

## CORR Insights®: Has Self-reported Marijuana Use Changed in Patients Undergoing Total Joint Arthroplasty After the Legalization of Marijuana?

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### Where Are We Now?

In the last decade, there has been a considerable shift in the United States regarding perceptions about marijuana—both as a potential medicine and in terms of its recreational use. Medical marijuana now is legal in 28

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*This CORR Insights® is a commentary on the article “Has Self-reported Marijuana Use Changed in Patients Undergoing Total Joint Arthroplasty After the Legalization of Marijuana?” by Jennings and colleagues available at: DOI: 10.1097/CORR.0000000000000339.*

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This CORR Insights® comment refers to the article available at DOI: 10.1097/CORR.0000000000000339.

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states and the District of Columbia, and regardless of one’s personal views regarding the value of medical marijuana, our patients are becoming more interested in it. The current study by Jennings and colleagues [6] further shows that patients are more comfortable talking with their healthcare providers about its use. In fact, the authors of the current study found that the destigmatization of marijuana use within the state of Colorado has led either to an increase in the willingness of patients to discuss marijuana use with their healthcare providers, or perhaps even to an increase in its use [8]. How this relates to patients’ perceived pain management, or the potential risks related to marijuana use, is unknown.

There is a robust debate across the country in terms of the use of marijuana to treat various medical conditions. The treatment of chronic pain and the potential for reducing opioid use is cited as one of the most common uses for medical marijuana [3]. Direct clinical studies have shown a modest effect in decreasing the need for opioid pain medications in the treatment of chronic and neuropathic pain [7]. Recent nationwide database

studies report that states with liberalized medical marijuana laws have seen both a decrease in opioid prescriptions [2, 8] and a decrease in opioid-related mortality [1]. There may be some role for marijuana in the management of chronic pain [4]. However, there is no evidence to support the use of marijuana in the management of acute pain related to either injury or surgery.

Regardless of the incomplete medical evidence for the use of marijuana in treating pain, many patients appear to be convinced of its efficacy. In the state of Massachusetts, the majority of patients treated for musculoskeletal injury believed that marijuana is both a medicine and that it is useful in the treatment of pain [5]. Those who self-reported marijuana use in that study believed that they used less opioid pain medication because of their marijuana use.

### Where Do We Need To Go?

It appears that marijuana use does have some potential benefit in the management of chronic pain in terms of reducing opioid use. However, there is no data to either support or discourage its use within the orthopaedic patient population. As such, there are three key questions that still need to be answered:

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First, we know very little about any potential harmful effects of marijuana use in orthopaedic patients. There may be adverse effects on the rate of post-operative infection, bone healing, or the development of substance abuse issues, but we need studies to confirm or dispute this.

Further, we need to know whether marijuana can help manage the chronic pain associated with orthopaedic conditions such as arthritis or chronic back pain. Most of the current data is based on large database studies without direct study of individual patient records. There are many potential confounders to the observed data, such as the heightened awareness of the opioid epidemic and increased scrutiny of opioid prescribing over the last few years that may have played a role in the decrease in overall opioid prescriptions.

Finally, while some data suggest that marijuana provides a benefit in managing chronic pain, there are no data regarding the use of marijuana in patients with either injury- or surgery-related pain [4]. Further study in this area is needed.

### How Do We Get There?

The use of marijuana, for medicinal uses or otherwise, is a polarizing topic. Proponents and opponents alike have strong beliefs and only through careful and deliberate study can we best understand the role (if any) medical marijuana has in orthopaedic patients.

There is no direct evidence, regarding the potential effects—whether in terms of benefits or harms—of medical marijuana in the orthopaedic population. As orthopaedic surgeons, we need to understand the potential uses, limitations, and adverse effects that may be associated with marijuana

use so that we can educate our patients effectively.

The largest obstacle to fully understanding any possible role of marijuana is the stigma and negative associations that exist around its use. While many states now condone the use of medical marijuana, it remains classified as a Schedule I Controlled Substance by the FDA and it is still illegal under federal law to produce or distribute marijuana. Enrolling patients who never use marijuana into a study where they may be randomized to receiving an illegal substance may prove difficult. Conversely, long-term users of marijuana may not be representative of the population as a whole. To fully understand the safety issues of marijuana, in terms of infection, nonunion, and the potential for substance abuse, researchers would need to develop randomized controlled trials involving thousands of patients. But the ability to study medical marijuana is confounded by the diverse types of marijuana available and the various methods of use making it difficult to have a standardized or reproducible dose. Given the issues that surround marijuana use, and the debate regarding medical and recreational marijuana, funding and performing large randomized trials regarding its use and efficacy is unlikely.

The most reasonable, and achievable, short-term approach is to complete a series of large prospective observational studies. These studies can focus the patient populations who have traditionally required opioid pain medications such as those with chronic back pain, hip and knee arthritis, and trauma. These studies can involve chronic pain patients, as well as patients with acute postinjury or post-surgery pain. Studies like this should be relatively easy to accomplish given the number of states with medical marijuana laws and the apparent

willingness of patients in those states to discuss their marijuana use. There are a large number of patients currently using marijuana to either manage the chronic pain associated with musculoskeletal complaints, or following surgery. However, these studies will have significant limitations and every effort should be made to address possible confounding. Many patients enrolled who report using medical marijuana will be long-time marijuana users. It is likely that this group is different from nonusers in terms of need for opioid pain medications, medical comorbidities, and life-style choices that may all impact both the need for opioids, and the risk of complications. Given these limitations, if these studies show no increase in the risk of complications, the only conclusions that could be drawn is that marijuana use by long-term users may be safe.

Given the charged nature of the debate surrounding medical marijuana, it is unlikely that we will have any real evidence to help settle the issues the use of marijuana raises in the near-term.

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