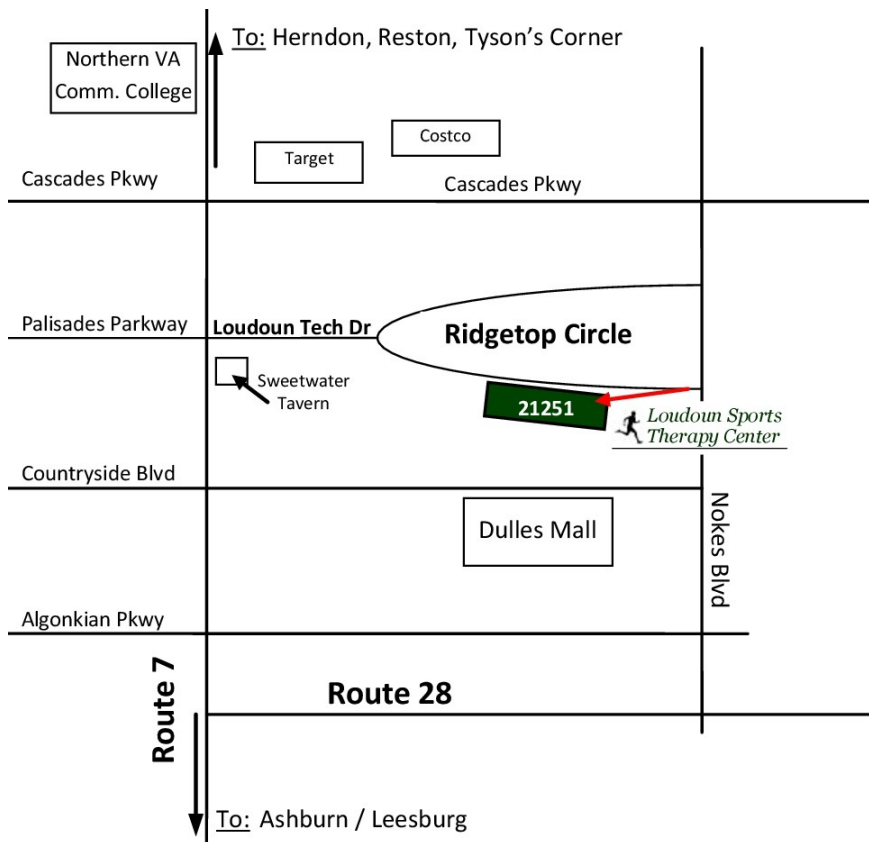


Loudoun Sports Therapy Center
 Orthopedic and Sports Physical Therapy



21251 Ridgetop Circle, Suite 140, Sterling, VA 20166

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The Active Person's Answer
 to Living Life
PAIN FREE



Pain is not normal at any age.
 What causes pain and how does your body process it?
 Read more inside to learn what you can do to
 reduce and manage your pain.



At Loudoun Sports Therapy Center, we are specialists in treating all orthopedic conditions and injuries.

It's our goal to help you live a healthy, active, pain-free lifestyle. We want to help you achieve your goals.

Our main focus is on you, the patient, and the goals you need to achieve to return to active, pain-free living. We will work with you and provide personalized, individualized care based on your symptoms. This care will include manual, hands-on treatment, exercises and a home exercise program. Lastly, we ensure that all patients are educated on their condition and provided with injury prevention techniques to avoid a reoccurrence of your symptoms.

Our team consists of physical therapists, physical therapist assistants, and athletic trainers so you receive the highest quality of expertise, care, and patient education throughout your plan of care. All of our clinicians have a professional degree and a license to practice physical therapy. We do not use any unlicensed staff in our patient care.

While patient care is our main focus, we also believe it is very important to give back to the community. Throughout the year, we hold workshops to educate our patients and the community on ways they can improve their health and overall quality of life. **You can find a schedule of our events by going to www.LoudounSportsTherapy.com/event.** We also support several organizations in Loudoun County such as Irene's Prom Closet, Toys for Tots, and local food banks. It's very important to our mission as a local business to help those in need and we love that there are so many wonderful organizations with which to be involved allowing us to give back to the community.



