



WESTERN NEUROPATHY ASSOCIATION

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Volume 17

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Neuropathy Hope

Hope through caring, support, research, education, and empowerment

A newsletter for members of Western Neuropathy Association (WNA)

SOMETHING NEW ABOUT MYELIN GENERATION

OHSU research could lead to new therapies to heal nervous system disorders

Oregon Health & Science University

Scientists have discovered that a special type of cell is much more prolific in generating a protective sheath covering nerve fibers than previously believed.

The revelation about Schwann cells raises the possibility of new avenues to treat nerve injuries and various forms of neuropathy. Further research could prove useful in promoting myelin repair in central nervous system disorders such as multiple sclerosis, where damage to myelin slows or blocks electric signals from the brain.

"This totally overturns the textbook definition of the way Schwann cells work," said senior author Kelly Monk, Ph.D., professor and co-director of the Vollum Institute at Oregon Health & Science University.

The research published today in the journal Nature Communications.

Two types of cells in the body produce myelin: oligodendrocytes in the brain and spinal cord, and Schwann cells in the rest of the body. Until now, scientists thought that only oligodendrocytes generated multiple myelin sheaths around axons, the slender projection of a nerve cell that carries electrical signals between cells.

The new research reveals that Schwann cells also are capable of spreading myelin across multiple axons.

Researchers made the discovery after conducting a genetic screen in zebrafish in the Monk laboratory. They discovered some fish had more myelin than expected, and those fish carried a mutation in a gene called *fbxw7*. When they knocked out the gene in genetically modified mice, they discovered an unexpected characteristic: individual Schwann cells began spreading myelin across many axons.

"It highlights a very plastic potential for these cells," Monk said.

In discovering how Schwann cells generate myelin at the molecular level, the discovery may lead to new gene-therapy techniques to repair damaged myelin in peripheral nervous system disorders such as Charcot-Marie-Tooth disease, a painful inherited form of neuropathy that affects 1 in 2,500 people in the United States.

Both Schwann cells and oligodendrocytes arose at the same point in evolutionary history, with the appearance of jaws in the vertebrate lineage.

Invertebrates lack myelin, and some, like the modern squid, uses thick axons to quickly transmit signals between neurons.

"We could have evolved that way, but our spinal cord would be the diameter of a giant sequoia tree," Monk said.

Instead, vertebrate axons evolved myelin to protect axons and speed up signal transmission. To create myelin, Schwann cells evolved to produce it around a single axon in the peripheral nervous system. Oligodendrocytes, in turn, generated myelin along multiple axons within the more confined environment of the brain and spine - the central nervous system.

"The real estate is fundamentally different in the central nervous system than in the peripheral nervous system," Monk said.

Monk theorizes that Schwann cells evolved a mechanism to repair damaged myelin on a cell by cell basis, since it would have been common for injuries to occur without necessarily killing the entire organism. Those traits would have been passed down and strengthened through generations of evolution.

By contrast, remyelination in the central nervous system tended to be an evolutionary dead end since few would have survived a severe whack to the brain or spine.

"There's no selective pressure in repairing myelin damage in the central nervous system, because you're probably going to die," Monk said.

However, the discovery published today suggests a new opportunity to heal the brain and spine.

"Targeting the *fbxw7* gene - or downstream pathway molecules - could be a powerful way to promote myelin repair in the central nervous system," Monk said.

