

Good Medicine

Thanks to a growing body of research and an increasingly powerful legalization lobby, cannabis has emerged from the murky shadows of the criminal underworld into the limelight in recognition of its powerful medicinal qualities.

The best medicine Chris Marks has ever found for SCI is cannabis. Every day, the 38-year-old marketing student from Victoria either smokes or vaporizes cannabis as a treatment for neuropathic pain and spasticity, and to help him relax and sleep.

“When I was first injured, I was on amitriptyline, Baclofen, gabapentin, dantrolene, tizanidine, Dilaudid, topical creams with ketamine for nerve pain, as well as a myriad of antibiotics,” says Marks, an incomplete C5 quadriplegic since 2005. “After a couple years, I asked myself, ‘Do all these pills do anything for me? I still have extreme spasticity.’ I weaned myself off the pills after talking to my doctor, and have not taken a single pill from the above list in over four years—just cannabis.”

Marks says he still has spasms, hypertonicity and mild dysreflexia every time he voids his bladder. “But not to the extremes I had before,” he says. “I experience almost zero nerve pain these days.”

Marks is among the growing legions of Canadians who are discovering the medicinal qualities of cannabis. Cancer patients, people with SCI and other neurological disorders such as MS, and those looking for relief from anxiety, depression and insomnia are among those who are reaping the benefits of this ancient remedy.

Cannabis Through the Ages

Make no mistake—cannabis is an ancient remedy. It was described in a Chinese medical compendium dating some 2,700 years B.C., and it appeared at the top of the list of the Zend-Avesta, a sacred Persian medical text dating from 550 B.C.

It was only in the 1930s that marijuana was vilified, with the prohibitive Marijuana Tax Act being signed into US law in 1937. According to some historians, marijuana was the victim of a successful lobbying effort and smear campaign by DuPont and other synthetic materials manufacturers, which then proceeded to reap vast profits by filling the void conveniently left by the criminalization of industrial hemp. At the time, cannabis was being prescribed by physicians for many common ailments, and researchers were just beginning to explore its therapeutic benefits.

Some 60 years of cannabis prohibition ensued, but medical science wouldn't be denied. In the late '70s and early '80s, even as cannabis was still widely-regarded as a criminal substance, researchers began discovering its beneficial effects. Today, a growing tide of research is contributing to the increasing recognition of cannabis as legitimate medicine—recognition by Health Canada, many other countries, and many US states.

And the research is compelling. Cannabis has been scientifically validated to relieve eye pressure in people with glaucoma, reduce nausea and improve appetite in people undergoing treatment for cancer and HIV, and control insomnia and depression.

Even more intriguing is what's coming down the research pipeline. Preliminary findings indicate that cannabis has promise as a treatment for a long string of diseases and disorders. Among these are Crohn's, migraines, fibromyalgia, ALS, arthritis, asthma, diabetes, epilepsy, hepatitis C, Huntington's, Parkinson's, psoriasis, sleep apnea, and anorexia.

Perhaps most exciting is the recent discovery that cannabis appears to have powerful cancer-fighting abilities.

Researchers working in animal studies are providing new evidence that cannabidiol (CBD), one of the active compounds in cannabis, fights cancer and tumours in at least five different ways.

All of this is great news. But our focus in *The Spin* is the ability of cannabis to provide relief from the most debilitating secondary health complications of SCI.

Cannabis and SCI

Basic research conducted over the past two decades has revealed that the human nervous system contains widespread cannabinoid receptors. In fact, the cannabinoid receptor system is the most widespread receptor system in the human body.

Cannabinoids are proteins that bind to and activate cannabinoid receptors. Once activated, the receptors repress the release of neurotransmitters by the brain cells that they are attached to. Because cannabinoid receptors are so widespread, they play a role in pain, movement, appetite, memory and mood, to name a few.

The body's own cannabinoids are found throughout our body and it's believed they play an important role in regulating function in our respiratory, reproductive, digestive, immune and other systems. But cannabinoids from external sources such as cannabis also bind to the cannabinoid receptor system and, in the process, modify our body's processes.

As the sidebar to the right explains, the two most important cannabinoids found in cannabis are D9-THC and CBD. When they bind to receptors, they get us high—but do much more as well.

First, they relieve neuropathic pain—a common and excruciating by-product of SCI and other diseases that often can't be effectively controlled with pharmaceutical approaches. While the exact nature of the mechanism isn't yet understood, D9-THC has been clearly demonstrated in many studies to provide relief for people suffering from neuropathic pain, including people with SCI.

