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*Dakota Diabetes Coalition is proud to offer this column on diabetes and related concerns every other Friday.*



Dr. Johnson is a family practice doctor in Grand Forks with a special interest in diabetes -- and a special knack for writing. As a member of the Dakota Diabetes Coalition, he has generously made himself available to answer questions through our listserv. If you have comments, or questions for Dr. Johnson to address in future columns, please contact [gailhand@q.com](mailto:gailhand@q.com)



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**Screen often, stress bg control**

# Neuropathy needs routine attention

Diabetic Neuropathy, or nerve damage, is a fairly common diabetes related complication. About 60% of persons with diabetes have some degree of neuropathy, and it is part of regular exams and screenings in persons with diabetes. Nearly all persons with diabetes will eventually have some form of neuropathy. Complications from neuropathy can range from mild to severe. Mild, nuisance type symptoms can include buzzing, burning, or tingling (parasthesias), typically in the feet.

More severe forms of neuropathy can present as significant chronic **pain management issues, and can potentially contribute to diabetic foot ulcers** or amputations. A1C of <7% is associated with substantial decreases in incidence and severity of diabetic neuropathy in both type 1 and type 2 patients.

Distal Symmetric Polyneuropathy (DPN) is the most common form of Diabetic Neuropathy and typically **involves both feet**. About half of patients with this condition show no symptoms, so testing is recommended.

**Asymmetric polyneuropathy is not typical** of DPN, and other types of nerve damage or disease should be considered, such as lumbar disc disease. Currently, the American Diabetes Association recommends screening at least annually with simple office tests. This can include testing with either a 10-mg filament, usually on the toes and feet or a vibratory sensation testing, tuning fork, also performed on the feet. Combining these tests with ankle reflexes can diagnose up to 87% of cases. More sophisticated testing, such as imaging studies or nerve conduction studies are typically not needed, unless there is an atypical presentation. Screening is important, as improving glucose control can lower risk of progression. Combined with routine foot exam, ulcers or other problems can be detected and treated early.

**Autonomic Diabetic Neuropathy** is a more complex condition, affecting both **cardiovascular and gastrointestinal** systems. Symptoms and signs are usually noted on history and physical examination, and include resting tachycardia, constipation, diarrhea, erectile dysfunction, hypoglycemia unawareness, exercise intolerance, gastro paresis (stomach), and so-called "brittle diabetes."

Cardiovascular autonomic neuropathy also includes orthostatic hypotension. Persons with **type 1 diabetes should be screened beginning 5 years** after diagnosis, and type 2 patients should start screening **at diagnosis**.

Resting pulse, along with questions regarding bowel or stomach problems, erectile issues, unannounced low blood sugar, or exercise issues should be considered at every office visit. Gastroparesis can be detected with radiology studies. Persons with cardiovascular autonomic neuropathy are thought to have **reduced chest pain perception** in the event of acute coronary syndromes.

Persons with diabetes can have **long nerve mononeuropathies** as well, but are less common. These can include those of motor nerves of eyes, carpal-tunnel syndrome, and peroneal nerve syndromes in the lower leg, drop foot. As the differential for these problems include other conditions, these will usually require more sophisticated investigation.

## **Medications for pain**

Treatments for Diabetic Symmetric Polyneuropathy can improve patients' quality of life. Medications are typically reserved for pain syndromes associated with neuropathy.

Class	Examples	Typical doses*
Tricyclic drugs	Amitriptyline	10–75 mg at bedtime
	Nortriptyline	25–75 mg at bedtime
	Imipramine	25–75 mg at bedtime
Anticonvulsants	Gabapentin	300–1,200 mg t.i.d.
	Carbamazepine	200–400 mg t.i.d.
	Pregabalin†	100 mg t.i.d.
5-hydroxytryptamine and norepinephrine uptake inhibitor	Duloxetine†	60–120 mg daily
Substance P inhibitor	Capsaicin cream	0.025–0.075% applied t.i.d. or q.i.d.

\* **Diabetes Care, Supplement 1, 2009-09-16**

Note that **duloxetine also has an indication for depression**, also sometimes present in persons with diabetes.

## When meds don't help...

Other causes of neuropathy should always be considered, especially if treatment doesn't help. **Thyroid disease, anemia, alcohol abuse, and Vitamin B12 or folate deficiencies are relatively common causes** of neuropathy, and are easily screened with blood tests. Always consider **Vitamin B12 testing in persons using metformin**, as B12 deficiency appears to be more common in these patients.

Diabetic neuropathy screening is generally simple, and can be performed at nearly every office visit. Quality of life can be improved for these patients. Good blood glucose control is known to reduce the incidence and severity of diabetic neuropathy, and should be the first line prevention and treatment.

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[Neuropathy needs Attention, Dr. Johnson's Column #53, Sept. 18, 2009](#)