

## Chronic Pain

An estimated one in five US adults suffers from a chronic pain condition of a duration of six months or more and requiring medical intervention. Nearly half of these patients report that their pain persists despite the use of conventional pain medicines, such as NSAIDs and opioids. Health economists estimate that the annual cost of chronic pain in the United States is \$635 billion in health care costs and lost productivity.<sup>1</sup>

Cannabis and cannabinoids – as well as specific flavonoids (phytonutrients) in the plant<sup>2</sup> – are well-documented to possess pain-relieving properties. Recent reviews of the clinical literature identify dozens of controlled studies, involving thousands of patients, documenting the safety and efficacy of cannabinoids in pain management.<sup>3</sup> A 2017 review of over 10,000 peer-reviewed scientific papers by the National Academies of Sciences, Engineering, and Medicine acknowledged, “In adults with chronic pain, patients who [are] treated with cannabis or cannabinoids are more likely to experience a clinically significant reduction in pain symptoms. ... There is conclusive or substantial evidence that cannabis is effective for the treatment of chronic pain in adults.”<sup>4</sup>

Numerous gold-standard (randomized, placebo-controlled) trials document the ability of either inhaled or vaporized herbal cannabis to significantly mitigate pain in various populations as well as in healthy volunteers exposed to laboratory-induced pain.<sup>5-6</sup> Specifically, several trials report clinically significant reductions in pain in patients with HIV,<sup>7-8</sup> diabetes,<sup>9</sup> spinal cord injury,<sup>10</sup> or with severe treatment-resistant neuropathy (nerve pain),<sup>11-13</sup> among other chronic conditions. These positive results have been replicated in clinical trials utilizing relatively low doses of cannabis<sup>14-15</sup> as well as in trials using plant-derived cannabis extracts.<sup>16-17</sup>

Longitudinal data further shows that cannabis provides patients with continued pain relief long term without producing significant adverse side effects,<sup>18</sup> including among elderly populations.<sup>19-20</sup>

The co-administration of either smoked cannabis or oral cannabinoids has been documented to augment the pain-relieving effects of opioids. In one study, vaporized herbal cannabis was demonstrated to enhance the pain-relieving activity of morphine and oxycodone in chronic pain subjects, therefore potentially allowing “for opioid treatment at lower doses with fewer side effects.”<sup>21</sup> Another study reported similarly enhanced analgesic efficacy when low doses of oral THC were combined with hydromorphone (aka Dilaudid). Authors reported, “These data ... are indicative of [the] possible opioid-sparing effects” of cannabinoids.<sup>22</sup> These synergistic effects have also been documented in settings where subjects were provided with only sub-therapeutic doses of cannabis and opioids.<sup>23</sup>

Numerous studies of various patient populations, including those with chronic pain,<sup>24-25</sup> cancer,<sup>26</sup> fibromyalgia,<sup>27</sup> multiple sclerosis,<sup>28</sup> and other conditions, consistently find that subjects taper or even eliminate their use of prescription pain medications following the use of cannabis.<sup>29-30</sup> There are now dozens of peer-reviewed papers documenting this trend. Some observational studies have similarly reported reductions in opioid-related mortality following the enactment of marijuana access.<sup>31-33</sup>

Not surprisingly, among patients enrolled in state-specific medical cannabis access programs, over 65 percent are registered to use the substance for the treatment of chronic pain.<sup>34</sup> This is the most commonly reported qualifying condition among active US cardholders.

The use of cannabis for pain, and as a potential substitute for opioids and other prescription analgesics, is rapidly becoming more accepted among clinicians,<sup>35,36</sup> with a coalition of physicians in 2020 issuing “consensus-based recommendations surrounding the safe introduction and titration of cannabinoids in concert with tapering opioids.”<sup>37</sup>

## REFERENCES

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