One of the more recent and credible studies was a double-blind trial con-

Cannabis at a Glance

- Cannabis, or marijuana, is the cured and dried flowers of the Cannabis plant that are smoked, vaporized or ingested for their psychoactive and medicinal qualities.
- Cannabis contains at least 85 diverse chemical compounds that are referred to as cannabinoids. Cannabinoids activate cannabinoid receptors in our nervous system that repress neurotransmitter release.
- Of all the cannabinoids, the most abundant and important are delta-9-tetrahydrocannabinol (D9-THC) and cannabidiol (CBD). D9-THC is the principal psychoactive cannabinoid—it gives us a euphoric high and appears to be instrumental in relieving neuropathic pain and spasticity. CBD is less psychoactive and more sedative than D9-THC, and is also thought to contribute to relief of chronic pain and spasticity. As well, CBD is the subject of much new research focusing on its antioxidant and cancer-fighting properties.
- Isolated pharmaceutical forms of D9-THC and CBD have been developed for specific purposes, but there is a growing body of evidence that suggests the two have a complex, intertwined relationship that creates a viable argument for consumption of natural cannabis that has a balance of D9-THC and CBD.
- Indica and sativa are the two main varieties of the cannabis plant. Sativa cannabis has a greater ratio of D9-THC to CBD and provides an uplifting, euphoric high. Indica strains have more CBD resulting in a narcotic “body stone” effect, making them appropriate for relaxation and sleep.
- Most cannabis today is a cross of the two varieties, with growers experimenting with hybrids to achieve specific combinations of results.

ducted by Dr. Mark Ware at Montreal's McGill University. The conclusion of Dr. Ware's study, which was published in the August 30, 2010 issue of the *Canadian Medical Association Journal*, stated, “A single inhalation of 25 mg of 9.4% tetrahydrocannabinol herbal cannabis three times daily for five days reduced the intensity of pain, improved sleep and was well tolerated.”

Results from another credible and more recent study led by the University of California's Dr. Barth Wilsey were published in the February 2013 issue of *The Journal of Pain*. This was also a double-blind study involving 39 people with SCI suffering from neuropathic pain. “Vaporized cannabis...may present an effective option for patients with treatment-resistant neuropathic pain,” concluded the authors, who also noted the effectiveness of using a low dose of THC, which didn't result in significant cognitive impairment. “As a result,” they wrote, “one might not anticipate a significant impact on daily functioning.”

The second benefit of cannabis is

relieving spasticity. The majority of research focusing on cannabis and spasticity is targeted toward MS—not surprising, given the much greater prevalence of MS compared to SCI. But an online search does reveal that there is a significant amount of anecdotal and subjective evidence (for example, surveys of people with SCI) that point to the effectiveness of cannabis in reducing SCI-related spasticity. There are also at least two objective studies.

One of these was done in 2003 by Swiss researchers at the Center for SCI and Head Injury in Basel. In the final phase, 13 subjects were given either a placebo or dronabinol, which is a pharmaceutical formulation of D9-THC. “The results demonstrate a significant therapeutic effect of (dronabinol)... in patients with SCI,” concluded the authors. “THC is an effective and safe drug in the treatment of spasticity.”

Closer to home, another objective double-blind study by University of Manitoba researchers was completed and reported in the May 2010 issue of

the *Archives of Physical Medicine and Rehabilitation*. The 11 subjects who completed the trial were given either a placebo or nabilone, a synthetic cannabinoid which is intended to mimic D9-THC. The researchers saw a significant decrease in spasticity using one form of measurement, and concluded, "Nabilone may be beneficial to reduce spasticity in people with SCI. We recommend a larger trial with a more prolonged treatment period and an option to slowly increase the dosage further."

One of the researchers involved was Dr. Karen Ethans, and she is currently recruiting subjects for a larger trial.

While more research is needed, a clearer picture of cannabis' effect as a treatment for SCI neuropathic pain and spasticity has emerged. And there are other benefits. A small dose before bed often helps some people with SCI get a good night's sleep. Others find it helps control overactive bladder (a small study seems to corroborate this). And, be-

cause cannabis in small doses increases serotonin, it has a similar effect to antidepressants, acting as a mood elevator.

