

Diabetic Neuropathy



What is diabetic neuropathy?

Diabetic neuropathy is nerve damage caused by diabetes. High blood sugar (glucose) can damage the blood vessels and nerves over time. This can cause problems and symptoms. It happens most often in the legs and feet. But it can also affect organs in your body.

Nerves send signals to and from your brain about pain, temperature, and touch. They tell your muscles when and how to move. They also control the systems in the body that digest food and pass urine.

You can have nerve problems at any time if you have diabetes. Nerve problems can start in the first 10 years after being diagnosed with diabetes. The risk goes up the longer you have diabetes. About half of people with diabetes have some form of nerve damage.

What causes diabetic neuropathy?

Researchers are still learning what causes it. Several things may lead to it. They include:

- **High blood sugar.** High blood sugar causes chemical changes in nerves. This makes it harder for the nerves to send signals. It can also harm blood vessels that send oxygen and nutrients to the nerves. This leads to nerve damage and nerve death.
- **Your genes.** Some genes can raise the risk for nerve disease. Autoantibodies to nerve tissue may cause other damage.

What are the symptoms of diabetic neuropathy?

The common symptoms include:

- Numbness in the hands or feet. This often happens on both sides.
- Tingling ("pins and needles") or burning in the feet
- Pain in the hands, feet, or legs
- Foot problems, such as calluses, dry skin, cracked skin, claw toes, and ankle weakness

Neuropathy can also cause problems with other parts of your body. It may harm your digestive tract, heart, sex organs, or eyes. This can lead to symptoms. They include:

- Nausea from slowed digestion (delayed gastric emptying)
- Diarrhea, constipation, or uncontrolled loss of poop (feces)
- Dizziness, especially when standing up
- Bladder infections from urine not flowing normally (urine retention)
- Erectile dysfunction
- Weakness
- Depression and sleep problems
- Visual changes. These include not being able to see or drive in the dark.
- Increased sweating

The symptoms of diabetic neuropathy may be like other health conditions. See your healthcare provider for a diagnosis.

How is diabetic neuropathy diagnosed?

To diagnose diabetic neuropathy, you will need a physical exam and tests. Your healthcare provider may check your muscle strength and reflexes. Your provider may also check how your nerves respond to:

- Position
- Vibration
- Temperature
- Light touch

You may also have tests. These include:

- Ultrasound to check for problems with the bladder
- X-rays and other tests to check for stomach problems
- Electrocardiogram to look for changes in your heart's rhythm
- Nerve conduction studies to check flow of electrical current through a nerve
- Electromyography to see how muscles respond to electrical impulses
- Nerve biopsy to remove a sample of nerve for testing

How is diabetic neuropathy treated?

Treatment will depend on your symptoms, your age, and your general health. It will also depend on how severe the condition is.

The main goal of treatment is to ease pain and discomfort. It can also help prevent more tissue damage. Treatment may include:

- Pain medicines
- Antidepressants or antiseizure medicines. These act on the nervous system to ease pain and discomfort.
- Creams you put on your skin
- Transcutaneous electronic nerve stimulation therapy
- Hypnosis
- Relaxation training
- Biofeedback
- Acupuncture
- Special shoes to protect your feet from injuries

You may also have treatment for complications of diabetic neuropathy. This may include digestive problems, dizziness, weakness, eye problems, or urinary or sexual problems.

What are possible complications of diabetic neuropathy?

Possible complications include:

- **Bladder problems.** The nerves of the bladder become damaged in some cases. They no longer respond normally as the bladder fills with urine. This causes the bladder to not be able to release urine completely. As a result, urine remains in the bladder. Or is released without warning. This can lead to urinary tract infections.
- **Erectile dysfunction (ED).** Neuropathy may cause ED if it affects the nerves that control erections. This means you may have trouble having or keeping an erection. This problem does not usually affect the desire for sex.
- **Diarrhea or constipation.** You may have diarrhea if the nerves that control your small intestine are damaged. The diarrhea is most common at night. You may also have constipation. This is a result of damage to nerves in the intestines.
- **Slow digestion in your stomach (gastroparesis).** The stomach is affected in some cases. It may lose the ability to move food easily down into the small intestine. It can cause bloating and vomiting. It changes how fast the body absorbs food. It can make it harder to match insulin doses to food portions.
- **Dizziness when standing.** In some cases, the nerves to the heart are affected. They may not work normally to help your heart keep normal blood pressure when you stand up. You may feel dizzy or even faint when you stand.
- **Loss of low blood sugar symptoms.** You may lose the warning signals of low blood sugar. These include feeling shaky or dizzy. This means you may have low blood sugar and not know it.
- **Foot and leg injuries.** Nerve injuries, especially in the feet, can lead to amputation of limbs.

Key points about diabetic neuropathy

- Diabetic neuropathy is nerve damage due to diabetes. It happens most often in the legs and feet. But it can also affect organs in your body.
- Nerve problems can happen in the first 10 years after being diagnosed with diabetes. The risk increases the longer you have diabetes. About half of people with diabetes have some form of nerve damage.
- Common symptoms include numbness in the hands or feet. And pain in the hands, feet, or legs. You may also have problems with your digestive tract, heart, sex organs, or your eyes.
- Diabetic neuropathy can impair your ability to feel the symptoms of low blood sugar.

Next steps

Tips to help you get the most from a visit to your healthcare provider:

- Know the reason for your visit and what you want to happen.
- Before your visit, write down questions you want answered.
- Bring someone with you to help you ask questions and remember what your provider tells you.
- At the visit, write down the name of a new diagnosis and any new medicines, treatments, or tests. Also write down any new instructions your provider gives you.
- Know why a new medicine or treatment is prescribed and how it will help you. Also know what the side effects are.
- Ask if your condition can be treated in other ways.
- Know why a test or procedure is recommended and what the results could mean.
- Know what to expect if you do not take the medicine or have the test or procedure.
- If you have a follow-up appointment, write down the date, time, and purpose for that visit.
- Know how you can contact your provider if you have questions.

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