

Cannabis in Modern Medicine

by [Dr. Joseph Mercola](#)

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[Source](#)

https://youtu.be/tSvx9v_H0n8

STORY AT-A-GLANCE

- Tetrahydrocannabivarin (THCV), while very similar to tetrahydrocannabinol (THC, the psychoactive part of marijuana), is not psychoactive, but can still induce a sense of “focused euphoria”
- THCV appears to be particularly effective for depression, anxiety and pain conditions. THCV has also been shown to improve symptoms of Parkinson’s disease and prevent progression of the disease
- A combination of THCA and CBD has been shown to reverse a majority of the symptoms associated with myasthenia gravis, a neuromuscular disorder that causes muscle weakness
- Cannabis is nonaddictive. The U.S. federal government puts THC addiction at about 4%. CBD addiction is nonexistent
- You can’t die from a cannabis overdose, as your brainstem, which controls your breathing and heart rate, has virtually no cannabinoid receptors

Dr. Allan Frankel, a board-certified internist at GreenBridge

Medical in Santa Monica, California, has treated patients with [medical cannabis](#) for the past 13 years.

The first time I interviewed him back in 2014, cannabis laws in the U.S. were quite different, so in this interview, he provides us with a much-needed update. Not only is recreational use of cannabis now legal in California and several other states, but [hemp](#) is also legal nationwide, thanks to a change in the farm bill passed at the end of 2018.¹ As noted by Frankel:

“Cannabis is becoming more and more a viable option that people can count on; you can have reliable dosing. There are certainly a lot of bad products out there ... In general, we’re looking for whole-plant [products].”

Hemp is going through a big change now because with the farm bill, the Version 2 hemp is going to be cannabis plants that started with 0.4% tetrahydrocannabinol (THC). I actually developed some of those. Now we just went to 0.3%. With the new farm bill, that’s defined as hemp. It’s basically whole-plant cannabis ... So, it’s confusing out there.”

Exciting Developments in Cannabis Medicine

Frankel is particularly excited by the discovery of a new cannabinoid molecule, tetrahydrocannabivarin or THCV. While very similar to THC, which is the psychoactive part of marijuana, THCV is not psychoactive, but can still induce a sense of “focused euphoria.”

“It’s a wonderful feeling, I think, for [those with] depression and anxiety,” Frankel says. It’s also helpful for pain, which is a really important medical need. Opioids are now killing an estimated 47,600 Americans annually,² and we

desperately need safer alternatives. Medical cannabis is one such alternative.

THCV has also been shown to improve symptoms of Parkinson's disease and prevent progression of the disease. As of right now the majority of plant strains contain about 50/50 THCV and THC. Breeding will eventually lower the THC content to within legal limits though, Frankel says, who estimates breeders may be able to lower the THC content to within legal limits in three to five years.

"I would say the most exciting thing that we've found with THCV is for treating existing neuropathy. There are 20 million people in this country who have neuropathic pain. It's been called suicide pain. It's horrible, horrible pain. There's not very good medication for it ... But it turns out THCV works unbelievably well for neuropathic pain."

A couple of animal studies have also looked at THCV for [multiple sclerosis](#) (MS). Two of Frankel's MS patients used transdermal THCV, resulting in the resolution of neuropathic discomfort, weakness and pain from their feet to their thighs.

"That's definitely one thing we're going to be pursuing a lot," Frankel says. "It's for mood, for seizures. You've got to get a little bit less THC in it. But for seizures, I see where it's going to be cannabidiol (CBD), tetrahydrocannabinolic acid (THCA), THCV or cannabidivarin (CBDV) – similar to treating cancer."

If we can have five or eight different major cannabinoids and maybe 100 terpenes that all kill cancer, why not mix them together? I mean, why wouldn't we want them together since they balance each other's side effects (and there's not much in the way of side effects)."

Autoflowers 101

While most have only heard of sativa and indica, there's a third cannabis strain called ruderalis, which is an autoflower. Frankel explains:

“What happened a few thousand years ago is sativas that were trying to grow in the steppes of Russia, the summers were so short with so little light that it was impossible for them to go through growth and then a flowering period. One plant, one day, had a little genetic change.

It started flowering at the same time that it's growing. It's amazing when you see these plants, because you can put them in any light and they grow up. Everybody will be hearing more and more about autoflowers.”

From seed to mature plant, it takes but 55 days. And, while it's a smaller plant, it's very easy to grow. “I see this as something for the home patient market,” Frankel says.

Ideal CBD-to-THC Ratios Vary Depending on Your Condition

At present, the farm bill legalizes hemp with a THC content of 0.3% or less.³ Unfortunately, each medical condition requires its own optimal CBD-to-THC ratio. In an ideal world, Frankel believes we should be able to obtain products and plants with any ratio desired.