"I first came to LSTC because I pulled muscles in my back and hips which were already weak. I couldn't bend over, twist, workout or jog without pain. After 6 weeks of therapy I am able to do all of my regular activities and even run a 5K - my first one in a year! Working with everyone here has made my recovery more fun than I ever imagined. Thank you!"
-Kathleen B.

Pain is not something you should have to live with or push through. The highly trained clinical staff at [Loudoun Sports Therapy Center](http://www.LoudounSportsTherapy.com) will help you identify and address your pain.

After a full one-on-one evaluation, they will design an individualized plan of care to you achieve goals that matter to your daily lifestyle.

If you have pain, DON'T WAIT!
Call [Loudoun Sports Therapy Center](http://www.LoudounSportsTherapy.com) TODAY and start your journey to **PAIN-FREE LIVING!**

703-450-4300

www.loudounsportstherapy.com



Wishing you the best - today and always,
The LSTC Team

Patient Testimonials



"When I started physical therapy, I had right hip pain constantly. Daily activities like jogging and horseback riding hurt, even driving or sitting for long periods of time at work caused pain and soreness. Physical therapy increased my balance, strength and taught me creative ways to help deal with soreness at home. The staff was energetic and fun. I am happy to be able to be back riding and running and getting back to my active lifestyle!"
~Maggie D.

"I have recovered motion beyond expectations. After living with lower back pain for ten plus years, I had given up on many activities such as skiing and race car driving. I now feel confident I can resume these. I can't thank the team at LSTC enough and just wish I had done it earlier."
~Cedric D.



"After having my third ACL reconstruction surgery on my left leg, I came to LSTC on crutches and unable to put any weight on my leg. I was in a lot of pain and had difficulties doing daily activities. After 8 months of physical therapy and sport-specific training from the great team at LSTC, I have gotten back to doing my daily activities. In addition to that, I am now able to jog, sprint, and make quick direction changes with confidence and no pain. I will be back to playing the sports I really enjoy. I want to give a big shout out to the wonderful staff here at LSTC. Thank you!"
~Ray B.

What is Pain?



TRUE or FALSE: As we age, we should feel more pain. THIS IS FALSE! Pain is *not* normal at any age.

Pain can be defined as a distressing sensation in a particular part of the body.

When we feel pain, there is a combination of 3 major things occurring in your body causing pain:

- 1. Muscle tightness**
- 2. Inflammation**
- 3. Pressure or pinching on a particular structure**



Muscle tightness can occur when there is an increase in activity, overuse of a muscle or use of a muscle in a new way. Some examples of when you might feel muscle tightness include walking more than normal, bending over incorrectly or an injury such as twisting your ankle. These are all things that will cause some muscle tightness and therefore pain.

Think of your muscles, tendons and other tissues as rubber bands. They need to be able to stretch. But they all have a limit on how much they can stretch. They will become stressed when they have to:

- Stretch too quickly
- Stretch further than its full capacity
- Stretch in a direction it's not meant to

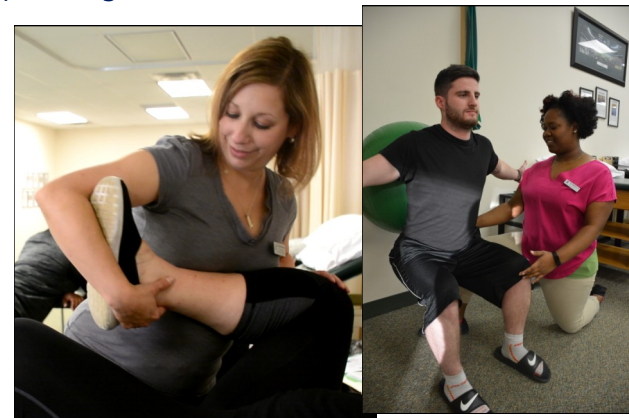
When a muscle, tendon or tissue gets stressed, it will automatically respond by tightening up and shortening itself. This is what ultimately causes the pain and discomfort you feel. Ever had a 'knot' in your neck or shoulder? This is an example of a group of muscles tightening up due to stress.

