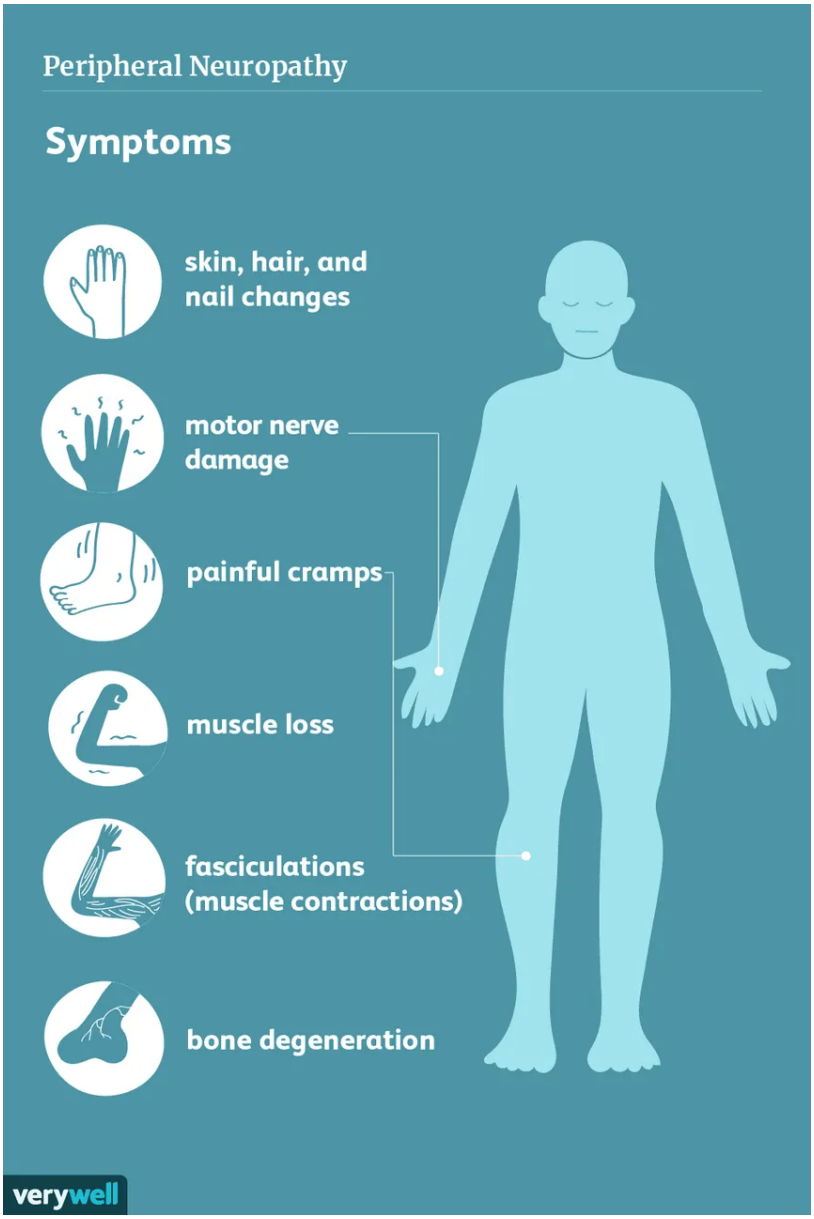
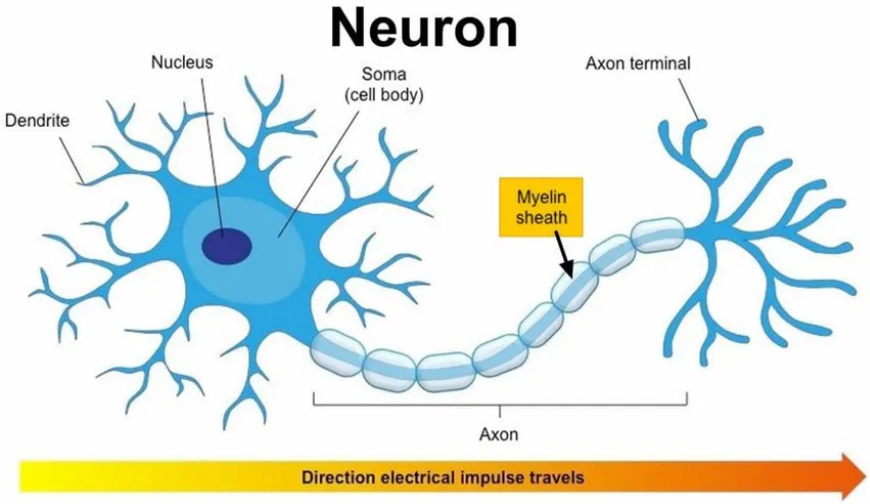
Peripheral Neuropathy - April 8 2024