Historically, before cannabis was bred for higher THC content for recreational use, the typical ratio of CBD to THC was 1-to-1. CBD ameliorates the psychoactive effects of THC, but even then, some THC-naïve patients can have an uncomfortable experience with a 1-to-1 formula, and need to start out with a 2-to-1 or a 4-to-1 ratio of CBD-to-THC first.

“Generally, if I start somebody on a 1-to-1 who has, let’s say, pain, where 1-to-1 would be reasonable, I’m basically telling them, ‘For the first few days, you’re not going to be able to drive. You’re going to get limited activities.’

You’re basically making a decision that instead of having pain, as you adjust to the THC you’re going to have a little stoniness. Now, if somebody offered me a lot of pain or a little stoniness [‘high’], I mean that’s a simple decision for me ...

But people are still so scared of cannabis that as a physician you have to really explain to them that this is a lot safer than narcotics. When they’re taking narcotics for their pain, they’re certainly having psychoactive issues and they’re getting addicted all the time.

There is no addiction with cannabis. The U.S. federal government puts THC addiction at about 4%. CBD has zero. When you start mixing like a 1-to-1, I don’t think there’s any addiction there at all. When we stop patients on cannabis, we just cold turkey it. I’ve never seen any problems [quitting] cold turkey ...

By the way, the reason there have never been any deaths with cannabis is because our brainstem that controls our heart beating and our lungs breathing have virtually no cannabinoid receptors.

You can pour in all the cannabis you want into the body, and it’s not going to alter your brainstem’s control of your breathing. The only way that you can die with cannabis is if 1,000 pounds lands on your head. But with Xanax or narcotics, it alters it very, very quickly.”

Extraction and Why 'Dabbing' Is Not Recommended

While there are modern CO2 machines that will allow you to extract the oils from the cannabis or hemp plant, Frankel prefers an ancient technique called hashing.

"Basically, you're using water or ice and getting the oil glands to fractionate or fracture off of the plant and you get a big pile of oil glands. Then you take those oil glands, which are called trichomes, and you can put them in a special parchment paper. You press a button and a press comes down and squeezes pure cannabis oil out of the millions of trichomes ...

That dilutes very well with MCT oil, olive oil or avocado oil, and then you have a dosed tincture. So why isn't everybody doing it? First of all, people are using this more in the recreational world, because it's very simple to get a small amount, like a dab of oil and then they vaporize it or smoke it.

I'm not a big fan of dabbing. I just think it's way too much ... It's not something I'm encouraging. This is something I'm actively discouraging. Dabbing is when you, instead of smoking the actual flower, which has maybe 15% to 20% THC in it, you smoke an oil that's 80% to 85% THC.

They put the dab of oil on top of a very hot piece of metal, like a spatula, and you inhale the vapor. First time you do it, even for somebody who's comfortable with THC, it's overwhelming ... and we're starting to see medical complications of it. It's just too much ...

There's nothing illegal about it. I just think it's foolish.

It's a zero-sum game. There's no good in it. I would discourage anybody from smoking oil ... Cannabis hyperemesis syndrome ... is related to overmedicating."

Symptoms of cannabis hyperemesis syndrome include gastrointestinal problems, diarrhea, abdominal pain, nausea and vomiting. The only things that seem to help for this are taking more THC, taking a hot shower or bath, or applying 0.1% capsaicin on the lower abdomen.

"Capsaicin triggers certain neurotransmitters that are on our pain fibers. This is where cannabinoids also work. It might be part of that overall heat sensation – with the bath and the showers and the capsaicin heat – triggering the transient receptor potential cation channel subfamily V member 1 (TRPV1), vanilloid receptors [that makes it work]."

That's what the current thinking is. But this is a disease that could become a big problem for kids. The only way to prevent it is just not to do dabs," Frankel says.

Cannabis for Myasthenia Gravis

"I can see why Pharma is terrified," Frankel says, "because the number of illnesses we're now impacting is substantial." For example, Frankel is now treating some 80 patients with [myasthenia gravis](#), a neuromuscular disorder with a lot of weakness. Frankel has found a combination of THCA and CBD can reverse a majority of the symptoms.

"If they get access to CBD and sometimes THC and THCA, most of them get off their prednisone," he says. "[Prednisone] is a horrible drug to be on long-term. Virtually all the patients get off their steroids and mostly get off their Mestinon and intravenous immunoglobulins (IVIgs).

I got one note from the ex-president of the Myasthenia Gravis Foundation that said, 'He doesn't know about all the immune drugs that are available for myasthenia.'

