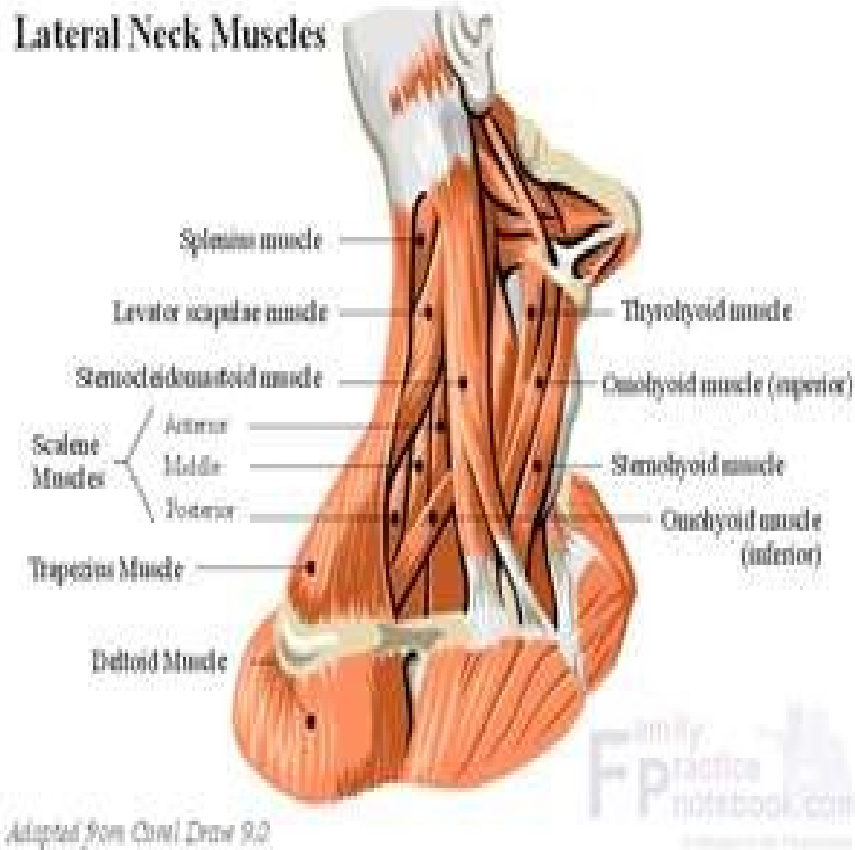


# Temple Physical Therapy

## A General Overview of Common Neck Injuries



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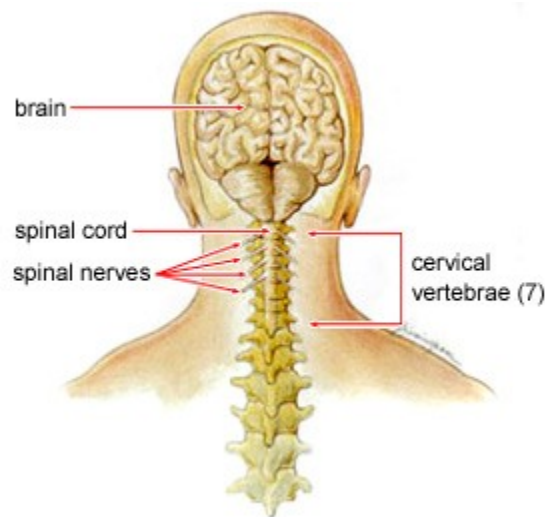
# Neck Pain

The neck (cervical spine) is composed of vertebrae that begin in the upper torso and end at the base of the skull. The bony vertebrae along with the ligaments (which are comparable to thick rubber bands) provide stability to the spine. The muscles allow for support and motion. The neck has a significant amount of motion and supports the weight of the head. However, because it is less protected than the rest of the spine, the neck can be vulnerable to injury and disorders that produce pain and restrict motion. For many people, neck pain is a temporary condition that disappears with time. Others need medical diagnosis and treatment to relieve their symptoms.

## Cause

Neck pain may result from abnormalities in the soft tissues—the muscles, ligaments, and nerves—as well as in bones and joints of the spine. The most common causes of neck pain are soft-tissue abnormalities due to injury or prolonged wear and tear. In rare instances, infection or tumors may cause neck pain. In some people, neck problems may be the source of pain in the upper back, shoulders, or arms.

## *Inflammatory Diseases*



The vertebral column.

