Sciatica

- Experiencing localized leg pain?
- Numbness or tingling?
- If so...get checked by a physician.

- If you are symptom free you may proceed with the exercises contained in this packet.

• Sciatica is a symptom or a set of symptoms rather than a specific diagnosis.

• Sciatica is a general term that refers to pain caused by compression or irritation of one or more nerves exiting the lower spine that make up the sciatic nerve.

• Sciatica can be caused by a number of different factors; such as degenerative disc disease, spinal stenosis (narrowing) or piriformis syndrome.

• Pain that radiates from your lower (lumbar) spine to your buttock and down the back of your leg is the hallmark of sciatica. You may feel the discomfort almost anywhere along the nerve pathway, but it’s especially likely to follow a path from your low back to your buttock and the back of your thigh and calf.

• Pain can vary widely from a mild ache to a sharp, burning sensation or excruciating discomfort.

• Risk factors for sciatica include age, obesity, occupation, prolonged sitting and diabetes.

• Not all cases of sciatica are preventable. However, with physical activity and regular exercise focusing on a strong core and good posture you can keep your body strong and reduce your risk.
Basics – Sciatic Nerve and Anatomy

The sciatic nerve is the largest and longest single nerve in the human body, about as big as a man’s thumb at its largest point. The nerve originates in the lower spine as nerve roots exit the spinal cord (through gaps in the bones of the lower spine), and extends all the way down the back of the leg to the toes.

The sciatic nerve is comprised of five nerves. It is formed on the right and left hand side of the lower spine by the fourth and fifth lumbar nerves and the first three nerves in the sacral spine.

The five nerves group together on the front surface of the piriformis muscle (in the rear) and become one large nerve, the sciatic nerve. This nerve then travels down the back of each leg, branching out to provide motor and sensory functions to specific regions of the leg and foot.

The sciatic nerve supplies sensation and strength to the leg as well as the reflexes of the leg. It connects the spinal cord with the outside of the thigh, the hamstring muscles in the back of the thighs, and muscles in the lower leg and feet.

As such, when the sciatic nerve is impaired, it can lead to muscle weakness and/or tingling in the leg, ankle, foot, and/or toes.
Causes of Sciatica

- **Piriformis Syndrome**

  Sometimes, tension in the piriformis muscle can cause irritation of the nerve. When the muscle shortens or spasms due to trauma or overuse, it can compress or strangle the sciatic nerve beneath the muscle, causing irritation or pain.

  Stretching of the piriformis can be used in both treatment and prevention of piriformis syndrome. In addition, strengthening of the core muscles (abs, back, etc.) can reduce strain on the piriformis. In addition, stretching of the hamstring and hips may also be beneficial.

- **Spinal Stenosis**

  A compressive condition in which the spinal canal (the spaces through which the spinal cord runs) narrows and compresses the spinal cord and/or the sciatic nerve roots. This narrowing can be caused by bone spurs, inflammation or a herniated disc which decreases available space for the spinal cord.

  Flexion of the lower spine (bending forward) increases the size of these passage ways and allows the irritation to or impingement to resolve. Stretching the muscles of the back that hold the spine in extension and strengthening the muscles that bring the spine into flexion may provide relief.

- **Degenerative Disc Disease**

  Degenerative Disc Disease is a condition that is commonly misunderstood. A degenerated disc is not actually a disease – it is part of the normal aging of the spine. When a spinal disc degenerates, it loses its ability to function efficiently as part of the spinal joint, which in turn can lead to back pain and sciatica. Sporadic tingling or weakness may also be present if the nerve roots are compromised. A well-rounded rehabilitation program focused on lumbar stabilization, reducing pain and inflammation and increasing mobility and strength can combat back problems.
Risk Factors for Sciatica

- **Age.**
  Age related changes in the spine such as herniated disks are the most common causes of sciatica.

- **Obesity**
  By increasing the stress on your spine, excess body weight may contribute to the spinal changes that trigger sciatica.

- **Occupation**
  A job that requires you to twist your back, carry heavy loads or drive a motor vehicle for long periods may play a role in sciatica.

- **Prolonged sitting**
  People who sit for prolonged periods or have a sedentary lifestyle are more likely to develop sciatica than active people are.

- **Diabetes**
  This condition, which affects the way your body uses blood sugar, increases your risk of nerve damage.

Prevention

- **Exercise regularly**
  This is the most important thing you can do for your overall health as well as for your back. Pay special attention to your core muscles – the muscles in your abdomen and lower back essential for proper posture and alignment.

- **Maintain proper posture when you sit**
  Choose a seat with good lower back support, arm rests and a swivel base. Consider placing a pillow or rolled towel in the small of your back to maintain its normal curve. Keep your knees and hips level.

- **Review and perform the stretching and strengthening exercises in this packet.**
The exercises contained in this packet are for reference only and should only be performed after being properly diagnosed by a physician and approved by a licensed physical therapist.