Making Good Use of Cannabis

We suspect that most medical users still consume it the old-fashioned way—smoke it, either rolled in joints or in a pipe. Smoking is quick and effective. But is it safe? Early research raised alarm bells, suggesting that smoking cannabis increases the risk of cardiopulmonary disease or cancer. However, more recent—and arguably more credible—research contradicts this, asserting that even habitual cannabis smoking doesn't create a significant health risk.

Nevertheless, if there's even a shadow of a doubt, and a safer alternative exists, why not try it? That better method is using a vaporizer, which creates only enough heat to vaporize D9-THC and CBD into gases. The result is that you're inhaling a more benign vapour which is readily absorbed into the bloodstream,

as opposed to inhaling smoke containing carbon monoxide and tar from a large number of burnt compounds. Studies demonstrate that vaporizing cannabis is more efficient when it comes to cannabinoid delivery, and that using a vaporizer could even help to reverse damage done by smoking. And because it's more efficient and less stressful on lungs, vaporizers are reported as being that much better for people with quadriplegia, who may have reduced lung capacity or more easily-irritated lungs.

Another popular and benign method of consumption is eating cannabis. Edibles—mainly in the form of treats and brownies made from cannabis-infused butter or cooking oil—are available pre-made from dispensaries or concocted in your own kitchen. Edibles introduce cannabinoids into your body through your gastro-intestinal tract. It's then processed in your liver before entering your bloodstream. One thing to keep in mind is that, when D9-THC is processed by the

Cannabis: Real Benefits for Three British Columbians

We asked three SCI-BC peers about their experiences with cannabis.

Cory Parsons is a Nanaimo-based chef, author, C5/C6 quadriplegic and long-time Health Canada licensed user and registered grower.

"I use medical cannabis to counteract the nausea affects of my pain medication," says Parsons. "I also find cannabis an excellent sleep aid—it allows me to remain asleep throughout the night. Ingesting medical cannabis



aids greatly in the reduction of the strength and frequency of my spasticity, again allowing for an undisturbed night's sleep. Without it, my spasticity becomes unbearable. I've also become aware of the anti-inflammatory properties medical cannabis provides, as I've found a decrease in shoulder pain due to reduced inflammation."

Parsons gets congested from smoke, so he uses a vaporizer or eats edibles. "I've found the very best method is to make a healthy protein smoothie," he says. "Over the past 14 years, I've experimented with strengths and quantities of medical cannabis dosages and I find that a little bit evenly spaced throughout the day works best for me, rather than large single doses, as I don't enjoy the 'cloudy head' feeling. Too much at one time impairs my ability to keep my thoughts focused and my day productive."

Parsons believes that cannabis offers him far greater medical benefits with the least negative side effects compared to the drugs

doctors had prescribed. "It would seem like they would give me one pill for one thing," he says, "and two more pills to combat the side effects of that pill, and then even more drugs to combat the negative side effects of those pills! With medical cannabis, I was able to cut my pharmaceutical drug intake by three quarters, and I still feel that this drug is by far the least toxic and its side effects are all positive ones—which is the exact opposite of the pharmaceutical world."

As for negative side effects, Parsons admits that his short-term memory isn't as good as it once was. "But," he says, "there's an app for that."

While he believes cannabis should be used respectfully, it should be decriminalized or legalized. "Research has shown that it is not the devil's weed that we were told it was growing up," he says.

Chris Marks is a 38 year-old incomplete C5 quadriplegic who lives and attends college in Victoria.

"I use cannabis for neuropathic pain management, spasticity, relaxation and recreation," says Marks, who is a licensed Health Canada user. "I smoke cannabis, vaporize it, and sometimes eat products infused with cannabis oil or butter."

Marks used cannabis recreationally before his 2005 injury and thought he would give it a try post injury. "I obtained a health Canada exemption to possess marijuana and found a designated grower to breed and grow some custom strains for me," he explains. "My grower has mailed me my marijuana monthly via Canada Post for the last few years."

liver, it's converted into another form of THC which has more of a longer-lasting sedative effect. That means it may be great for sleeping, but perhaps not as ideal for reducing pain and spasticity. Another common complaint about edibles is that it takes much longer for the effect to be noticed, and it's also more difficult to find an appropriate dosage.

Yet another method is tinctures—usually an alcohol-based solution of dissolved cannabinoids that can be taken as drops, or added to food and drink.

