

# Fix the Feels: The Fast Track to Fighting Nerve Pain

*Discover How to  
Reverse Neuropathy  
& Thrive with a  
Functional Medicine  
Approach*

An elderly woman with grey hair, wearing a white button-down shirt and dark pants, is sitting on a light-colored couch. She is holding her right leg with both hands, appearing to be in pain. A black cane with a yellow grip is leaning against the couch next to her. The background is a bright, out-of-focus indoor space with a window.

aervita

INTEGRATIVE MEDICINE + HYPERBARICS

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## Section 1: Understanding Peripheral Neuropathy

Peripheral neuropathy occurs when nerves outside of the brain and spinal cord — known as peripheral nerves — become damaged or dysfunctional. These nerves are responsible for sending signals between the central nervous system and the rest of the body. When this signaling system is impaired, it can result in pain, tingling, numbness, burning, or muscle weakness — often beginning in the feet or hands.

If not addressed early, neuropathy can progress to more serious complications such as ulcers, infections, falls, and even amputations. The good news is that in many cases, neuropathy is not permanent. With the right interventions, symptoms can often be slowed, improved, or even reversed.

### Common Signs and Symptoms

Neuropathy can affect three major types of nerves — sensory, motor, and autonomic — and symptoms vary accordingly:

- **Sensory symptoms:** Numbness, tingling, burning, “pins and needles,” or sensitivity to touch or temperature
- **Motor symptoms:** Muscle weakness, cramping, difficulty walking, or poor coordination
- **Autonomic symptoms:** Digestive changes, dizziness from blood pressure shifts, or issues with sweating and temperature regulation

Most patients experience symptoms in their feet or legs first. Over time, the symptoms may move upward or affect the hands and arms as well.

## How Common Is It?

Peripheral neuropathy is more common than many people realize:

- More than **20 million Americans** are believed to be living with peripheral neuropathy
- **60–70% of people with diabetes** will develop some form of neuropathy
- **About 30%** of neuropathy cases have no immediately identifiable cause
- Older adults — particularly over the age of 55 — are significantly more likely to develop neuropathy

Because neuropathy often develops slowly, many people don't seek care until symptoms are advanced.

## The Hidden Cost of Neuropathy

The burden of neuropathy goes beyond physical pain:

- The average patient's unexpected cost with diabetic neuropathy spends **over \$10,000 a year** to manage symptoms and related complications
- **Hospital admissions** for severe complications like ulcers or infections can exceed **\$20,000 per visit**
- Neuropathy can lead to reduced mobility, depression, sleep disturbances, and loss of independence

Delaying intervention may result in preventable suffering and rising medical costs.

## How High Blood Sugar Damages Nerves

The most common cause of peripheral neuropathy in the United States is chronically elevated blood sugar, typically in the context of prediabetes or diabetes.

Here's how the damage occurs:

1. **Microvascular Injury:** High blood sugar damages the small blood vessels (capillaries) that supply oxygen and nutrients to the nerves.
2. **Nerve Starvation:** Without adequate blood flow, nerve tissues become hypoxic — deprived of oxygen — and cannot repair or regenerate effectively.
3. **Inflammation & Oxidative Stress:** Elevated glucose triggers chronic inflammation and increases the production of harmful free radicals. These compounds damage the nerve's protective coatings (myelin) and the mitochondria inside nerve cells.
4. **Advanced Glycation End Products (AGEs):** Excess sugar binds to proteins and fats, forming AGEs. These compounds stiffen tissues, promote inflammation, and accelerate nerve degeneration.

This chain of events can lead to progressive nerve damage — often starting in the feet — even before blood sugar levels reach the threshold for a diabetes diagnosis.

## The Conventional Medical Approach

Conventional care typically relies on medications to manage symptoms. Common prescriptions include:

- **Gabapentin or Pregabalin (Lyrica)** – Anticonvulsants used to calm nerve activity. Side effects can include fatigue, dizziness, and brain fog.
- **Amitriptyline or Nortriptyline** – Tricyclic antidepressants often prescribed for nerve-related pain. These may cause dry mouth, drowsiness, or constipation.
- **Duloxetine (Cymbalta)** – A serotonin-norepinephrine reuptake inhibitor (SNRI) used for diabetic nerve pain. Possible side effects include nausea, sleep disruption, and elevated blood pressure.
- **Topical treatments** – Lidocaine patches or capsaicin creams may offer localized relief but do not address the underlying cause.

While these medications can be useful in reducing pain, they often fail to stop disease progression and do not restore nerve function.

## Why Aervita Takes a Different Approach

At Aervita Integrative Medicine + Hyperbarics, we go beyond symptom management. Our Neuropathy Program is built around uncovering and addressing the root causes of nerve damage using a comprehensive, science-based approach.

Our team uses advanced diagnostics to evaluate blood sugar regulation, nutrient levels, gut health, mitochondrial function, inflammatory markers, and toxic exposures — all of which may be contributing to your symptoms.

By combining this data with proven lifestyle interventions and regenerative therapies like hyperbaric oxygen, photobiomodulation and pulsed electromagnetic field therapies, we offer a path not just to symptom relief, but to actual healing and long-term function.

## Section 2: Root Causes of Neuropathy

Peripheral neuropathy is not a disease in and of itself — it is a **symptom of deeper dysfunction**. Identifying the root cause(s) is essential for meaningful recovery.

At Aervita, we don't chase symptoms. We dig deeper into each patient's health history, lab work, lifestyle, and environment to uncover what's driving their nerve damage. Below are the most common (and often overlapping) causes of neuropathy.

## 1. High Blood Sugar and Metabolic Dysfunction

The most common cause of neuropathy in the United States is **chronically elevated blood sugar** — whether from diabetes, prediabetes, or undiagnosed insulin resistance with poor diet and lifestyle driving most of these factors.

### How High Blood Sugar Damages Nerves:

- **Microvascular Injury:** Elevated blood sugar damages small blood vessels (capillaries), restricting oxygen and nutrient flow to the nerves.
- **Nerve Starvation:** Without oxygen and glucose regulation, nerve cells begin to malfunction and degenerate.
- **Oxidative Stress:** High glucose levels produce excess free radicals, damaging nerve cell membranes and mitochondria.
- **Advanced Glycation End Products (AGEs):** Excess sugar bonds to proteins and fats, creating AGEs that stiffen tissues, trigger inflammation, and accelerate aging and nerve deterioration.

This silent progression often begins **years before a diabetes diagnosis**, and many patients with "normal" labs still have impaired glucose tolerance, especially post-meal.

## 2. Nutritional Deficiencies

Nerve tissue is highly sensitive to nutrient status, and even mild deficiencies can lead to dysfunction. Common deficiencies associated with neuropathy include:

- **Vitamin B12** – Essential for nerve insulation (myelin) and repair. Deficiency is common in older adults, vegetarians, and users of metformin or acid-blocking medications.
- **Vitamin D** – Supports nerve function and immune balance; low levels are linked to increased nerve pain and slower healing.
- **Magnesium** – Needed for nerve signal transmission, muscle relaxation, and blood sugar control.
- **Omega-3 Fatty Acids** – Anti-inflammatory fats critical for nerve structure and protection.

In many cases, supplementation and dietary correction can restore these nutrients and dramatically improve symptoms over time.

Emerging research also suggests that deficiencies in **vitamin E**, **zinc**, **coenzyme Q10**, and **alpha-lipoic acid** may contribute to neuropathy in some individuals, though the evidence is still limited or mixed. While these nutrients are involved in antioxidant defense and nerve health, more large-scale human trials are needed to confirm their role as root causes. Nonetheless, we often assess for these in patients with persistent symptoms or poor healing.