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**Please contact
your group leader or
check your group
page on the
WNA website –
www.WNAinfo.org
to find out about the
topic/speaker for the
upcoming meeting.**

Bev Anderson
Editor

Newsletter Design by



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 Sprifke (530) 756-5102

Elk Grove

Next meeting, Oct. 8
2nd Tuesday, 1 PM
New Senior Center of Elk Grove
8230 Civic Center Drive
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 (925) 292-9280

Merced

Next meeting Sept. 12
2nd Thursday, 1 PM
Central Presbyterian Church
1920 Canal Street
(Hoffmeiser Center across from the church)
Larry Frice (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
bonjournapa@hotmail.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

3rd Tuesday, 1:30 PM
Northminster Presby. Church
3235 Pope Street
Bev Anderson 877-622-6298

San Diego

3rd Monday, 1:30 PM
Ed Brown Center for Active Adults
18402 W. Bernardo Dr.
Chhattar Kucheria (858) 774-1408

San Francisco

2nd Monday, 11 AM – 12:30 PM
Kaiser French Campus
4141 Geary Blvd. between 6th & 7th Ave.
Rm. 411A - Watch for signs.
Merle (415) 346-9781

San Jose

3rd Saturday, 10:30 AM
O'Conner Hospital, 2105 Forest Avenue
SJ 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, Lodi, 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.



Dear friends,

I hope you are having a great summer with lots of fun and relaxation worked into your busy lives. Along the way, no matter the season, if we keep our mind open to it, we can learn a lot. I want to share a few things I've learned that might be helpful to you.

The first news in the newsletter is that the pain medication from U.C. Davis is going into clinical trials very soon. Right now, the holdup is having to wait until the federal budget is signed so they know the National Institutes of Health are funded. That is likely not going to happen until September or after. The government shutdown earlier this year held up everything so nothing could go forward at that time. We are excited the trials will be in Austin, Texas as that is the base city of the Neuropathy Alliance of Texas. They also have two of their support groups in Austin and are ready to help in any way they can.

Supplements have to be checked out to be sure they do not interact dangerously with our medications. For example, ginkgo biloba may seem to be healthy for you but paired with blood thinners, blood pressure medications, or SSRI antidepressants, it is quite dangerous. Recently, I stopped into a juice bar from which I'd seen some beautiful looking cold drinks brought into a meeting. I decided I'd try one too. I looked at the menu board on the wall behind the counter and asked the server about some of the items. "Oh, those are healthy herbs we put in each drink," she said. I said, "No, thanks. Those could kill me," and I walked out. At the time, I knew ginkgo biloba was a supplement that I shouldn't have although I didn't know how dangerous it was for me. This is a concept from Consumers Reports On Health, March 2018, "The Truth About Memory Supplements." So please be discerning about the "healthy" products you take into your body. (<https://www.consumerreports.org/dietary-supplements/d-memory-supplements-really-work/>)

This month I learned that I breathe wrong. Can you imagine at my age just now learning that I have been breathing incorrectly? I tend to hold my breath fairly regularly and that is not good for a person. My motto now is to breathe through a situation. If I become short of breath, I get myself breathing again because it was likely that I held my breath watching something or doing something that needed special attention. Walking down a short hall, I got to feeling out of breath and realized I'd not been breathing as I'd been paying attention to something at the end of the hall. It must be a habit I had not realized I had developed. Holding your breath puts pressure on your lower abdomen, which as you grow older, can cause special problems. It is never good to hold our breath, except when underwater while swimming. I've been told and now you know too.

Three topical creams that have been reported as being helpful are Magnilife Cream, Topricin Foot Therapy Cream and Arnicare Gel. Some pharmacies and Amazon carry them.

About itching. If it is on the surface, dry skin lotion should help. If it is deeper beyond being able to be scratched for relief, it is likely neuropathy caused.

"The only thing that helps recover nerve damage after chemotherapy is exercise as it helps speed nerve regeneration." *"Stem cell therapies at this point, are at best giving false hope and at worst can cause life-threatening complications."* Ahmet Hoke, MD, PhD. FRCPC, professor, Neurology and Neuroscience, director, Neuromuscular Division, editor-in-chief, Experimental Neurology, Johns Hopkins School of Medicine. (A lone exception appears below.)

Tai Chi is recommended by many I spoke to for people with neuropathy as it helps with balance and quality of life. Classes are often available in many localities at senior centers, gyms, and a variety of organizations.