What are the side-effects? Again, new evidence suggests that even habitual smoking doesn't increase risk of lung cancer. And the assertion that cannabis is a "gateway" drug to more powerful narcotics has pretty much been relegated to the urban myth category. For the moment, that leaves a couple of side-effects. First, some studies have suggested that long-term use may lead to some memory impairment. Second, as advertised, cannabis gets you high. That's fine—unless, of course, you've got a job to do, a degree to get, or anything else that re-

quires a clear head such as driving. Yet, as many users report, it is possible to reap the medicinal effects without being a stoner. Most people with SCI who use medical cannabis have gone through a trial and error process to find what form of cannabis, at what dosage, works best. Many have found that a combination of methods, usually smoking or vaporizing small amounts during the day and taking edibles before bed, works best. For most, the goal is to find a balance that provides the medicinal effect without resulting in a "high" that curbs productivity or the ability to work and function daily.

Getting Your Medicine

The cannabis prohibition is clearly crumbling. Around the world, access to medical cannabis is steadily improving, public attitudes towards cannabis are becoming more enlightened, and even cannabis laws for recreational use are loosening. Indeed, in the last US election, two US states—Colorado and our neighbours across the border in Washington—voted to legalize cannabis.

In Canada, legalization seems more like a question of when, not if. Liberal leader Justin Trudeau has already indicated his support for decriminalization, with his party's official position being support for full-blown legalization.

But, for the moment, by virtue of its inclusion in the antiquated Controlled Drugs and Substances Act, cannabis is illegal. The only way you can possess it legally is to be licensed by Health Canada's Medical Marijuana Access Regulations, or MMAR (why the federal government chose this antiquated spelling is a mystery to us).

You need to apply for an MMAR license and update it annually. Your completed application needs to include a declaration of support from your doctor. Once authorized, you have three options to get your medicine: access Health Canada's supply of cannabis (heavily criticized for its poor quality), obtain a license from Health Canada to grow your own, or obtain a license from Health Canada to designate someone to grow on your behalf. (Note: these options are changing

Like Parsons, Marks has discovered many benefits of cannabis as a medicine. "Cannabis has not cured my SCI, nor has it taken away every symptom of the injury," he says. "But neither did the 20 plus pills I used every day."



One of the greatest benefits he's found is that it eliminated the need to take Baclofen for spasticity. "Now, I don't have to worry about having a seizure when I forget to take my Baclofen," he says, adding that weaning himself off the drug was "extremely difficult."

He uses cannabis daily, but tries not to use large amounts, particularly before exams or public speaking engagements. "Smoking is messy, stinky and possibly dangerous, so I try to use the vaporizer the most. I invested in a Volcano vaporizer—it appears to be the safest method of cannabis usage.

The downsides of cannabis usage Marks sees are social stigma from people with outdated views, and the cost of it for people with low or fixed incomes.

"Most of the downsides I see with cannabis stem from poorly-conceived public policy and misinformation by lumping cannabis in with other highly dangerous and addictive drugs like cocaine or heroin," he says. "My experience with a compassion club with well over 1,000 members is that it improves quality of life for many people, including myself."

Arren Hahn is a 37-year-old from C4/C5 quadriplegic from Vancouver. Since his injury in 2005, Hahn has experienced extreme neuropathic pain and spasticity. These days, he's playing wheelchair rugby for Team BC, travelling, and living a healthy lifestyle. He credits much of his ability to deal with pain and spasticity to cannabis.

"I've been using medical marijuana for five years now," says Hahn. "I prefer to eat it—I find this is the most effective way to use it for sleep and nerve pain. Pain and spasticity affect my sleep habits very much—sometimes I'm up for days at time even with medical cannabis. But without it, when I travel abroad, I have an extremely hard time sleeping and getting rest."

Hahn is also a Health Canada registered user who receives his cannabis from his own designated grower. "I like to make brownies or cookies for the main part of my medical use," he says. "I also smoke a little bit throughout the day and smoke a full joint at night."

For Hahn, some of the side effects of his cannabis usage are dry mouth, eyes and skin, and sometimes being tired in the morning. But he says the benefits far outweigh the negatives. "Eating and smoking cannabis both work well for my nerve pain and sleep problems. Although they don't fix the problems completely, they seem to work better than the pharmaceutical medications that I use or have used for these same problems."



next year—more on that in a few paragraphs.)

