

# Choices



## Cannabis and MS



# Read me...

## Introduction to Cannabis

Cannabis is a flowering plant that has long been used for its fibrous stalks to create hemp and its seeds for food supplements for both animals and humans. Cannabis has also long been used for its medicinal properties and for recreational use. Cannabis has a very long history of being used for medicinal purposes across much of the world (1).

In the UK, cannabis is categorised as a class B drug, and it is illegal to possess, supply or produce. However, in some areas of the world, such as California in the United States of America, laws are being reformed to allow the possession of cannabis for both recreational and medical use (2).

In the late twentieth century, a chemist from Israel, Raphael Mechoulam, extracted more than 60 different chemicals from cannabis, which were thought to have potential for medicinal use. Of particular note was his discovery of the human endocannabinoid system, which is a group of receptors located in the brain and central nervous system that are involved in a range of physiological processes including appetite, pain-sensation, mood, memory and in mediating the effects of cannabis (1).

## Cannabis and MS

One of the main constituents of cannabis is tetrahydrocannabinol (THC). This is the molecule which produces a psychoactive effect when cannabis is smoked or

consumed. This is the part of the plant that can give a sense of relaxation or pleasure (10). Another constituent of cannabis is cannabidiol (CBD). It is this element of cannabis on which initial research has focused as a potential treatment of spasticity in multiple sclerosis (MS) (3).

MS specific research into cannabis-based medicines has shown mixed results, suggesting further studies are needed (4). The 'Cannabinoids for treatment of spasticity and other symptoms related to multiple sclerosis' (CAMS) study recruited 667 people with MS. The study results showed beneficial effects on symptoms, including mobility and self-reported improvements in pain, versus placebo but did not find that cannabis had a significant effect on spasticity (4). As part of the CAMS study the researchers also looked at the data gathered and did further studies relating to continence and bladder urgency. The study found that there was a clinically significant effect of using cannabis on incontinence episodes in patients with MS (5). The 'Multiple sclerosis and extract of cannabis' (MUSEC) trial recruited 279 people with MS and found that the relief of body pain after using cannabis extract (CE) was consistently higher than in the placebo group (6). A trial with a much smaller cohort found that treatment with a cannabis extract (THC) was effective in reducing pain and sleep disturbance connected to MS related central neuropathic pain and was mostly well tolerated (7).

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It is also thought that cannabis has neuroprotective qualities, which means that it may protect nerve cells against damage or degeneration. The way this works and the full potential of cannabidiol/tetrahydrocannabinol (CBD/THC), as well as the neuroprotective effects in neuropsychiatric and neurodegenerative disorders are not completely understood (8).

**‘It [cannabis] helps me with bladder control which means I can get a good night's sleep which then helps me with functioning the next day. It can make my walking and balance problems a bit worse at the time.’**

There is also a further wealth of anecdotal evidence from the MS community that has reported that self-medicating with cannabis alleviates some MS symptoms, particularly bladder issues, spasticity, pain, and tremor (3).

## Sativex

Sativex is a cannabis based medication and is licensed in the UK for the treatment of moderate to severe spasticity for people where other medications (baclofen, tizanidine, gabapentin, pregabalin and clonazepam) have been demonstrated as ineffective, or the adverse effects of these medications have been found to be intolerable (12).

Sativex contains both THC and CBD and is delivered orally, as a spray. An individual begins by taking one spray in

the evening and over time gradually increasing the amount of doses per day until optimum symptom relief is achieved. Sativex can be taken up to a maximum of 12 times per day. Sativex is generally well-tolerated with common side effects being dizziness in the first few weeks of taking the medication and mild anxiety has been reported in some cases. It is felt that people taking Sativex are unlikely to develop a dependency on the medication (12).

Even if a person finds Sativex does alleviate their spasticity, it can be difficult to gain funding for its use, paid for by the NHS. In October 2014, the National Institute for Health and Care Excellence (NICE) in the UK, produced new guidelines for the treatment of MS. In these guidelines, NICE stated: ‘Do not offer Sativex to treat spasticity in people with MS because it is not a cost effective treatment’ (13).

The drug manufacturer, Bayer, offers a ‘Pay-For Responder’ scheme where the first pack of Sativex is offered free of charge for the patient to try. This must be supported by a neurologist with an MS specialism (14).

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**I'm very lucky to be receiving Sativex on prescription, having paid for it initially. I was on one of the first trials, found that it helped, but of course was not able to get it afterwards. I lobbied my MP and with the help of a very supportive GP, eventually managed to get it on prescription. I take between 3 and 5 puffs a day and alongside my other medications it helps to manage my pain.**

Sativex can be funded on the NHS, if the person and their neurologist are able to demonstrate the specific need and by completing an 'Individual Funding Request'. In England it would then be the decision of the local Clinical Commissioning Group (CCG) whether NHS funding is granted. In April 2011, the Scottish Medicines Consortium (SMC), did not recommend Sativex within the NHS in Scotland. However, an 'Individual Patient Treatment Request' (IPTR) can be made in the right circumstances. Sativex has been approved for use on the NHS in Wales, however people with MS wishing to gain Sativex would still need to go through an 'Individual Funding Request' process to gain the medication.