When I submitted the **cannabis article** in the June issue, I mentioned that I had another article that I'd put in later. It is the one in this issue. I hope the articles are helpful in gaining a wider understanding of cannabis and neuropathy. Many people I've spoke with are finding pain relief in using cannabis in one form or another, but not everyone. That is basically true of everything available for people with neuropathy.

You will be receiving our organization's letter that goes to everyone in our database three times a year, with up-to-date news, encouragement to join, and requests for contributions. I trust you will respond. The P.S. at the bottom of those letters is personalized for people who are members in good standing, needing to renew their membership, or an invitation to join if the person has not done so. Funding is vitally important to our ongoing existence so please read the letter and respond as you are able.

Can you recognize a buckeye tree? If you can and see one fairly regularly, watch it as it can be an indicator of when fall is on its way. The one I see each week was beautiful this spring. It's huge white blossoms were some of its best. I looked forward to seeing it. Six weeks ago now, the tree was turning brown preparing to drop its leaves. Hopefully that means an early fall which would mean rain in September. The terrible fires we have had the past two or more years were in October. The needed rains didn't come until November so it was a quite late fall. Of course, when the rains started, they hardly let up for months. I'd much rather have a bit more rain than the damaging fires.

Happy August,

Bev

Help With Health Care Challenges

If the number is not in your area, call the one listed and ask for the right number.

Medicare

www.Medicare.gov

...

The Affordable Health Care Act

For current information go to www.HealthCare.gov

...

HICAP

Health Insurance Counseling

for seniors and people with disabilities.

www.cahealthadvocates.org

/HICAP/

Call (800) 434-0222 to ask a question or to make an appointment.

...

Health Rights Hotline

Serving Placer, El Dorado, Yolo, & Sacramento Counties, regardless where you receive your health coverage.

Tollfree (888) 354-4474 or TDD (916) 551-2180.

In Sacramento, (916) 551-2100.

www.hrh.org.

...

HMO Help Center

Assistance

24 hours a day, seven days a week.

(888) HMO-2219

or (877) 688-9891 TDD

...

DRA's Health

Access Project Free publications about the health care, insurance rights and concerns of people with disabilities and serious health conditions. For more information, go to <http://dralegal.org/> and click on "Projects".

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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HEALTHY EATING FOR PERIPHERAL NEUROPATHY WITH CHEF BILL NOLAN

Chef Bill Nolan shares another 'healthy eating' recipe using two nutritional powerhouses: kale and quinoa. Kale is packed with vitamins, fiber, and antioxidants like alpha lipoic acid. Quinoa is high in protein, fiber, and vitamins as well.

Summer is here and it's time for salads!

I like to have a big salad every weekday for lunch. I keep a variety of vegetables in the refrigerator and grab what is there and see what I can make. The salad I'm featuring here is more of an entrée salad and contains kale.

Kale: Love it?

It's my experience that there are two camps - kale lovers and quite the opposite. Follow these tips and you'll be a kale lover! When you're working with kale, remember to peel the leaves away from the stems, use only the leaves. Kale tends to be a little stiff, so I like to massage it with my hands for a few minutes to loosen it up.

Thai Cashew, Kale, and Quinoa Salad with Peanut-Ginger Sauce

This is an exciting and colorful salad that can be kept in the refrigerator "undressed" for about five days, so have a little at a time and enjoy the goodness. When you hear "eat the rainbow" this salad fits the bill with a rainbow of colored vegetables. Abundant in phytonutrients, this salad is anti-inflammatory and rich in neuroprotective anti-oxidants, including alpha lipoic acid.