Summary:

Address the cause:

- *diabetes or prediabetes,*
- *infection,*
- *drugs,*
- *heavy metals,*
- *other toxins,*
- *hypothyroid,*
- *trauma or pressure on nerve.*
- *Bone marrow disorders*
- *Copper deficiency**

Supplements:

- *R-Alpha Lipoic Acid, more effective than regular alpha lipoid acid*
- *Benfotiamine (Fat soluble B1), more effective than thiamine*
- *Pyridoxal-5-Phosphate (B6-P5P) - don't take pyridoxine*
- *Methylcobalamin (B12), Hydroxycobalamin - not cyanocobalamin*
- *Acetyl-L Carnitine,*
- *L-Citrulline,*
- *Folate. Not folic acid*
- *Copper, if necessary - balance with zinc*

***Near Infrared Light** - between 810 - 110 nm wavelength - pads must cover the entire area treated, FDA cleared, not a hand held device.*

Exercises for foot neuropathy:

- *https://youtu.be/loUuq7rPTH0?si=YFDgNmNDcaSai-r6*
- *https://youtu.be/zIVgAS-xTqI?si=Hr7hmAvi00ZMZqzY*

==========

Mainstream Information - Mt Sinai

Peripheral Neuropathy means damage to the peripheral nerves - not in the central nervous system. One or more nerves may be affected.

Possible causes:

- Diabetes is the most common cause
- Autoimmune disorders, such as rheumatoid arthritis or lupus
- Chronic kidney disease
- Infections such as HIV/AIDS, shingles, hepatitis C (Also Lyme disease)
- Low levels of vitamin B1, B6, B12, or other vitamins
- Metabolic disease
- Poisoning due to heavy metals, such as lead
- Poor blood flow to the legs
- Underactive thyroid gland
- Bone marrow disorders
- Tumors
- Certain inherited disorders

- Trauma or pressure on a nerve
- Long-term, heavy alcohol use
- Glue, lead, mercury, and solvent poisoning
- Drugs that treat infections (Cipro), cancer, seizures, and high blood pressure
- Pressure on a nerve, such as from carpal tunnel syndrome
- Being exposed to cold temperatures for a long period of time
- Pressure from bad-fitting casts, splints, a brace, or crutches

Symptoms:

- Tingling or burning in the arms and legs, often starting in your toes and feet.
- Deep pain in the feet and legs.
- Loss of feeling in your legs and arms.
- Numbness can cause a loss of balance and stumbling.
- Muscle weakness and lack of control. Muscles may become smaller.
- Problems digesting food. Feeling full and having heartburn after eating only a little food.
- Trouble swallowing. It has been estimated that more than 20 percent of individuals over the age of 50 have trouble swallowing. Diarrhea or constipation. Vomiting undigested food.
- Postural hypotension.
- Unaware of heart problems.
- Sexual problems. Some people may not be able to tell when their blood sugar gets too low.
- Leaking urine.
- Sweating too little or too much and problems controlling body temperature.

