



Accurate Clinic

2401 Veterans Memorial Blvd. Suite 16
Kenner, LA 70062 - 4799
Phone: 504.472.6130 Fax: 504.472.6128

www.AccurateClinic.com

Accurate Education

Complementary and Alternative Medicine (CAM)

Nutraceuticals for Diabetic Peripheral Neuropathy

Diabetic peripheral neuropathy is a common complication of diabetes, often poorly controlled by standard pharmacologic treatments due to limited efficacy and tolerability. Nutraceuticals are increasingly engaged as adjunctive treatments, with several compounds offering benefits.

Most Effective Compounds Based on Human Studies

Alpha-lipoic acid has the most consistent evidence for symptom improvement in DPN, demonstrating significant reductions in total symptom scores and improvements in neuropathic deficits.

- **Dosing:** 600 mg daily
- **Safety:** Alpha-lipoic acid at doses ≥ 1200 mg/day may cause nausea and vomiting.

Acetyl-L-carnitine shows evidence for pain reduction and improved nerve conduction, but the overall certainty is still low. Some systematic reviews question its efficacy and highlight potential for mild adverse effects, especially at higher doses.

- **Dosing:** 1500–3000 mg/day
- **Safety:** May cause mild GI symptoms and headache

Vitamin B complex Vitamin B1 and Vitamin B12 are supported for pain and dysesthesia improvement, as well as enhanced nerve conduction in EMG studies. Benfotiamine is a synthetic, fat-soluble derivative of thiamine (vitamin B1). Because of its fat-soluble properties, it has higher bioavailability so it is absorbed better by the body than water-soluble thiamine.

- **Dosing:** Benfotiamine 300–600 mg/day; Vitamin B12 (Methylcobalamin) 500–1500 mcg/day
- **Safety:** May sometimes cause mild GI symptoms and headache
- **Special considerations:** Often found in combination with other B vitamins

L-methylfolate, also known as 5-MTHF, is the biologically active and most easily absorbed form of folate (vitamin B9). Supplementation provides consistent symptomatic and structural benefits, including pain reduction (up to 3 points on pain scales) and increased epidermal nerve fiber density.

- **Dosing:** L-methylfolate is typically dosed at 3–5 mg/day
- **Safety:** Excellent safety profile
- **Special considerations:** Often found in combination with other B vitamins

Other compounds offering potential benefits, but currently have less evidence, including Vitamin D, Vitamin E, omega-3 fatty acids, coenzyme Q10, Ginkgo biloba, N-acetylcysteine (NAC), melatonin and palmitoylethanolamide (PEA). Synergistic benefits may be found for combinations of these compounds, including multi-herb Chinese formulas and acupuncture, but they're not studied yet.

Vitamin D: Extensive research shows that vitamin D supplementation can improve pain scores and may enhance nerve conduction in DPN, especially in patients with deficiency.

- **Dosing:** Doses should be guided by maintaining blood levels between 50 and 80 ng/mL, but doses may range from 2,000 IU/day to 50,000 IU/week with higher doses showing greater improvements in pain, microcirculation, and inflammatory markers.
- **Safety:** Safety is good, but monitoring for hypercalcemia is recommended with high-dose regimens.

Vitamin E: Evidence is mixed, but some research suggests vitamin E may improve symptoms and nerve conduction, but results are not robust enough for strong recommendations.

- **Dosing:** 400–800 IU/day
- **Safety:** Good, but long-term high-doses may increase bleeding risk and isn't recommended routinely.

Omega-3 Fatty Acids: Early research suggests that supplementation improves pain..

- **Dosing:** typically 1–3 g/day combined DHA/EPA, with higher ratio of DHA:EPA (1,000 mg:200 mg)
- **Safety:** Good, but long-term doses >3 gms/day may increase bleeding risk and isn't routinely advised.

Coenzyme Q10: Preliminary studies suggest possible improvement in DPN symptoms, but research is limited and inconsistent. Risks for low blood levels/greater need should be monitored.

- **Dosing:** 100–300 mg/day
- **Safety:** well tolerated

Ginkgo biloba (GB): Possible benefit for neuropathic pain including DPN, for mechanical and thermal allodynia; limited clinical research, but overall quality but human evidence is low.

- **Dosing:** Standardized extracts (EGb 761) at 120–240 mg/day, divided into two doses
- **Safety:** GB is generally safe, with rare mild GI side effects, headache, or allergic reactions.

N-acetylcysteine (NAC): Some small studies indicate potential benefit for neuropathic pain and nerve function in DPN, but evidence is preliminary and not sufficient for routine recommendation.

- **Dosing:** 600–1,200 mg/day
- **Safety:** NAC is generally safe, with rare GI side effects.

Melatonin: There is very limited evidence for melatonin in DPN. Melatonin has antioxidant and neuroprotective properties, but human research for DPN is insufficient to support its routine use.

- **Dosing:** typically 3–10 mg nightly
- **Safety:** Good

Palmitoylethanolamide (PEA): has anti-inflammatory and analgesic properties with preliminary research suggesting benefit for neuropathic pain and DPN, but robust human studies are lacking.

- **Dosing:** 600–1,200 mg/day
- **Safety:** PEA is well tolerated.



Neuropathic Pain



CAM