Chef Bill Nolan's Thai Cashew, Kale, and Quinoa Salad with Peanut-Ginger Sauce

6-7 servings

Salad Ingredients:

- 1 large carrot, julienned;
- 2 cups cooked quinoa;
- 3 cups sliced red cabbage;



- 1 cup chopped red bell pepper;
- 1 cup chopped green bell pepper;
- 1 cup canned chickpeas, rinsed well;
- 2 cups kale, removed from stems, washed, dried and chopped;
- 1 cup cashews, chopped;
- 1 bunch of green onions, white and green parts, sliced 1/4" thick;
- juice of 1 small lime

Peanut-Ginger Sauce:

- 2 teaspoons fresh ginger, peeled and minced;
- 3 tablespoons soy sauce or coconut aminos if you are avoiding soy;
- 2 teaspoons apple cider vinegar;
- 3 teaspoons sesame seeds;
- 1/3 cup natural peanut butter or almond butter;
- 1/2 cup warm water;
- 1/4 teaspoon crushed red pepper flakes, or more to your taste.

Directions:

Combine ingredients for salad. Separately combine ingredients for peanut sauce. Dress salad with sauce and serve.

(Used with the permission of the Foundation for Peripheral Neuropathy - June 10, 2019.)

T2D, CHOLESTEROL, AND NEUROPATHY: WHAT'S THE LINK?

Lower LDL cholesterol might be a risk factor for nerve damage in type 2 diabetes

By Kristen Monaco, Staff Writer, MedPage Today, May 31, 2019

Lower levels of serum cholesterol were linked to more peripheral nerve damage in type 2 diabetes, a German study found.

In a cohort of 100 adults with type 2 diabetes, the lipid equivalent lesion load of nerve tissue was positively correlated with the average size of a peripheral nerve lesion ($r=0.44$; $P<0.001$ with the nerve's cross-sectional area), reported Felix Kurz, MD, of Heidelberg University Hospital, and colleagues.

Additionally, the lipid equivalent lesion load of nerve tissue in participants' right legs was also positively correlated with the maximum length of a nerve lesion ($r=0.71$; $P<0.001$).

Writing in JAMA Network Open, Kurz's group reported that the lipid equivalent lesion loads were also negatively correlated with the following other variables:

- Total serum cholesterol level ($r= -0.41$; $P<0.001$)
- High-density lipoprotein (HDL) cholesterol level ($r= -0.30$; $P=0.006$)
- Low-density lipoprotein (LDL) cholesterol level ($r= -0.33$; $P=0.003$)
- Nerve conduction velocities of the tibial ($r= -0.33$; $P=0.01$)

The lipid equivalent lesion load of these nerves was also negatively correlated with nerve conduction velocities of the tibial ($r= -0.33$; $P=0.01$) and peroneal nerves ($r= -0.51$; $P<0.001$). A similar negative correlation was also seen with the compound muscle action potentials (CMAP) of the tibial ($r= -0.31$; $P=0.02$) and peroneal nerves ($r= -0.28$; $P=0.03$).

The analysis included adults with type 2 diabetes -- 64 with distal symmetric diabetic polyneuropathy (DPN)

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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:

www.ncbi.nlm.nih.gov/sites/entrez

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:

- 17927294 Arginine is an amino acid found in our diet and is converted to agmatine in the body. Agmatine decreases pain by blocking NMDA receptors, protecting nitric acid, decreasing stress, and reducing dependence on opiates and alcohol. Agmatine is available without prescription.
- 20447305 This Israeli study of lumbar disc -related radiculopathy (sciatica) used agmatine, a metabolite of the amino acid arginine, available over-the-counter and normally found in the diet. They gave 2.670 grams a day to the treatment group and a placebo to the control group. There was a statistically significant improvement of pain and quality of life with agmatine.
- 27639607 This is a literature review of 14 articles reporting the effects of low-level laser therapy on neuropathic pain. All studies demonstrated some effectiveness, but the scientific rigor of the studies was considered less than optimal.
- 28987080 This article discusses the possible mechanisms of action of low-level (600-1000nm) laser therapy (LLLT) for the control of pain and stimulation of regeneration. LLLT was seen by the authors, however, as a complementary rather than a primary treatment modality.

DISCOUNTS FOR WNA MEMBERS

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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.