The other route to Sativex in the UK is paying for the medication through private prescription. Costs can vary per pharmacy, but the NHS published price of each Sativex pack (3 x 10ml vials) is £375 per month (15).

Sativex is a class B drug (16), but can lawfully be possessed by someone with a prescription from a qualified medical

professional. If travelling abroad, be aware that Sativex's legal status varies between countries, so it is advisable to check with the relevant Embassy before travelling to the country (12).

## Canbex – VSN16R

There is also a new drug in development in the UK that is cannabis based and will hopefully treat spasticity for people with MS. David Baker, Professor of Neuroimmunology at the Blizzard Institute (part of the Barts and London hospitals) began work in the early part of the century on the symptomatic control of spasticity with cannabinoids, which looked at cannabis being used to treat symptoms of MS. Professor Baker and his colleagues are founders of a university spin-out company called 'Canbex', which is trialling a new drug called VSN16R (17).

Researchers synthesized their compound (VSN16R), which showed anti-spastic activity in experimental autoimmune encephalomyelitis (EAE) in mice and was as effective as existing spasticity medications, but lacked their sedative side-effects. The orally taken drug was well tolerated in humans in phase I trials (18). A phase II trial at sites across England in Liverpool, London and Sheffield is currently underway and is continuing to recruit participants. The trial is a placebo controlled trial and is relatively short in length (approximately four weeks). It is open to adults aged 18-70, who have an EDSS score of less than 6.5 and who experience issues with spasticity.

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If this is of interest you should speak to your neurologist, MS nurse or GP. The trial is scheduled to end in December 2017 (19).

## Cannabidiol (CBD) products

Until recently it has been possible to buy CBD products legally in the UK, with many companies selling products with claims of medicinal benefits. It has been possible to buy vaporising kits, oils, oral tablets, chewing gum and other products. The status and availability of products containing CBD may be changing in the near future. The Medicines and Healthcare Products Regulatory Agency (MHRA), which is the part of the Department of Health responsible for ensuring that medicines work and are acceptably safe recently issued an opinion on CBD. In late 2016 an MHRA representative said: “We have come to the opinion that products containing cannabidiol (CBD) used for medical purposes are a medicine. Medicinal products must have a product licence (marketing authorisation) before they can be legally sold, supplied or advertised in the UK, unless exempt. Licensed medicinal products have to meet safety, quality and efficacy standards to protect public health.” The statement goes on to say that “Our primary concern is patient safety and we wish to reiterate that individuals using cannabidiol (CBD) products to treat or manage the symptoms of medical conditions should discuss their treatment with their doctor.” At the end of

2016 the MHRA wrote to 18 companies advising them of their opinion (20).

However, at the time of publication, there are still a variety of CBD products available to purchase.

**I've used CBD drops under the tongue. They did seem to lessen the pins & needle feelings in my legs/mouth and seemed to work better the longer I took them. CBD is good because you don't get the 'high' so can still function normally. It was only a small dose - I got a peppermint flavour so the taste wasn't too bad.**

## Smoking and health effects of cannabis

There are many ways to ingest cannabis, however when it comes to smoking cannabis, it is felt that there is a health risk. Kevin P. Hill MD, Assistant Professor at the Harvard Medical School, has said: “In theory, smoked cannabis should be as effective a treatment as other forms. But doctors don't recommend smoking because it is so bad for your lungs, and when you use the drug in pill or spray form, it helps your doctor control how much of the active chemical you get.” (9)

Cannabis often has warnings related to mental health, particularly in relation to heavy recreational use. Even though the active compound THC can give a sense of relaxation to users, if large amounts are used, it has been known to have negative

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effects including inducing anxiety. Some regular or emotionally vulnerable cannabis users, may have undesirable experiences. Depending on the user's mood and personal circumstances the effects of heavy use have been known to include confusion, anxiety and paranoia. Some researchers also suggest that long-term recreational use can lead to irreversible, but minor cognitive deficits. However, 2.3 million, 16-59 year-olds reported using cannabis in the past year and only a very minor portion of these users will have had a bad experience. (10)

There has also been research into MS, cannabis and cognition. One study that used MRI imaging as a measure found that cannabis use in MS results in more widespread cognitive difficulties and brain volume loss. This could be a potential cause for concern for the MS community as cognitive impairments and difficulties occur in approximately 40–60% of people with MS (11).

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# How we create our Choices leaflets

MS-UK believes we must listen to the voices of people affected by multiple sclerosis to shape the information and support we provide. It is these people that bring us perspectives that no one else can give.

For every Choices leaflet we produce, MS-UK consults the wider MS community to gather feedback, and uses this to inform content. All of our Choices leaflets are then reviewed by the MS-UK Virtual Insight Panel before they are published.

Thank you to everyone affected by MS who made this leaflet possible.

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