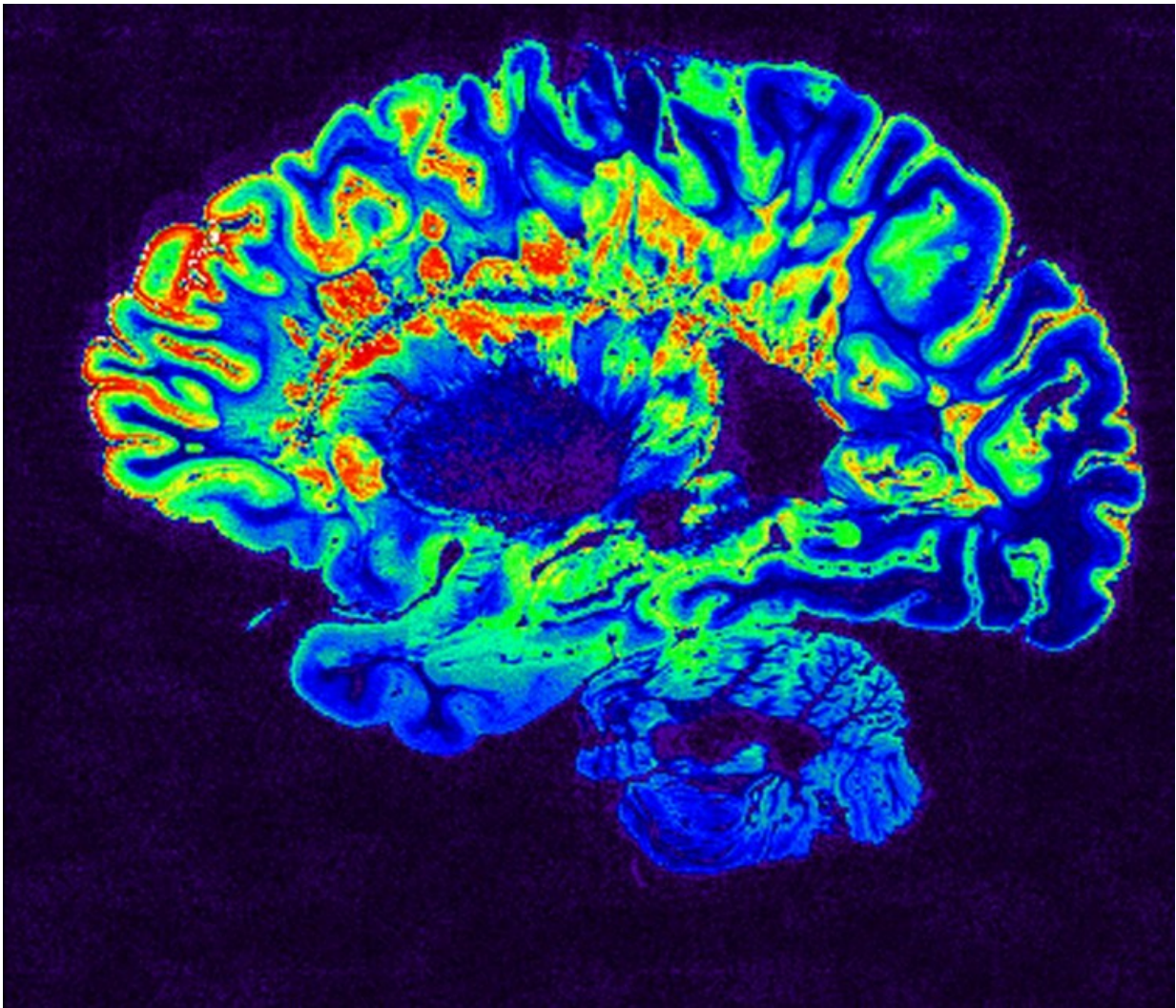


Can marijuana treat MS symptoms? It's hard for researchers to find out

January 17 2017, by Thorsten Rudroff



An MRI scan of a fixed cerebral hemisphere from a person with multiple sclerosis. Credit: NIH Image Gallery/Flickr, CC BY-NC

An estimated [400,000 Americans](#) are currently living with multiple sclerosis, an autoimmune disease where the body's immune cells attack a fatty substance called myelin in the nerves. Common symptoms are gait and balance disorders, cognitive dysfunction, fatigue, pain and muscle spasticity.

Colorado has the highest proportion of people living with MS in the United States. It is estimated that [one in 550 people](#) living in the state has MS, compared to one in 750 nationally. The reason for this is unknown, but could be related to several factors, such as vitamin D deficiency or environment.

Currently available therapies do not sufficiently relieve MS symptoms. As a result many people with the condition are trying alternative therapies, like [cannabis](#). Based on several studies, the American Association of Neurology states that there is [strong evidence](#) that cannabis is effective for treatment of pain and spasticity.