A lot of times, when we feel any kind of pain or discomfort, we try to be self manage our symptoms and get rid of that pain as quickly as possible. We might try to take a medication or put heat or ice on the area of pain. The problem with this self-treatment, however, is that it may address the symptoms of pain, but it doesn't address the root cause of your pain.

In order to fully handle any kind of pain, you have to determine what's causing it. This is where an expert medical professional such as a physical therapist plays an integral role.

Remember, there are receptors throughout your body: in your tissues, muscles, joints, etc. These receptors send a signal to the brain, which is how your brain perceives pain. Pain medications work to reduce the intensity of the signal and how long it takes for that signal to get to your brain. Therefore, the perceived level of pain is reduced. Think about the volume control on your TV. When you press the mute button, the volume is 'off'. As soon as you unmute it, the volume resumes at its previous level. In the same way, medications reduce the 'volume' of your symptoms but they don't address the root cause. When the medicine wears off, the symptoms return.

A physical therapist can determine if your pain is caused by tightness in the tissue, swelling or inflammation, or pressure or pinching due to altered mechanics. After determining this, a physical therapist can establish a plan to get rid of the actual causes.





When you overuse a joint or group of muscles or have an injury to the tissue in that area, it will generally protect itself by swelling to cushion the injury site with fluid. Think about running a longer distance than normal. The repetitive use of your hips, knees, and lower body in general causes a perception in the receptors in your leg muscles that something is wrong. Those receptors respond by increasing the size of the tissue and flood them with fluid. Your body is not a perfect machine because this actually leads to pain. Flooding the area with fluid makes it much more difficult for the tissue to move, stretch and perform its function optimally. Additionally, it increases the friction and the release of the message to the brain. When you do something such as twisting your ankle, you actually see swelling in that area. You are seeing the tissue response to the excessive force or movement. The swelling is the tissue's attempt to protect itself and the surrounding area from further injury. So in this case, swelling is your body's natural defense mechanism at the time of injury.

Inflammation is the body's attempt at self-protection and is a tissue's response to injury, irritation or abnormal stress.

Typically, we think of inflammation as fluid or swelling we can see. However, more often than not, inflammation is *not* easily seen because it can occur within the joint space or surrounding tissue.

When our body's tissues are inflamed, there is a great potential for friction to occur in that area. Think about arthritis. The reason arthritis is painful is because there is inflammation in the joints resulting from wear down of the cartilage, causing the rough arthritic bones to rub together. This friction causes pain.

Another way inflammation occurs is when you overuse or injure a joint or muscle. The tissue in that area will generally protect itself by swelling. Think about 'tennis elbow', whether the condition is from playing tennis, driving a lot, using a mouse repetitively, etc, the tissues in your elbows will respond to this overuse by swelling and pooling fluid to the area. While the body is attempting to protect itself by doing this, it's actually making it much more difficult for the tissues in that area to move, stretch and move fluidly as they're supposed to, thus, you experience pain and discomfort.

Inflammation also occurs with injury. Think about twisting your ankle. You actually see swelling in your ankle when you do this and this is the tissue's response to the excessive force or movement that occurred. The swelling is the tissue's attempt to protect itself and the joint it surrounds from further injury.



Causes of Pain: Pressure or Pinching On Something

Pain can come from pressure on nerves, tendons, muscles, skin, tissues, etc.

Many times, we think that pain means there is pressure on a nerve and that is the only cause for our pain. However, there is usually pressure on much more than just a nerve.

Yes, pressure on a nerve does cause pain. Think about a back problem. There could be any number of things pressing on a nerve to cause back pain. But in most cases, this would cause *referred* pain, meaning pain that radiates to another area. This helps illustrate the concept that the pressure is on the nerve but also affects tissues, tendons or muscles in the area.



Prevent Pain by Warming Up and Stretching

Properly warming up and stretching is key to preventing pain and injury.

