



FAMILY FOOT AND ANKLE CLINIC

SPECIALISTS AND SURGEONS

At Family Foot & Ankle Clinic, we are committed to providing you with the highest quality of care and ensuring you have all the information you need to make informed decisions about your health.

If you have any questions or concerns, please don't hesitate to reach out to us. You can contact our office directly at 763-421-7300. Additionally, you can visit our website at <https://familyfootmn.com/> for more resources and information about our services.

Thank you for choosing us for your healthcare needs!

Diabetes Complications and Amputation Prevention

People living with diabetes are prone to having foot problems, often because of two complications of diabetes: nerve damage (neuropathy) - more information below- and poor circulation. Neuropathy causes loss of feeling in your feet, taking away your ability to feel pain and discomfort, so you may not detect an injury or irritation. Poor circulation in your feet reduces your ability to heal, making it hard for even a tiny cut to resist infection. Having diabetes increases the risk of developing a wide range of foot problems. Furthermore, with diabetes, small foot problems can turn into serious complications.

Diabetes-Related Foot & Leg Problems

- **Infections and ulcers (sores) that do not heal.** An ulcer is a sore in the skin that may go all the way to the bone. Because of poor circulation and neuropathy in the feet, cuts or blisters can easily turn into ulcers that become infected and will not heal. This is a common—and serious—complication of diabetes and can lead to a loss of your foot, your leg or your life.
- **Corns and calluses.** When neuropathy is present, you cannot tell if your shoes are causing pressure and producing corns or calluses. Corns and calluses must be properly treated or they can develop into ulcers.
- **Dry, cracked skin.** Poor circulation and neuropathy can make your skin dry. This may seem harmless, but dry skin can result in cracks that may become sores and can lead to infection.
- **Nail disorders.** Ingrown toenails (which curve into the skin on the sides of the nail) and fungal infections can go unnoticed because of loss of feeling. If they are not properly treated, they can lead to infection.
- **Hammertoes and bunions.** Nerve damage affecting muscles can cause muscle weakness and loss of tone in the feet, resulting in hammertoes and bunions. If left

untreated, these deformities can cause ulcers.

- **Charcot foot.** This is a complex foot deformity. It develops as a result of loss of sensation and an undetected broken bone that leads to destruction of the soft tissue of the foot. Because of neuropathy, the pain of the fracture goes unnoticed and the patient continues to walk on the broken bone, making it worse. This disabling complication is so severe that surgery, and occasionally amputation, may become necessary.
- **Poor blood flow.** In diabetes, the blood vessels below the knee often become narrow and restrict blood flow. This prevents wounds from healing and may cause tissue death.

Diabetes Foot Care Guidelines

Diabetes can be dangerous to your feet—even a small cut can produce serious consequences. Diabetes may cause nerve damage that takes away the feeling in your feet. Diabetes may also reduce blood flow to the feet, making it harder to heal an injury or resist infection. Because of these problems, you may not notice a foreign object in your shoe. As a result, you could develop a blister or a sore. This could lead to an infection or a nonhealing wound that could put you at risk for an amputation.

To avoid serious foot problems that could result in losing a toe, foot or leg, follow these guidelines.

Inspect your feet daily. If your eyesight is poor, have someone else do it for you. Inspect for:

- *Skin or nail problems:* Look for cuts, scrapes, redness, drainage, swelling, bad odor, rash, discoloration, loss of hair on toes, injuries or nail changes (deformed, striped, yellowed or discolored, thickened or not growing).
- *Signs of fracture:* If your foot is swollen, red or hot or has changed in size, shape or direction, see your foot and ankle surgeon immediately.

Call your doctor if you notice anything.

Bathe feet in lukewarm, never hot, water. Keep your feet clean by washing them daily. Use only *lukewarm* water—the temperature you would use on a newborn baby.

Be gentle when bathing your feet. Wash them using a soft washcloth or sponge. Dry by blotting or patting and carefully dry between the toes.

Moisturize your feet but not between your toes. Use a moisturizer daily to keep dry skin from itching or cracking. But don't moisturize between the toes—that could encourage a fungal infection.

Cut nails carefully. Cut them straight across and file the edges. Don't cut nails too short, as this could lead to ingrown toenails. If you have any nail problems, hard nails, or reduced feeling in your feet, your toenails should be properly trimmed by a professional.

Never treat corns or calluses yourself. No “bathroom surgery” or medicated pads. Visit your doctor for appropriate treatment.

Wear clean, dry socks. Change them daily.

Consider socks made specifically for patients living with diabetes. These socks have extra cushioning, do not have elastic tops, are higher than the ankle and are made from fibers that wick moisture away from the skin.

Wear socks to bed. If your feet get cold at night, wear socks. Never use a heating pad or a hot water bottle.

Shake out your shoes and feel the inside before wearing. Remember, your feet may not be

able to feel a pebble or other foreign object, so always inspect your shoes before putting them on.

Keep your feet warm and dry. Don't let your feet get wet in snow or rain. Wear warm socks and shoes in winter.

Consider using an antiperspirant on the soles of your feet. This is helpful if you have excessive sweating of the feet.

Never walk barefoot. Not even at home! Always wear shoes or slippers. You could step on something and get a scratch or cut.