### 3. Chronic Inflammation and Autoimmune Triggers

Inflammation plays a central role in the development and progression of neuropathy. In some individuals, the immune system mistakenly attacks the nerves themselves — this is referred to as **autoimmune neuropathy**.

Conditions that may trigger this include:

- Hashimoto's thyroiditis
- Rheumatoid arthritis
- Celiac disease or gluten sensitivity
- Lupus (SLE)
- Sjogren's syndrome

Even without a formal autoimmune diagnosis, patients with elevated inflammatory markers (e.g., CRP, homocysteine) may experience persistent nerve-related symptoms due to systemic inflammation. Reducing these triggers is a key therapeutic goal in our program.

### 4. Gut Health, Leaky Gut, and the Microbiome

The gut-brain and gut-nerve connections are well established in modern research. A disrupted gut environment can silently impact neurological health in multiple ways:

- **Leaky gut (intestinal permeability)** allows inflammatory compounds and undigested food proteins into the bloodstream, which may trigger immune responses and nerve inflammation.
- **Dysbiosis**, or an imbalance in gut bacteria, affects nutrient absorption, blood sugar regulation, and immune tolerance — all relevant to neuropathy.
- **Molecular mimicry** can occur when proteins from certain foods or bacteria resemble components of your own nervous system, prompting autoimmune attacks.

Improving gut integrity and microbiome diversity is a core focus of our integrative treatment plan.

### 5. Toxic Exposure: Mycotoxins, Heavy Metals, and Environmental Chemicals

Many patients with unexplained neuropathy test positive for **toxic burdens** that impair nerve health. The most common offenders include:

#### **Mycotoxins (from mold):**

- **Ochratoxin A** – Impairs kidney and nerve function
- **Gliotoxin** – Suppresses immune repair of damaged tissue
- **Aflatoxins** – Linked to nerve degeneration and cancer risk

### Heavy Metals:

- **Mercury** – Found in fish, dental amalgams, and some industrial settings; highly neurotoxic
- **Lead** – Often from old pipes or contaminated soil
- **Arsenic** – Present in some groundwater and imported rice
- **Aluminum** – Linked to oxidative stress and mitochondrial disruption

### Environmental and Industrial Toxins:

- Pesticides and herbicides
- Phthalates (plasticizers)
- Bisphenol-A (BPA)
- Solvents and cleaning agents

Even low levels of these toxins, over time, can damage nerves by increasing oxidative stress and impairing detoxification pathways. At Aervita, we use functional lab testing and targeted detox protocols to lower this burden safely.

## 6. Infections and Mitochondrial Dysfunction

Chronic infections — even latent or subclinical ones — can provoke immune responses that affect nerve tissue. Examples include:

- Epstein-Barr virus (EBV)
- Lyme disease and co-infections
- Cytomegalovirus (CMV)
- *Helicobacter pylori*
- Parasites or gut pathogens

These infections can impair **mitochondrial function**, the energy-producing system inside every cell, including nerves. When mitochondria are damaged, nerves lose their energy supply and slowly deteriorate.

## 7. Poor Circulation and Oxygen Deprivation

Nerves rely on a constant supply of oxygen and nutrients. Any condition that impairs circulation — such as smoking, sedentary lifestyle, or vascular disease — can hinder nerve regeneration and worsen symptoms.

Cold feet, slow wound healing, or color changes in the skin may indicate compromised blood flow. Improving circulation through movement, oxygen therapy, and lifestyle changes is critical for nerve recovery.

## Section 3: Your Healing Framework — How Nerve Damage Can Be Reversed

Peripheral nerves don't break down overnight — and they don't heal overnight either. But with the right conditions, they often **can** regenerate. The key is knowing which systems control nerve health and how to influence them daily.

This section introduces the seven core “pillars” that create the foundation for nerve healing — the same systems supported in our clinical approach. You don't need perfection. You need momentum in the right direction, consistently applied.

### Why Nerves Break Down — and How They Heal

Healthy nerves rely on:

- Steady blood sugar and insulin control
- Nutrient-rich blood flow
- Mitochondrial energy production
- Low systemic inflammation
- Oxygen delivery and good circulation

When these systems are compromised — through blood sugar spikes, poor diet, sedentary behavior, chronic stress, or toxic exposures — nerves suffer from undernourishment and inflammation. Over time, this leads to structural and functional degeneration.

But that process isn't irreversible. In many cases, **when the internal environment improves, nerve tissue can stabilize, regenerate, and reconnect.**

### The 7 Pillars of Nerve Healing

These are the seven areas we focus on to help patients improve outcomes naturally, based on current research and clinical practice.

#### 1. Nutrition: Fuel for Repair

What you eat either drives inflammation or reduces it. Specific nutrients are required for nerve tissue repair, myelin maintenance, and blood sugar stability.

#### 2. Movement: Circulate, Stimulate, Strengthen

You don't need intense exercise — just the right kind of consistent movement that supports blood flow, balance, and mitochondrial function.

#### 3. Sleep: Repair Mode Activated

Sleep is your nervous system's recovery window. Poor sleep increases pain sensitivity, slows healing, and disrupts metabolic regulation.

#### 4. Detoxification: Lowering the Load

Mold, metals, pesticides, plastics, and even infections can interfere with nerve signaling and mitochondrial energy production. Clearing these safely helps reduce inflammation and oxidative stress.

#### 5. Stress Management: Calm the System

Mental and physical stress increase cortisol, worsen blood sugar control, and amplify inflammation. Learning to shift out of fight-or-flight mode supports real, physiological healing.

#### 6. Supplementation: Rebuilding What's Missing

Targeted supplements can help correct deficiencies, improve nerve function, and enhance cellular repair when diet alone isn't enough — especially with aging, absorption issues, or high inflammation.

#### 7. Advanced Therapies: Accelerating Results

Regenerative modalities like red and infrared light therapy, PEMF, and oxygen-based treatments can increase blood flow, improve tissue oxygenation, and stimulate nerve recovery at the cellular level. When stacked with the foundational pillars, they enhance outcomes.

These systems work together. **The more you align with them, the more momentum you build — and the more likely you are to see results.**

### What Comes Next: Your Nerve Healing Roadmap

The following sections will break down each pillar into practical actions you can take. You'll learn:

- What to eat (and avoid) to support nerve repair
- How to move safely and build resilience
- How to create deeper, more restorative sleep
- How to reduce exposure to toxic triggers
- What stress management techniques are most effective
- How to identify and use the right supplements
- What therapies are worth your time

You don't need to do everything all at once — but you do need to understand what matters most. **This guide is your roadmap.**

## Section 4: Nutrition for Nerve Regeneration

What you eat can either feed inflammation and nerve damage — or drive regeneration and healing. For most people with peripheral neuropathy, nutrition is one of the **most controllable and impactful levers** for improvement.

That's not because food is magic. It's because your nerves depend on a stable internal environment — and what you eat is the raw material that builds (or breaks) that environment every single day.

### Anti-Inflammatory Eating: The Foundation of Healing

An anti-inflammatory, nutrient-dense diet has been shown in multiple studies to improve pain, insulin sensitivity, oxidative stress, and mitochondrial function — all key factors in nerve repair.