Too often, we treat injuries that could have easily been prevented had the patient thoroughly prepared their body for activity. A warm up 'feeds' the body. It can be dynamic stretching, a jog, a swim, a brisk walk etc. A warm-up does all the following:

- It increases the heart rate.
- It increases the blood supply to the muscles.
- It begins to produce more lubrication for the smooth joint motion.

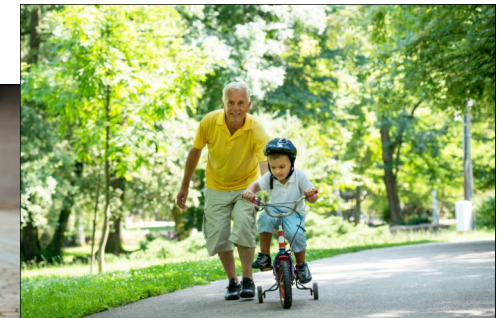
Stretching is something everyone should do every day. Your muscles are like rubber bands and need to be stretched consistently to maintain that extensibility. Once your body is warm, the increased temperature enables your muscles to stretch without risking injury.

There are two types of stretches: static and dynamic.

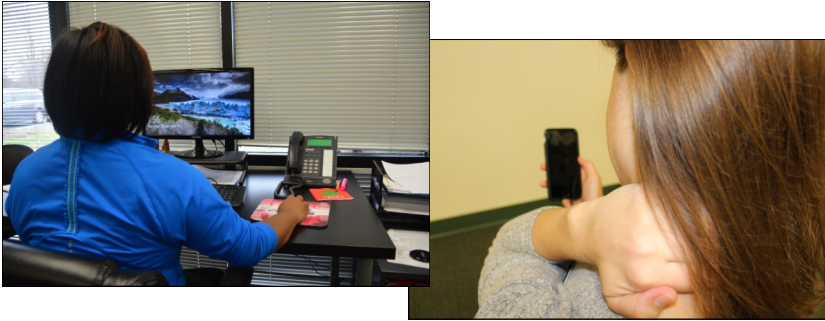
Static stretching is the most common form of stretching, because it can be performed at any fitness level. A static stretch is generally held for 20-30 seconds, at the end of range of motion, to encourage additional lengthening of the muscle and deeper movements.

Dynamic stretching prepares the body for activity-specific functioning. This kind of stretching is the best way to prepare the joints for movement and activation.

Whether you're getting ready to work out, play with your grandkids, go for a run, or play a sport, a proper warm up and stretching routine will go a long way to prevent pain and injury.



How does Proper Posture Help Alleviate Pain?



If you spend hours driving, texting, typing or even just sleeping in the wrong position, the odds are you have pain somewhere. Spending extended periods of time in incorrect positions can lead to incorrect movement patterns and increase your risk for pain and injury.

Posture is very important, especially when it comes to preventing neck-related injuries. As a society, we tend to spend large amounts of time sitting at computers, on our phones and watching TV. As 'relaxing' as some of these activities may seem, they actually put abnormal stress on our body when performed with poor posture or for prolonged periods of time. **Poor posture often develops from bad habits and weakness in key muscle groups.**

The scapular muscles are the muscles that surround the shoulder blade and help you sit up straight. We tend to sit with our backs rounded and shoulders rounded forward (slouched), which results in the scapular muscles becoming over stretched. **An overstretched muscle is a weak muscle. An overstretched and weak muscle will cause pain.**

Patients with poor posture will often complain of neck and upper back pain. A slouched posture also causes our heads to move forward in what's called a forward head posture. This is the most common cause of headaches and significant muscle tightness in the muscles at the base of the skull. By training these muscles to work optimally, we are able to sit up straight for long periods of time and take all the stress off our necks. It will also decrease the frequency and intensity of headaches and can even decrease lower back pain.

Five Types of Pain



1. Somatic– pain felt on the skin, muscle, joint, bone, ligament, etc. Somatic pain is commonly sharp and well-localized.

2. Visceral– pain felt in internal organs. Symptoms include sensitivity to inflammation, stretch and decreased blood flow. Visceral pain is difficult to localize and can present itself as a deep ache or cramping sensation.

3. Nerve Pain– pain that comes from the central nervous system (CNS). Neurological-related conditions such as stroke or MS, pinched nerve, disc herniation or infections such as shingles can all cause nerve pain.