Building Better Balance DVD, Developing Spine Health

The DVDs are \$30 each. The price of a full set (4 DVDs) is \$100 (that's a 20% discount). You can order the DVDs by going to the website www.building-better-balance.com. Shipping is free. You can also order the DVDs over the phone using a credit card. Call (707) 318-4476 and leave a message "Vanessa Kettler, Balance and Fall Prevention www.building-better-balance.com (707) 318-4476

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.

T2D, Cholesterol, and Neuropathy: What's the Link?– *Continued from page 4*

and 36 who were free of DPN. All individuals underwent a magnetic resonance neurography of the right middle thigh with a 3.0-T scanner at a single center in Germany.

Among individuals with DPN, the average lesion load in vital nerve tissue was about 20%, with an average 63 mm maximum lesion length, compared with only 10% in those without DPN, with a 50 mm maximum lesion length.

Those with DPN had significantly lower total serum cholesterol levels, which was driven by lower LDL cholesterol levels, as follows:

- Total serum cholesterol level: 175.00 mg/dL [DPN] vs 197.31 mg/dL [No DPN]
- HDL cholesterol level: 52.21 mg/dL vs 51.14 mg/dL
- LDL cholesterol level: 87.73 mg/dL vs 113.90 mg/dL
- Triglycerides: 221.92 mg/dL vs 166.71 mg/dL

Both total serum cholesterol levels and LDL cholesterol were positively correlated with tibial and peroneal nerve conduction velocities, and tibial nerve CMAP.

"To our knowledge, this study was the first to visualize in vivo that low levels of serum cholesterol, specifically LDL-C, were accompanied by peripheral nerve damage in [type 2 diabetes] DPN," the research group wrote, noting that the study "contradicts the results of previous studies that indicated that lowering serum cholesterol levels potentially slows the progression of DPN by lowering total serum cholesterol and LDL-C levels."

"Instead, our findings are in line with results of previous studies that found that the intake of statins and a decrease

of serum cholesterol level are associated with neuropathic symptoms, microvascular damage, and an accelerated deterioration of peripheral nerve fibers," Kurz and co-authors said.

They said that one possible explanation for the findings could be that "lowering serum cholesterol levels impairs peripheral nerve regeneration because cholesterol cannot be produced in axons and therefore has to be supplied to neurite tips and adjacent Schwann cells of regenerating axons by either axonal transport or external supply via HDL-C and LDL-C."

Because so many new therapies are now aimed at treating dyslipidemia in type 2 diabetes, like PCSK9 inhibitors, patients with low cholesterol levels should be on high alert for any signs of neuropathy, the researchers concluded.

The study was supported by grants from the German Research Foundation.

Several co-authors reported financial relationships with industry.

LAST UPDATED 05.31.2019

- Primary Source – JAMA Network Open

Source Reference: Jende J, et al "Association of Serum Cholesterol Levels With Peripheral Nerve Damage in Patients With Type 2 Diabetes" JAMA Netw Open 2019; 2(5): e194798

Used by permission of MedPage Today.

FOOT HEALTH INFORMATION FROM VANESSA KETTLER

VISUALIZE FOOT HEALTH

This article can be used as a guide while practicing any foot exercises, enhancing the effectiveness significantly. The visualizations described here are of special use for anyone who has difficulty moving. If exercise is not in the cards for you right now, use these techniques to visualize health and move toward it.

Visualization in this context is interpreted as the use of mental images to influence physical ability, control pain, or prepare for performance. It is employed extensively as a training tool in competitive sports. In our case we are using visualization to improve foot function, especially for those who have nerve damage or for anyone who has more difficulty with their feet than they used to. Visualization helps to reduce tension, improve circulation, and flow of energy. By visualizing using your feet in a positive way, you promote strength, balance, and function.

