Medical marijuana for peripheral neuropathy

By Jessica Robinson-Papp MD, MS, FAAN Mount Sinai Medical Center, and Sara Dehbashi, MD, Neuronuclear Fellow, Mount Sinai Medical Center

Medical marijuana use is becoming more common in the U.S. due to legalization in many states. The U.S. federal government still considers all forms of marijuana illegal, however so far, they have mostly not interfered with medical marijuana activities that are legal under state laws. Given that peripheral neuropathy and neuropathic pain are complicated conditions that are challenging to treat, we aim to review the effectiveness, roles and risks of medical marijuana in the treatment of peripheral neuropathy in this article.

What is marijuana?
The term marijuana refers to strains of the cannabis plant that contain substances, called cannabinoids, that can have effects on the human body.

What is medical marijuana?
Medical marijuana refers broadly to marijuana products that are used for medicinal purposes. The exact definition of medical marijuana varies by state. Some states allow actual marijuana (i.e. the plant material) for medicinal use, whereas in other states (e.g. New York), medicinal products are derived from the marijuana plant, and sold in different forms (e.g. tinctures or pills). Marijuana is comprised of over 400 chemical entities with more than 60 cannabinoids. The two main cannabinoids are:

- Tetrahydrocannabinol, or THC: the psychoactive compound in marijuana (the substance that produces the high). THC occurs naturally in marijuana; there are also synthetic forms of THC that are prescription medications (e.g. dronabinol).
- Cannabidiol, or CBD: This substance does not produce any psychoactive effects. Since it has low abuse potential, CBD-containing products are less tightly regulated than THC. In some states CBD can be sold as a supplement or topical treatment. A prescription medication form of CBD (Epidiolex) recently became available in the U.S. but is only approved for the treatment of certain forms of epilepsy.

What is recreational marijuana?
Recreational marijuana refers to marijuana that is used for recreational purposes. In most states use of marijuana for recreational purposes is illegal. In states where recreational marijuana is legal, the actual product itself is typically not different from products used for medicinal purposes.

What is synthetic marijuana?
Synthetic marijuana also sometimes called “fake weed” contains human-made chemicals that are either sprayed on dried, shredded plant material so they can be smoked or sold as liquids to be vaporized and inhaled in e-cigarettes. Some of these products contain chemicals similar to those found in the marijuana plant. However, it is important to know that these drugs may affect the brain much more powerfully than marijuana, and that their effect can be unpredictable, and in some cases dangerous and even life-threatening.

How does medical marijuana work?
The THC and/or CBD contained in medical marijuana binds to specific cannabinoid receptors in the brain and peripheral nervous system which is likely the way in which it is able to alleviate chronic pain (1).

Currently, there is a debate about the so-called “entourage effect” which refers to the idea that compounds other than cannabinoids in marijuana (i.e. terpenes and flavonoids) are important in its therapeutic effects. This idea has wide lay-popularity, but little scientific evidence to support it.

How is medical marijuana administered?
Legal routes of administration vary by state. For example, in New York state, medical marijuana can be used as a vapor, tincture or pill. In other places the natural leaf form is available and smoking or conversion to an edible product is allowed.

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Roster of Our WNA Information and Support Groups

**CALIFORNIA**

**Auburn**
Next meeting Oct. 7
1st Monday, 11 AM
Woodside Village MH Park
12155 Luther Road
Sharlene McCord (530) 878-8392

**Castro Valley**
2nd Wednesday, 1:30 PM
First Presbyterian Church
2490 Grove Way (next to Trader Joe)
Joy Rotz (510) 842-8440

**Concord**
Next meeting Sept. 19
3rd Thursday, 1:30 PM
First Christian Church
3039 Willow Pass Road
Wayne Korsinen (925) 685-0953

**Davis**
Next meeting Sept. 10
2nd Tuesday, 3:30-5:00 PM
Davis Senior Center, 646 A Street
Mary Sipple (530) 756-5102

**Elk Grove**
Next meeting July 9
2nd Tuesday, 1 PM
Elk Grove Senior Center
8830 Sharkey Avenue
Roger White (916) 686-4719

