



Summaries from the NFL/NFLPA Committee on Pain Management: 1) Alternatives to Opioids for Long-Term Pain and 2) Cannabidiol (CBD) and Cannabis

ALT-O: Alternatives to Opioids for Long-Term Pain

Opioids are strong pain medications that are very effective for short-term pain from injuries or surgery. Unfortunately, opioids have potential for addiction and misuse due to their powerful effects, especially when they are used for long-term, or chronic, pain. Medical research has shown that there are alternatives to opioids that should be used instead of opioids for chronic pain. Medication alternatives that include aspirin, ibuprofen brand name Motrin®), and acetaminophen (brand name Tylenol®). Non-medication treatments for chronic pain include acupuncture, biofeedback (where players are trained to slow their breathing and heart rate) and therapeutic massage.

Aspirin is a common pain reliever. Aspirin has a ceiling effect, as do the other medications like it, which means that higher doses above the recommended dosage for pain does not provide additional pain relief. Higher doses will, however, increase the risk of side effects.

There are other commonly-used pain relievers as well, including ibuprofen (Motrin), naproxen (brand name Aleve®), and ketorolac (brand name Toradol®). They are especially useful for muscle and joint pain from conditions such as arthritis. These medications also help lower fever and reduce swelling. Ketorolac is an especially strong pain reliever that is used to treat moderate to severe pain and inflammation.

Several recent research studies demonstrate the benefits of common pain relievers, and found that opioids like Percocet or Vicodin are no better than pain relievers like aspirin and ibuprofen at reducing how much pain affects daily activities, such as working, walking or sleeping. Patients taking common pain relievers reported less pain those prescribed opioid medications like Percocet or Vicodin.

Acetaminophen (Tylenol) is an effective pain reliever for mild to moderate pain. It is not like aspirin and ibuprofen as it does not have anti-inflammatory properties. Like the aspirin or ibuprofen, it also has an analgesic ceiling effect—at some point raising the dose does not help. An important benefit of acetaminophen is that it will not hurt the stomach and intestinal lining. An important potential dangerous side effect is that high doses of acetaminophen can lead to severe liver problems. Unfortunately, it is reported that 20% of liver transplants performed in the US is a result of acetaminophen overdose.

Acupuncture, where very thin needles are inserted at different places in the skin to stop pain signals, is another therapy that may provide relief of long-term pain. Acupuncture works through the body's natural opioid system. It is effective for reducing back and neck pain, arthritis, chronic headache, and shoulder pain.

Therapeutic massage may relieve pain by physically relaxing painful muscles, tendons, and joints, and mentally reducing stress and anxiety. Arthritis is a condition that can be positively affected by massage therapy. However, the recommended 2 to 4 sessions per week may not be practical for many patients.

Biofeedback teaches relaxation techniques and ways to control breathing and heart rate to help manage pain and other life stressors. There are no associated risks with this therapy.

Depending on existing health conditions, exercise therapy (e.g., walking, swimming, yoga,) can address posture, weakness, or repetitive motions that contribute to muscle pain. In addition to physical function, exercise can improve mental health.

State of the Science: Cannabidiol (CBD) and Cannabis

As cannabis (marijuana) rules change in the United States, interest in the medical uses of cannabis and cannabinoids (chemicals found only in the cannabis plant) like cannabidiol (CBD) is growing. In the US as of August 2019, 33 states and the District of Columbia (DC) and 11 states and DC have passed laws for medical and recreational cannabis, respectively. Some players may see CBD and medical cannabis as possible answers to their medical problems—especially pain problems—but the state of the science is confusing.

The cannabis plant contains hundreds of chemicals, including over 140 cannabinoids. We know two of these cannabinoids better than the others: delta-9-tetrahydrocannabinol (THC) and CBD. THC makes the “high” that users may feel as well as paranoia that some users feel as well. CBD does not make users high and it seems to have exciting anti-anxiety and anti-psychotic properties, functioning as a buffer of sorts to the effects of THC.

CBD is a promising compound, but the level of its use in the United States outpaces the level of research at this point. Most of the hype about CBD is based upon results from animal studies.¹ Clinical trials in large numbers of people are usually needed before millions of Americans use a medication for serious medical problems. There are two small clinical studies that suggest that CBD may be effective for treating a kind of pain called neuropathic pain that involves a burning feeling usually in a person’s feet.

Due to the fact that the most CBD products are bought from online, it is hard to know what is really in these products. One study showed that only 30%, less than 1 in 3, of CBD products online contained the amount of CBD shown on the label.² Some of these products may contain THC, resulting in a positive drug test. In addition, CBD may cause bad side effects if you are taking some other medications that it reacts badly with.

Medical cannabis, or medical marijuana, has been studied more in recent years.³ There are a few small clinical trials that show cannabis and the first two FDA-approved cannabinoids, dronabinol and nabilone, to be effective treatments for long-

term pain and neuropathic pain. These trials were not very big and not very long, so more clinical trials are needed. Of course, cannabis remains a banned substance under the NFL Policy for Substances of Abuse. In addition, the potential problems associated with cannabis, from effects on driving, addiction, and worsening of psychiatric disorders such as depression and anxiety, make it a substance to approach with extreme caution. As always, when you are thinking about whether a medication may be helpful to you, we encourage you to discuss it with your doctor.

References

1. Pisanti S, Malfitano AM, Ciagli E, et al. Cannabidiol: State of the art and new challenges for therapeutic applications. *Pharmacol Ther* 2017 175: 133-150.
2. Bonn-Miller MO, Loflin MJE, Thomas BF, et al. Labeling accuracy of cannabidiol extracts sold online. *JAMA* 2017 318: 1708-1709.
3. Hill KP, Palastro MD, George TP. Therapeutic cannabis use in 2018: Where do we stand. *Lancet Psychiatry* 2019 6:88-89.