Here are food groups and examples to include regularly:

#### Non-starchy vegetables

- Kale, spinach, chard
- Broccoli, cauliflower, Brussels sprouts
- Bell peppers, zucchini, cucumbers
- Celery, carrots, beets

#### Mushrooms

- Shiitake, maitake, oyster, portobello, lion's mane
- Rich in beta-glucans and immune-modulating compounds

#### Low-glycemic fruits

- Berries: blueberries, raspberries, strawberries
- Cherries, grapefruit, kiwi, lemons, limes
- Avocados, pomegranates

#### Herbs and spices

- Turmeric, rosemary, basil, oregano
- Ginger, garlic, thyme, cinnamon

#### High-quality proteins

- Wild-caught fish (salmon, sardines, mackerel)
- Pasture-raised, organic eggs
- Grass-fed and grass-finished beef
- Venison, elk, bison
- Organic poultry
- Shellfish (e.g., oysters, mussels)

#### Healthy fats

- Extra virgin olive oil, avocado oil
- Avocados
- Nuts: walnuts, macadamias, almonds, Brazil nuts
- Seeds: chia, flax, hemp, pumpkin

#### Fermented and prebiotic foods

- Sauerkraut, kimchi, kefir, unsweetened yogurt
- Garlic, leeks, onions, asparagus, green bananas

## What to Avoid or Greatly Reduce

Common inflammatory and blood-sugar-spiking foods to limit or remove:

- **Sugary foods:** donuts, pastries, candy, syrup, sweetened yogurts
- **Sweetened drinks:** soda, juice, energy drinks, sugary coffee drinks
- **Refined grains:** white bread, pasta, crackers, bagels, boxed cereals
- **Industrial oils:** soybean oil, canola oil, corn oil
- **Processed meats:** bacon, hot dogs, deli meats with nitrates or preservatives
- **Fried foods:** fast food fries, chips, breaded meats
- **Ultra-processed snacks:** cookies, frozen meals, shelf-stable snack bars
- **Alcohol (especially excessive use)**

## Body Fat and Healing: Know Your Numbers

Fat tissue — especially **visceral (belly) fat** — acts like a metabolic organ. It produces inflammatory compounds, impairs blood sugar regulation, and slows the healing of nerve tissue. For people with peripheral neuropathy, **excess fat is a major roadblock to recovery.**

Reducing body fat by even 5–10% can:

- Lower inflammatory markers like CRP and IL-6
- Improve insulin sensitivity
- Enhance mitochondrial function
- Decrease nerve pain and improve mobility

### What's considered “elevated” body fat?

- Men: >25%
- Women: >32–35%

### What's an optimal range for healing and metabolic function?

- Men: 12–20%
- Women: 20–30%

If you have a body fat percentage that exceeds these ranges, any reduction is a major step in the right direction and can be **major player in symptom suppression.**

## How to Calculate or Measure Body Fat %

You don't need to guess. There are several reliable ways to track your **body composition** — which includes both **body fat %** and **lean body mass** (everything that's not fat: muscle, bone, organs, etc.). Unfortunately, oftentimes when we go to the doctor, they are measuring our body mass index (BMI; a measurement of our height and weight). Even though it usually correlates with negative health outcomes, BMI can be misleading as it doesn't account for muscle mass. Here are some better methods listed below.

### Common methods include:

- **DEXA scan** – Gold standard; available at many medical imaging centers
- **Bod Pod** – Air displacement; very accurate, often used in sports science
- **Skinfold calipers** – Affordable, decent accuracy with trained practitioner
- **Bioelectrical impedance (BIA)** – Found in many clinics and body composition scales; Aervita uses this as part of its functional assessment tools

Knowing your true body composition helps you:

- **Set better goals** for fat loss or muscle retention
- **Calculate calorie needs more accurately**
- **Set an individualized protein target** (based on lean mass)

## Using Body Composition to Improve Nutrition Targets

If you know your **lean body mass (LBM)** — the weight of everything in your body that isn't fat — you can calculate your **caloric needs and protein intake** with greater precision.

### Example:

- 200 lb person with 30% body fat
- Lean body mass =  $200 \times 0.70 = 140$  lbs

**Protein target:** 0.7–1.0 grams per lb of LBM → **98–140g protein/day**

**Calorie target (for moderate activity):**  $\text{LBM} \times 14\text{--}15 = 140 \times 14 = \sim 1,960\text{--}2,100$  calories/day

Using LBM instead of total weight is especially helpful for those with significant fat to lose — it **avoids overestimating calorie and protein needs** while ensuring enough intake to support nerve and muscle repair.

## Calories: How to Estimate Your Needs

Understanding your energy needs helps balance healing and fat loss without unnecessary restriction.

### Step 1: Multiply your goal weight by an activity multiplier:

Activity Level	Definition	Multiplier
<b>Sedentary</b>	Little to no exercise, desk job, minimal daily movement	×12–13
<b>Moderately active</b>	Regular walking, light training 2–3x/week	×14–15
<b>Very active</b>	Strength training or cardio 4–5x/week	×16+

**Example:** Goal weight: 160 lbs × 14 = ~2,240 calories/day (moderately active)

**For fat loss:** Reduce by ~10–20%, reassess progress every 2–4 weeks.

## Protein: The Critical Repair Nutrient

Protein supports nerve repair, muscle mass retention, blood sugar stability, and immune function.

### How much do you need?

The most accurate recommendation is based on **lean body mass (LBM)** — which is your body weight minus fat mass.

### General target:

- **0.7–1.0 grams of protein per pound of lean body mass**

See earlier example for LBM-based calculation.

### Best protein sources include:

- Wild fish
- Grass-fed beef, bison, venison
- Organic poultry
- Pasture-raised eggs
- Whey or collagen protein powder
- Shellfish (especially oysters)

## Micronutrients That Matter

Micronutrient deficiencies are extremely common in patients with neuropathy — especially older adults, those with digestive issues, and those taking medications like metformin, acid blockers, or statins.

Here are the key nutrients for nerve repair and function, and where to get them:

Nutrient	Role	Best Food Sources
Vitamin B12	Myelin repair, nerve signaling	Liver, sardines, clams, eggs, grass-fed beef
Vitamin D	Immune regulation, inflammation control	Sunlight, salmon, trout, fortified dairy, egg yolks
Magnesium	Nerve conduction, muscle relaxation	Pumpkin seeds, almonds, spinach, avocado
Omega-3s	Anti-inflammatory support, nerve membrane health	Wild-caught salmon, mackerel, sardines, flaxseed
Alpha-lipoic acid	Antioxidant, insulin sensitizer	Spinach, broccoli, organ meats (often supplemented)
Zinc	Immune function, gut barrier repair	Oysters, beef, lamb, pumpkin seeds
CoQ10	Mitochondrial energy production	Sardines, liver, grass-fed beef, pistachios

These nutrients can often be partially restored through food, but many patients still benefit from **targeted supplementation**, especially when absorption is compromised or deeper healing is needed.

## Glycemic Load > Glycemic Index

Glycemic Index (GI) measures how fast a carbohydrate-containing food raises blood sugar. However, it doesn't account for portion size. **Glycemic Load (GL)** reflects **how much** a typical portion will affect blood sugar — and is more practical for daily decisions.