Treatment:

- Diabetes should be controlled.
- Stop drinking or using other toxic substances..
- Low levels of B12 or other vitamins should be supplemented.
- Drugs to suppress the immune system if due to an autoimmune disorder.
- Surgery to remove pressure from a nerve.
- Exercises to improve muscle strength and control.
- Wheelchairs, braces, and splints may improve movement or the ability to use an arm or leg that has nerve damage.

==========

Shared Information:

Liz: Has had this problem starting in high school. Might be lack of blood flow She uses heat lamps, benfotiamine, and L-carnitine 1,000 mg three times/day (TID). She feels the difference with L-carnitine. They also give high doses of L-carnitine (10 gm/1000 lb) to horses in their feed. After taking it, her muscles want to move. Most days no symptoms. Only comes back with lack of sleep or cutting off circulation. Heat lamp (infrared) helps a lot - the same ones used to heat chickens - from tractor supply store. She shines them on her legs. You can also use them to make an infrared sauna. Pulse in the legs was ok - doctor checked. Cold feet even in summer. Grounding mat in bed, better circulation and no cold feet in summer.

Jeanne: Movement is important, even if it's the vibration plate or Qigong. It started in her toe with pins and needles. Getting worse and now feet hurt in the morning. She had Renaud's Disease and cayenne pepper helped this lack of circulation. She read that **progesterone helps**

regrow the myelin. After looking this up in google scholar, we found many studies showing that progesterone stimulates the growth of myelin sheath after damage.!!

Jennifer: Cold feet - boiled ginger and soak in water to improve circulation. She has leg cramps - may be peripheral neuropathy. Uses pendulum for supplements - takes cal-mag. She doesn't take potassium yet.
Alta: Will share this with a friend with type 1 diabetes, peripheral neuropathy and macular degeneration. She has a biology background, so could really benefit by reading the studies.

Liz: Dance music makes her move.

Maryetta: Fractured her sacrum in February, but no symptoms until March. Have had several cortisone shots, and have missed her exercise at the Y. Physical Therapist suggested a recumbent bike. Use to do yoga. Have had constipation, which is unusual for her. Chemo caused peripheral neuropathy. Has had good results with acupuncture for peripheral neuropathy and other problems.

Connie: Noni Juice reverses postmenopausal osteoporosis and helps bones heal and for hemorrhoids. 2 oz/day.
Diabetics or someone with high blood sugar or high triglycerides have glycated proteins, which means the sugar attaches to proteins, damaging them. This is one mechanism that causes nerve damage in diabetics. Many studies are done in treated diabetics on peripheral neuropathy and the supplements listed above, especially alpha lipoid acid and benfotiamine. Depending on how the studies are performed, they do experience improvement in symptoms.

Jeanne: Doctors don't always know the studies with natural supplements. People have to research the studies, not limit themselves with what the doctors know. She thinks her symptoms of aging have something to do with her lack of mobility. She moved from a house with stairs to one floor living and she feels as though this has made a difference in her mobility issues.

Alta agrees that since she stopped using a tram to go up and down her steps, her breathing is much better. And she only goes up the steps twice/day and it makes this difference.

Jennifer agrees. She uses the computer at the island so she's standing.

Liz puts on dance music to inspire her to move.

Connie says 'get a dog'. Her dog Willow demands she go out for a walk or play with her in the house many times/day.

Maryetta broke her sacrum falling off a ladder, so she couldn't go to the Y to exercise for a month. She normally goes for 4 hours twice/week, which is great for mobility and her social life. She use to do yoga and even went to an Ashram for a retreat. That was 40 years ago, but she still tries to exercise as much as possible. She's going to use the recumbent bike rather than the stationary bike to take the pressure off her sacrum. She uses a special pillow to sit on and take the pressure off of that area. She notices that the break changed her bowel habit. She has peripheral neuropathy from chemo and has to take gabapentin for the pain. She has had a couple cortisone shots in her sacrum.

