

Unlocking Nerve Health with Holistic Neuropathy Solutions

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STORY AT-A-GLANCE

- › Diabetic peripheral neuropathy (DPN) is a widespread complication of diabetes, leading to nerve damage that causes pain and numbness, significantly affecting quality of life
- › Holistic treatments for DPN include vitamin supplementation, exercise, and stress relief techniques, which may provide additional symptom relief alongside conventional methods
- › Schwann cells are crucial for nerve repair, but high glucose levels in diabetes disrupt their function, leading to nerve damage. Targeting these disruptions could offer new therapeutic strategies
- › Effective management requires maintaining stable blood sugar, limiting linoleic acid intake to 5 grams daily, optimizing protein consumption, regular exercise, and practicing stress relief techniques
- › Natural remedies such as vitamin B and D supplements, capsaicin creams, warm baths, meditation, and acupuncture can help alleviate symptoms and enhance overall well-being

Diabetic peripheral neuropathy, or DPN, is the most common cause of neuropathy worldwide, affecting approximately half of all diabetes patients, and its prevalence increases with the duration of diabetes.¹

It is characterized by symmetric, sensory nerve damage that is typically distal-to-proximal, meaning the damage starts at the farthest points from the central nervous

system (hands and feet) and gradually moves closer to the body's core. This nerve damage leads to persistent pain and numbness.

Living with DPN can take a significant toll on your quality of life. The unrelenting pain associated with this condition can disrupt your sleep, affect your mood, and reduce your overall functionality. Studies have shown that up to 26.8% of individuals with diabetes experience pain or tingling due to DPN.²

Unfortunately, as noted in a March 2024 paper in the Journal of Pain Research, painful diabetic peripheral neuropathy is frequently misdiagnosed and underserved, leading to inadequate pain management and reduced quality of life for patients.³ This oversight emphasizes the need for a comprehensive approach in treating painful DPN, addressing both the underlying diabetes and the neuropathic pain symptoms.

Current conventional treatments for DPN primarily focus on controlling blood sugar levels and managing pain through medications. However, specific therapies are limited, and many patients continue to suffer despite these interventions. By exploring holistic treatments such as vitamin supplementation, exercise, and stress relief techniques, you might find additional ways to alleviate your symptoms and improve your quality of life.

In this article, I review the latest research on the diagnosis and treatment of DPN, with a particular emphasis on managing neuropathic pain. Understanding these holistic approaches could empower you to take a more active role in your health management and discover effective strategies for coping with this condition.

Diagnosis and Current Management of Diabetic Peripheral Neuropathy

DPN is a condition that requires careful diagnosis and management. Diagnosing DPN typically involves a clinical evaluation, which includes a thorough medical history and physical examination. Physicians often use nerve conduction studies to assess the electrical activity of nerves and determine the extent of nerve damage. These tests are crucial for confirming a diagnosis of DPN and evaluating its severity.

The conventional approach to managing DPN focuses on symptom relief, primarily through drugs, along with lifestyle modifications to control your glucose levels. As noted in the Journal of Pain Research:⁴

"The management of painful DPN involves treating its underlying cause via lifestyle modifications and intensive glucose control, targeting its pathogenesis, and providing symptomatic pain relief, thereby improving patient function and health-related quality of life.

Four pharmacologic options are currently approved by the US Food and Drug Administration (FDA) to treat painful DPN. These include three oral medications (duloxetine, pregabalin, and tapentadol extended release) and one topical agent (capsaicin 8% topical system).

More recently, the FDA approved several spinal cord stimulation (SCS) devices to treat refractory painful DPN. Although not FDA-approved specifically to treat painful DPN, tricyclic antidepressants, serotonin/norepinephrine reuptake inhibitors, gabapentinoids, and sodium channel blockers are common first-line oral options in clinical practice."

The three drugs mentioned – duloxetine, pregabalin, and tapentadol – are primarily used to manage neuropathic pain. While these drugs can help alleviate pain, they often come with side effects and do not address the root cause of nerve damage.