**Tip:** Always consider GL > GI when choosing foods.

### Best choices (low GL):

- Leafy greens, broccoli, Brussels sprouts, zucchini, mushrooms
- Berries, cherries, apples, grapefruit, lemons
- Lentils, chickpeas, black beans
- Quinoa, steel-cut oats, wild rice
- Sweet potatoes (especially cooled)
- Nuts and seeds
- Greek yogurt or kefir (unsweetened)

### Avoid or limit (high GL):

- White potatoes (especially mashed or fried)
- White rice, jasmine rice
- White bread, bagels, croissants
- Sweetened cereals, instant oatmeal packets
- Baked goods: muffins, cookies, cakes
- Dried fruits, sweetened yogurts
- Fruit juice, soda, sweet tea
- Large servings of tropical fruits like pineapple or watermelon

### Helpful tips to reduce blood sugar spikes:

- Pair carbs with fat, fiber, or protein
- Eat fiber-rich vegetables before carbs
- **Apple cider vinegar (1 tbsp in water before meals)** has been shown in several studies to help reduce post-meal glucose

## Fasting & Autophagy: Cellular Spring Cleaning

Short periods of fasting can support **metabolic flexibility**, **insulin sensitivity**, and **nerve repair** by promoting a natural process called **autophagy** — where the body clears out damaged cells and regenerates healthier ones. Autophagy plays a role in reducing inflammation, improving mitochondrial health, and enhancing tissue recovery.

Common strategies include:

- **Time-restricted eating** (e.g., eating all meals within a 6–10 hour window)
- **Intermittent fasting** (e.g., 16:8 fast/feed split, or an occasional 24-hour fast) Fasting is not required for healing, and those who are **underweight or have low muscle mass** should be cautious, as extended fasting without resistance training may lead to muscle loss. For these individuals, the focus should remain on nutrient density, strength training, and stable blood sugar — not prolonged fasting.

## Gut Health: Your Internal Regulator

Your gut is where nutrients are absorbed, toxins are eliminated, and immune signaling is regulated. An inflamed or dysbiotic gut can:

- Impair B12, magnesium, and fat-soluble vitamin absorption
- Trigger systemic inflammation and immune reactivity
- Disrupt blood sugar control via the gut-brain axis

Gut health is complex. Working with a **qualified functional medicine practitioner** can help identify root causes of gut dysfunction, including food sensitivities, hidden infections, microbiome imbalances, or digestive insufficiencies.

## Recap: The Nutrition Strategy for Nerve Healing

- Build meals around lean protein, vegetables, and healthy fats
- Avoid added sugar, processed carbs, and inflammatory oils
- Optimize for blood sugar stability using glycemic load
- Prioritize low-GI whole foods, especially when paired with fat or fiber
- Consider digestive support and targeted supplements when necessary
- Seek guidance when gut health or blood sugar issues are unresolved

Consistency matters more than perfection. The internal environment you build meal by meal plays a major role in how fast — and how fully — your nerves recover.

## Section 5: Movement, Muscle & Mitochondria

For people with peripheral neuropathy, movement is medicine — not punishment. While many associate exercise with weight loss, its role in **nerve regeneration, circulation, energy production, and blood sugar control** is even more important. Even moderate movement can help restore function, reduce pain, and support tissue repair. And you don't need to be an athlete — you just need to move **consistently and intentionally**.

### Why Circulation Matters for Nerve Repair

Nerves are metabolically demanding. They require oxygen, glucose, amino acids, and key micronutrients to regenerate. But if blood flow is limited, nerves become undernourished and hypoxic (low in oxygen).

Regular movement helps:

- Improve **microvascular circulation** to nerve endings
- Deliver nutrients and remove metabolic waste
- Support angiogenesis — the formation of new capillaries
- Prevent further tissue breakdown from disuse

Even light activity like walking or stretching improves local oxygen delivery to damaged nerves — especially in the feet and legs.

### Muscle Is Metabolic Medicine

Your muscles are more than just mechanical tools — they're **metabolic powerhouses** that regulate blood sugar, burn fat, and produce anti-inflammatory compounds when activated.

Here's what happens when you build and use muscle:

- Blood glucose is cleared from the bloodstream more efficiently
- Insulin sensitivity improves
- Inflammatory markers drop
- Myokines (muscle-based signaling proteins) are released that support tissue regeneration and immune balance

Maintaining muscle mass, especially in the lower extremities, is also one of the best predictors of **mobility, balance, and fall prevention** — major concerns for neuropathy patients. Building muscle and strength in the legs should be a high priority.

## What About Pain, Numbness, or Instability?

Movement is still safe — and beneficial — for most patients with neuropathy, even if they're dealing with:

- Tingling or burning in the feet
- Numbness or lack of sensation
- Muscle weakness or fatigue
- Poor balance or coordination

In fact, the **worst thing you can do is nothing**. Inactivity leads to deconditioning, increased blood sugar instability, loss of muscle mass, and even more nerve deterioration.

That said, your plan should match your current abilities and adapt as you improve. If you need guidance, working with an Aervita practitioner or personal trainer can be well worth the investment.

## Start Where You Are: Scalable Movement Options

Whether you're deconditioned or already active, here are options you can build from:

Level	Recommended Activities
Limited mobility	Seated resistance bands, chair yoga, foot circles, pool walking
Beginner	Walking (5–15 min sessions), recumbent bike, beginner resistance training
Moderate	30-min walks, bodyweight training, light free weights, gentle yoga
Advanced	Weightlifting, HIIT, power yoga, hiking, plyometrics (if stable)

Even **5 minutes, multiple times a day**, can make a difference. The goal is to move **frequently**, not perfectly.

## Strength Training and Nerve Healing

If your body can tolerate it, **resistance training** should be part of your weekly plan — even just 1–2 times per week. Why?

Because resistance training:

- Increases muscle mass and insulin sensitivity
- Enhances mitochondrial function and blood flow
- Supports brain-derived neurotrophic factor (BDNF), a protein that encourages **nerve repair and neuroplasticity**
- Improves energy metabolism by boosting **ATP (cellular energy) output**

No gym required. Strength training can be done with:

- Resistance bands
- Bodyweight exercises (e.g., squats, push-ups, step-ups)
- Dumbbells or kettlebells at home
- Machines for added joint safety

**Form matters more than intensity.** Focus on controlled, pain-free movement and build from there.

## Other Excellent Forms of Movement for Neuropathy

While strength training is one of the most effective tools for nerve recovery, several other types of exercise also offer powerful benefits:

- **Walking** – Low-impact and excellent for circulation, especially after meals to support blood sugar
- **Swimming or water aerobics** – Reduces pressure on joints while enhancing blood flow and flexibility
- **Cycling or recumbent biking** – Promotes leg circulation and endurance with minimal joint stress
- **Pickleball** – A fun, lower-impact sport that improves agility, balance, and coordination. Best suited for patients with mild to moderate neuropathy and good foot control
- **Tai Chi or chair yoga** – Help with balance, proprioception, and nervous system regulation
- **Balance exercises** – Like single-leg stands, wall-supported toe raises, or heel-to-toe walking to improve stability and prevent falls

These activities can be rotated or combined with strength training to create a well-rounded weekly routine.

## The Mitochondrial Connection

Mitochondria are your cells' energy factories — and nerves are packed with them. When mitochondrial health declines (due to age, toxins, inactivity, or inflammation), your body produces less ATP — the energy required for cellular repair and nerve signaling.

Movement is one of the most powerful tools to **stimulate mitochondrial biogenesis** — the creation of new mitochondria — and improve energy efficiency.

Exercise also:

- Increases oxygen uptake
- Reduces oxidative stress (when balanced with recovery)
- Enhances the capacity to generate and recycle energy ( $\text{ATP} \rightleftharpoons \text{ADP}$ )
- Helps regulate sleep, mood, and metabolic function — all relevant to nerve health

## Recap: Why Movement Matters

- Improves blood flow to damaged nerves
- Builds muscle that regulates glucose and inflammation
- Boosts mitochondrial energy production
- Supports balance, coordination, and long-term mobility
- Reduces the risk of falls and complications
- Enhances endorphins, sleep, and mental clarity

Movement is one of the most **low-cost, high-return tools** available to support nerve regeneration. The key is to start where you are, stay consistent, and progress at your own pace.