She is taking bone strength supplements twice/week. The exercise combined with supplements would help her bones heal. She is also going to add Noni Juice to her supplements to increase bone healing.

Connie points out the cortisone takes the calcium out of the bone, which could delay healing of the bone. She refers to our previous meeting on bones and joints. Noni Juice has been shown in studies to reverse post-menopausal osteoporosis and help healing when there's a problem healing after a break. Refer to our previous meeting on Bones and Joints. Noni also healed her hemorrhoids. She also suggests a vibrating platform and infrared light for healing bone. The Y might have a vibrating platform.

Jennifer Every day she does Qigong, including the standing meditation. Her practice from Master Lu is seasonal and so the rest of the practice changes. She demonstrates the standing meditation. There is extra energy with the solar eclipse, so Master Lu suggests doing the meditation several times today. Every Thursday night is a 30 min standing meditation with a large international group. She was only able to do 30 minutes because of the energy she receives in the group. This Thursday night meditation is free and she buys the seasonal classes. Here is Grand Master Lu's website, which is a wealth of information:
https://www.grandmasternanlu.com/
He also has a YouTube channel.
Jennifer also does acupuncture.

Jeanne, Alta and Maryetta have also had excellent results with acupuncture, especially those trained in China.

Helpful Therapies from YouTube:

Dr Joe Exercises for Foot neuropathy:
https://youtu.be/loUuq7rPTH0?si=YFDgNmNDcaSai-r6

Bob&Brad Exercises for Foot neuropathy:
https://youtu.be/zIVgAS-xTqI?si=Hr7hmAvi00ZMZqzY

Dr Ken Berry: Possible causes and treatments
https://youtu.be/Vn4O6wrs72M?si=-kXa2YNyI9Od98th

Drugs to treat: Amitryptyline, Neurontin, Tegretol, Lyrica
Possible Causes:
Rare: Alcoholism, Chemo, heavy metals, porphyria, B12 deficiency, Lyme disease, small vessel vasculitis
Common: Diabetes, hyperglycemia, pre-diabetes, chronic hyperinsulinemia, metabolic syndrome, chronic inflammation, autoimmunity.
Treatments (Nerves grow very slowly, so healing takes months):
Diet - low carbohydrates, especially grains,
Fasting - intermittent - to a 14- 20 hour/day fast.

Physiotherapy: Alpha Lipoid Acid

https://youtu.be/gFbV_W865Cg?si=scpAD0b-d0REC_sH

The Nerve Doctors - Causes:
https://youtu.be/Pmigkkt0r2M?si=ygkaUDNbYlJxoBsO

Drugs:
- Chemo
- Statins,
- Calcium Channel Blockers: Amlodipine
- Cipro, Levaquin - fluoroquinolone antibiotics,
- Antidepressants

Regular alcohol consumption, even light drinking
Celiac disease
Inflammatory bowel disease
Malnutrition
Bariatric surgery
Surgeries that directly damages the nerve
Compression to nerve over a period of time
Chronic Kidney Disease
Contrast dyes - colonoscopy, MRI, CT scans, PET scans
Shingles, Lyme Disease and HIV.

The Nerve Doctors: Nerves can heal.
https://youtu.be/a3P3I5M8kCw?si=-wbt7R0IDs1ugmuf

Supplements: R-Alpha Lipoic Acid, Benfotiamine (Fat soluble B1), Pyridoxal-5-Phosphate (B6-P5P), Methylcobalamin (B12), Acetyl-L Carnitine, L-Citrulline, Folate.
Near Infrared Light - between 810 - 110 nm wavelength - pads must cover the entire area treated, FDA cleared, not a hand held device.