4. Sympathetic Pain– pain generated by the sympathetic nervous system (SNS). It generally occurs after a fracture or injury to soft tissue. Sympathetic pain will cause sensitivity to the skin and area around the injury.

5. Referred Pain– pain felt next to or some distance from the original site of injury. An example of this is radiating pain down your leg stemming from a back problem (sciatica) or pain you feel down your arm during a heart attack.



How Does the Brain Process Pain?



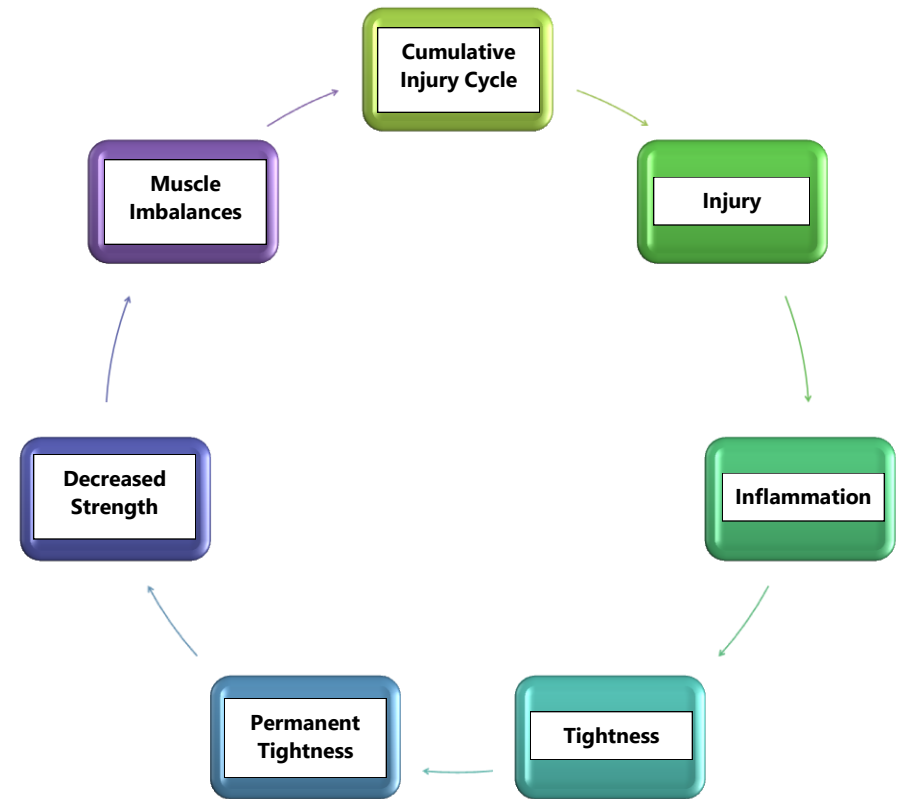
There are receptors all throughout your body in your muscles, tissues, tendons, joints, etc. **Receptors are microscopic receivers that perceive changes in the body.** For example, if a muscle is stretched, compressed or if there's pressure put on it, the receptors in that muscle recognize that there is some change occurring. Think about a faucet that's turned on. When you adjust the handle, there is a change in the water pressure or signal.

When there is a change in the signal going to the receptors, there is a change in the signal sent back to the brain.

Anytime there is a change in the signal sent to the brain, whether it's an increase or a decrease, the brain perceives that change as pain.

The brain will then send a message of pain back to the area and that will cause us to feel either localized or referred pain.

Cumulative Cycle of Injury



What is the Cumulative Cycle of Injury?

This cycle starts when you sustain an injury. That injury leads to inflammation and/or muscle tightness. If those last for more than 24 hours, then adhesions or tightness in the tissues become permanent. By permanent, we mean they don't fully heal and they won't heal on their own. This causes decreased strength, which leads to muscle imbalances. Injured muscles can't fully regain their strength. **This is the cumulative cycle, meaning it's easier for you to sustain an injury again because you have never fully healed so the process repeats itself.**