## Section 6: Sleep, Recovery & Nervous System Reset

Sleep isn't just a luxury — it's when your nervous system repairs itself. Without deep, restorative sleep, the body struggles to reduce inflammation, regenerate nerve tissue, regulate blood sugar, or manage pain.

Many patients with neuropathy experience poor sleep — and in many cases, **poor sleep is making the neuropathy worse.**

## Why Sleep Quality Matters for Nerve Healing

Here's what happens during healthy sleep:

- **Tissue repair accelerates**, especially in the first half of the night during slow-wave (deep) sleep
- **Growth hormone** and other repair signals rise
- **Inflammation decreases**, cortisol drops, and blood sugar stabilizes
- **Brain-derived neurotrophic factor (BDNF)** increases — a key molecule that supports neuroplasticity and nerve regeneration
- The **parasympathetic nervous system** becomes dominant, allowing “rest and digest” functions to take over

Without this reset each night, healing slows down, and symptoms can worsen.

## How Neuropathy and Poor Sleep Feed Each Other

Patients with nerve pain or numbness often experience:

- Difficulty falling asleep due to **burning or tingling sensations**
- Frequent waking from **pain, numbness, or leg discomfort**
- Anxiety, restlessness, or racing thoughts at bedtime
- Early waking with low energy and poor recovery

These issues increase **sympathetic nervous system activity** (fight-or-flight), which raises blood sugar, amplifies inflammation, and blocks deep rest and healing.

## Sleep Apnea: A Hidden Contributor

Many people with neuropathy also have **undiagnosed sleep apnea** or **obstructive sleep-disordered breathing** — especially if they:

- Snore loudly
- Wake up gasping or with dry mouth
- Feel unrefreshed despite 7–9 hours in bed
- Have elevated blood pressure, overweight, or carry fat in the neck or face

Sleep apnea causes **repeated drops in oxygen**, which limit **deep sleep cycles** and reduce tissue oxygenation — both essential for nerve repair. Over time, this can significantly worsen nerve damage and increase risk for diabetes, heart disease, and cognitive decline.

If suspected, a **home sleep test** or full sleep study is worth pursuing.

## 10 Proven Ways to Improve Sleep and Recovery

You don't have to overhaul your entire sleep routine at once. Start with these practical steps:

1. **Set a fixed wake-up time (even on weekends)**– This anchors your circadian rhythm and helps consolidate sleep quality over time.
2. **Get morning light exposure within 30–60 minutes of waking**– Natural light helps set your internal clock, suppresses melatonin at the right time, and promotes better nighttime sleep.
3. **Build sleep pressure throughout the day**– Physical activity increases **ADP and adenosine**, signaling the brain to sleep later. Avoid long daytime naps that interfere with nighttime cycles.
4. **Limit screens and overhead lights 1–2 hours before bed**– Blue light delays melatonin. Use warm lighting and reduce screen time as bedtime approaches.
5. **Cool your bedroom**– Ideal sleep temperature is ~65–68°F (18–20°C). Cooler environments support deeper sleep.
6. **Avoid caffeine after 12 p.m.**– Caffeine's effects linger and can disrupt sleep even if you feel tired.
7. **Avoid alcohol before bed**– Alcohol fragments sleep and reduces REM and deep sleep stages.
8. **Finish eating 2–3 hours before bed**– Late meals can raise body temperature, blood sugar, and cortisol — all of which interfere with restful sleep.
9. **Try a magnesium-rich snack in the evening**– Pumpkin seeds, almonds, or tart cherry juice can support relaxation and melatonin production.
10. **Create a calming bedtime routine**– Gentle stretching, reading, journaling, or breathwork signal safety to your nervous system and promote better sleep onset.

## Sleep and the Nervous System: A Two-Way Street

Sleep is when the **parasympathetic nervous system** takes the lead — allowing the body to rest, digest, and repair. People with neuropathy often struggle to access this state consistently, especially if stress, pain, or overstimulation dominate their day.

Improving sleep isn't just about better rest — it's a **nervous system reset** that helps regulate inflammation, pain, hormones, and energy.

## Recap: Why Prioritizing Sleep Pays Off

- Deep sleep supports **BDNF**, mitochondrial function, and tissue regeneration
- Consistent bedtime routines improve **pain perception** and **blood sugar regulation**
- Diagnosing and treating **sleep apnea** may reduce nerve damage
- Calming the nervous system before bed enhances **parasympathetic activity**, which is required for healing

Sleep is **not a passive state** — it's one of the most active forms of repair your body performs. Making it a priority pays off in both the short and long term.

## Section 7: Reducing Total Toxic Burden

Toxins are an often-overlooked contributor to chronic illness — including neuropathy. While they aren't the only cause of nerve damage, ongoing exposure to **environmental, dietary, and biological toxins** can silently fuel the breakdown of nerve tissue over time.

Toxins do this by:

- Increasing inflammation and immune dysregulation
- Interfering with mitochondrial energy production
- Elevating oxidative stress and free radical damage
- Blocking detox and nutrient absorption pathways

Reducing your **total toxic burden** helps free up the body's natural ability to repair and regulate itself.

## The Blind Spot in Modern Medicine

Conventional care often overlooks **chronic low-level toxin exposure** — focusing instead on acute poisonings like lead or pesticide spills. But everyday exposures from plastics, additives, mold, and chemicals usually go undetected.

Functional and integrative medicine looks deeper: Where are toxins coming from? Is your body clearing them effectively? And how are they impacting your nerves, hormones, and energy?

The gap is large: In the U.S., over **85,000 chemicals** have been registered for use. According to the Environmental Working Group (EWG), **most have never been thoroughly tested for long-term safety**, and the U.S. regulates far fewer chemicals than the EU or Canada.

# Types of Toxins That Can Affect Nerve Health

## Mycotoxins (Mold Toxins)

- Produced by molds like *Aspergillus*, *Penicillium*, and *Stachybotrys*
- Common in water-damaged buildings and **contaminated food** (grains, nuts, coffee)
- Linked to brain fog, immune suppression, and nerve dysfunction

## Environmental Chemicals

- Plastics (BPA, phthalates), pesticides, herbicides, flame retardants, dry-cleaning solvents
- Many are **xenoestrogens**, meaning they mimic estrogen in the body — reducing testosterone and increasing estrogen-related symptoms
- Contribute to early puberty, infertility, mood issues, and low energy
- One study found the **average American woman applies over 160 chemicals daily**, mostly from personal care products

## VOCs (Volatile Organic Compounds)

- Found in air fresheners, paint, furniture off-gassing, cleaning products, and cosmetics
- VOCs are airborne chemicals that can cause headaches, fatigue, dizziness, immune disruption, and respiratory irritation

## PFAS (Per- and polyfluoroalkyl substances)

- Known as “forever chemicals” because they can **persist for decades or longer**
- Found in nonstick pans (teflon), water-repellent clothing, fast food wrappers, microwave popcorn bags, and contaminated drinking water
- PFAS have been linked to liver damage, hormone disruption, and immune dysfunction

## Heavy Metals

- Mercury, lead, aluminum, cadmium, etc
- Found in large fish, dental fillings, cosmetics, old water pipes, and certain medications
- Interfere with nerve transmission, energy production, and detox pathways

