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CBD and SCI

By [Jessica Farthing](#) | August 1st, 2019

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It's Legal. Will It Help?

While the country still battles state-by-state on whether to legalize marijuana, a recent change in federal law has opened the floodgates on sales of products featuring cannabidiol, one of the non-psychoactive components of marijuana, or cannabis. With legalization came immense popularity, and now it seems CBD is for sale everywhere and in everything. From CBD bath bombs to edible gummies and oils, it is for sale in gas stations, natural food stores and kiosks in the mall. So what is CBD? Is it safe? And can it help people with spinal cord injury?



What Exactly is CBD?

The ways that CBD differs from marijuana can be hard to understand. Starting with a lesson in plant biology is helpful to define the differences and similarities between the two. Cannabis is the genus of the flowering plants that breaks down into three species: cannabis sativa, cannabis indica and cannabis ruderalis. The word hemp is used to describe a strain of one of these plants that has less than 0.3% tetrahydrocannabinol or THC — the ingredient in the cannabis plant that causes a psychoactive reaction or high. "Marijuana" is commonly used to label the plants that contain more THC, though the industry is taking a stand against the term "marijuana" to rebrand these products as part of the wellness industry.

CBD can be sourced from plants containing small or large amounts of THC. Cannabidiol is just one of many phytocannabinoids (naturally-occurring cannabinoids) found in cannabis. Others are CBC (cannabichromene), currently being studied as a cancer tumor inhibitor and stimulator of bone growth, and CBG (cannabigerol), which treats fungal infections and kills bacteria. Laws regarding growing and processing of hemp were murky until recently. With the passage of the Hemp Farming Act of 2018, hemp was removed from the federal listing of schedule 1 drugs, which had placed it in the same category as heroin. Now, farmers can legally produce this crop in the U.S.

With a legal product easily available across the country, people with disabilities have begun to explore relief in many forms. For spinal cord injury specifically, many claim CBD helps with stress and anxiety, inflammation, neuropathy, chronic pain, spasticity and sleeplessness — all without the high from the THC.

A Restful Night

Bert Burns, C6-7 quad, has always been an athlete, and after 37 years of wear and tear he turns to CBD to help calm his tired body. Burns' first job post-injury was as a sports and fitness specialist for Shepherd Center in Atlanta, which made wheelchair sports available on a constant basis. Burns got hooked on racing and trained his way to becoming a Paralympian. He earned a gold medal in the 4x400 relay at the 1992 Paralympics in Barcelona and went on to be a part of the 2000 Paralympics, winning medals in the marathon and 5,000 meters, and the 2004 Paralympics in Athens. That was his 87th — and last — marathon.

In addition to his career as a wheelchair racer, Burns made time for wheelchair rugby. He loves the game's intensity, but not the physical degradation that came with it. "There's cutting, turning and holding people and that puts a lot of pressure on your shoulders," he says. "Plus, 37 years of using your shoulders instead of your legs and knees takes a toll."

Currently, Burns doesn't have everyday pain that he treats with CBD but uses the oil every night to assist in a good night's sleep. "Even though I take medication for muscle spasms, I'd wake up literally every two hours. I never really got a good night's sleep because my legs had spasms. I'd take it and within 15 minutes, I would be out and sleep great all night long. The next morning I wouldn't wake up groggy at all." In fact, with the CBD, Burns doesn't seem to have any side effects — just the benefit of quality rest.

Another value of CBD for Burns is the ability to take less medication. Taking muscle relaxers made him foggy in the morning, hampering his ability to enjoy his life as a father of twins and a successful businessman in the medical supply industry.

Dosages have been trial and error. He's been taking CBD for around seven months, using a tincture of oil and CBD first. The next time, he ordered gummies from the same manufacturer and didn't get the right reaction, "It was hard to judge the number of gummies to take. Two didn't work and three made me feel less clear. I didn't feel the consistency was there."

