

Non-psychoactive cannabinoids show promise for pain relief

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Some cancers love bone. They thrive in its nutrient-rich environment while gnawing away at the very substrate that sustains them, all the while releasing inflammatory substances that cause pain—pain so severe that opioids often are prescribed to allay the agony.

But opioids recently have been denounced for their addictive nature. This summer, the nation's opioid crisis was declared a national emergency.

Long before that, Todd Vanderah of the University of Arizona had been seeking ways to create alternative analgesics. He and his colleagues are now seeing promise in a specific class of chemical compounds that may help people find pain relief brought about by metastatic [breast cancer](#).

Those compounds, says Vanderah, head of the Department of Pharmacology in the College of Medicine – Tucson, are unique, non-psychoactive cannabinoids. In other words, they do not bring about the euphoria typically associated with cannabinoids. What's more, these particular

chemical compounds help slow bone loss, unlike opioids, while slowing the proliferation of the cancer.

Vanderah and his colleagues have published several peer-reviewed studies investigating unique cannabinoids' analgesic viability as well as the mechanisms behind opioids' addictive properties.

The latest studies show that sustained opioid use in metastatic cancer may enhance bone loss, says Vanderah, an expert on opioid addiction, whereas non-psychoactive cannabinoids actually inhibit [bone loss](#) and pain.

A recent publication by Vanderah and his colleagues in the journal *Neuropharmacology* demonstrated that the combination of the non-psychoactive cannabinoid with a low dose of an opioid resulted in [pain relief](#) while significantly reducing the addictive property of the [opioid](#).

Researchers are now using different kinds of cannabinoids to slow the proliferation and spread of cancer. Vanderah says there are 400 [chemical compounds](#) within a marijuana plant, with only one or two being tested for medicinal use. Studies so far have shown that cannabinoids slow the spread of brain and colon cancer in addition to breast cancer.

"It won't kill the cancer cells off, but it slows the proliferation," he says, adding that this finding was something of a delightful surprise. "Now we're trying to figure out how the cannabinoid slows the breast [cancer](#) proliferation.

"That's one of those things I love about science: when we don't expect something to happen and then we end up working another several years on a project that we thought would be done with one or two publications."

More information: Shaness A. Grenald et al.

Synergistic attenuation of chronic pain using mu opioid and cannabinoid receptor 2 agonists, *Neuropharmacology* (2016). DOI: [10.1016/j.neuropharm.2016.12.008](https://doi.org/10.1016/j.neuropharm.2016.12.008)

Provided by University of Arizona

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