## Biotoxins from Infections

- Chronic infections like **Lyme**, **Epstein-Barr Virus (EBV)**, or co-infections can produce toxic byproducts that damage tissue
- **Infection panels** (or single tests) can help identify chronic microbial toxicity and autoimmunity

## Parasites and Gut Toxins

- Commonly found during **comprehensive stool testing**, often alongside yeast, mold, or bacterial overgrowth
- Contribute to “endogenous toxins” that recirculate if digestion or elimination is sluggish

## 10 Practical Steps to Lower Your Toxic Load

You don't need to live in a bubble — small, consistent changes can have a large impact. Here's where to start:

1. **Use glass, stainless steel, or ceramic** for storing or heating food
2. **Drink filtered water** — reverse osmosis or carbon-block filtration helps reduce PFAS, chlorine, fluoride, and heavy metals
3. **Choose organic produce** whenever possible, especially from the “Dirty Dozen” list
4. **Switch to non-toxic personal care** (shampoo, deodorant, makeup) — avoid parabens, phthalates, and triclosan
5. **Clean with natural products** — such as vinegar, castile soap, or baking soda; avoid bleach and ammonia where possible
6. **Avoid synthetic fragrances** — this includes **colognes, perfumes, and any product with “fragrance” or “parfum” on the label**
7. **Filter indoor air** — use HEPA filters and open windows when outdoor air quality is good; **indoor plants like snake plants** can reduce airborne toxins like formaldehyde and benzene
  - *Snake plants* have been shown to remove *\*up to 87% of indoor toxins in 24 hours (NASA study)*
8. **Remediate mold** if present — sometimes this may require relocating if remediation isn't possible or symptoms persist
9. **Support daily elimination** — stay hydrated, consume 25–35g of fiber per day, and ensure regular bowel movements
10. **Use the Healthy Living app** to scan barcodes on personal care and household items to detect known toxins and find safer alternatives

## Bonus: Improve Toxin Clearance with Movement and Heat

Toxin reduction isn't just about avoidance — it's also about **mobilizing and clearing** what's already stored. These strategies enhance **lymphatic flow, blood circulation, and detox capacity**:

- **Exercise** — promotes lymph drainage and sweating
- **Sauna therapy** (infrared or traditional) — improves sweat-based toxin excretion
- **Sun exposure** — encourages sweating, supports mitochondrial function, and raises vitamin D
- **Photobiomodulation (red/NIR light therapy)** — enhances mitochondrial function and cellular repair
- **Deep breathing and stretching** — encourage lymphatic and parasympathetic activity

Movement and sweating aren't optional — they're essential tools to keep detoxification flowing.

## Recap: Less In = Less Inflammation

- Toxins contribute to inflammation, oxidative stress, hormone disruption, and nerve dysfunction
- The average American is exposed to thousands of chemicals daily — many of which are **unregulated and untested long-term**
- Mycotoxins, VOCs, PFAS, plastics, mold, and infections all play a role
- Reducing exposure and improving clearance helps the body **refocus its energy on healing**

You don't need to eliminate every toxin — but even reducing **5–10 major exposures** can significantly improve your body's ability to heal, repair, and regenerate.

## Section 8: The Role of Stress in Neuropathy and How to Manage It

Stress isn't just emotional. It's chemical. It's neurological. It's physical.

And when stress becomes chronic, it creates the exact conditions that **prevent nerve healing** — raising inflammation, disrupting blood sugar, impairing digestion, reducing sleep quality, and slowing mitochondrial repair.

In short: **If the body is stuck in survival mode, it can't enter healing mode.**

### How Stress Impacts Nerve Repair

When you're under stress — physical, emotional, or internal — your body activates the **sympathetic nervous system** (the “fight-or-flight” mode).

This response:

- Increases **cortisol**, a stress hormone that raises blood sugar
- Suppresses **immune regulation** and gut function
- Disrupts **sleep cycles**, which are needed for nerve regeneration
- Inhibits **BDNF** (brain-derived neurotrophic factor), slowing nerve growth
- Diverts blood flow **away from digestion and repair**

Over time, chronic stress keeps the body in a **state of low-grade inflammation and repair resistance** — worsening symptoms like burning, tingling, fatigue, brain fog, and mood instability.

## The Autonomic Nervous System: A Simple Breakdown

Your nervous system has two main gears:

System	Role	Nickname
Sympathetic	Activates energy, fight-or-flight, stress response	"Survival mode"
Parasympathetic	Supports digestion, healing, sleep, and nerve repair	"Rest-and-repair mode"

Most patients with neuropathy — especially if dealing with pain, fatigue, or sleep issues — spend too much time in **sympathetic mode**. The goal is to **re-engage the parasympathetic nervous system** so the body can shift into healing.

### Signs You're Stuck in Sympathetic Overdrive

- Shallow breathing or breath-holding
- Poor sleep, especially trouble falling asleep
- Anxiety, racing thoughts, or irritability
- Digestive issues like bloating or constipation
- Elevated blood pressure or heart rate
- Feeling “wired but tired”

### Tools to Reset the Nervous System

These evidence-based tools can help stimulate the **vagus nerve** — the key switch that moves the body into parasympathetic, healing mode.

#### 1. Diaphragmatic breathing (Box breathing)

Inhale for 4 seconds → Hold for 4 → Exhale for 4 → Hold for 4. Repeat for 3–5 minutes, especially before meals or bed. The diaphragm is directly connected to the vagus which can send a calming signal to the brain when regulated with slow movement.

**Focus on breathing from your belly** — your lower ribs and abdomen should expand outward as you inhale. If your chest or shoulders are rising more than your belly, you're likely overusing accessory muscles instead of the diaphragm.

## 2. Gentle movement after meals

A 10–15 minute walk lowers cortisol and improves digestion and blood sugar response.

## 3. Cold exposure (brief)

Splashing cold water on your face or taking a cool shower can activate vagus tone.

## 4. Grounding (Earthing)

Standing barefoot on natural ground (grass, sand, dirt) for 5–10 minutes reduces sympathetic activity and may reduce inflammation.

## 5. Humming, chanting, or singing

These stimulate the vagus nerve through vibration and slow, controlled breathing.

## 6. Gratitude or prayer practice

Focusing on what's going well — even for 30 seconds — lowers cortisol and shifts attention from threat to safety.

## 7. Gentle stretching or yoga

Releases muscle tension, improves circulation, and promotes relaxation.

## 8. Time in nature

Even 20 minutes outside has been shown to reduce heart rate, blood pressure, and cortisol levels.

In Japan, “forest bathing” (Shinrin-yoku) is sometimes prescribed by physicians as a formal part of preventative and restorative health care. Exposure to trees, sunlight, and natural sounds supports immune balance and autonomic regulation.

## 9. Laughter, connection, and touch

Quality social interaction boosts oxytocin, which helps counterbalance stress hormones.

## Integrating Stress Reset Into Daily Life

- Start with **just one tool** per day and build from there
- Pair it with another habit — like stretching before bed or walking after meals
- Keep it **low-pressure**: 2–5 minutes is enough to make a difference
- Track how you feel before and after — even small improvements matter

## Recap: Calm Supports Healing

- Chronic stress worsens inflammation, glucose control, and sleep — all key drivers of neuropathy
- The body must shift from “survival mode” to “repair mode” for healing to occur
- Activating the parasympathetic system reduces symptoms, stabilizes mood, and improves resilience
- Nervous system resets are simple, low-cost, and can be practiced daily

You don’t need to eliminate stress — just **build moments of safety, stillness, and regulation** into each day. That’s what allows the body to start rebuilding from the inside out.