Getting a doctor's support has proven to be a problem for some MMAR applicants. Many doctors and their representative organizations are openly unhelpful. No doubt, abuse by patients seeking to exploit the system has contributed to this. This is probably a major reason why statistics point to the vast majority of medical cannabis users simply purchasing their medicine illegally.

Here at SCI BC, we urge peers to use the legal route—protect yourself at all costs. Police have demonstrated a reluctance to seek out and prosecute unlicensed medical cannabis users, but that doesn't mean you won't be one of the unlucky few.

Good scientific evidence led SCI to be one of the first conditions that qualified for MMAR approval (it was approved for SCI spasticity and pain relief in 2001). As a result, it's a condition that's a no-brainer for even the most conservative of physicians. The bottom line is that, if your doctor won't approve you—a person with an SCI—for a MMAR license, it's probably time to find another doctor.

There is a third route to obtain medical cannabis, and that's through one of BC's many compassion clubs or dispensaries. These exist in a murky grey area. Canadians have a constitutional right to use cannabis for medical reasons. So when Health Canada was unable to produce enough cannabis of sufficient quality to meet demand, compassion clubs and dispensaries emerged.

The federal government maintains these are illegal. But police, for the most part, seem to look the other way. The result is that many people choose to bypass the complex and time-consuming Health Canada route in favour of dispensaries. Convenience (Vancouver alone has an estimated 30 dispensaries), confidentiality and expertise are some of the reasons for this. The latter is important—dispensary staff are often experts that can suggest strains, methods of consumption and dosages that are appropriate for a client's medical condition.

Technically, however, buying from a dispensary is illegal, even for MMAR license holders.

Adding to the confusion is that Health Canada has announced it will change the rules for medical cannabis on April 1, 2014. The most radical and heavily criticized of these changes is removing licenses to grow your own cannabis. Instead, production will be steered into larger facilities. And the price per gram is projected to skyrocket, from about \$4 per gram to up to \$9 per gram.

Critics say that Health Canada's changes are driven by the desire to profit from a burgeoning industry, and will drive licensed users back into the realm of illegally-obtained cannabis. Yet another criticism of the changes is that they presented a perfect opportunity to integrate dispensaries and compassion clubs, arguably the closest thing to a pharmacy that medical cannabis users have access to. Instead, the new rules seem to suggest a crackdown of dispensaries is imminent.

If opinion polls are to be believed, all of these proposed changes—and indeed, the entire Health Canada regulation of medical marijuana—may be irrelevant in the future. Last November, Angus Reid published results of an extensive two country public opinion poll on cannabis. In the US, 54% supported outright legalization. Here in Canada, the figure was 57%. It's likely that these numbers will continue to grow as new evidence emerges about the medical potential of cannabis.

The message is simple: politicians who

avoid the topic or maintain support for prohibition do so at their own peril. In BC, an opportunity to put public opinion to the test is coming this fall, when the Sensible BC campaign will have three months to collect 400,000 signatures and force a BC referendum to decriminalize marijuana in 2014.

The Bottom Line

The body of evidence is far from complete, but the picture is becoming more and more clear: when used appropriately, cannabis can be good medicine for people with SCI. No doubt, we're preaching to many of the converted in this story. But we also believe that many other readers may have never considered it. Others might be sitting on the fence, unwilling to move forward because of outdated social stigma, conservative values or moral beliefs.

Our hope for all readers is that they see cannabis in a modern context. It's so much more than a recreational drug like alcohol. It's not a cure-all, and it won't be effective for everyone. But it is medicine, with clear benefits for some people with SCI already confirmed, and more emerging as research moves forward.

If you suffer from excessive neuropathic pain, spasticity or even insomnia, and you're finding pharmaceutical drugs ineffective or too hard on your body, perhaps you should consider cannabis. Ask your medical professionals for their thoughts. And show them this story if you don't get an enlightened response. ■

SCI BC Staff Member Headed to Hall of Fame

Vernon's Sonja Gaudet, Canada's most decorated wheelchair curler, will be inducted into the Canadian Curling Hall of Fame during the Canadian Curling Association's (CCA) annual meetings in June. Gaudet, who is Spinal Cord Injury BC's Peer Program Coordinator in Vernon, has won gold medals at the past two Paralympic Winter Games in Torino, Italy and Vancouver. She played lead both times. She's also helped Team Canada win three world wheelchair curling championships, the most recent coming in February in Sochi, Russia.

Gaudet becomes the first athlete inducted into the Canadian Curling Hall of Fame based on her wheelchair curling achievements.

