

No bones about it: Cannabis may be used to treat fractures

July 16 2015



Cannabis—marijuana, hashish—was used as a go-to medical remedy by societies around the world for centuries. But the therapeutic use of marijuana was banned in most countries in the 1930s and '40s due to a growing awareness of the dangers of addiction. The significant medical benefits of marijuana in alleviating symptoms of such diseases as Parkinson's, cancer, and multiple sclerosis have only recently been reinvestigated.

A new study published in the *Journal of Bone and Mineral Research* by Tel Aviv University and Hebrew University researchers explores another promising new medical application for [marijuana](#). According to the

research, the administration of the non-psychoactive component cannabinoid cannabidiol (CBD) significantly helps heal [bone fractures](#). The study, conducted on rats with mid-femoral fractures, found that CBD—even when isolated from tetrahydrocannabinol (THC), the major psychoactive component of cannabis—markedly enhanced the healing process of the femora after just eight weeks.

The research was led jointly by Dr. Yankel Gabet of the Bone Research Laboratory at the Department of Anatomy and Anthropology at TAU's Sackler Faculty of Medicine and the late Prof. Itai Bab of Hebrew University's Bone Laboratory.

Undeniable clinical potential

The same team, in earlier research, discovered that [cannabinoid receptors](#) within our bodies stimulated bone formation and inhibited bone loss. This paves the way for the future use of cannabinoid drugs to combat osteoporosis and other bone-related diseases.

"The clinical potential of cannabinoid-related compounds is simply undeniable at this point," said Dr. Gabet. "While there is still a lot of work to be done to develop appropriate therapies, it is clear that it is possible to detach a clinical therapy objective from the psychoactivity of cannabis. CBD, the principal agent in our study, is primarily anti-inflammatory and has no psychoactivity."

According to Dr. Gabet, our bodies are equipped with a cannabinoid system, which regulates both vital and non-vital systems. "We only respond to cannabis because we are built with intrinsic compounds and receptors that can also be activated by compounds in the cannabis plant," he said. The researchers found that the skeleton itself is regulated by cannabinoids. Even the addition of a non-psychoactive compound acting outside of the brain can affect the skeleton.

Separating the components out

"We found that CBD alone makes bones stronger during healing, enhancing the maturation of the collagenous matrix, which provides the basis for new mineralization of bone tissue," said Dr. Gabet. "After being treated with CBD, the healed [bone](#) will be harder to break in the future."

The researchers injected one group of rats with CBD alone and another with a combination of CBD and THC. After evaluating the administration of THC and CBD together in the rats, they found CBD alone provided the necessary therapeutic stimulus.

"We found CBD alone to be sufficiently effective in enhancing [fracture healing](#)," said Dr. Gabet. "Other studies have also shown CBD to be a safe agent, which leads us to believe we should continue this line of study in clinical trials to assess its usefulness in improving human fracture healing."

Provided by Tel Aviv University

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