## Section 9: Smart Supplementation for Nerve Support

A healthy diet is the foundation — but it’s often **not enough to correct deeper deficiencies**, support nerve repair, or overcome long-standing metabolic stress. However, it’s also important to remember that supplements are just that — you can’t out-supplement a poor diet and lifestyle.

That’s where targeted supplementation comes in.

The right nutrients, in the right form and dosage, can help:

- Improve mitochondrial energy production
- Reduce oxidative stress and inflammation
- Support nerve insulation and communication
- Replenish common micronutrient deficiencies
- Stabilize blood sugar and immune function

But not all supplements are created equal — and quality matters.

## Why Supplementation Is Often Necessary

Even with a nutrient-dense diet, many patients still face gaps due to:

- **Soil depletion** (fewer minerals in today’s produce)
- **Poor gut absorption** (common with aging, stress, inflammation, or medication use)
- **Medication interactions** (e.g., metformin, acid blockers, statins deplete B12, magnesium, CoQ10)
- **Higher needs** during periods of repair or chronic inflammation

Studies show that nearly **90% of Americans** are not meeting the recommended intake for at least one essential nutrient — and standard RDAs are often set too low for therapeutic purposes.

## Supplements With Strong Evidence for Neuropathy

These nutrients and compounds are among the most studied and consistently effective in supporting nerve health. Some work best in combination or as part of a broader protocol.

Nutrient / Compound	Function	Key Notes
<b>Alpha-Lipoic Acid (ALA)</b>	Powerful antioxidant; improves insulin sensitivity	May reduce pain and improve nerve conduction; R-ALA form is more bioavailable
<b>Methylcobalamin (B12)</b>	Supports myelin sheath and nerve regeneration	Better absorbed than cyanocobalamin; low B12 is common even in “normal” blood tests
<b>Vitamin D3 + K2</b>	Modulates immune function and inflammation	Especially important in northern climates or those with low sun exposure
<b>Magnesium (Glycinate or Malate)</b>	Calms nerves, reduces muscle tension, improves sleep	Avoid magnesium oxide (poor absorption)
<b>Omega-3s (EPA/DHA)</b>	Reduces inflammation, supports nerve cell membranes	Best from triglyceride-form fish oil or wild-caught fish
<b>Coenzyme Q10 (Ubiquinol)</b>	Supports mitochondrial energy (ATP) production	Especially important if taking statins or with fatigue
<b>Acetyl-L-Carnitine</b>	Enhances nerve regeneration and mitochondrial activity	May reduce pain and improve function in diabetic neuropathy
<b>Curcumin (with piperine or liposomal)</b>	Potent anti-inflammatory and antioxidant	Helps modulate inflammatory pathways that affect nerves
<b>Zinc (citrate or glycinate)</b>	Supports immune balance and tissue repair	Be cautious with high doses long-term without copper balance
<b>Benfotiamine (B1 derivative)</b>	Helps reduce advanced glycation end products (AGEs)	Protective in diabetic neuropathy and vascular-related nerve issues

## Quality, Form, and Safety: What to Look For

Many over-the-counter supplements — especially those bought through large online marketplaces — are:

- Poorly absorbed or in the **wrong form** (e.g., cyanocobalamin vs. methylcobalamin, or folic acid vs. methylfolate)
- **Underdosed**, so they don't reach a therapeutic level
- **Contaminated or mislabeled**, especially if not 3rd-party tested
- Sometimes even **counterfeit** — some Amazon listings have been found to contain fake versions of name-brand products

### What to look for:

- 3rd-party certifications (e.g., NSF, USP, GMP)
- Brands with transparent sourcing and quality testing
- Practitioner-grade or physician-recommended options
- Avoid supplements with synthetic dyes, artificial flavors, or preservatives

If you're not sure where to start, your provider or health coach may guide you toward **trusted brands** or provide access to a curated supplement bundle designed for neuropathy recovery.

## A Brand You can Trust

NutriDyn is one high quality brand that is often recommended at Aervita. If you would like to purchase any of the supplements recommended above, you can find them at [Nutridyn.com](https://www.nutridyn.com). Get **10% off your first order** by using practitioner code 104148 when you set up an account.

## Recap: Supplementation That Supports Real Results

- Diet is the base — supplements are the **precision tools** to fill in the gaps
- The right forms and doses matter more than just “taking a multivitamin”
- 3rd-party testing and practitioner guidance can prevent wasted money and subpar results
- Supplements work best **alongside lifestyle changes**, not instead of them

Used properly, supplementation can become a **powerful accelerator for healing, energy, and long-term nerve repair**.

## Section 10: Advanced Therapies That Enhance Healing

Advanced therapies are more than add-ons — they're often **the most powerful lever for progress**, especially in complex or resistant cases of neuropathy.

At **Aervita**, we combine non-invasive, high-tech solutions that go beyond conventional models. These therapies are designed to **target the root biology of nerve damage** — oxygen deprivation, poor circulation, low cellular energy, inflammation, and mitochondrial dysfunction.

And unlike many clinics that delay advanced treatments until everything else is perfect, **we believe they can create meaningful change even when nutrition, sleep, and movement aren't yet dialed in.**

That's part of what makes our model different — and more effective.

### Hyperbaric Oxygen Therapy (HBOT)

**How it works:** Increases oxygen delivery to tissues under pressure, saturating blood plasma with oxygen and pushing it into hard-to-reach, poorly perfused areas.

#### Why it helps:

- Stimulates stem cells and tissue regeneration
- Supports mitochondrial energy production (ATP)
- Enhances microvascular circulation
- Reduces inflammation and oxidative stress

**Evidence:** HBOT has been shown to reduce symptoms and improve nerve function in patients with diabetic neuropathy and chronic nerve injury.

### Photobiomodulation (Red & Infrared Light Therapy)

**How it works:** Delivers red and near-infrared light into the skin and tissue, activating enzymes that boost cellular energy and repair.

#### Why it helps:

- Enhances ATP production via cytochrome c oxidase
- Reduces pain and inflammation
- Promotes nerve regeneration and vascular growth
- Can improve sleep quality and mitochondrial efficiency

**Evidence:** Multiple human and animal studies show improvements in pain, nerve conduction, and tissue healing with consistent use.

## PEMF Therapy (Pulsed Electromagnetic Field)

**How it works:** Applies low-frequency electromagnetic pulses to stimulate cell membranes and promote healing in muscles, joints, and nerves.

**Why it helps:**

- Enhances oxygen and nutrient delivery to cells
- Increases cellular voltage and membrane repair
- Modulates inflammation
- Supports neuromuscular recovery

**Evidence:** PEMF is FDA-cleared for pain and inflammation and has growing support in research for promoting nerve regeneration.

## Honorable Mentions: Other Evidence-Based Therapies

While not part of every care plan, the following therapies can offer **measurable improvements** in neuropathy when used correctly:

### Acupuncture

- Modulates pain perception and stimulates blood flow
- Activates endogenous opioids and vagus nerve function
- May improve nerve conduction and reduce tingling/burning

### TENS (Transcutaneous Electrical Nerve Stimulation)

- FDA-cleared for neuropathy-related pain
- May reduce pain signals and improve local circulation
- Home-use devices are affordable and safe

### Peptide therapy (e.g., BPC-157, Thymosin Beta-4)

- Experimental but promising tools to support tissue repair, inflammation control, and neurogenesis
- Often used in integrative and longevity-focused protocols

### Massage Therapy

- May improve circulation, reduce pain, and support parasympathetic activity
- Can decrease nerve-related pain and discomfort, especially when applied regularly
- Works best when integrated with other modalities like movement, hydration, and supplementation

## IV Therapy

- Delivers nutrients like B12, magnesium, or glutathione directly into the bloodstream
- Useful in cases with poor absorption or severe deficiencies
- May reduce fatigue and accelerate tissue repair

## Infrared Sauna

- Promotes circulation, sweating, detoxification, and parasympathetic activation
- May help relieve stiffness, inflammation, and improve sleep

## Cryotherapy

- Short bursts of extreme cold reduce nerve-related pain, modulate inflammation, and may improve circulation post-exposure
- More useful for pain relief and recovery than nerve regeneration alone, but can be complementary

## Why These Therapies Work — Even on Their Own

These therapies don't depend on perfect diet, sleep, or exercise to work.

