

Support for Healthy Peripheral Nerves

Developed and reviewed by the clinical, chiropractic, and naturopathic members of the Standard Process team

Peripheral Nerve Function and Significance

Peripheral nerves relay motor and sensory information between the central nervous system and the viscera, muscles, and sensory receptors in a bidirectional manner. Peripheral nerves also regulate autonomic processes such as heart rate, respiration, blood pressure, and digestion.

Rapid communication between the peripheral and central nervous systems depends on myelination. Myelination is a process through which Schwann cells create myelin—a lipid-rich insulating sheath around nerve axons that acts as an electrical insulator. Myelinated nerves, like large motor neurons and muscle spindles, achieve faster nerve impulse conduction velocity than unmyelinated sensory nerves that transmit pain and temperature signals.

When peripheral nerves cannot send and receive signals properly, it can have serious consequences for the body. Peripheral neuropathy encompasses a range of conditions that involve damage to the peripheral nervous system. Diabetes mellitus is the top cause of peripheral neuropathy in the United States. Other common causes include nutritional deficiencies, vascular problems, autoimmune disease, and exposure to toxins and medications — such as in the case of chemotherapy-induced peripheral neuropathy. Peripheral nerves can regenerate to an extent if the surrounding connective tissue is intact. Schwann cells play a critical role in regenerating nerve cell axons in the peripheral nervous system by providing nerve growth factors and creating the myelin sheath that encases nerve fibers.

Nutrition and lifestyle factors can support peripheral nerve health through healthy metabolic function, balanced immune and inflammatory response, vascular health, and nutrient repletion.

Supportive Lifestyle Practices

- Educate patients on the importance of blood sugar management for peripheral nerve health. Chronically elevated blood sugar disrupts nerve signaling and damages blood vessels that deliver nutrients and oxygen to nerves. Disruptions in the insulin signaling pathway prohibit axon repair and encourage apoptosis of damaged cells.¹
- Encourage patients to engage in regular physical activity, which has been shown to support nerve myelination and axonal regeneration.² Myelin expansion can be induced in humans throughout the entire lifespan by intense aerobic exercise. An active lifestyle also promotes healthy blood circulation and the delivery of nutrients and oxygen to peripheral nerves.
- Consider acupuncture and electroacupuncture as interventions for peripheral neuropathy. Meta-analyses confirm their effectiveness for diabetic neuropathy, carpal tunnel syndrome, and Bell's Palsy.³

Whole Foods Nutritional Recommendations

- Encourage regular consumption of foods rich in omega-3 polyunsaturated fatty acids such as salmon, calamari, tuna, sardines, and mackerel. Omega-3 fatty acids support healthy myelin production and modulate inflammatory and immune processes in the nervous system.⁴
- Recommend that patients eat foods rich in vitamin B₁₂ such as red meat, fish, poultry, and eggs. Vitamin B₁₂ supports the synthesis of myelin and modulates neuronal apoptosis.⁵
- Encourage a diet rich in thiamine-rich foods like whole grains, meat, and fish. Thiamine supports the maintenance of nerve membrane function, the synthesis and maintenance of myelin, and modulates oxidative stress affecting nerve cells.⁵

Dietary Supplement Regimen



Cataplex® B₁₂

Suggested Use: **1 tablet per day**

- Essential for normal myelin synthesis and central nervous system function*
- Excellent source of vitamin B₁₂



Turmeric Forte

Suggested Use: **1 tablet 1-2 times daily**

Turmeric Forte contains a bioavailable form of Turmeric rhizome and Fenugreek seed. These herbs and their constituents:

- Support a healthy inflammatory response*
- Provide antioxidant activity*



Olprima™ EPA|DHA

Suggested Use: **2 softgels per day**

Through a 55:45 ratio of omega-3s EPA and DHA, Olprima™ EPA|DHA supports brain health and the body's healthy inflammatory response.*



Neuroplex®

Suggested Use: **2 capsules per day**

Neuroplex® combines synergistic ingredients to support the nervous and endocrine systems.*

- Supports the nervous system*
- Vitamin B₆ is involved in neurotransmitter formation, important for cognitive functioning*
- Excellent source of thiamin, riboflavin, niacin, vitamin B₆, iron, zinc, and copper

Assessment of Peripheral Nerve Health

In Office/Physical Exam

- Physical exam: Visual inspection and sensory examination of extremities including vibration, light touch, and pain. Assess myotomes of upper and lower extremities and deep tendon reflexes.
- Lab studies: Complete blood count, vitamin B₁₂, methylmalonic acid, homocysteine, fasting blood glucose, HbA1c, auto-antibodies, C-reactive protein
- Medical History: metabolic health, alcohol intake, vegetarianism/veganism, age, malabsorption syndromes, medications
- Electromyography test (EMG)
- Imaging such as MRI in appropriate patients

REFERENCES

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3. Dimitrova, A., et al. (2017). Journal of alternative and complementary medicine, 23(3), 164–179.

4. Silva, R. et al. (2017) Frontiers in pharmacology, 8, 723.

5. Calderón-Ospina, C. A., & Nava-Mesa, M. O. (2020). CNS neuroscience & therapeutics, 26(1), 5–13.