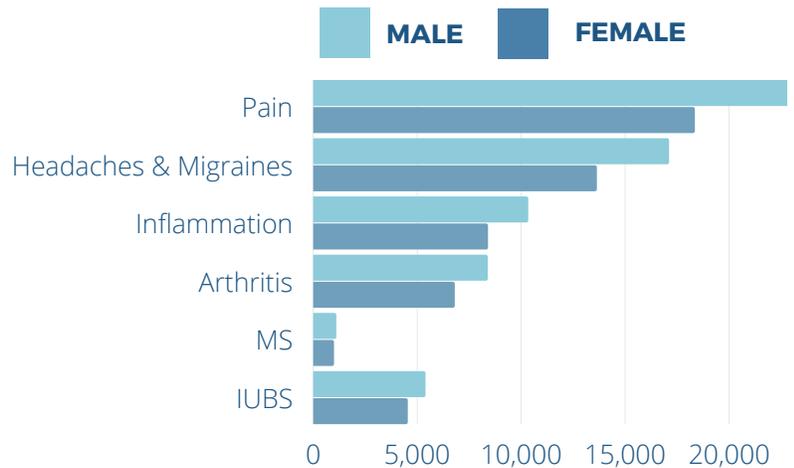
There is an urgent need to develop alternative pain therapies with lower risks of misuse (and abuse) and better long-term safety profiles. Medical cannabis could offer one such solution. [1]

PAIN CONDITIONS

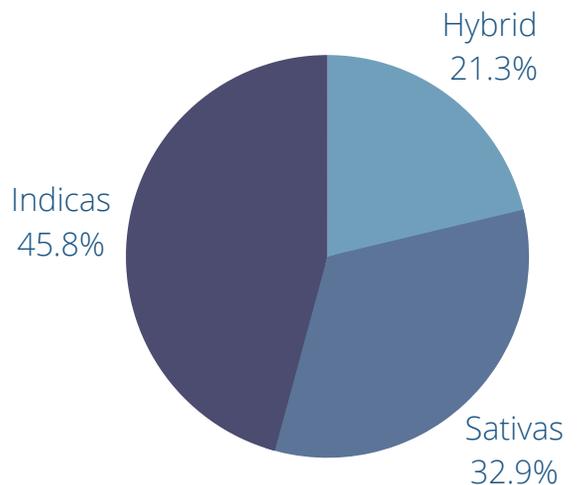


GENDER

BY CONDITION



STRAIN TYPE



ANALYSIS

A 2016 study discovered that 12% of patients with rheumatoid arthritis used opioids chronically.

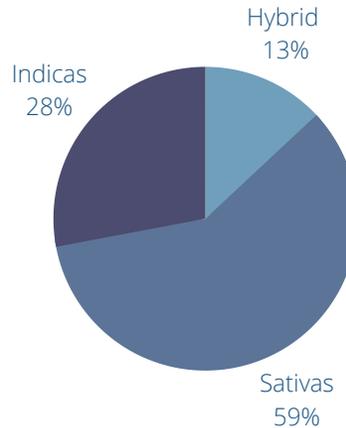
Thirty percent of patients with of patients with rheumatoid arthritis use opioids. [2]

A 2014 study determined that opioids were used in more than 50% of emergency department migraine visits. [3]

In 2015, study discovered that inflammatory pain increased the self-administration of opioids, which altered the function of the opioid receptors. Altered receptors led to dose escalation. [4]

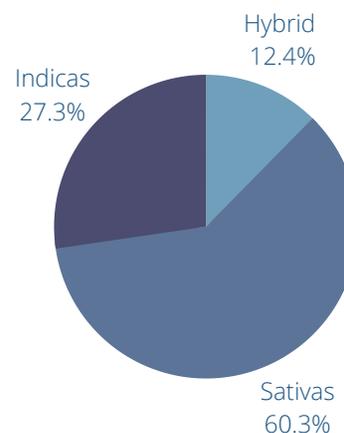
STRAIN PREFERENCES

ARTHRITIS



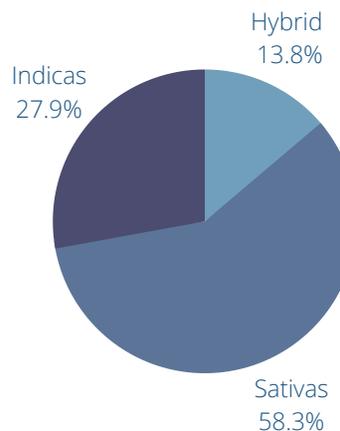
- 1 AC/DC
- 2 CANNATONIC
- 3 HARLEQUIN
- 4 BANANA HAZE
- 5 SUPER LEMON HAZE

HEADACHES & MIGRAINES



- 1 CHARLOTTE'S WEB
- 2 CINDERELLA
- 3 BLUEBERRY
- 4 CHEESECAKE
- 5 3 KINGS

INFLAMMATION



- 1 AC/DC
- 2 HARLEQUIN
- 3 CANNATONIC
- 4 SUPER LEMON HAZE
- 5 CHARLOTTE'S WEB

ADDITIONAL SOURCES

[1] Wakeman, S. E., MD, & Pino, C. A., MD. (20). Prescription of opioids for acute pain in opioid naïve patients. UptoDate. Retrieved February 17, 2021, from <https://www.uptodate.com/contents/prescription-of-opioids-for-acute-pain-in-opioid-naive-patients>

[2] Zamora-Legoff, J.A., Achenbach, S.J., Crowson, C.S. et al. Opioid use in patients with rheumatoid arthritis 2005–2014: a population-based comparative study. *Clin Rheumatol* 35, 1137–1144 (2016). <https://doi.org/10.1007/s10067-016-3239-4>

[3] Minen, M. T., Tanev, K., & Friedman, B. W. (2014). Evaluation and Treatment of Migraine in the Emergency Department: A Review. *Headache: The Journal of Head and Face Pain*, 54(7), 1131–1145. doi:10.1111/head.12399

[3] Hipólito, L., Wilson-Poe, A., Campos-Jurado, Y., Zhong, E., Gonzalez-Romero, J., Virag, L., Whittington, R., Comer, S. D., Carlton, S. M., Walker, B. M., Bruchas, M. R., & Morón, J. A. (2015). Inflammatory Pain Promotes Increased Opioid Self-Administration: Role of Dysregulated Ventral Tegmental Area μ Opioid Receptors. *The Journal of neuroscience : the official journal of the Society for Neuroscience*, 35(35), 12217–12231. <https://doi.org/10.1523/JNEUROSCI.1053-15.2015>

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