

SUPERFICIAL PERONEAL NERVE ENTRAPMENT (Anterolateral Compartment Syndrome)



■ ■ ■ Description

Superficial peroneal nerve entrapment is a nerve disorder in the foot and ankle that causes pain, tingling, and loss of feeling, most commonly on the top of the foot, the ankle, and lower third of the leg. It involves compression of the superficial peroneal nerve in the front of the lower leg, about 4 to 5 inches above the ankle. The nerve usually comes through thick ligament-like tissue in the lower third of the leg as it becomes superficial to give sensation to the skin.

■ ■ ■ Common Signs and Symptoms

- Pain, tingling, numbness, or burning on the top of the foot, ankle, or lower third of the leg
- Possibly, pain made worse with sports activities (walking, running, squatting)

■ ■ ■ Causes

Superficial peroneal nerve entrapment is caused by pressure on the superficial peroneal nerve 4 to 5 inches above the ankle. This occurs as it comes through the ligament-like tissue (fascia), by muscle that may also come through the same small space as the nerve through the fascia, and is the result of direct injury, stretching with recurrent ankle sprains, or increased pressure within the part of the leg before the nerve comes out through the fascia (chronic compartment syndrome).

■ ■ ■ Risk Increases With

- Recurrent ankle sprains
- Sports on uneven terrain that may result in ankle sprains or endurance sports such as running or jogging
- Direct pressure on the nerve, such as with tight-fitting boots or ski boots
- Poor physical conditioning (strength and flexibility)

■ ■ ■ Preventive Measures

- Appropriately warm up and stretch before practice or competition.
- Maintain appropriate conditioning:
 - Leg, foot, and ankle flexibility
 - Muscle strength and endurance
 - Cardiovascular fitness
- Wear proper equipment and ensure correct shoe fit.

■ ■ ■ Expected Outcome

This condition is usually curable with appropriate treatment, and sometimes it heals spontaneously. Usually, surgery is necessary to relieve the pressure on the nerve.

■ ■ ■ Possible Complications

- Permanent pain, tingling, and numbness of the affected foot, ankle, and leg
- Inability to compete due to pain

■ ■ ■ General Treatment Considerations

Initial treatment consists of rest from the offending activity and medications and ice to help reduce pain and inflammation. Padding (moleskin) in high boots reduces pressure on the nerve. Strengthening and stretching exercises of the muscles of the foot and ankle may be useful. Chronic cases often require surgery to free the pinched nerve. Surgery may be performed on an outpatient basis (you go home the same day) to remove the source of compression. If this is associated with chronic exertional compartment syndrome, fascial release is recommended. If the nerve pressure is associated with recurrent ankle sprains, surgery to tighten the ankle ligaments is also recommended. This provides almost complete relief in most patients.

■ ■ ■ Medication

- Nonsteroidal anti-inflammatory medications, such as aspirin and ibuprofen (do not take within 7 days before surgery), or other minor pain relievers, such as acetaminophen, are often recommended. Take these as directed by your physician. Contact your physician immediately if any bleeding, stomach upset, or signs of an allergic reaction occur.



Figure 1

From Bucholz RW: Rockwood and Green's Fractures in Adults, 3rd ed. Philadelphia, JB Lippincott, p. 2143.

- Pain relievers may be prescribed as necessary by your physician, usually only after surgery. Use only as directed and only as much as you need.

■ ■ ■ **Heat and Cold**

- Cold is used to relieve pain and reduce inflammation for acute and chronic cases. Cold should be applied for 10 to 15 minutes every 2 to 3 hours for inflammation and pain and immediately after any activity that aggravates your symptoms. Use ice packs or an ice massage.

- Heat may be used before performing stretching and strengthening activities prescribed by your physician, physical therapist, or athletic trainer. Use a heat pack or a warm soak.

