

NEUROPATHY/ NERVE COMPRESSION SYNDROMES

The term neuropathy by strict definition means **disease or pathology of the nerve**. Like the term **Arthritis**, this is a very generalized term that can have many different causes. Some of those causes can be diabetes, thyroid problems, the result of chemotherapy, vitamin deficiencies, and physical compression of the nerves.

The most common cause of neuropathy is **Diabetes**. Neuropathy is the leading cause of diabetic ulcerations, and infections. It is also the leading cause of loss of toes and in more advanced cases, amputation. Prior to this time, this has been a major concern and worry for both the patient and the treating physician.

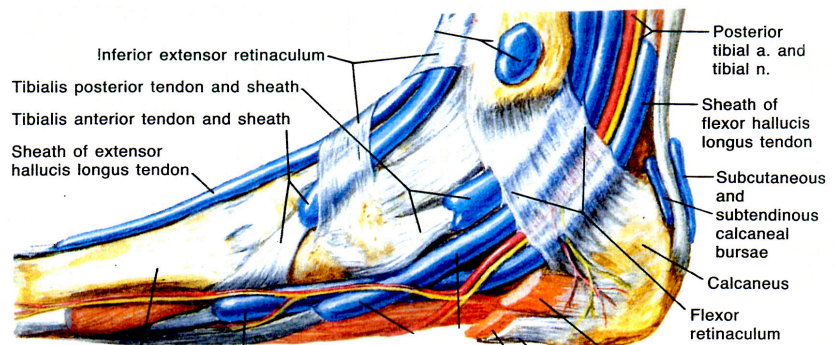
Until recently, there has been no good news concerning this problem.

The purpose of this handout is to provide you with information that is a new source of optimism for patients with neuropathy. By having an **early measurement** made of the sensitivity in your feet, the earliest stages of neuropathy can be identified. **WE ARE PROUD TO BE A TESTING CENTER FOR THE DELLON INSTITUTE FOR PERIPHERAL NERVE SURGERY.** A number of years ago; A.Lee Dellon, M.D. , a Professor of Plastic Surgery and Neurosurgery at Johns Hopkins University and Mayo Clinic, developed a very accurate method of testing called the Pressure-Specified Sensory Device. This is a painless test that has become the gold standard. The **American Diabetes Association has recommended that all Diabetics be tested annually.**

The good news is that in certain cases, the test will reveal an area of compression of the nerve which can be treated with surgery to relieve your symptoms of burning, tingling and pain and in many cases, restore feeling to your feet.

WHY ARE NERVES OF A DIABETIC COMPRESSED?

Nerves begin in the spinal chord and extend into the fingers and toes. Along this path, there are areas where these nerves pass through a small tunnel formed by bones and ligaments. This is the same in everyone. In your foot, there are two areas where this can happen: on the inside of your ankle called the tarsal tunnel and in the front of the ankle called the anterior tarsal tunnel.



Diabetics nerves are susceptible to compression because the nerves in a diabetic become swollen due to excess sugar in the nerves which draws in excess water. If a nerve swells in a canal that is already tight, like the areas described above, the nerve will become compressed or pinched and the symptoms will ensue.

This can occur even in diabetics whose sugar levels are in excellent control.

WHAT IF I AM NOT A DIABETIC AND HAVE THESE SYMPTOMS?

If you are not a diabetic and have the symptoms, the first thing that must be determined is that indeed you are not a diabetic or a pre-diabetic. There are millions of people who have what is called Metabolic Syndrome or pre-diabetes who do not know it. A blood test is required to determine this.

If indeed you are not a diabetic, nerve compression can still occur in these same canals in the ankle. This is called **TARSAL TUNNEL SYNDROME**. In this instance, when the nerve is “pinched” it soon becomes oxygen starved. When this occurs you will have the symptoms of buzzing, tingling, burning and numbness in the areas that are supplied by that nerve.

In the foot, the posterior tibial nerve travels through a bony and fibrous tunnel on the inside of the ankle. This nerve supplies the entire bottom of the foot, including the heel. Compression of the posterior tibial nerve can result in numbness or tingling of the heel, the arch, the ball of the foot, and the bottom and tips of the toes. Continued compression of the nerve without treatment can further lead to muscle weakness, or atrophy of the small muscles to the toes leading to curled toes or hammer toes.

HOW CAN I TELL THE DIFFERENCE BETWEEN NEUROPATHY AND TARSAL TUNNEL SYNDROME?

With neuropathy, the patient generally has the same symptoms in both feet. The affected areas usually involve both the top and the bottom of the foot. Physicians describe this as a **stocking and glove distribution**. In contrast, often when there is a nerve compression, only one set of nerves will be involved giving the symptoms in only a particular area of the foot or hands. **This is easily differentiated using the Pressure-Specified Sensory Testing Device.**

WHAT CAN I DO IF I HAVE THESE SYMPTOMS?

Certainly if you are a **diabetic** it is critical that you work with your physician to get optimum control of your sugar. If you are overweight, it is also very helpful to loose weight both for the sugar control and for the weight that you are putting on your feet and ankles. **The second most important thing that you can do is to be tested.** Once you have been tested, we can determine a treatment regimen for you. Often times conservative management with medications and orthotics to re-align your foot will relieve the symptoms. **It is also important that you do not delay treatment for this condition as the longer that the condition persists , the more damage is being done to the nerves.** If it is determined by testing that there is an area of compression of the nerve, surgical decompression of the nerve will allow nerve regeneration and healing to take place.

WHO IS A CANDIDATE FOR SURGERY?

The most ideal candidate is one who is in the very early stages of neuropathy. Because there will be very little damage done to the nerve at this point, there is a good probability that healing of the nerve and relief of the symptoms will be complete. Certainly you are a candidate for the surgery if conservative treatment has failed and **if you have symptoms of numbness, burning and tingling throughout the day and if you are unable to sleep at night because of the symptoms.**

WHAT DOES SURGERY INVOLVE?

The surgical procedure is done on an outpatient basis at the **FORD CENTER FOR FOOT SURGERY**. The surgery itself is done under “**twilight sedation**” administered by one of our staff anesthesiologists. The surgery requires approximately 45 minutes to an hour to perform but you will be here for several hours. You will need to have someone drive you home because of the anesthetic. Because of the medication that we infiltrate into the surgical area, your foot will be numb for up to 20 hours, thus you will have little or no post-operative pain. There is also very little pain because there was nothing done to the bones or joints. Because the surgery is being done around the ankle, you will be required to wear a boot for several weeks after the surgery to allow for excellent healing.

WHAT CAN I EXPECT AFTER THE SURGERY?

The answer to this is “it depends”! The symptoms during the first 6 months following the surgery depend on the amount of damage that was done to the nerve that was compressed. For some, relief is immediate and for others there is a period of time where the nerve reacts to being decompressed by increased stinging and sometimes shooting pains. These are generally short lived. **We generally don’t determine the final amount of nerve healing for 6 months to a year as nerves are very slow to heal.** We do testing of the nerve post operatively to determine how healing is taking place.

WHAT ARE THE RISKS OF THIS SURGERY?

As with any surgery, there are risks of complications. These can include anesthetic complications, poor wound healing resulting in a painful scar, bleeding, infection, and the possibility that you may have more pain post-operatively. We have worked very hard to minimize these complications but they are possible even though rare.

Overall, nerve decompression surgery is a wonderful procedure for relief of some of the most painful symptoms that we see. **This is truly the good news!** The new method of testing and in some cases surgical decompression was not available to us until recently and thus many of you have suffered for a long time. **For you, there is a good possibility that you will not need to suffer any longer.**