

Cannabis for Managing Hip and Knee Pain—Pre- and Post- Operative Options

Why consider medical marijuana (Cannabis)?

Narcotics have traditionally been given for pain control after joint replacement surgery and sometimes beforehand. We now understand this can cause major problems, including long-term narcotic addiction and a higher possibility of a poor result after joint replacement. There has been an increasing focus on narcotic abuse in the United States with a major effort to decrease the prescribing of narcotics. The overall national narcotic dispensing rate declined from 2012 to 2020, and in 2020, was at the lowest point in the past 15 years (1).

Alternative medications and practices for pain management are being studied for joint pain before and after total joint replacement. Cannabis (or marijuana) has been proposed as an option to help treat joint pain but remains controversial. In 1970, the United States Federal Controlled Substances Act classified marijuana as a Schedule 1 drug. This means it has a high potential for abuse and no medical usefulness. Due to this ruling in 1970, research to explore the potential medical effects of marijuana has been difficult. Recent legalization of marijuana for medical and/or recreational use in many states has led to a renewed interest.

What is medical marijuana and CBD?

THC (d-9-tetrahydrocannabinol) and CBD (cannabidiol) are the main active ingredients in marijuana. THC is produced from the marijuana while CBD is harvested from hemp. Hemp and marijuana are the same plant species, and both typically produce THA and CBD, but hemp is defined as a plant that contains 0.3% THC or less while marijuana is a plant with greater than 0.3% THC. The United States Department of Agriculture (USDA) released a final ruling on hemp production in 2021, that federally allows for the growth of hemp and provides structure and restrictions for hemp farming. Despite this, it remains illegal at the federal level to grow marijuana, even though many states now allow it (2).

Cannabinoids, such as CBD, act throughout the body. THC has more effects on the brain, while CBD has more effects on the immune system, GI tract, and spleen. CBD does not produce the same psychoactive effects as THC (the recreational drug part of marijuana described as being high), and potentially is more anti-inflammatory in nature. THC and CBD are available in many forms to the consumer including the dried leaf and concentrated preparations such as oil, cream, or food products. These products can be used in different ways depending on how they are prepared and can include smoking, vaping, oral ingestion (eating or taking in pill form) and applying to the skin. Smoking or vaping produces the most rapid delivery. Oral ingestion can be less favorable due to difficulty controlling dosage.



What are the side effects of medical marijuana?

The effects of medical marijuana depend on the person using it, the method used to take it, and the amount that is taken. Common side effects include dizziness, euphoria, confusion, disorientation, somnolence, dry mouth, nose or throat irritation, paranoia, and nausea. Severe side effects are rare but there have been reports of cardiovascular compromise in patients with underlying heart disease and acute psychiatric effects such as psychosis (3). Side effects are dose-dependent with serious medical events usually seen with high THC concentrations in recreational use (4). The side effects of medical marijuana need to be investigated further to have a better understanding of how much should be used and who should consider using it.

Should I use medical marijuana or CBD products for joint replacement surgery?

There is currently little evidence supporting the use of medical marijuana for pain after joint replacement surgery. While just over 20% of patients presenting to a surgeon for hip and knee arthritis may report CBD use, there appears to be little to no perceived benefit at this time (Deckey et al.)” A study showed no evidence to support cannabinoid use for arthritis at this time (6). Another study reviewed 81 joint replacement patients who were given dronabinol, a synthetic oral cannabinoid approved for treating nausea and vomiting in patients with cancer. This was given in addition to the standard postoperative pain medications. The dronabinol group had a shorter hospitalization and lower morphine consumption, which was promising in terms of pain reduction (7). A 2019 study, however, showed that cannabis use had no effect, positively or negatively, on outcomes after TKA (8). Furthermore, another study suggested higher revision rates after TKA in patients using cannabis (9). Another recent study with a very small sample size showed no decrease in narcotic requirements in patients that used CBD/THC products (10). Topical CBD products also do not appear to help with pain control after surgery (11).

Most of the existing literature is of limited value in guiding physicians and their patients since performing high quality studies on this topic is difficult. No federal funding is available for research since the federal government considers cannabis a Schedule 1 drug (high potential for abuse, no medical usefulness). Furthermore, in states that have legalized marijuana use, there is little regulation regarding potency, making it nearly impossible to standardize. Further research is needed to determine its usefulness in joint replacement surgery.

Is medical marijuana or CBD for me?

Medical marijuana is not FDA-approved; thus the treatment regimen (dosing, frequency, route of administration) is guided by dispensaries, not the physician. This means that there is little guidance for how to use medical marijuana or CBD. There are guidelines as to when physicians should consider providing patients with a prescription for the use of medical marijuana in states where it is legal. Patients need to be screened carefully and counseled on potential risks. In legal states, recreational marijuana, which generally contains higher THC concentrations, does not require physician certification. CBD and hemp oils are managed differently as they have very low concentration of THC. These do not require physician certification in the vast majority of states.



Conclusion

Medical cannabis has potential benefits in pain control and decreasing opioid usage after total joint replacement. Due to federal regulations, politics, and social stigma, conducting high quality research is difficult. As medical marijuana regulations slowly change, determining its usefulness after hip and knee replacement will need further exploration before recommendations are made. We recommend having a discussion with your arthroplasty surgeon if you are considering the use of THC or CBD products for treatment of your arthritis and/or for pain control with joint replacement surgery.

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This article has been written by Obi Adigweme, MD in collaboration with and the AAHKS Patient and Public Relations Committee and the AAHKS Evidence Based Medicine Committee. Links to these pages or content used from the articles must be given proper citation to the American Association of Hip and Knee Surgeons.