Topical agents are also commonly prescribed to alleviate pain, while spinal cord stimulation (SCS) devices offer an alternative for patients who do not respond well to pharmacological treatments. These devices provide targeted pain relief by modulating pain signals before they reach your brain.⁵

Maintaining Healthy Blood Sugar Levels Is Crucial

Maintaining stable blood sugar levels is essential to prevent further nerve damage. This involves regular monitoring of blood glucose, adhering to a balanced diet, minimizing your linoleic acid (LA) consumption, and engaging in regular physical activity. These

lifestyle changes are foundational in managing high blood sugar, which is one of the primary underlying causes of DPN.

Regular physical activity, a balanced diet, and weight management are also important strategies that support overall nerve health and can help mitigate pain symptoms. Additionally, maintaining healthy blood pressure and cholesterol levels helps reduce the risk of further complications.⁶

Other holistic approaches and natural remedies are also gaining attention for their potential benefits in managing DPN. These include vitamin supplementation, stress relief techniques, and alternative therapies like acupuncture. Such approaches aim to complement traditional treatments and offer additional symptom relief, enhancing the overall quality of life for those affected by DPN.

Schwann Cells: Guardians of Nerve Health in Diabetes

Why is maintaining stable blood sugar such a key facet of DPN treatment? An August 2024 study published in the journal *Frontiers in Endocrinology* provides the answer. As explained in this study, Schwann cells are essential for maintaining healthy nerves.⁷

These cells wrap around nerve fibers in the peripheral nervous system, providing support and helping nerves repair themselves after injury. Without Schwann cells, nerves struggle to function properly, leading to problems like numbness and pain.

In people with diabetes, high blood sugar levels disrupt how Schwann cells work. When glucose levels are consistently high, Schwann cells can't support nerves as effectively. This is what leads to nerve damage, which is a major factor in diabetic peripheral neuropathy. The damaged nerves result in the painful symptoms that many diabetic patients experience, such as tingling, burning, and loss of sensation in the limbs.

The study also explored how high glucose affects Schwann cells at a molecular level. It turns out that high sugar levels trigger processes called apoptosis and autophagy in these cells. Apoptosis is a form of programmed cell death, while autophagy is a way for cells to recycle their components.

Both processes can lead to the demise of Schwann cells when they're overactivated by high glucose. This cell death means that nerves lose their protective support, worsening the symptoms of neuropathy.⁸

Understanding these mechanisms is crucial for developing new treatments. By targeting the pathways that cause Schwann cells to die, researchers hope to find ways to protect these cells from high glucose levels. This could lead to therapies that not only alleviate the symptoms of diabetic peripheral neuropathy but also address the underlying nerve damage, offering better outcomes for patients.⁹

Potential of Natural Remedies in Managing Diabetic Neuropathy

The good news is that incorporating natural remedies can significantly alleviate the symptoms of DPN. Vitamins, particularly B and D supplements, play a pivotal role in supporting nerve health and providing pain relief.¹⁰

Vitamin B complex, which includes B1, B6, and B12, is essential for maintaining healthy nerves. Deficiencies in these B vitamins are closely linked to the development of peripheral neuropathy, and supplementing has been shown to reduce existing pain and help prevent further nerve damage.

Vitamin D is equally important as it contributes to nerve function and overall health. Research indicates that adequate levels of vitamin D can help manage pain associated with neuropathy by improving insulin sensitivity and reducing inflammation.^{11,12,13} A randomized clinical trial published in 2021 evaluated vitamin D supplementation as an add-on therapy for diabetic peripheral neuropathy.¹⁴

Sixty-eight patients (60.3% female, average age 65) were split into two groups: one receiving standard treatment plus a daily dose of 5,000 IU vitamin D, and the other receiving standard treatment alone for eight weeks. The vitamin D group showed significantly better outcomes, including:

- Greater pain reduction

- Better mood improvement (88.2% vs. 70.6%)
- Higher vitamin D levels at study end (40.02 ng/mL vs. 18.73 ng/mL)

Notably, higher vitamin D levels correlated with lower pain scores in the treatment group. The study concluded that adding vitamin D supplementation (5000 IU daily) to standard treatment is an effective way to improve pain and mood outcomes in diabetic neuropathy patients.

Sunlight exposure is your best source of vitamin D, but if you can't make enough through sun exposure, vitamin D supplementation is certainly recommended. Just remember to take extra vitamin K2 and magnesium as well, as these three work in tandem.