**Folsom**
Next meeting Sept. 18
3rd Wednesday, 12:30 PM
Association Resource Center
950 Glenn Dr., Suite 150
Bev Anderson (877) 622-6298

**Fresno**
Next meeting – Sept. 17
3rd Tuesday, 11:00 AM
United Community Church of Christ
5550 N. Fresno St.
Bonnie Zimmerman (559) 313-6140

**Grass Valley**
2nd Monday, 1:30 PM
GV United Methodist Church
236 S. Church Street
Bev Anderson 877-622-6298

**Livermore**
Next meeting Sept. 24
4th Tuesday, 10 AM
Heritage Estates
900 E. Stanley Blvd.
Lee Parlett (825) 292-9280

**Merced**
Next meeting Sept. 12
2nd Thursday, 1 PM
Central Presbyterian Church
1920 Canal Street
(Hoffmeister Center across from the church)
Larry Price (209) 358-2045

**Modesto**
Next meeting – Sept. 16
3rd Monday, 10:30 AM
Trinity United Presbyterian Church
1600 Carver Rd., Rm. 503
Ray (209) 634-4373

**Monterey**
Next meeting – Sept. 18
3rd Wed., 10:30 AM (odd numbered months)
First Presbyterian Church
501 El Dorado Street
Dr. William Donovan (831) 625-3407

**Napa**
Next meeting Aug. 1
1st Thursday, 2 PM
Napa Senior Center, 1500 Jefferson St.
Ron Patrick (707) 257-2343
bonjournap@gmail.com

**Placerville**
Next meeting Sept. 11
2nd Wednesday, 1 PM
El Dorado Senior Center
937 Spring Street
Bev Anderson (877) 622-6298

**Redwood City**
Next meeting Sept. 24
4th Tuesday, 1 PM
Sequoia Hospital Health and Wellness Center
749 Brewster Avenue
Danielle LaFlash (415) 297-1815

**Roseville**
2nd Wednesday, 1PM (odd numbered months)
Sierra Point Sr. Res. 
5161 Foothills Blvd.
Stan Pashote (916) 409-5747

**Sacramento**
Next meeting June 25
3rd Tuesday, 1:30 PM
Northminster Presby. Church
3235 Pope Street
Bev Anderson 877-622-6298

**San Francisco**
2nd Monday, 11 AM – 12:30 PM
Kaiser French Campus
4141 Geary Blvd. between 6th & 7th Ave.
Rm. 411A - Watch for signs.
Meryl (415) 348-9781

**San Jose**
3rd Saturday, 10:30 AM
O’Connor Hospital, 2105 Forest Avenue
S.J. DePaul Conf. Rm.
Kathy Romero (407) 319-2557

**Santa Barbara**
4th Saturday, 10AM (Sept., Oct., Jan., March, May)
St. Raphael Catholic Church
5444 Hollister Ave., Conference Room
Shirley Hopper (805) 689-5939

**Santa Cruz**
3rd Wednesday, 12:30 PM (odd numbered months)
Trinity Presbyterian Church
420 Melrose Avenue
Mary Ann Leer (831) 477-1239

**Santa Rosa**
Next meeting Sept. 4
1st Wednesday, 10:30 AM
Steele Lane Community Center
415 Steele Lane
Judy Leandro (707) 480-3740

**Walnut Creek**
4th Friday, 10 AM
Rossmoor, Hillside Clubhouse
Vista Room
Karen Hewitt (925) 932-2248

**Westlake Village - Thousand Oaks**
2nd Monday, 4:30-5:30 PM
United Methodist Church
Youth Classroom 1 (faces parking lot)
1049 S. Westlake Blvd.
Angie Becerra (805) 390-2999

**NEVADA**

**Las Vegas**
Next meeting Sept. 19
3rd Thursday, 1 PM
Mountain View Presbyterian Church
8601 Del Webb Blvd.
Barbara Montgomery
lvneuropathygroup@gmail.com

**OREGON**

**Grants Pass**
Next meeting Sept. 18
3rd Wednesday 2:00 PM
Club Northwest
2160 N.W. Vine St.
David Tally 541-218-4418

For information on groups in the following areas or any other place you are interested in finding out about a support group, call Bev Anderson at (877) 622-6298. She is actively trying to open new groups and re-open closed groups. Check with her about a group in your area especially if you would volunteer to be the leader.