Keep floors free of sharp objects. Make sure no needles, insulin syringes or other sharp objects are on the floor.

Take care of your diabetes. Keep your blood sugar levels under control.

Do not smoke. Smoking restricts blood flow in your feet.

Get periodic foot exams. Seeing your foot and ankle surgeon on a regular basis can help prevent the foot complications of diabetes.

Do not ignore leg pain. Pain in the leg that occurs at night or with a little activity could mean you have a blocked artery. Seek care immediately.

[What Is Diabetic Peripheral Neuropathy?](#)

Diabetic neuropathy is nerve damage caused by diabetes. When it affects the arms, hands, legs and feet, it is known as diabetic peripheral neuropathy. Diabetic peripheral neuropathy is different from peripheral arterial disease (poor circulation), which affects the blood vessels rather than the nerves.

Three different groups of nerves can be affected by diabetic neuropathy:

- *Sensory nerves*, which enable people to feel pain, temperature and other sensations
- *Motor nerves*, which control the muscles and give them their strength and tone
- *Autonomic nerves*, which allow the body to perform certain involuntary functions, such as sweating

Diabetic peripheral neuropathy does not emerge overnight. Instead, it usually develops slowly and worsens over time. Some patients have this condition long before they are diagnosed with diabetes. Having diabetes for several years may increase the likelihood of having diabetic neuropathy. The loss of sensation and other problems associated with nerve damage make a patient prone to developing skin ulcers (open sores) that can become infected and may not heal. This serious complication of diabetes can lead to loss of a foot, a leg or even a life.

[Causes](#)

The nerve damage that characterizes diabetic peripheral neuropathy is more common in patients with poorly managed diabetes. However, even patients living with diabetes who have excellent blood sugar (glucose) control can develop diabetic neuropathy. There are several theories as to why this occurs, including the possibilities that high blood glucose or constricted blood vessels produce damage to the nerves.

As diabetic peripheral neuropathy progresses, various nerves are affected. These damaged nerves can cause problems that encourage development of ulcers. For example:

- Deformities (such as bunions or hammertoes) resulting from motor neuropathy may cause shoes to rub against toes, creating a sore. The numbness caused by sensory neuropathy can make the patient unaware that this is happening.
- Because of numbness, a patient may not realize that s/he has stepped on a

small object and cut the skin.

- Cracked skin caused by autonomic neuropathy, combined with sensory neuropathy's numbness and problems associated with motor neuropathy, can lead to developing a sore.

Motor Neuropathy (Deformity) + Ill-Fitting Shoes + Sensory Neuropathy (numbness) = Ulcers (sores)

Symptoms

Depending on the type(s) of nerves involved, one or more symptoms may be present in diabetic peripheral neuropathy.

For sensory neuropathy:

- Numbness or tingling in the feet
- Pain or discomfort in the feet or legs, including prickly, sharp pain or burning feet

For motor neuropathy:

- Muscle weakness and loss of muscle tone in the feet and lower legs
- Loss of balance
- Changes in foot shape that can lead to areas of increased pressure

For autonomic neuropathy:

- Dry feet
- Cracked skin

Diagnosis

To diagnose diabetic peripheral neuropathy, the foot and ankle surgeon will obtain the patient's history of symptoms and will perform simple in-office tests on the feet and legs. This evaluation may include assessment of the patient's reflexes, ability to feel light touch and ability to feel vibration. In some cases, additional neurologic tests may be ordered.

Treatment

First and foremost, treatment of diabetic peripheral neuropathy centers on control of the patient's blood sugar level. In addition, various options are used to treat the painful symptoms. Medications are available to help relieve specific symptoms, such as tingling or burning. Sometimes a combination of different medications is used.

In some cases, the patient may also undergo physical therapy to help reduce balance problems or other symptoms.

Prevention

The patient plays a vital role in minimizing the risk of developing diabetic peripheral neuropathy and in preventing its possible consequences. Some important preventive measures include:

- Keep blood sugar levels under control.
- Wear well-fitting shoes to avoid getting sores.
- Inspect your feet every day. If you notice any cuts, redness, blisters or swelling, see your foot and ankle surgeon right away. This can prevent problems from becoming worse.
- Visit your foot and ankle surgeon on a regular basis for an examination to help prevent the foot complications of diabetes.
- Have periodic visits with your primary care physician or endocrinologist. The foot and ankle surgeon works together with these and other providers to prevent and treat complications from diabetes.

What Your Foot & Ankle Surgeon Can Do

Your foot and ankle surgeon can help wounds heal, preventing amputation. Many new surgical techniques are available to save feet and legs, including joint reconstruction and wound healing technologies. Getting regular foot checkups and seeking immediate help when you notice something can keep small problems from worsening. Your foot and ankle surgeon works together with other healthcare providers to prevent and treat complications from diabetes.

When Is Amputation Necessary?

Even with preventive care and prompt treatment of infection and complications, there are instances when amputation is necessary to remove infected tissue, save a limb or even save a life.

<https://www.foothealthfacts.org/conditions/diabetic-complications-and-amputation-prevention>

<https://www.foothealthfacts.org/conditions/diabetic-peripheral-neuropathy>