Capsaicin creams offer another effective natural remedy for managing neuropathic pain. Capsaicin, the active component in chili peppers, works by depleting substance P, a neurotransmitter involved in sending pain signals to the brain.¹⁵ When applied topically, capsaicin creams can reduce the sensation of pain in the affected areas. It is recommended to start with a low concentration to minimize skin irritation and gradually increase usage for optimal results.

Warm baths are another simple yet effective method to relieve diabetic neuropathy symptoms. Soaking in warm water improves blood circulation and relaxes tense muscles, which can significantly reduce pain and discomfort.¹⁶

Adding Epsom salts to the bath may enhance the therapeutic effects of warm baths for diabetic neuropathy by improving blood circulation and relaxing muscles, although caution is advised to prevent burns due to reduced sensitivity to heat in neuropathy.

Meditation and acupuncture are also valuable for managing diabetic neuropathy. Meditation helps reduce stress and anxiety, which can exacerbate pain perception. Mindfulness and deep breathing techniques promote relaxation and improve overall well-being, making it easier to cope with chronic pain.¹⁷

Acupuncture, an ancient Chinese practice, involves inserting thin needles into specific points on the body to stimulate energy flow and release endorphins, the body's natural

pain relievers. This can lead to a noticeable decrease in neuropathic pain and an enhanced sense of calm.

Incorporating these natural remedies into a comprehensive treatment plan can provide additional relief for individuals managing diabetic peripheral neuropathy. By addressing both the physical and emotional aspects of the condition, these holistic approaches contribute to an improved quality of life.

Solutions for Diabetic Peripheral Neuropathy

If you are dealing with diabetic peripheral neuropathy, there are several steps you can take to alleviate your symptoms and improve your overall health. In addition to the recommendations already mentioned, the following strategies are also helpful as they will boost your mitochondrial health and cellular energy production throughout your body:

- 1. Control your blood sugar levels** — Maintaining your blood glucose within a healthy range is vital. Consistently high blood sugar can damage your nerves, worsening neuropathy. Monitor your levels regularly, adhere to your prescribed treatment plan, and follow a balanced diet that includes 250 to 300 grams of targeted carbohydrates tailored to your microbiome.

A higher carbohydrate intake is necessary to support optimal metabolic function and cellular energy production. I go into great detail about how to select and incorporate more carbs into your diet in my new book, "Your Guide to Cellular Health: Unlocking the Science of Longevity and Joy."

- 2. Limit dietary linoleic acid to 5 grams a day or less** — Another key dietary component is to keep your LA intake below 5 grams a day. Excess LA causes whole-body inflammation, which is a significant factor in insulin resistance. When your cells become less sensitive to insulin, your body struggles to regulate blood sugar levels.

Over time, this forces your pancreas to make more insulin, eventually leading to pancreatic dysfunction and Type 2 diabetes.

- 3. Optimize protein intake** — Ensuring adequate protein consumption is essential for nerve repair and overall cellular health. Aim for 0.8 grams of protein per pound of ideal bodyweight (i.e., the weight you ought to be based on your height, age and gender, not your current total weight), focusing on high-quality sources such as grass fed meats, eggs, and collagen-rich foods.

Balancing your protein intake supports muscle mass maintenance, metabolic health, and effective management of diabetic neuropathy by providing the necessary amino acids for cellular repair and regeneration.

- 4. Incorporate physical activity** — Engaging in regular, low-impact exercises like walking, swimming, or cycling can improve blood flow to your nerves, reducing pain and discomfort. Exercise also helps in managing weight and improving insulin sensitivity, which are crucial for overall diabetic management.

Additionally, physical activity enhances mitochondrial function and cellular energy production, further supporting nerve health and resilience against neuropathic damage.

- 5. Practice stress relief techniques** — Chronic stress can heighten the perception of pain and contribute to inflammation, exacerbating neuropathic symptoms.

Incorporate stress-reducing activities into your daily routine, such as meditation, deep breathing exercises, or spending time in nature, to help manage your symptoms more effectively. Reducing stress also supports cellular energy production and mitochondrial health, which are essential for maintaining nerve function and overall well-being.

Sources and References

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