Rheumatoid arthritis can destroy joints in the neck and cause severe stiffness and pain. Rheumatoid arthritis typically occurs in the upper neck area.

## ***Cervical Disk Degeneration (Spondylosis)***

The disk acts as a shock absorber between the bones in the neck. In cervical disk degeneration (which typically occurs in people age 40 years and older), the normal gelatin-like center of the disk degenerates and the space between the vertebrae narrows. As the disk space narrows, added stress is applied to the joints of the spine causing further wear and degenerative disease. The cervical disk may also protrude and put pressure on the spinal cord or nerve roots when the rim of the disk weakens. This is known as a herniated cervical disk.

## ***Injury***

Because the neck is so flexible and because it supports the head, it is extremely vulnerable to injury. Motor vehicle or diving accidents, contact sports, and falls may result in neck injury. The regular use of safety belts in motor vehicles can help to prevent or minimize neck injury. A "rear end" automobile collision may result in hyperextension, a backward motion of the neck beyond normal limits, or hyperflexion, a forward motion of the neck beyond normal limits. The most common neck injuries involve the soft tissues: the muscles and ligaments. Severe neck injuries with a fracture or dislocation of the neck may damage the spinal cord and cause paralysis.

## ***Other Causes***

Less common causes of neck pain include tumors, infections, or congenital abnormalities of the vertebrae.

## **When Should You Seek Medical Care?**

If severe neck pain occurs following an injury (motor vehicle accident, diving accident, or fall), a trained professional, such as a paramedic, should immobilize the patient to avoid the risk of further injury and possible paralysis. Medical care should be sought immediately.

Immediate medical care should also be sought when an injury causes pain in the neck that radiates down the arms and legs.

Radiating pain or numbness in your arms or legs causing weakness in the arms or legs without significant neck pain should also be evaluated.

If there has not been an injury, you should seek medical care when neck pain is:

- continuous and persistent
- severe
- accompanied by pain that radiates down the arms or legs
- accompanied by headaches, numbness, tingling, or weakness

Many patients seek orthopaedic care for neck pain because orthopaedists are specifically trained to diagnose, treat, and help prevent problems involving the muscles, bones, joints, ligaments, and tendons. Although some orthopaedists confine their practices to specific areas of the musculoskeletal system, most treat a wide variety of diseases, injuries, and other conditions, including neck pain.

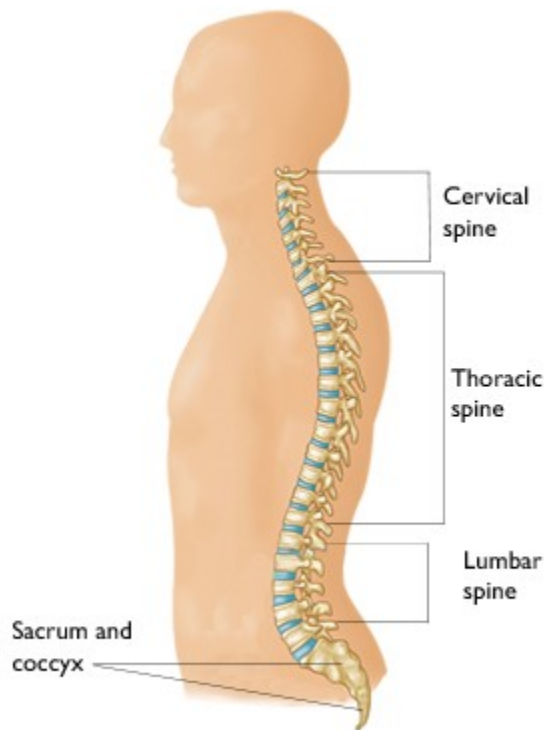
## Cervical Radiculopathy (Pinched Nerve)