■ ■ ■ **Notify Our Office If**

- Symptoms get worse or do not improve in 2 weeks despite treatment
- New, unexplained symptoms develop (drugs used in treatment may produce side effects)

EXERCISES

➤ **RANGE OF MOTION AND STRETCHING EXERCISES** • Superficial Peroneal Nerve Entrapment (Anterolateral Compartment Syndrome)

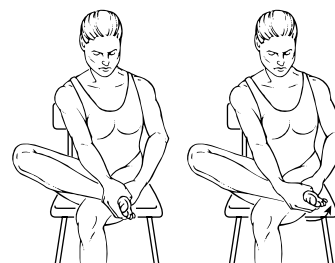
These are some of the *initial* exercises you may start your rehabilitation program with until you see your physician, physical therapist, or athletic trainer again or until your symptoms are resolved. Please remember:

- Flexible tissue is more tolerant of the stresses placed on it during activities.
- Each stretch should be held for 20 to 30 seconds.
- A *gentle* stretching sensation should be felt.



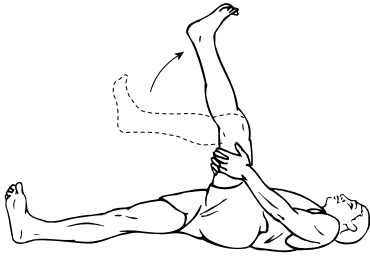
RANGE OF MOTION • Ankle Plantar Flexion

1. Sit in the position shown.
2. Using your hand, pull your toes and ankle down as shown so that you feel a gentle stretch.
3. Hold this position for _____ seconds.
4. Repeat exercise _____ times, _____ times per day.



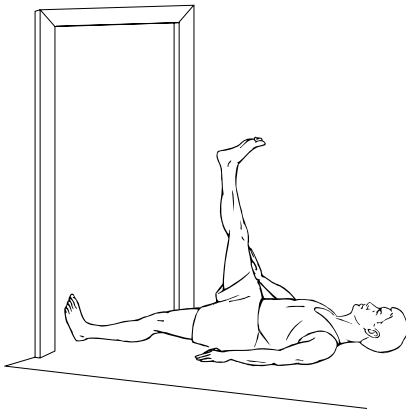
RANGE OF MOTION • Ankle Inversion

1. Sit with your _____ leg crossed over the other.
2. Grip the foot with your hands as shown and turn the sole of your foot upward and in so that you feel a stretch on the outside of the ankle.
3. Hold this position for _____ seconds.
4. Repeat exercise _____ times, _____ times per day.



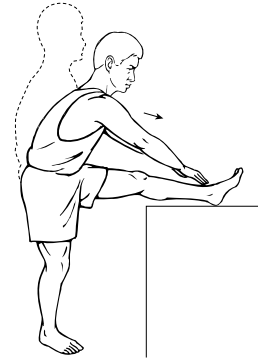
FLEXIBILITY • Hamstrings

1. Lie on your back with your leg bent and both hands holding on to it behind the thigh as shown.
2. Your hip should be bent to **90 degrees** and the thigh pointing straight at the ceiling.
3. Straighten out your knee as far as you can. Keep your thigh pointing straight toward the ceiling.
4. Keep the other leg flat on the floor.
5. Hold this position for _____ seconds.
6. Repeat exercise _____ times, _____ times per day.



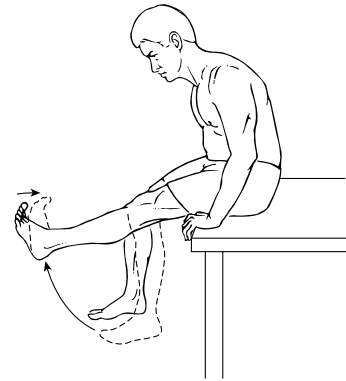
FLEXIBILITY • Hamstrings, Doorway

1. Lie on your back near the edge of a doorway as shown.
2. Place the leg your are stretching up the wall keeping your knee straight.
3. Your buttock should be as close to the wall as possible and the other leg should be kept flat on the floor.
4. You should feel a stretch in the back of your thigh.
5. Hold this position for _____ seconds.
6. Repeat exercise _____ times, _____ times per day.



FLEXIBILITY • Hamstrings, Ballet

1. Stand and prop the leg you are stretching on a chair, table, or other stable object.
2. Place both hands on the outside of the leg you are stretching.
3. Make sure that your hips/pelvis are also facing the leg you are stretching.
4. Slide your hands down the outside of your leg.
5. Lead with your chest/breast bone. Keep your chest upright and back straight. Do not hunch over at the shoulders. Keep your toes pointing up.
6. You should feel a stretch in the back of your thigh.
7. Hold this position for _____ seconds.
8. Repeat exercise _____ times, _____ times per day.