I wrote back: 'Assuming 'he' is me, I actually think I am aware of them. I didn't wear a sandwich sign and go out to Wilshire Boulevard recruiting these people. They are on pharmaceuticals. They're doing terribly. They're feeling poorly and they're very weak. They can't see. They came here. They're doing better now. I'm OK with that' ...

This is something I talk to all my patients about. This is a vegetable plant. This oil is vegetable oil. This is nutrition. It's absolutely nothing more than nutrition. It's a perfect example on how nutrition is medicine and medicine is nutrition ... People have been eating it, smoking it and cooking it for tens of thousands of years."

Using Whole-Plant CBD as a Nutritional Supplement

If you're generally healthy, Frankel regularly recommends taking 10 to 15 milligrams of CBD a day, taken once a day at nighttime, as a nutritional supplement to support optimal health.

"I take 40 to 50 milligrams of whole-plant CBD," Frankel says, "But it's not just for prevention. My parents were Holocaust survivors. My sister and I ended up with this horrible anxiety and early morning awakening syndrome, where for decades I would wake up at 1 o'clock in the morning sweating. CBD stopped it in two days. That's one of the things that convinced me that this is too exciting not to do."

Frankel also points out there are animal studies showing that if you give CBD up to a week before or a week after a coronary or a stroke, you improve the outcome by about 40%. And, while CBD has neuroprotective effects, THCV is showing promise in the actual reversal of neurodegeneration.

Whole-plant CBD can also work wonders for acute gout pain, and when taken regularly, can help prevent recurrence. “I have three or four patients who are taking CBD and stopped having episodes of gout,” he says. It’s worth mentioning though that gout is frequently triggered or worsened by oxalate-rich foods, so it would make sense to address your diet and not just rely on a CBD supplement.

That said, Frankel claims CBD supplementation actually helps lower uric acid levels, which is rather interesting. CBD may also help lower blood pressure (thus caution is needed if you’re on blood pressure medication), and stabilize low-density lipoprotein (LDLs) levels and lower total cholesterol.

Frankel also discusses the use of CBD to help wean patients of [opioids and benzodiazepines](#). For those details, please listen to the interview or read through the transcript.

The Future of Cannabis in Medicine

Frankel predicts Kaiser Permanente will play an instrumental role in bringing medicinal cannabis to the mainstream.

“They flew me to Maui [where] I gave a talk to the Kaiser surgeons on using cannabis as a replacement for narcotics. It makes all the sense in the world that Kaiser is going to be one of the big players in that area because they have all the incentives wrapped into one to make it work.

Kaiser doctors are now sending me patients. That would have never happened five years ago. I mean they couldn’t even

mention the word ... One other thing I want to share is that for cancer and seizure patients – and eventually all patients – is that the tinctures, the oils, are going to become way more complex.

If we had plants from 200 to 300 years ago, they were way more medicinal because they didn't have THC at 20% to 25%. THC was 1.5%. CBD has been around for a long time. THCV has been a big deal. All these plants had a percent or two of each of these major cannabinoids.

I would imagine that picking it raw or smoking or cooking some of these plants that were a couple of hundred years old would be really, really medicinal ...

All I'm doing is saying, 'The plant was way better 100 years ago, before we started messing with it. Let's see if we can reproduce that plant in a bottle today.' That's kind of what my overall goal is."

When it comes to cancer treatment, Frankel admits we still don't know enough to make any hard and fast prescriptions. "We know that a 1-to-1 of CBD and THC is effective for a lot of solid tumors," he says. "There are clinical trials out now with glioblastoma and astrocytomas."

In Europe, doctors are also experimenting with low-dose chemotherapy combined with various cannabinoids, showing improved outcomes. Frankel, in his cancer treatments, started using mixtures of CBD, THC, THCA and CBDA nearly three years ago. Now, he's starting to add in THCV and THCVA.

"I see the cancer thing blowing up in a big way. In Israel, at the Tikun Olam, they just put in half a billion dollars to study cannabis and cancer. And then there are clinical trials coming out, virtually all of them are showing very positive

results. Cannabis doesn't necessarily need to replace everything. It's one more tool for the doctors' and the patient's toolbox to use."

More Information

To learn more about Frankel and the use of cannabis in medical practice, visit [GreenBridgeMed.com](https://www.GreenBridgeMed.com). There you will find information about how cannabis can be used in the treatment of:

- Anxiety and insomnia
- Cancer
- Crohn's disease
- Migraines
- Autism
- Chronic pain
- Fibromyalgia
- Seizures

To read about medical conditions not listed above, please visit this [site](#).

[Link to transcript of full interview.](#)

**THC and CBD in Modern Medicine: A Special Interview With Dr.
Allan Frankel
By Dr. Joseph Mercola**