1. Piriformis Syndrome
2. Degenerative disc disease

Stretching exercises

Hamstring Stretch – Chair
- Sit upright in your chair.
- Stick your right leg straight out in front of you with your heel on the floor.
- Point your toe to the sky and gently lean forward.
- Keep your upper back straight as you bend forward at your hips.
- Hold each stretch for 10-30 seconds and then switch sides.

Hamstring Stretch – Floor
- Lie flat on your back with your knees bent and feet on the floor.
- Straighten your right leg as much as possible and point your heel to the sky.
- Keep your hips and glutes on the floor.
- Hold each stretch for 10-30 seconds and then switch sides.

Glute/Piriformis Stretch – Chair
- Sit upright in your chair.
- Gently cross your right leg over and rest your right ankle on your left knee.
- Keep your right knee bent throughout the stretch.
- Keep your back straight throughout the stretch.
- Hold each stretch for 10-30 seconds and then switch sides.
Glute/Piriformis Stretch – Floor

- Lie flat on your back with your knees bent and feet on the floor.
- Gently cross your right leg over and rest your right ankle on your left knee.
- Keep your right knee bent throughout the stretch.
- Keep your back straight throughout the stretch.
- Hold each stretch for 10-30 seconds and then switch sides.

Strengthening Exercises

Bridge

- Lie on your back with your knees bent.
- Keep your back in a neutral position, not arched and not pressed into the floor.
- Avoid tilting your hips.
- Tighten your abdominal muscles.
- Raise your hips off the floor until your hips are aligned with your knees and shoulders.
- Hold for 5-10 seconds.
- Repeat each hold and work up to 15 repetitions.

STOP EXERCISE IMMEDIATELY IF YOU EXPERIENCE ANY PAIN.
Bridge – Chair
- Sit in the chair upright
- Keep your back in a neutral position, not arched and not pressed into the chair.
- Avoid tilting your hips.
- Tighten your abdominal muscles.
- Grab the back of the chair and raise your hips up until your hips are aligned with your knees and shoulders.
- Hold for 5-10 seconds.
- Repeat each hold and work up to 15 repetitions.

Bird Dog (Level 1)
- Kneel on the floor with hands firmly placed about shoulder width apart.
- Brace your abdominals by pulling your belly in toward your spine.
- Keep your hands on the floor and extend your right leg back until it is straight and in line with your spine.
- Squeeze and contract your glutes and keep your abdominals braced.
- Check to see that your back, glutes and leg are even with one another.
- Hold your right leg for 3 seconds and then relax and alternate to the other leg.
- Work up to 15 repetitions on each side.

STOP EXERCISE IMMEDIATELY IF YOU EXPERIENCE ANY PAIN.
Seated Good Mornings

- Sit toward the front of your chair or bench with legs fairly wide apart to allow you to bend forward unencumbered by your lap.
- Focus on keeping the spine erect and extended even as you bend in other words, do not let your chest collapse toward the thighs.
- Inhale as you bend forward, exhale as you lift back up to the starting position.
- Work up to 15 repetitions.

Superman (Piriformis Syndrome ONLY)

- Lie on your stomach with your arms by your sides.
- You might also use a folded towel to support your head.
- Tighten your abdominal muscles and keep your chin tucked in.
- Lift the head, shoulders, and arms with palms up a few inches off ground.
- Keep your back straight throughout the movement.
- Hold for 3 seconds and work up to 15 repetitions.

STOP EXERCISE IMMEDIATELY IF YOU EXPERIENCE ANY PAIN.
1. Spinal Stenosis

Stretching Exercises

Knees to chest - Floor

- Lie on your back with your knees bent.
- Brace your abdominals by bringing your belly in toward your spine.
- Gently bring your knees toward your chest and hold them with your arms.
- Hold each stretch for 10-30 seconds and then repeat.

Strengthening Exercises

Seated Good Mornings - Chair (Stretching or Strengthening)

- Sit toward the front of your chair or bench with legs fairly wide apart to allow you to bend forward unencumbered by your lap.
- Focus on keeping the spine erect and extended even as you bend in other words, do not let your chest collapse toward the thighs.
- Inhale as you bend forward, exhale as you lift back up to the starting position.
- Work up to 15 repetitions.

STOP EXERCISE IMMEDIATELY IF YOU EXPERIENCE ANY PAIN.
Abdominal Crunch
- Lie on your back and lift your feet so that your knees and hips are bent at 90-degree angles.
- Tighten your abdominal muscles.
- Raise your head and shoulders off the floor.
- To avoid straining your neck, place them behind your head.
- Work up to 15 repetitions.

Back Bend
- Begin by standing with proper posture.
- Place your feet shoulder width apart with a slight bend in your knees.
- Push your hips back behind your heels.
- Bend forward slightly at the waist.
- Rotate your shoulders so your palms are facing down toward the ground.
- Keep your back straight and your torso tall.
- Hold for 3 seconds and return to starting position.
- Work up to 15 repetitions.

References