Dr Berg - Supplements for Sciatica, Carpal Tunnel, & other neurological problems
https://youtu.be/S-nrK7wcnvc?si=ueiU5Qoa--ic2PmK

B6 - Pyridoxal-5-Phosphate (B6-P5P) - the active form. Don't take pyridoxine, the inactive form. It could create a deficiency. Food sources mostly animal protein sources.
B12 - Builds up the myelin sheath. Nerve regeneration. Take methylcobalamin, not cyanocobalamin. Food sources are animal based food. Also a genetic problem.
B1 - Benfotiamine (the fat soluble form). Involved with blood flow and the myelin sheath.
Also, there's a copper deficiency in sciatica. Essential for collagen and the nervous system. Use copper brace for the back. Foods meat, shellfish, liver, dark chocolate.
Copper supplement start at 2 mg/day and increase slowly to 20 mg.

https://youtu.be/h8-_UI1f2dw?si=GKWqBrpX9bcwqCjh

Stretches for sciatica:
https://youtu.be/Htiz00ktAM4?si=HUZ7gAWmxZn8y3Qa

Science on Supplements:

R-Alpha Lipoic Acid - better absorption than regular ALA.

Increasing bioavailability of (R)-alpha-lipoic acid to boost antioxidant activity in the treatment of neuropathic pain.
https://europepmc.org/article/med/26694149
"this first investigation confirms the role of R-aLA as an anti-oxidant for the aetiological treatment of peripheral neuropathy. Increasing its plasma bioavailability even after a non-invasive administration through the oral route is a good starting point for proposing a valid adjuvant for the treatment of pain symptoms."

Efficacy and Safety of the Combination of Superoxide Dismutase, Alpha Lipoic Acid, Vitamin B12, and Carnitine for 12 Months in Patients with Diabetic Neuropathy - 2020
https://www.mdpi.com/2072-6643/12/11/3254
"The combination of the four elements in one tablet for 12 months in patients with DMT2 improved all indices of peripheral neuropathy, including SNAP and SNCV, pain, and Quality of Life perception, except CARTs and MNSIE."
Supplement: Libytec Combinerv. Ingredients: ALA 570 mg, SOD Glysodin 10 mg, Acetyl-L-Carnitine 300 mg, B12 2.5 mcg (no other information on ingredients provided)
https://www.vita4you.gr/en/libytec-combinerv-20-tabs

Nutritional neuropathies
https://onlinelibrary.wiley.com/doi/abs/10.1002/mus.26783
"Neuropathies associated with nutritional deficiencies are routinely encountered by the practicing neurologist… Patients with **cobalamin (B12)** and **copper** deficiency neuropathy characteristically have concomitant myelopathy, whereas **vitamin E** deficiency is uniquely associated with a spinocerebellar syndrome. In contrast to those nutrients for which deficiencies produce neuropathies, **pyridoxine (B6) toxicity** results in a non–length-dependent sensory neuronopathy. Deficiencies occur in the context of malnutrition, malabsorption, increased nutrient loss (such as with dialysis), autoimmune conditions such as pernicious anemia, and with certain drugs that inhibit nutrient absorption. **When promptly identified, therapeutic nutrient supplementation may result in stabilization or improvement of these neuropathies**."

*Note that B6 should be taken in the P5P form, not the pyridoxine in cheaper supplements.
Ref: **Vitamin B-6-Induced Neuropathy: Exploring the Mechanisms of Pyridoxine Toxicity** 2021
https://www.sciencedirect.com/science/article/pii/S2161831322004781

Oral Benfotiamine 300 mg Versus Intramuscular Thiamine in Diabetic Patients with Peripheral Neuropathy - 2022
https://www.semanticscholar.org/paper/Oral-Benfotiamine-300-mg-Versus-Intramuscular-in-Hefnawy-Ramadan/d096682e37c1ced528e758fba2eafd0f93c61464?p2df
"Oral Benfotiamine 300 mg is safe and more effective than intramuscular Thiamine HCl, in increasing vitamin B1 blood level in patients with diabetic peripheral Neuropathy, which in turn relieves peripheral neuropathy"

