

Diabetic Foot Pain by Kenneth B. Rehm, DPM

Diabetes is one of the most common reasons people seek relief for painful feet. With diabetes, four types of foot problems may arise in the feet.

Nerve Problems Due to Diabetes

The most common contributor to diabetic foot pain is a nerve problem called Peripheral Neuropathy. This is where the nerves are directly affected by the disease process. There are basically three types of peripheral neuropathy: sensory, motor, and autonomic neuropathy.

A large percentage of pain diabetic patients complain of is due to sensory neuropathy. This can show up as "sensitive pain," where the amount of pain is not proportional to the amount of insult that is causing it. For instance, just touching the skin or putting a sheet over your feet in bed could be painful. This can be present at the same time as numbness in the feet. Sensory neuropathy symptoms can include burning, tingling or a stabbing pain.

Relief is foremost on someone's mind when painful neuropathy has raised its ugly head. The first thing to do is to check your blood sugar for the past several weeks to see if there has been a trend toward high blood sugar (Editor's Note: The A1c test is traditionally employed to determine this, and should be repeated about every three months.) Persistent high blood sugar can contribute to this type of pain.

Massaging your feet with a diabetic foot cream, or using a foot roller, often takes the edge off the pain. Vitamin B preparations are often recommended; and there are a variety of prescription medications that do work. Using cushioned, supportive shoes and foot support inserts is always needed to protect the feet from the pounding, rubbing and irritating pressures that contribute to neuropathic pain.

Motor neuropathy can contribute to another painful diabetic condition. The nerves to the muscles become affected by the disease process. This makes the muscles feel weak and achy. Some of the first muscles to become affected are those in the thigh; other common muscles include the shin muscle and the small muscles of the feet. When motor neuropathy is present, walking imbalances can result. These can cause increased rubbing of the foot in the shoe, inflammation of the skin, increased callous formation, and pain.

Helping yourself against the ravages of motor neuropathy involves correcting those walking imbalances with supportive shoes and foot support inserts. Foot exercises, massage and using foot rolling devices are excellent ways to help keep those muscles and joints from becoming stiff.

Keep the muscles working and the joints moving!

Autonomic neuropathy affects the nerves to areas that are not under our conscious control. The sweating mechanism is altered -- so the person who suffers with this condition may have thickened, dry cuticles and nails; as well as dry, stiff, cracked skin -- which is subject to a buildup of thicker calluses with more pain. Bacterial and fungal infection could be more likely; an additional source of pain and concern.

Daily use of toenail oil and conditioning foot cream made specifically for diabetic foot care can play an essential role in preventing these problems.

Circulation Problems

Circulation problems in the feet may cause intense pain, even though the feet may feel numb to the touch. This is due to the effect of high blood sugars on the arteries, capillaries and veins. Arteries feed fresh blood away from the heart. This fresh blood nourishes and provides oxygen to the tissues. The blood enters and leaves the tissues through capillaries and goes back up to the heart to get refreshed with oxygen and nourishment by way of the veins.

The arteries most commonly affected are those behind the knee and the calf. These arteries are subject to the same fatty deposits that most people have, however, the process

can be accelerated in diabetes. These fatty deposits thicken the walls of the arteries, and may develop calcium deposits. Blood flow to the feet could then be partially or totally blocked. Because the tissues are starving for oxygen, this can be an extremely painful process. Such pain is often described as though the feet are in a vise, and are being strangled.

The capillaries are known to get thickened and stiff from diabetes -- thus not as efficient in delivering oxygen and nutrients to and from the tissues.

The veins can get swollen and painful. This happens when the arteries cannot handle the blood flow, and little channels are created to direct the blood over to the veins instead of trying to push the blood through closed arteries. Sometimes there is more blood than the veins can handle. They become so full that the valves become broken. Blood then pools in the feet and legs and can leak out into the skin, creating ulcerations, which can be very painful.

With the approval of your medical doctor, support hose, exercise, massage, physical therapy, medications and various surgical procedures can be used to improve the circulation.

Muscle & Joint Problems

Muscle and joint problems in the diabetic patient are a frequent source of discomfort and pain. The muscles are affected by diabetic neuropathy, circulation problems and atrophy. The tendons (attachment of the muscle to the bones) may become stiff and contracted due to the walking imbalance associated with peripheral neuropathy.

This walking imbalance forces the foot and joints to move in ways that are not healthy and that Mother Nature never intended. In addition, they may stiffen in this bent position because of the excess blood sugar combining with the proteins in the joints. This is called diabetic glycosylation of the joints.

This, combined with the normal imbalance all people, including non-diabetics, are subject to, can lead to stiff hammertoes, bunions, spurs, and tiny fractures with

dislocation of the bones (called Diabetic Charcot Deformity). These problems can be sources of pain, infection, ulceration and major medical concern.

With consent from your foot healthcare provider, foot rollers, massage and specially made shoes and inserts might be the best way to deal with these muscle and joint problems.

Frequent Infections

Diabetic persons become more susceptible to bacterial, fungal and yeast infections due to medical and nutritional changes that takes place in the body.

Bacterial infections show up in areas on the foot that become irritated, ulcerated or injured. The signs of a bacterial infection include redness, swelling, warmth, pain and tenderness as well as the presence of pus. (Editor's Note: Blind diabetics can detect foot infections by touch, and, in some cases, by smell.) This kind of infection can either be on the skin, called cellulitis, or can spread to the bone. When infection has spread to the bone it is called osteomyelitis. It is interesting that even though a diabetic may have numbness in their foot, they could sometimes feel pain when they have a bacterial infection. When a diabetic suddenly develops pain while their feet are numb, it could be a sign that an infection is present -- and a health care provider should be contacted without delay.

Fungal or yeast infections in the foot commonly occur as athlete's feet or fungal toenails. Athlete's feet can cause the skin to become blistered, scaly, red, inflamed and painful. A bacterial infection can occur on top of this because the irritated skin serves as a good place for germs to thrive. Fungal toenails can become very thick, powdery and ingrown. These thick nails can leave debris under the nails and cause severe irritation to the skin surrounding the nails. They can even become ingrown with callused nail grooves. This can cause infection to the areas surrounding the nail and is a source for medical concern.

In order to maximize a person's ability to fight off infections, think strengthen the immune system. This comes from good blood sugar control, moderate exercise, good nutrition and supplements, if recommended by your health care professional. Fungus can

make the skin raw and fungus toenails can become thick, irritating, painful and infected with bacteria. Self-inspection and daily maintenance of the skin and nails is essential to prevention. Once your toenails or skin on the feet become infected with fungus, it is important to treat it right away to prevent ulceration and bacterial infection. Medications prescribed by your foot healthcare professional are recommended, but various over-the-counter and home remedies have found success. The use of tea tree oil, sesame oil, garlic, grapefruit seed extract, and galberry root soaks are among them.

It is important to note that not all diabetics can detect the pain of these problems -- and therefore should have their feet visually and manually inspected every day. Be Prudent, Be Cautious and Follow the Rules of Good Health!

From the Editor: Dr. Kenneth B. Rehm, DPM, is a podiatrist whose practice is limited to the diabetic foot. He is the medical director of the Diabetic Foot and Wound Care Center, in San Marcos, California; telephone (760) 744-6226. Along with expert care and instruction, he offers several products he has developed for the diabetic foot. Originally from Cleveland, Ohio, Dr. Rehm graduated from California College of Podiatric Medicine in 1976, and has been in practice for more than 25 years. Consulting Editor to Podiatry Management magazine, he is also an active lecturer, and has been keynote speaker for our Diabetes Action Network's annual meeting

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