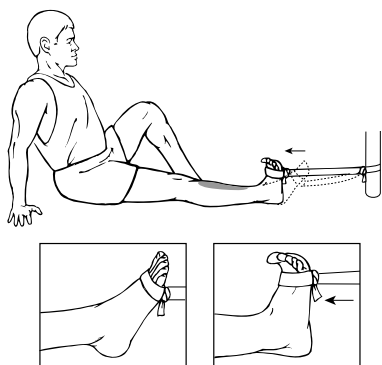
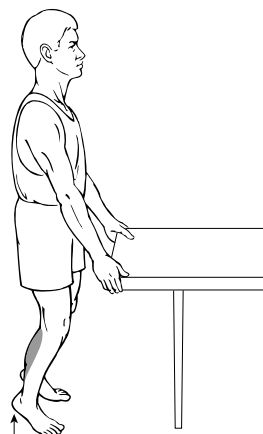
MOBILIZATION • Nerve Root

1. Sit on a chair, bench, table, or counter that is high enough so that your feet are off the floor.
2. Slump/slouch when you sit, rounding your back and allowing your head to bend forward as shown.
3. **With your foot relaxed, slowly** straighten your _____ knee until it is straight or you feel a mild pull in the back of your knee or calf. Hold for a count of 10. Relax and let your knee bend.
4. If you can straighten your knee fully without feeling a pull, **slowly** pull your toes up toward you. Hold for a count of 10. Relax, and let your toes point.
5. Repeat exercise _____ times, _____ times per day.

> STRENGTHENING EXERCISES • Superficial Peroneal Nerve Entrapment (Anterolateral Compartment Syndrome)

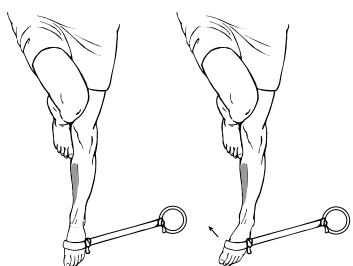
These are some of the *initial* exercises you may start your rehabilitation program with until you see your physician, physical therapist, or athletic trainer again or until your symptoms are resolved. Please remember:

- Strong muscles with good endurance tolerate stress better.
- Do the exercises as *initially* prescribed by your physician, physical therapist, or athletic trainer. Progress slowly with each exercise, gradually increasing the number of repetitions and weight used under their guidance.



STRENGTH • Dorsiflexors

1. Attach one end of elastic band to fixed object or leg of table/desk. Loop the opposite end around your foot as shown.
2. Slowly pull the foot toward you. Hold this position for ____ seconds. Slowly return to starting position.
3. Repeat exercise ____ times, ____ times per day.

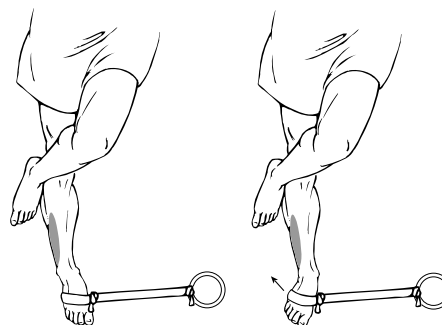


STRENGTH • Ankle Inversion

1. Attach one end of elastic band to fixed object or leg of table/desk. Loop the opposite end around your foot.
2. Turn your toes/foot inward as far as possible, attempting to push your little toe down and in. Hold this position for ____ seconds.
3. Slowly return to starting position.
4. Repeat exercise ____ times, ____ times per day.

STRENGTH • Plantarflexors

1. Stand with feet shoulder-width apart. Hold on to counter or chair if necessary for balance.
2. Rise up on your toes as far as you can. Hold this position for ____ seconds.
3. Complete this exercise using only one leg if it is too easy using both legs.
4. Repeat exercise ____ times, ____ times per day.



STRENGTH • Ankle Eversion

1. Attach one end of elastic band to fixed object or leg of table/desk. Loop the opposite end around your foot.
2. Turn your toes/foot outward as far as possible, attempting to pull your little toe up and outward. Hold this position for ____ seconds.
3. Slowly return to starting position.
4. Repeat exercise ____ times, ____ times per day.

Notes:

(Up to 4400 characters only)

Notes and suggestions