Examples of how visualization can help:

- A nearly blind student visualizes being able to focus his eyes even if he actually can't. The act of visualizing improves his balance in much the same way it would if he could see.
- A number of years ago one of my students suffered a terrible event that resulted in four crushed vertebrae and multiple fractures to ALL her ribs. For two years she visualized daily how she would one day be performing Hatha Yoga. She reached her goal!
- A member of my dance company was so terrible at a particular choreography that I was going to have to cut her from an upcoming performance. I did not see her for two weeks. She came back and executed the choreography perfectly! She had not practiced it at all, at least not in a traditional way. What she had done was visualized in her mind doing the dance in great detail. The act of visualizing the steps had successfully trained her nervous system to be able to perform them flawlessly.
- The US Olympics Ski Team practices visualization while waiting to perform. They visualize what a perfect run would be and they do so in great detail. Visualization has become an essential tool for many professional sports.

Visualization Possibilities:

Visualizing foot and ankle alignment: Whenever you do any exercise, it is helpful to concentrate on the correct method as you move. The feet have 32 joints each. The ankle itself has 10. As we take a step, the joints move and adjust to circumstances like the kind of terrain we are stepping upon, acting in effect like shock absorbers. If we concentrate on proper alignment as this adjustment takes place, our balance is improved, we strengthen the best muscles of the ankle and foot and we limit tenderness from other problems.

Roll through the central line of your feet: This is a productive visualization while walking or when flexing and pointing your

foot during seated foot exercises. The central line of the foot runs from the center of the back of the heel, through the arch and forward out through the second toe. Focus on this line as you roll through your feet when you walk. Heel touches first, roll through the arch, push off with the ball of the foot.

If your step ever feels unsteady, think of focusing your weight into the point at the base of the second toe (the toe next to the big toe). This is the balance and energetic center of the foot.

More helpful foot visualizations:

- Visualize beauty. Visualize pleasure. Visualize delighted feet. Visualize pleasant sensation: water, sun, sand, the touch of a child's foot, the fun of splashing. Imagine that your feet and toes are supple, nimble and agile.
- Imagine the bottoms of your feet growing roots into the earth.
- Imagine headlights coming out the fronts of your toes. Think of the fronts of your toes as being open instead of closed. Envision energy shooting out your toe headlights.
- Imagine having webbed toes that spread out as you step.

Mobility in the ball joints of the feet is crucial for improving balance. Most of us use our feet as if they are single blocks. Learn to stretch and bend in these joints at the base of the toes, using massage, visualization, and the foot exercises of Building Better Balance.

Foot Dermatomes: A dermatome is a root nerve map. The root nerves of the spine can reflect pain in the foot itself. When sensation is felt in a particular area of the foot it may be related to impingement of the root nerve close to the spine. One way to determine if this phenomenon is involved is to rub topical anti-inflammatory gel or creme into the sacral or lumbar spine. Foot relief may result, an important fact to tell your doctor. A special feature on the use of dermatomes is included in the 3rd Building Better Balance DVD, Developing Spine Health.

"Vanessa Kettler is the creator, developer, and producer of the Building Better Balance DVD series. The classes address many of the issues we face as we age especially fall prevention and balance improvement. Each DVD is a one-hour class with 45 minutes of gentle movement combined with 15 minutes of tips about preventing falls and improving health. The exercises are different on each DVD with focus varying from improving balance, learning how to walk much more easily, developing health in the lower and upper spine, and reducing the symptoms of chronic conditions. All exercises have the goal of improving balance. A special feature highlighting exercises for peripheral neuropathy is included."

"The DVDs are \$30 each. The price of a full set (4 DVDs) is \$100 (that's a 20% discount). You can order the DVDs by going to the website www.building-better-balance.com. Shipping is free. You can also order the DVDs over the phone using a credit card. Call (707) 318-4476 and leave a message " Vanessa Kettler, Balance and Fall Prevention www.building-better-balance.com (707) 318-4476

MEDICAL MARIJUANA AND OLDER ADULTS

Well tolerated among elderly patients; nearly a third reduced opioids

By Judy George, Contributing Writer, MedPage Today, February 28, 2019

PHILADELPHIA -- Medical cannabis was well-tolerated among elderly patients and provided significant symptomatic benefits, a retrospective chart review showed.