In fact, when patients are struggling to implement foundational changes — whether due to fatigue, pain, or life barriers — **advanced therapies can help create the momentum they need to feel better, faster.**

They:

- Improve circulation and oxygenation
- Stimulate ATP production and nerve regeneration
- Reduce pain, making movement more accessible
- Support mitochondrial repair and cellular signaling

Combined, these effects build a foundation for deeper healing.

## Recap: Therapies That Move the Needle

- Advanced therapies like **HBOT, light therapy, and PEMF** directly target the biological root causes of nerve dysfunction
- They're **safe, science-supported, and effective**, even when lifestyle changes are still in progress
- **Aervita's model integrates these early in care**, not as a last resort — helping patients make faster, more lasting improvements
- Honorable mentions like **acupuncture, peptides, sauna, and IV therapy** can complement and expand results

When used strategically, these tools **turn the tide** — helping patients overcome stagnation, relieve pain, and accelerate nerve repair in ways that are difficult to achieve through lifestyle changes alone.

## Appendix A: The Complete Neuropathy Recovery Checklist

Use this checklist as your daily and weekly guide. These are the evidence-based habits, therapies, and tools that support nerve regeneration, reduce symptoms, and help you take back control over your health.

### Nutrition & Blood Sugar Regulation

- ☐ Prioritize protein (0.7–1.0g per lb of lean body mass)
- ☐ Build each meal around lean protein, healthy fats, and non-starchy vegetables
- ☐ Include fiber-rich plant foods at each meal (25–35g daily)
- ☐ Limit or avoid added sugars, refined carbs, processed snacks, and sweetened drinks
- ☐ Choose mostly low-glycemic, whole-food carbohydrates (berries, quinoa, lentils, oats)
- ☐ Balance carbohydrate intake with protein, fat, or fiber to reduce glucose spikes
- ☐ Eat 2–3 meals per day and avoid late-night eating (stop eating 2–3 hours before bed)
- ☐ Use apple cider vinegar (1 tbsp in water before meals) to help modulate blood sugar
- ☐ Drink enough water daily — aim for half your body weight in ounces

### Physical Activity & Circulation

- ☐ Move your body every day: walking, stretching, biking, or strength training
- ☐ Do resistance training 2–3x/week, scaled to your ability
- ☐ Take a 10–15 minute walk after meals when possible
- ☐ Avoid prolonged sitting: stand up, stretch, or walk every hour
- ☐ Try balance or core work if neuropathy affects stability
- ☐ If using advanced therapy, complete PEMF, red/NIR light, or HBOT sessions as scheduled
- ☐ Track your energy levels and symptom response to movement and therapies

### Sleep Quality & Circadian Rhythm

- ☐ Wake up at the same time every day (including weekends)
- ☐ Get 10–30 minutes of direct morning sunlight shortly after waking
- ☐ Avoid caffeine after 12 p.m. to support deep sleep
- ☐ Cool your bedroom to 65–68°F
- ☐ Avoid blue light or bright screens 1–2 hours before bed
- ☐ Avoid long daytime naps to build “sleep pressure” naturally
- ☐ Create a relaxing evening wind-down routine: stretching, reading, journaling, or breathing exercises
- ☐ Keep electronics out of the bedroom and prioritize a consistent sleep time

## Parasympathetic Reset & Stress Reduction

- Practice 3–5 minutes of diaphragmatic breathing or box breathing daily
- Take a slow walk in nature or sit outdoors to reduce nervous system arousal
- Engage in light stretching, yoga, or grounding to shift into repair mode
- Splash cool water on your face or take a cool rinse to stimulate vagus tone
- Sing, hum, or chant to activate parasympathetic pathways
- Reflect, journal, pray, or practice gratitude at least once a day
- Spend time with loved ones or engage in meaningful social connection
- Notice when you're "stuck in overdrive" and give yourself permission to slow down

## Supplementation & Nutrient Optimization

- Take your supplements consistently at the appropriate time of day
- Choose 3rd-party tested brands in effective forms (e.g., methyl-B12, R-ALA, omega-3s)
- Avoid bargain or unverified products from large online marketplaces
- Work with a provider to personalize your stack as needs change
- Consider: alpha-lipoic acid, methylcobalamin (B12), magnesium (glycinate), omega-3s, CoQ10, curcumin, acetyl-L-carnitine, vitamin D3/K2, and benfotiamine

## Toxic Load Reduction & Detox Support

- Store and reheat food in glass, stainless steel, or ceramic — not plastic
- Filter your drinking water to remove PFAS, heavy metals, chlorine, and VOCs
- Avoid synthetic fragrances, perfumes, air fresheners, and products labeled with "parfum" or "fragrance"
- Use non-toxic cleaning products like vinegar, castile soap, or certified brands
- Switch to clean skincare, shampoos, and lotions (paraben- and phthalate-free)
- Use the Healthy Living app to scan personal care and household products
- Ventilate your home by opening windows when outdoor air quality is good
- Use HEPA air purifiers in living and sleeping spaces
- Add indoor plants such as snake plants or peace lilies to help clean indoor air
- Address any water damage or visible mold — sometimes relocation is necessary
- Consume enough fiber and water to support regular bowel movements
- Sweat regularly via exercise, sauna, or warm baths
- Move lymph through daily activity, breathwork, and hydration
- Replace one high-toxicity item per week with a safer option

## Monitoring & Accountability

- Track your symptoms weekly: pain, numbness, fatigue, sleep quality, digestion
- Measure or reassess your body composition monthly (body fat %, LBM)
- Adjust calories, macros, or supplements based on progress and testing
- Review wins and obstacles with a coach or provider as needed
- Recommit to 1–2 high-impact habits each week for steady progress
- Celebrate non-scale victories: energy, mobility, focus, confidence

## Final Reminder

This is not about doing everything perfectly — it's about building healing momentum. Some days you'll check most boxes. Other days, just one. **That one still matters.**

With consistency, coaching, and support, neuropathy can improve — and in many cases, **can be reversed**. You're not stuck. You're not broken. This checklist is your map forward.

## Ready to Start Healing?

Neuropathy doesn't have to be your new normal. With the right plan, support, and tools, you can reduce symptoms — and in many cases, reverse them.

At **Aervita Integrative Medicine + Hyperbarics**, our comprehensive neuropathy recovery program is designed to uncover root causes, support real healing, and deliver measurable results.

Your next step is simple:

- Book a [free discovery call](#) to learn if our program is right for you
- Or skip the wait and [enroll now](#) to start your personalized recovery plan

This guide gave you the roadmap. Now let us help you walk it — step by step.

## Have Questions? We're here for you.

If you have any questions or need advice, please email [info@aervita.com](mailto:info@aervita.com) or give us a call at (952) 213-6386.

