

# NEUROPATHY – MEDICAL MARIJUANA RESEARCH OVERVIEW

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*Neuropathy is the damage to the sensory, motor or automatic nerves that occurs from an underlying cause. Studies have shown cannabis is effective at significantly reducing neuropathic pain.*

## **OVERVIEW OF NEUROPATHY**

Peripheral neuropathy, which is often simply referred to as neuropathy, is a condition where nerves are damaged, causing weakness, numbness and pain. Among the most common causes of neuropathy is diabetes mellitus, but the condition can also be caused by infections, alcoholism, traumatic injuries, autoimmune diseases, medications, infections, tumors, and inherited disorders.

The symptoms associated with neuropathy depend on what types of nerves are damaged. Damage to sensory nerves, which receive sensation and damage, can cause tingling and stabbing or burning pain. Damage to motor nerves, which control how the

muscles move, can cause muscle weakness and a lack of coordination. If damage occurs in autonomic nerves, which control functions like blood pressure, heart rate, digestion, and bladder processes, an individual can experience heat intolerance, bowel and bladder problems, digestive issues and changes in blood pressure. Neuropathy can also increase the risk of infection and burns and other skin traumas because one may not realize they're injured or feel temperature changes and pain.

Neuropathy treatment focuses on managing the underlying condition that is causing neuropathy and relieving symptoms. Medications are often used to manage pain. Transcutaneous electrical nerve stimulation (TENS), plasma exchange and intravenous immune globulin, and physical therapy can also help ease symptoms.

## **FINDINGS: EFFECTS OF CANNABIS ON NEUROPATHY**

Cannabis has been shown to be highly effective at relieving neuropathic pain (Jensen, Chen, Furnish & Wallace, 2015) (Baron, 2015) (McDonough, McKenna, McCreary & Downer, 2014). Two major cannabinoids found in cannabis, tetrahydrocannabinol (THC) and cannabidiol (CBD), activate the two main cannabinoid receptors (CB1 and CB2) of the endocannabinoid system within the body (Fine & Rosenfeld, 2014). These receptors regulate the release of neurotransmitter and central nervous system immune cells to manage pain levels (Woodhams, Sagar, Burston & Chapman, 2015).

In numerous studies, cannabis has demonstrated the ability to significantly lower pain levels in patients suffering from neuropathic that had previously proven refractory to other treatments (Boychuck, Goddard, Mauro & Orellana, 2015). It's been shown to specifically reduce neuropathic pain caused by diabetes (Wallace, et al., 2015). Multiple sclerosis and central neuropathic pain patients experienced pain relief with only mild to moderate adverse effects while undergoing two years of THC and CBD treatment (Rog, Nurmikko & Young, 2007). CBD was shown to significantly reduce neuropathic pain in cancer patients without diminishing nervous system function or adversely effecting chemotherapy effectiveness (Ward, et al., 2014). One study found that in HIV-positive patients, 94% reported an improvement in muscle pain and 90% reported an

improvement in nerve pain after cannabis use (Woolridge, et al., 2005). In another study, 12 of 15 chronic pain patients who smoke herbal cannabis for therapeutic reasons reported an improvement in pain (Ware, Gamsa, Persson & Fitzcharles, 2002).

Because of cannabis' effectiveness at reducing pain, its use is prevalent among the chronic pain population (Ware, et al., 2003). Luckily, studies indicate that long-term cannabis use for managing pain is safe. After a year of regular use, patients with chronic pain were found to be at no greater risk of serious adverse effects than non-cannabis users (Ware, et al., 2015).

## **STATES THAT HAVE APPROVED MEDICAL MARIJUANA FOR NEUROPATHY**

Currently, [Arkansas](#), [Montana](#), [New Mexico](#), [New York](#), [Pennsylvania](#), and [West Virginia](#) have approved medical marijuana for the treatment of neuropathy. In [Washington D.C.](#), any condition can be approved for medical marijuana as long as a DC-licensed physician recommends the treatment. In addition, a number of other states will consider allowing medical marijuana to be used for the treatment of neuropathy with the recommendation from a physician. These states include: [California](#) (any debilitating illness where the medical use of marijuana has been recommended by a physician), [Connecticut](#) (other medical conditions may be approved by the Department of Consumer Protection), [Massachusetts](#) (other conditions as determined in writing by a qualifying patient's physician), [Nevada](#) (other conditions subject to approval), [Oregon](#) (other conditions subject to approval), [Rhode Island](#) (other conditions subject to approval), and [Washington](#) (any "terminal or debilitating condition").

Several states have approved medical marijuana specifically to treat "chronic pain," a symptom commonly associated with neuropathy. These states include: [Alaska](#), [Arizona](#), [California](#), [Colorado](#), [Delaware](#), [Hawaii](#), [Maine](#), [Maryland](#), [Michigan](#), [Montana](#), [New Mexico](#), [Ohio](#), [Oregon](#), [Pennsylvania](#), [Rhode Island](#), [Vermont](#), and [West Virginia](#). The states of [Nevada](#), [New Hampshire](#), [North Dakota](#), [Montana](#), [Ohio](#) and [Vermont](#) allow medical marijuana to treat "severe pain."

The states of [Arkansas](#), [Minnesota](#), [Ohio](#), [Pennsylvania](#), [Washington](#), and [West Virginia](#) have approved cannabis for the treatment of “intractable pain.”