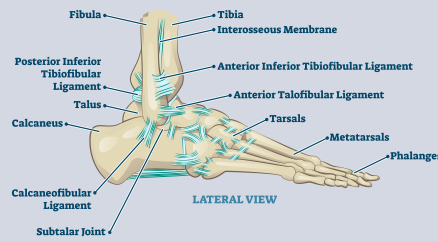


# Foot and Ankle Conditions and Treatments



## NUMBNESS AND TINGLING (TARSAL TUNNEL)

### Anatomy

The brain and spinal cord make up the central nervous system. The nerves that branch out of the spinal cord are called nerve roots. The peripheral nervous system is made of the nerves that branch out and innervate the trunk and limbs. The peripheral nervous system is a general term for the nerves that are not inside the spinal cord.

Nerves carry communications from the brain to the muscles, skin, internal organs and blood vessels. When this communication is interrupted, it causes numbness, tingling and pain.

### What is numbness and tingling?

Numbness and tingling are signs of a problem affecting the sensory pathways between the brain, the spinal cord and the peripheral nervous system. Called paresthesia, numbness and tingling are potentially dangerous symptoms of nerve compression, a condition that if left untreated can cause permanent damage to the nerves. Numbness is often the first symptom of nerve injury. Severe injuries such as a fracture can present as numbness and mask the underlying pain.

### What are the orthopedic causes of numbness and tingling?

Injuries that can cause numbness and tingling:

- A neck injury with nerve compression will affect the arms and hands
- A low back injury with nerve compression will affect the back and legs
- A fracture can not only break a bone, but also compress the nerves nearby
- Joint dislocation caused by an injury can compress nerves

Conditions of the spine that cause numbness and tingling:

- A pinched nerve in the spine is called radiculopathy and can be caused by osteoarthritis, a bone spur or a herniated disc. Age and obesity are common causes of pinched nerves.
- A herniated disc is a bulging, slipped or ruptured spinal disc that pushes into the spinal canal and presses on spinal nerves, causing pain, burning, tingling and numbness. If it occurs in the lower spine, it can cause sciatica. When the herniated disc is in the neck, it can cause radiating pain down the arm into the hands and fingers and causes numbness and tingling in the shoulder and arm. It can be caused by an injury or a condition called degenerative disc disease.

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- Disc degeneration is a natural part of aging and can compress the nerve at the spinal column or as the nerve leaves the spinal column to innervate the upper arms or the legs.
- Spinal stenosis can occur in the neck and back. It is a narrowing of the spinal canal, caused by osteoarthritis, that places pressure on the spinal nerves and cause pain, numbness and tingling. In the neck it causes numbness and tingling in a hand or arm. In the back it causes numbness in the foot or leg. Osteoarthritis can also cause the formation of bone spurs that can grow into the spinal canal and cause numbness and tingling.
- Cervical spondylosis is osteoporosis of the neck and affects 85% of people older than 60 with numbness and tingling in the arms and shoulders.
- A compression fracture of a vertebra can cause the vertebra to collapse and press on the spinal cord and nerves. Caused by osteoporosis (brittle bone disease), it can produce numbness and tingling.

Nerve entrapment syndromes that can cause numbness and tingling:

- Tarsal tunnel syndrome is a degenerative condition that damages the peripheral nerves and cause numbness, tingling and pain. Tarsal tunnel syndrome is compression of the nerves in the ankle.

There are numerous disorders and diseases that cause paresthesia. Orthopedic conditions of concern are multiple sclerosis, diabetes, tumors and blood clots that press on the nerves.

Diagnosis involves a physical examination with evaluation of symptoms and medical history. X-rays, MRIs, CT scans, blood tests and additional tests and imaging studies may be needed to determine the diagnosis. Our goal is to diagnose the underlying condition and treat it appropriately to eliminate numbness and tingling and prevent permanent nerve damage.