**New Leadership needed.** No meetings for now. Contact for information: Bev Anderson 877-622-6298. **California:** Alturas, Antioch-Brentwood, Bakersfield, Berkeley – Oakland, Carmichael, Clearlake, Costa Mesa, Crescent City, Eureka, Fort Bragg, Garberville, Jackson, Lakeport, Lincoln, Lod, Madera, Mt. Shasta, Oxnard, Quincy, Redding, Salinas, Santa Maria, San Rafael, Sonoma, Sonora, Stockton, Susanville, Truckee, Tulare-Visalia, Turlock, West Sacramento, Weed, Ukiah, Woodland, Yreka, Yuba City- Marysville. **Nevada:** Reno-Sparks. **Oregon:** Brookings, Medford, Portland, Salem.
President's Message By Bev Anderson

Summer brings changes in support groups’ schedules. Be sure to check on the second page of this newsletter to see if there are changes in your group’s schedule. Many groups do not meet in July and August. Odd number months scheduled groups may or may not meet in July. So to eliminate confusion, I’m listing the date of the next meeting of each group. Any group that I’ve not gotten by the time this newsletter goes to press will be on the WNA website. Each group has its own page on the website. Please check it out by going to www.WNAinfo.org.

This issue is going to press early because our newsletter designer is having hand surgery and won’t be able to use her right hand for a few weeks. We are trusting that all will go well and the operation will be a success.

The first article this month is on marijuana. Next month there will be another article on marijuana that includes other information including CBD oil and how it is different from hemp oil. I know there is quite a bit of interest in this subject and many are getting measurable help from medical marijuana.

In the summer the sun shines brightly and many of us will be out in it. The second article features possible benefits of sunshine and how important Vitamin D is to our health. Being careful and using sunscreen is, of course, also important so that skin cancer does not develop. I have a small dent in my nose because of summers spent in the sun in my youth. My nose sunburned and peeled all summer and the skin responded negatively. This article also references possible benefits especially for those with diabetes. I also used the article because we rarely see research reports from Brazil. It is good to know that many other countries are researching areas that are of special interest to us.

We were able to match the $1,000.00 that Kathy Clemens put up to match at our Annual Conference. We actually almost double matched it. It is a great help when people participate in supporting WNA. We thank Kathy for her generous support.

On pages 4 and 5 are photos from our Annual Conference held on May 10 in Modesto that were taken by Ray Nichols, leader of the Modesto Neuropathy Support Group. Lindsay went through the hundreds of photos and chose the ones to print in the newsletter and the WNA website. As soon as we receive them, the slides shown by Dr. Ralph and Dr. Sampognaro will also be on our website. Videos will be made soon of this year’s speakers. Each group leader will receive a set to use in meetings. Anyone can buy one or more for $5 each online via our website or by check through the mail.

Happy Summer (June 21 is the official first day of summer. Each day afterward is a day closer to winter.).

Ray Nichols, leader of the Modesto Neuropathy Support Group

DOING SOME ONLINE SHOPPING? We recommend AmazonSmile and iGive.com.

AmazonSmile is an easy and automatic way for you to support WNA every time you shop, at no cost to you. When you shop at smile.amazon.com, you’ll find the exact same low prices, vast selection and convenient shopping experience as Amazon.com, with the added bonus that AmazonSmile will donate a portion of the purchase price to the Western Neuropathy Association!!! Make sure you type in our organization.

You can also support WNA by shopping at one of the 1700+ stores at iGive.com and selecting the Western Neuropathy Association as your charity of choice - they will donate a rebate of your purchase at no extra cost to you!
DISCOUNTS FOR
WNA MEMBERS

The following companies or individuals have agreed to give WNA a discount to WNA members. Give them a call or visit. If you choose to purchase the service or wares of any on this list, pull out your WNA Membership Card and claim the discount.