Progesterone as a neuroactive neurosteroid, with special reference to the effect of progesterone on myelination - 2000
https://academic.oup.com/humrep/article/15/suppl_1/1/716144
"progesterone inhibits the neuronal nicotinic acetylcholine receptor, whereas its 3α,5αreduced metabolite 3α,5α-tetrahydroprogesterone (allopregnanolone) activates the γ-aminobutyric acid

receptor complex A (GABA-RA). Besides these effects, neurosteroids also regulate important glial functions such as the synthesis of myelin proteins. Thus, in cultures of glial cells prepared from neonatal rat brain, progesterone increases the number of oligodendrocytes expressing the myelin basic protein (MBP) and the 2′,3′-cyclic nucleotide-3′-phosphodiesterase (CNPase). An important role for neurosteroids in myelin repair has been demonstrated in the rodent sciatic nerve, where progesterone and its direct precursor pregnenolone are synthesized by Schwann cells. After cryolesion of the male mouse sciatic nerve, blocking the local synthesis or action of progesterone impairs remyelination of the regenerating axons, whereas administration of progesterone to the lesion site promotes the formation of new myelin sheaths."

Progesterone synthesis and myelin formation in peripheral nerves 2001
https://www.sciencedirect.com/science/article/abs/pii/S0165017301001394
"Schwann cells, the myelinating glial cells in the peripheral nervous system, synthesize progesterone in response to a diffusible neuronal signal. In peripheral nerves, the local synthesis of progesterone plays an important role in the formation of myelin sheaths. This has been shown in vivo, after cryolesion of the mouse sciatic nerve, and in vitro, in cocultures of Schwann cells and sensory neurons. Schwann cells also express an intracellular receptor for progesterone, which thus functions as an autocrine signalling molecule. Progesterone may promote myelination by activating the expression of genes coding for transcription factors (Krox-20) and/or for myelin proteins (P0, PMP22). Recently, it has been proposed that progesterone may indirectly regulate myelin formation by influencing gene expression in neurons. Steroid hormones also influence the proliferation of Schwann cells: estradiol becomes a potent mitogen for Schwann cells when levels of cAMP are elevated and glucocorticosteroids have been shown to increase the mitogenic effects of peptide growth factors."

Progesterone and progestins: neuroprotection and myelin repair - 2008
https://www.sciencedirect.com/science/article/abs/pii/S1471489208001586
"Progesterone, known for its role in pregnancy, also exerts marked effects on the nervous system. Its neuroprotective and promyelinating actions, now well documented by experimental studies, make it a particularly promising therapeutic agent for neuroinjury and neurodegenerative diseases. This concept has recently been translated into clinical practice, though there is need for more experimental studies and investigations on the mechanisms of the actions of progesterone."

Iodine:

Iodine Deficiency and the Brain: Effects and Mechanisms -2016
https://www.tandfonline.com/doi/abs/10.1080/10408398.2014.922042
"Iodine is an essential micronutrient needed in human diets. As iodine is an integral component of thyroid hormone, it **mediates the effects of thyroid hormone on brain development. Iodine deficiency is the most prevalent and preventable cause of mental impairment in the world.** The exact mechanism through which iodine influences the brain is unclear, but is generally thought to begin with genetic expression. Many brain structures and systems appear to be affected with iodine deficiency, including areas such as the hippocampus, microstructures such as myelin, and neurotransmitters. The clearest evidence comes from the studies examining cognition in the cases of iodine deprivation or interventions involving iodine supplementation. Nevertheless, there are many inconsistencies and gaps in the literature of iodine deficiency, especially over the lifespan. This paper summarizes the literature on this topic, suggests a causal

mechanism for iodine's effect on the brain, and indicates areas for the future research (e.g., using magnetic resonance imaging (MRI) and functional MRI to examine how iodine supplementation facilitates cognitive functioning).”