Adults who were an average age of 81 experienced relief in chronic pain, sleep, neuropathy, and anxiety with medical cannabis, reported Laszlo Mechtler, MD, of Dent Neurologic Institute in Buffalo, New York, and colleagues, in an early-release abstract from the American Academy of Neurology meeting to be held here in May.

Moreover, 32% reduced their opioid pain medication, they added.

At first, about a third of patients experienced adverse effects -- mostly sleepiness, balance problems, and gastrointestinal disturbances -- but in 13% of patients, those problems resolved when dosages were adjusted.

Similar findings were seen last year in a study published in the *European Journal of Internal Medicine*, in which elderly patients reported significantly less pain with medical cannabis and more than 18% stopped or reduced opioid analgesics.

In the U.S., people age 65 and older are among the fastest-growing group of cannabis users. To date, 33 states and the District of Columbia have legalized medical marijuana. Ten states also have legalized recreational use, and that's caused some experts to be concerned about older adults who may self-treat medical problems without guidance.

"Evidence is growing in support of some indications for medical cannabis -- pain, for example -- and that needs to be weighed against side effects to which older adults may be more vulnerable, like dizziness, somnolence, confusion, and dry mouth," Joshua Briscoe, MD, of Duke University Medical Center, told MedPage Today. "Older adults should use caution when experimenting with medical cannabis on their own and share the details of such use with their physicians."

In this study, Mechtler and colleagues analyzed charts of 204 patients from ages 75 to 102 years who used the New York

state's Medical Marijuana Program. They had an average age of 81 and were followed in a neurologic outpatient setting in Buffalo. Of the total sample, 129 were women and 75 were men.

Participants took various ratios of tetrahydrocannabinol (THC) to cannabidiol (CBD) by mouth as a liquid extract tincture, capsule, or in an electronic vaporizer, for an average of 16.8 weeks.

Initially, 34% of participants experienced adverse effects; after adjusting dosages, that figure dropped to 21%. The most common side effects were sleepiness (13%), balance problems (7%), and gastrointestinal disturbances (7%). Due to side effects, seven patients (3.4%) stopped using medical marijuana. The most common ratio of THC to CBD among people who reported no side effects was 1:1.

Overall, 69% of participants experienced symptom relief, largely improvements in pain (49%), sleep (18%), neuropathy (15%), and anxiety (10%).

"With legalization in many states, medical marijuana has become a popular treatment option among people with chronic diseases and disorders, yet there is limited research, especially in older people," Mechtler said in a statement.

"Our findings are promising and can help fuel further research into medical marijuana as an additional option for this group of people who often have chronic conditions," he added. "Future research should focus on symptoms like sleepiness and balance problems, as well as efficacy and optimal dosing."

The study was supported by the Dent Family Foundation.

• Primary Source – American Academy of Neurology

Source Reference: Bargnes V, et al "Safety and efficacy of medical cannabis in elderly patients: a retrospective review in a neurological outpatient setting" AAN 2019. This article is used with the permission of Med Page Today.

STEM CELL BREAKTHROUGH

Now there is hope for children with spinal muscular atrophy (SMA), through the work of Dr. Jerry Mendell and the Center for Gene Therapy at the Abigail Wexner Research Institute Nationwide Children's Hospital in collaboration with colleagues at the Ohio State University. Zolgensma developed by Dr. Mendell and team at OSU was recently approved by the FDA as the first ever IV gene therapy.

A child with spinal muscular atrophy usually dies by two years of age. Evelyn is four-years-old and hitting every growth marker quite well after having this medication administered shortly after birth. Her sister, born before Evelyn was conceived, lived only 18 months.

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