Anodyne Therapy
Infrared Light Therapy equipment - 12% off all home units. Contact: 800-521-6664 or www.anodynetherapy.com

HealthLight Infrared Light Therapy equipment - 5% off Single Boot System and Dual boot system. Contact: 888-395-3040 or www.healthlight.us

Auburn
The Footpath
825 Lincoln Way
(530) 885-2091
www.footpathshoes.com
WNA Discount: 10% off the regular price shoes.

Elk Grove
Shoes That Fit
8649 Elk Grove Blvd.
(916) 686-1050
WNA Discount: 20% off the regular price shoes.

Fortuna
Strehl’s Family Shoes & Repair
Corner of 12th & Main
1155 Main Street
(707) 725-2610
Marilyn Strehl, C.PED is a Certified Pedorthic
WNA Discount: 10% off the regular price shoes.

West Sacramento
Beverly’s Never Just Haircuts and Lilly’s Nails
2007 W. Capitol Ave
Hair – (916) 372-5606
Nails – (916) 346-8342
WNA discount: 10% off the regular price.

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Neuropathy Support Formula/Nerve Renew (1-888-840-7142) is a supplement that a sizable number of people are taking and reporting it has helped them. The company gives members of WNA a discount and free shipping. The 30-day supply is $40 (normally $49.97). It can be auto-shipped monthly for the same. A 3-month supply via auto-ship is $95.00. They also have a Nerve Repair Optimizer that is available for $20 with free shipping. Marsha, the manager, said that if anyone wants more information about the product, they can call and ask for her. If she is not readily available, leave your number and she will call you back.

Additional Discounts
Do you know a business that might offer our members a discount? Tell them that they will be listed each month in our newsletter and on our website so our members will know of their generosity and patronize their business. Call (877) 622-6298 or e-mail info@pnhelp.org.

We’ll mail an agreement form to the business, and once we have it, we’ll add them to this list.
Lower levels of vitamin D were tied to higher glucose levels in a study of Brazilian women.

In the cross-sectional analysis, more than 65% of women had hypovitaminosis D -- considered to be a serum 25(OH)D level under 30 ng/mL -- which was associated with higher odds of having a blood glucose level of 100 mg/dL or higher (OR 1.29, 95% CI 1.05-1.57, P=0.015).

This relationship was also seen among women with even lower serum levels of vitamin D, Tânia Valladares, MSc, of the University of Sao Paulo School of Public Health in Brazil, and colleagues wrote in Menopause: The Journal of The North American Menopause Society.

Among the quarter of women with a serum 25(OH)D level <20 ng/mL, they also had significantly higher odds of having a blood glucose level of 100 mg/dL or higher, although the magnitude was no greater (OR 1.25, 95% CI 1.04-1.50).

Self-reported use of supplements was not associated with blood glucose levels. “It has been postulated that vitamin D plays a role in pancreatic beta cell function, improving the insulin response to an increase in the blood glucose level,” Valladares’ group explained. “Those data underscore a potential benefit of a higher 25(OH)D level in individuals who still have a minimal beta cell population, improving the insulin response and perhaps preventing the progression of insulin dependence.”

The findings were consistent with the literature, the researchers said, although intervention studies haven’t shown any significant benefit to vitamin D supplements. Consequently, they recommended future studies should aim to differentiate whether or not serum vitamin D “can actually improve blood glucose levels or if its importance is restricted to its function as a marker of ill health.”

In a statement, JoAnn Pinkerton, MD, executive director of the North American Menopause Society, who was not involved with the study, underscored the importance of the relationship between low vitamin D levels and type 2 diabetes. “Vitamin D supplementation may help improve blood sugar control, but intervention studies are still needed,” she said. However, Pinkerton also stressed that no causal relationship between these two variables has been proven yet.

When determining vitamin D deficiency in patients, the American Association of Clinical Endocrinologists (AACE) and the American College of Endocrinology (ACE) note that “defining ‘vitamin D inadequacy’ is extremely controversial.”

