

# Vegan Diet Eases Diabetic Neuropathy Pain

by [Kristina Fiore](#) Staff Writer, *MedPage Today*

Note that this study was published as an abstract and presented at a conference. These data and conclusions should be considered to be preliminary until published in a peer-reviewed journal.

ORLANDO -- A plant-based diet may help relieve diabetic nerve pain, according to a randomized trial presented here. In the 15-patient DINE study, patients with type 2 diabetes and diabetic neuropathy who were randomized to a vegan diet and B12 supplementation had greater improvement in pain scores than those who only took the vitamin, according to Anne Bunner, PhD, and Caroline Trapp, MSN, of the [Physicians Committee for Responsible Medicine](#).

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They reported their findings at the [American Association of Diabetes Educators meeting](#) here.

"Diabetic peripheral neuropathy is underdiagnosed, partially because there's not a whole lot for physicians to offer these patients," Bunner said. "We wanted to know if in the setting of a randomized controlled trial a low-fat vegan diet can make a difference in diabetic neuropathy pain."

Bunner noted that current treatments for diabetic neuropathy -- which occurs in about half of all type 2 diabetes patients -- only treat the pain, and do not treat the underlying cause of that pain.

An earlier observational study by Crane and Sample (*J Nutr Med* 1994; 4: 431-439) of 21 type 2 diabetics with nerve pain showed that being on a low-fat, high-fiber vegan diet for a month brought complete pain relief to 81% of participants, who lost about 11 pounds on average.

The majority of these patients were also able to reduce their diabetes medications and blood pressure medications.

To see whether similar benefits would hold in a randomized controlled trial, Bunner and Trapp conducted the DINE study (Dietary Intervention for chronic diabetic NEuropathy pain) in 15 patients with type 2 diabetes and neuropathy, who had a mean age of 57. About half were female and half had a college education or higher.

Patients were randomized to either a low-fat, high-fiber, plant-based diet with B12 supplementation or to B12 supplementation alone. Bunner noted that diabetic patients, especially those on metformin, tend to be deficient in B12.

Those on the diet could only eat plant-based foods, and they had to limit fatty foods such as oils and nuts to 20 to 30 grams per day. They were also told to get at least 40 grams of fiber per day, and to choose foods that had a low glycemic index.

Bunner added that there were no portion limits since high-fiber foods are low in calories.

Diet intervention patients also went to 20 weekly nutrition classes that involved nutrition education, social support, cooking demonstrations, and food product sampling.

With good adherence (five of seven diet patients were fully adherent), those on the diet had significantly greater

improvements in McGill Pain Questionnaire scores than those on B12 alone ( $P=0.04$ ), Bunner said.

They also had significantly greater reductions in body mass index (BMI) compared with controls ( $P=0.01$ ).

Many other parameters were also improved with the diet compared with supplementation alone, and while the changes were significantly different from baseline, they were not significantly greater than those in the B12 group.

Those included cholesterol lowering, which was greater in the diet group but was confounded by the fact that many in that group came off lipid medications, while those in the B12 group were put on more lipid drugs, so the graphs were artificially lowered, Bunner said.

They also had significant improvements in HbA1c that didn't differ at the end of the study, possibly because of similar medication changes, she said.

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Those on the vegan diet also had significant improvements in neuropathy symptom scores (NTSS-6) not seen in the control group, along with similar changes for quality-of-life scores, but the differences weren't significant at the end of the trial, possibly because of the small number of patients or because of the effect of participating in a study on the control group, Bunner said. Still, the researchers concluded that the study demonstrates the potential of a dietary intervention for treating diabetic neuropathy pain. They plan to follow patients through 1 year and report longer-term effects.

Trapp added that she doesn't use the word "vegan" to describe the diet to patients because it's a loaded word: "some people don't like it. It's an immediate turn-off." Instead, she calls it a "plant-based" diet, and patients appear to be more open to it.