

Department of Health and Human Services

Guidance on the Suggested Use of Medical Cannabis Multiple Sclerosis

About this document: The following information on the use of medical cannabis serves as a suggested use guide for those participating in the Utah Medical Cannabis Program. The intended audience for this document includes qualified medical providers, pharmacy medical providers, patients intending to use medical cannabis, and caregivers of patients intending to use medical cannabis.

This document details the guidance on the use of medical cannabis for multiple sclerosis. This document does not include general instructions on the use of medical cannabis, contraindications, warnings, precautions and adverse reactions to using cannabis and drug-to-drug interactions which could be found in the extended guidance document titled *Guidance on the Suggested Use of Medical Cannabis*. The extended guidance document can be found on the Department of Health and Human Services Center for Medical Cannabis website (www.medicalcannabis.utah.gov).

About the authors: This document was authored by the Utah Cannabis Research Review Board and Department of Health and Human Services staff.

About the Utah Cannabis Research Review Board: Under Utah Health Code 26-61-201, the Cannabis Research Review Board is a board of medical research professionals and physicians who meet on a voluntary basis to review and discuss any available scientific research related to the human use of cannabis, cannabinoid product or an expanded cannabinoid product that was conducted under a study approved by an Institutional Review Board (IRB) or was conducted and

DISCLAIMER

The following information on the use of medical cannabis serves as a suggested use guide for those participating in the Utah Medical Cannabis Program. This document has been vetted and approved by the Utah Cannabis Research Review Board under Utah Health Code 26-61-202.

This document is a summary of available peer-reviewed literature concerning potential therapeutic uses and harmful effects of cannabis and cannabinoids. With the ongoing nature of cannabis and cannabinoid research, it is not meant to be complete or comprehensive and should be used as a limited complement to other reliable sources of information. This document is not a systematic review or meta-analysis of the literature and has not rigorously evaluated the quality and weight of the available evidence. There is a lack of controlled clinical trials yielding high level evidence of predictable therapeutic benefit for any given condition other than those for FDA approved formulations. This document includes warnings and risks related to the use of cannabis including cannabis use disorder, potentially irreversible brain damage/mental illness, and legal liability for DUI and potential for adverse work-related consequences.

All patrons participating in the Utah Medical Cannabis Program are advised to use this document and any such document produced from this original document as informational and educational. The use of medical cannabis is at one's own risk. **Medical cannabis is NOT a first line therapy for most medical conditions.**

The information in this document is intended to help as far as available data allows Utah health care decision-makers, health care professionals, health systems leaders, and Utah Medical Cannabis patients to make well-informed decisions and thereby improve the quality of health care outcomes in patients using medical cannabis use. While patients and others may access this document, the document is made available for informational purposes only and no representations or warranties are made with respect to its fitness for any particular purpose. The information in this document should not be used as a substitute for professional medical advice or as a substitute for the application of clinical judgment in respect of the care of a particular patient or other professional judgment in any decision-making process.

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IMPORTANT NOTE: As always, in the event of significant side effects, stop use of medical cannabis until side effects have resolved, and then reduce to previous, best-tolerated dose. To avoid unwanted psychoactive side effects, “**start low and go slow**” especially when using cannabis products for the first time or using new dosages or types of products.

There is substantial evidence to support the conclusion that cannabis and cannabinoids are effective in improving patient-reported multiple sclerosis spasticity symptoms (oral cannabinoids). This is based on supportive findings from good-quality studies with very few or no credible opposing findings.

There is moderate evidence to support the conclusion that cannabis or cannabinoids are effective in treating neuropathic pain in patients with multiple sclerosis.

There is insufficient evidence to support or refute the conclusion that cannabis or cannabinoids are effective in treating spasticity in patients with paralysis due to spinal cord injury (National Academies of Sciences, Engineering, and Medicine, 2017 *d*).

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Multiple sclerosis (MS) is an autoimmune disease in which the immune system attacks myelin sheaths of neurons present in the central nervous system. Resulting damage to myelinated neurons of the central nervous system can result in sensory deficits, neuropathic pain (hyperalgesia and allodynia), motor weakness and paralysis involving both striated and smooth muscles, and upper motor neuron hyper-reflexia and spasticity. A number of biologic-based disease modifying agents, immune antagonists, and symptom-based therapies are approved for the treatment of this chronic and often progressive debilitating disorder.

The 2017 National Academy of Sciences and Engineering literature review on the medical effects of cannabis and cannabinoids concluded that there is conclusive evidence for patient-reported improvement in multiple sclerosis-related spasticity (National Academies of Sciences, Engineering, and Medicine, 2017*d*). An extensive literature review conducted by the government of Canada (Health Canada, 2013) concluded that:

- *Evidence from pre-clinical studies suggests THC, CBD and nabiximols improve multiple sclerosis (MS)-associated symptoms of tremor, spasticity and inflammation.*
- *The available evidence from clinical studies suggests cannabis (limited evidence) and certain cannabinoids (dronabinol, nabiximols, THC/CBD) are associated with some measure of improvement in symptoms encountered in MS and spinal cord injury (SCI) including spasticity, spasms, pain, sleep and symptoms of bladder dysfunction.*

Evidence for disease-modifying and neuroprotective effects of cannabis in preclinical models of multiple sclerosis (Pryce et al., 2015) support the use of medical cannabis in the early treatment of MS. However, a single placebo-controlled study of pure synthetic THC (dronabinol) administered to 498 patients with chronic and progressive MS (Zajicek et al., 2013) failed to demonstrate an improvement in disability or neuropathology.

One cross-sectional study reported that prolonged use of ingested or inhaled cannabis was associated with poorer performance on various cognitive domains (e.g. information processing speed, working memory, executive function, and visuospatial perception) in patients with MS (Honarmand et al., 2011).

In summary, clinical evidence supports the use of medical cannabis for symptomatic treatment of MS-associated spasticity of both striated and smooth muscles, pain, and sleep disturbances in patients with MS. Preclinical data from MS models in animals suggest the possibility that medical cannabis may also be effective in MS as a disease-modifying agent and may have neuroprotective effects, but clinical trials using medical cannabis as a disease-modifying agent are lacking (Chiurchiù et al., 2018).

When recommending medical cannabis for treatment of MS, inform the patient of possible adverse reactions including the possibility of decreased cognitive performance associated with long-term use of cannabis, and do appropriate clinical monitoring of cognitive function.

For dosing guidance for treatment of MS, please refer to the general dosing suggestions at the beginning of the document titled Guidance on the Suggested Use of Medical Cannabis found on the Department of Health and Human Services Center for Medical Cannabis website (www.medicalcannabis.utah.gov).

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