“[Randomized controlled trials] evaluating nutrients are often confounded when ‘low’ nutrient status is not established, since nutrients reach a threshold effect in which greater amounts do not provide enhanced physiologic effects. As such, providing vitamin D to volunteers who are vitamin D replete should not be expected to demonstrate beneficial effects,” they explain in their position statement on the use of vitamins and minerals in skeletal health.

The current study’s cutoff of 30 ng/mL for vitamin D deficiency is the same as that recommended by AACE and ACE.

For the analysis, 680 women ages 35-74 completed interviews and physical exams and gave blood samples. Their mean blood glucose was 105 mg/dL, while the average 25(OH)D level was 26.4 ng/mL. Among the cohort, 3.5% reported taking vitamin D supplementation, which -- as expected -- was negatively associated with having low vitamin D (OR 0.44, 95% CI 0.19-0.99, P=0.049) levels. Women who reported having habitual sun exposure also saw lower odds of having a serum vitamin D level under 30 ng/mL (OR 0.68, 95% CI 0.48-0.96, P=0.028), but no significant risk of excessive blood glucose (OR 1.03, 95% CI 0.85-1.25).

A glucose level of 100 mg/dL or higher wasn’t only associated with low vitamin D levels, but was also significantly tied to obesity, hypertension, and older age among women:

- BMI ≥30: OR 1.42 (95% CI 1.19-1.69, P<0.001)
- SBP ≥130 or DBP ≥85 mmHg: OR 1.27 (95% CI 1.03-1.56, P=0.025)
- Age 60+: OR 1.33 (95% CI 1.11-1.61, P=0.003)

Among the study’s limitations were that data on sun exposure, vitamin D supplementation, medication use, and other potential confounders were self-reported. Also, the cohort was exclusive to women living in a tropical region of Brazil where sunlight is relatively strong and plentiful.

The study was supported by the Fundação de Amparo à Pesquisa do Estado de São Paulo.Valladares and co-authors reported no disclosures. Primary Source Menopause Source Reference: Valladares T, et al “Higher serum levels of vitamin D are associated with lower blood glucose levels” Menopause 19; DOI: 10.1097/GME.0000000000001308.

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Medical Marijuana for Peripheral Neuropathy – Continued from page 1

What are the dosing recommendations? (9)

It is important to know that medical marijuana products vary widely and so no consistent recommendations can be made on dosing. A general common-sense approach recommended by some doctors is “start low, go slow, and stay low.” One study (8) found that 25 mg herbal cannabis with 9.4% THC, administered as a single smoked inhalation three times daily for five days, significantly reduced average pain intensity compared with a 0% THC cannabis placebo in adult participants with chronic post-traumatic or postsurgical neuropathic pain.

What conditions does medical marijuana treat?

State laws differ on the conditions that can legally be treated with medical marijuana. The National Academies of Sciences, Engineering and Medicine (NASEM) published a comprehensive review of the literature in 2017 for all indications (not just neurological), which is available here. [1] In summary, medical marijuana is most often allowed to be used in debilitating conditions such as neuropathy, spinal cord injury with spasticity, multiple sclerosis, epilepsy, ALS, chronic pain, Parkinson disease, Huntington’s disease, HIV/AIDS, and cancer; and for controlling symptoms and conditions such as muscle spasms, severe nausea, cachexia, PTSD, etc.

For many of these conditions there is inadequate information to conclusively assess the effects of cannabinoids. Studies have shown significant efficacy in 3 main medical conditions, which are: 1) chemotherapy induced nausea and vomiting; 2) chronic pain, including neuropathic pain, and 3) multiple sclerosis related spasticity.

One of the neuropathic pain conditions that has been evaluated by randomized, double-blind studies, is HIV-neuropathy, in which studies have shown promising effects on pain (2).

What are the major risks of taking medical marijuana?

It is important to know that medical marijuana (unlike opioid pain medicines) is not lethal in overdose, and trials done in humans so far have overall shown an acceptable safety profile. The evidence suggests that smoking cannabis (unlike tobacco) does not increase the risk for certain cancers (i.e., lung, head, and neck) in adults, but is associated with chronic cough.

