

# neuropathy and PAD



## Treating what gets in the way of relief.

### What is peripheral neuropathy?

Peripheral neuropathy describes a malfunction, disease or degenerative state of peripheral nerves that results in pain, numbness, tingling, swelling or muscle weakness in the limbs. Nerves can become neuropathic as a result of diabetes, vascular disease, infection and chemotherapy. Smoking, alcohol, environmental toxins, immuno-inflammatory disease and genetic predisposition are a few of the other potential causes.

### The blood flow connection.

The most commonly diagnosed form of neuropathy is diabetic neuropathy. In diabetes, the nerves get sick from either increased blood sugar or too little blood reaching the nerves. In both cases, the nerve does not get enough oxygen. In fact, evidence shows that a common cause of peripheral neuropathy is early vascular disease, a disorder of blood vessels that reduces blood flow.

### What is peripheral artery disease?

Peripheral artery disease (PAD) refers to blood vessel wall and flow abnormalities within the limbs. As a result of diminished blood flow, usually from hardening of the arteries, deep aching pain, loss of hair, swelling and skin-color changes can occur. The pain is most often in the calf, but vascular disease can also contribute to pain in the thigh and buttock.

Arm symptoms occur less often than leg symptoms, but vascular disease is felt to be a primary component of thoracic outlet syndrome. In this instance, people complain of pain, swelling and skin-color changes associated with numbness and tingling sensations in the smallest two fingers of the hand.

PAD can cause leg pain that is felt with exercise and relieved with rest. When located in the leg, it is known as “claudication.” Most people do not go from pain-free to severe pain overnight. Peripheral damage can cause exercise-related pain that can mimic PAD, and other musculoskeletal conditions such as restless legs syndrome and spinal stenosis can confuse the diagnosis, especially when early peripheral artery disease is present.

### How are PAD and neuropathies diagnosed?

Electrodiagnostic studies help Dr. Robert G. Schwartz evaluate for damage to the sensory and motor nerves. Medical thermography helps him assess sympathetic nerves that may be responsible for related pain and temperature sensations. Dr. Schwartz uses vascular Doppler and duplex ultrasound to check for restricted blood flow and claudication. Other tests — imaging exams, gait and motion analysis, laboratory studies, etc. — may also be needed.

### Providing relief by reducing total load.

Improving blood flow is essential for PAD and neuropathy. Nerve blocks and special sympathetic blocks can relieve neuropathic pain and improve blood flow. Proper skin care and nutrition are also vital, as is the reduction of toxins.

Various medications can help increase blood flow, stabilize nerve membranes, elevate the pain threshold and reduce inflammation. Treating associated spinal nerve root irritation, osteoarthritis and ligament pain can have a dramatic impact on the pain associated with both peripheral neuropathy and PAD. As a complex, chronic pain physician and specialist in both physical and vascular medicine, Dr. Schwartz is uniquely qualified to help you find the pain relief you need.

### Resolving even the most complex pain with innovative solutions and proven leadership.



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