Helping Many Symptoms

With a fairly recent T7 injury, Amanda Oliver has been struggling to get back to living the life she wants and has found CBD to be helpful in a variety of ways. The biggest effect of CBD for Oliver has been reducing muscle spasms. She takes four doses of baclofen every day, staggered every six hours. "When my PCA comes in the morning to help me get up, it's impossible," she says. "Every time they touch my leg or it brushes across the blanket, it starts kicking everywhere with spasms. The baclofen was the only thing that kept that in check until the gummies."

Taking the gummies makes a remarkable difference, "Even if I sleep through two doses, I wake up and I'm still spasm free, which is insane."

On top of helping with spasms, a little CBD has been invaluable for her anxiety. "I do feel really relaxed. My brain wanders a lot and I overthink everything, and [with CBD] these thoughts calm down a little bit."

Like Burns, after a long day in her wheelchair, Oliver counts on CBD to make sleeping easier. A few gummy cubes taken a couple of hours before bed relieves tension so she can get quality rest. "All my muscles seem to be letting go," she says.

Other than the hassle of having to go to a dispensary to replenish her CBD supply, Oliver's only complaint is that CBD's high cost makes her hesitate to try other brands or delivery methods. "I don't want to invest in other products because of the risk of it not working." Like Burns, she hasn't noticed any side effects to the supplement, only the benefits.

Physician Approval

As a physiatrist in Washington state, Dr. Gregory T. Carter is no stranger to people with spinal cord injury using CBD and cannabis products. "The vast majority of my patients with SCI are using some form of cannabis," he says. "There is still much we need to learn about cannabidiol. However, there is good animal model evidence that the cannabinoids work, at least partially, through some of the same pathways as baclofen."

Despite the small amount of scientific research available, Carter recommends cannabis products for people with spinal cord injuries. "Cannabinoids work and they are very safe, plus there are many other potential benefits," he says. "Cannabinoids have immunomodulatory and neuroinflammatory properties, which contribute to the anti-spasticity and pain-reducing properties of cannabinoids."

Carter doesn't have enough scientific evidence to conclusively say that CBD works as well as the entire plant, including THC. Many experts suggest that a full-spectrum product using all the cannabinoids would be best to get the most value. His suggested dosage is based on studies, saying, "the available data would indicate that most people can get a beneficial antispasmodic and analgesic effect by using average daily doses of under 5 mg per day, although some may require a larger amount to obtain relief."

As far as how to ingest, Carter suggests vaporization for fast effect, and oral routes — like sublingual tinctures and edibles — for chronic dosing.

Is There a Downside?

While Oliver and Burt claim to have experienced minimal to no detrimental side effects, doctors and researchers are doing their best to provide more definitive answers. In a study published in 2017, researchers at the National Center for Biotechnology Information, a division of the United States National Library of Medicine, assimilated literature from clinical studies on the safety of CBD and published the overall results. They found a positive result for CBD use with the most frequently reported physical side effects being diarrhea, tiredness and a change in appetite or weight. Also, none of the studies seemed to indicate that a higher dose of CBD was required after time to achieve the same positive result.

Altogether, the studies found that consistently taking CBD, even in high doses of 1,500 mg per day, is tolerated well by humans. Some studies did report a reaction with hepatic drugs — medicines that are processed by the liver. CBD blocks an important enzyme that allows more of a medicine into the system than normal. Doctors don't know all the drug interactions that are possible with CBD, but a few that have been suggested range from anti-anxiety medication, prescription blood thinners and even Advil. This is similar to grapefruit, which interacts with prescription medications through the same process as CBD. It is important to talk to a physician to establish that CBD is safe to combine with any medications that are being taken.

Carter is among the many professionals and people with SCI/D who are excited to see what more in-depth research finds. "I think the whole area of cannabinoids for use in chronic neurodegeneration, including spinal cord injuries, both traumatic and acquired, is wide open for further research and exploration and holds tremendous potential."

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