Some other side effects as listed below, have been reported.

- Impairment in learning, attention and memory with acute use, which may persist
- Developing or worsening substance use disorders including alcohol, tobacco and other illicit drugs
- Psychiatric effects, such as development of social anxiety disorder, increased risk of suicidal thoughts, increased risk of schizophrenia and other psychoses, and worsening of pre-existing bipolar symptoms with daily use
- Lower birth weight in pregnancy
- Reduced future achievement in adolescents

What are the laws and regulations surrounding marijuana?

Currently, a total of 34 states in US have approved a comprehensive, publicly available medical marijuana programs, in addition to approved efforts in 12 states that allow use of medical marijuana products for medical reasons in limited situations (full list available at this website [3]. However, the US federal government still considers marijuana illegal.

What is the efficacy and cost-effectiveness of medical marijuana in neuropathic pain?

As previously indicated, the scientific literature demonstrates some efficacy of medical marijuana/cannabis in the treatment of chronic neuropathic pain. Clinical trials of different routes of administration (sublingual, oral, smoked, and vaporized) have demonstrated analgesic benefit in the treatment of this costly and disabling condition (3,4,5), and some treatment guidelines for neuropathic pain recommend consideration of cannabinoids as a second or third line agent (6,7).

As expenses for medical marijuana are not covered by health plans and are out-of-pocket, knowing the cost-effectiveness of medical marijuana may impact patients’ decisions regarding its use. Based on a recent published article (7), inhaled cannabis appears to be cost-effective when used as second or third-line treatment in chronic neuropathic pain.

References:

Ellis RJ et al; Smoked medicinal cannabis for neuropathic pain in HIV: a randomized, crossover clinical trial; Neupyschopharmacology. 2009 Feb;34(3):672-80 [6]
Aviram J et al; Efficacy of Cannabis-Based Medicines for Pain Management: A Systematic Review and Meta-Analysis of Randomized Controlled Trials; Pain Physician. 2017 Sep [9]
Ware Mark A et al; Smoked cannabis for chronic neuropathic pain: a randomized controlled trial; CMAJ. 2010 Oct 5; 182(14): E694–E701. [12]
For more information about medical cannabis and other treatments for peripheral neuropathy, please refer to Peripheral Neuropathy Pain Management and Treatments [14] on the Foundation for Peripheral Neuropathy website. Used with the permission of The Foundation for Peripheral Neuropathy - https://www.foundationforpn.org
NEUROPATHY MEDICAL LITERATURE REVIEW
By William B. Donovan, M.D.

We can access the National Library of Medicine (NLM) to obtain information on peripheral neuropathy (PN). There are over 100 medical articles a month written on PN. I review these references and select articles that would appear to be most interesting to us neuropathy sufferers. This is the link to PubMed that will connect to the NLM:


If you are reading this article on the computer, just click on the above link to go there. If you are reading the print edition of the newsletter, type this link into the address bar of the browser on a computer. If you don’t know how, get a librarian or friend to help you.

After you get to PubMed, you will see a line that says “Search PubMed” followed by “for” and a space. Every article in the NLM is given a PMID, an eight digit identification number. I will give you PMID numbers of the selected articles. Type the PMID into the space after the “for” and click on “Go” at the end of the space, or press the ENTER key on your keyboard. You will then see a one paragraph abstract of the article appear, as well as links to related articles.

The reader can also go to the WNA website www.pnhelp.org, click on the RESOURCES tab and select MEDICAL LITERATURE REVIEW from the menu to review the archive of summaries that have appeared in this column over recent years.

This month’s PMIDs:

• 29948355 This is a Turkish single-blind study of 44 patients with carpal tunnel syndrome. They were randomized to a splint group and a Kinesio taping group. After 6 weeks of treatment there was significantly more improvement in the taping group in terms of nerve conduction, symptom severity and functional status.

• 30069477 This is a meta-analysis of 11 randomized, controlled trials involving post herpetic neuralgia. There was highly significant improvement of pain and insomnia in the gabapentin (Neurontinâ) group, but adverse symptoms included somnolence, dizziness and edema.