Although there are many anecdotal reports indicating cannabis' beneficial effects for treatment of MS symptoms such as fatigue, muscle weakness, anxiety and sleep deprivation, they have not been scientifically verified. This is because [clinical trials](#) – where patients are given cannabis – are difficult to do because of how the substance is regulated at the federal level.

To learn more, my [Integrative Neurophysiology Laboratory](#) at Colorado State University is studying people with MS in the state who are already using [medical cannabis](#) as a treatment to investigate what MS symptoms the drug can effectively treat.

Medical marijuana isn't a prescription drug

Marijuana, or cannabis, contains over 100 compounds, but THC

(Tetrahydrocannabinol) and CBD (Cannabidiol) are believed to have the most medical relevance.

However, there is currently no information about the most effective ratio of THC and CBD, which form of ingestion (smoking or eating, for instance) is best, or how often people with MS should use cannabis products.

The main reason for the limited [scientific evidence](#) about how well cannabis can treat MS symptoms is because it is a [Schedule 1 substance](#). This means that it has "no currently accepted medical use and a high potential for abuse." This classification makes it very difficult to study cannabis in clinical trials.

Because cannabis is on Schedule 1, doctors can't prescribe it, even in the states with [medical marijuana laws](#), like Colorado. In those states doctors can provide patients with a "permission slip" for cannabis, which has to be approved by a state agency.

Because of the lack of scientific evidence, doctors can't recommend a specific strain and dosage of cannabis to patients. Patients are left to choose on their own. Moreover, a recent study in the Journal of the American Medical Association showed that out of 75 cannabis products, only [17 percent were accurately labeled](#). And 23 percent contained significantly more THC than labeled, possibly placing patients at risk of experiencing adverse effects.

How we are studying cannabis and MS

My lab's long-term goal is to determine whether cannabis can safely and effectively treat MS symptoms. But because of current federal regulations our lab can conduct only [observational studies](#) at this time. To conduct clinical trials with a Schedule 1 substance, investigators

much have a special license, which my lab is in the process of applying for. At the moment, this means we study only people who are or are about to use cannabis and we do not provide cannabis to anyone for our studies.

We recently completed an online survey of 139 MS patients currently using cannabis to learn what types of products they used, how often they used those products and for how long.

Our results, which have not yet been published, found that 91 of our respondents (66 percent) reported that they currently use cannabis, and 56 percent of the [cannabis users](#) reported using either smoked or edible products. Seventy-eight percent of the cannabis users also indicated that they reduced or even stopped other medications as a result of their cannabis use.

The survey respondents who are using cannabis reported lower disability scores on the Guy's Neurological Disability Scale, a clinical scale used to evaluate neurological disability in people with MS, and they seem less likely to be obese. However, these data are self-reported, which means objective longer clinical trials are required to confirm these results.

We are also conducting an ongoing observational study, set to be completed in mid-2017, on the effects of regular cannabis use on physical function and activity levels in people with MS. There are many studies on the influence of cannabis on cognitive function in [healthy](#) and [diseased populations](#). However, no study to date has used objective measures of motor function in people with MS who are using cannabis, such as muscle strength and fatigue tasks, walking performance and postural stability tests.

Our preliminary results indicate that people with MS using cannabis have greater physical activity levels, leg strength and walking speed,

while also having less spasticity, fatigue and a lower perceived risk of falling. It is of note that these individuals are rarely using only cannabis to help control their symptoms. They are often using cannabis alongside traditional medications.

Importantly, cannabis users did not perform worse than nonusers on any of our measurements. These are very promising results, and we are expecting significant positive effects of cannabis at the end of this observational study.

Randomized control trials are needed

The outcomes of these observational studies will be the foundation for larger randomized clinical trials, where some patients are treated with cannabis and others aren't. These types of studies are needed to truly show the benefits and risks of consequences of cannabis use in this population.

Applying for the special license that investigators must have to conduct clinical research with a Schedule 1 substance is a lengthy process. Once granted, the DEA requires on-site inspections of the investigator's facilities. Furthermore, it is also very difficult for these types of experiments to be approved and performed. These policies make conducting research on the medical benefits and side effects of cannabis in the United States extremely hard. As a sad result, top researchers are looking to export their ideas outside the country.

We want to conduct clinical research to understand what cannabis products MS patients should use, in what dosage and in what form of ingestion. We also want to find out whether long-term cannabis use is safe, and if the effectiveness changes overtime due to increased tolerance. Fortunately, our first intervention study, which will investigate the effects of different marijuana strains on motor and cognitive

function in people with MS, has been approved by the CSU Institutional Review Board. This means that my lab can begin this research once our license is approved.

The answers to these questions will provide guidelines for health care providers and [people](#) with MS on cannabis use. If these studies can demonstrate that cannabis effectively relieves and treats MS symptoms, they could help establish the medicinal value of cannabis. That could make a case for rescheduling cannabis, making it easier for physicians and researchers to establish cannabis' true benefits and risks.

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