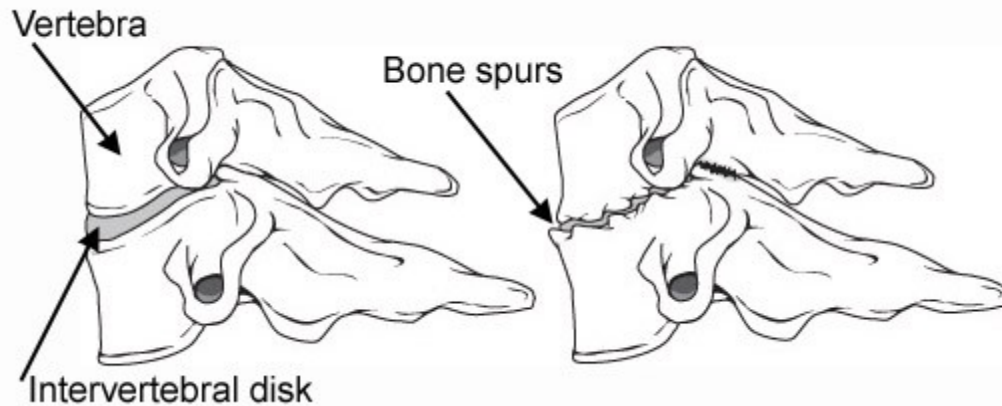
Some people have neck pain that may radiate into the shoulder and arm. This type of pain is often caused by an injury near the root of a spinal nerve. A nerve root injury is sometimes referred to as a "pinched" nerve. The medical term for this condition is cervical radiculopathy.

Understanding your spine and how it works can help you better understand cervical radiculopathy. Learn more about your spine: [Spine Basics \(topic.cfm?topic=A00575\)](#)

### Cause

As disks age, they lose height and begin to bulge. They also lose water content and become stiffer.





(Left) Side view of a healthy cervical vertebra and disk. (Right) A disk that has degenerated and collapsed.

As the disks lose height, the vertebrae move closer together. The body sees the collapsed disk as a possible weak area and responds by forming more bone — called spurs — around the disk to strengthen it. The bone spurs that form also contribute to the stiffening of the spine. Bone spurs may also narrow the area of the foramen and pinch the nerve root.

The disk changes that occur with age are often called arthritis or spondylosis. It is important to keep in mind that all these changes are "normal" and they occur in everyone. In fact, if MRI scans were performed on all people aged 50 or older, nearly half of the scans would show worn disks and pinched nerves that do not cause painful symptoms. It is not known why some patients have symptoms and others do not.

## Symptoms

Cervical radiculopathy pain travels down the arm in the area of the involved nerve. Pain is usually described as sharp. There can also be a "pins and needles" sensation or even complete numbness. In addition, there may be a feeling of weakness with certain activities.

Symptoms can be worsened with certain movements, like extending or straining the neck or turning the head. These symptoms are often made better by placing the hand on the head and stretching the shoulder.

## Doctor Examination

After discussing your medical history and symptoms, your doctor will examine your neck. This will include testing your strength and sensation as well as reflexes. Your doctor may also have you do certain neck and arm movements to try to recreate or relieve your symptoms.

## Tests

### *X-rays*

X-rays can show the alignment of bones along the neck. They can also show any narrowing of the foramen and disks.

### ***Computed tomography (CT)***

CT scans show the bones of the neck in finer detail. Bone spurs can be seen with CT, especially spurs near the foramen.

### ***Magnetic resonance images (MRI)***

An MRI of the neck can show if nerve compression is caused by soft tissue, such as a bulging disk and herniations. MRI can also show the appearance of the spinal cord and nerve roots.

### ***Electromyography***

Electromyography and nerve conduction studies may be able to help show the difference between symptoms caused by pressure on spinal nerve roots and nerve damage caused by other ailments, such as diabetes.

## **Treatment**

It is most important to note that the majority of patients with cervical radiculopathy get better with time and never need surgery, or even any treatment at all.

Some patients will have the pain go away quickly over days to weeks, while others take longer. It is also not uncommon for cervical radiculopathy to come back at some time in the future, but again, this problem usually gets better without any specific treatment. Some patients do develop persistent symptoms and require evaluation and treatment for the arm pain or weakness.

### ***Nonsurgical Treatment***

If you are not getting better, your surgeon will recommend a course of treatment. Treatment for radiculopathy starts with nonsurgical options.

**Soft Collars.** Soft collars allow the muscles of the neck to rest and limit neck motion. This can help decrease pinching of nerve roots with movement. Soft collars should only be worn for short periods of time, because long-term wear can decrease the strength of neck muscles.

**Physical Therapy.** Physical therapy can help with neck muscle stretching and strengthening. Sometimes, traction is also used.

### **Medications.**

- **Nonsteroidal anti-inflammatories (NSAIDs).** These include drugs like aspirin and ibuprofen, and may be helpful if the arm symptoms are from nerve swelling.
- **Oral corticosteroids.** A short course of oral corticosteroids may also help reduce swelling, as well as pain.

- **Narcotics.** These medications are reserved for patients with severe pain that is not relieved by other options. Narcotics are usually prescribed for a limited time only.
- **Spinal injections.** Sometimes, an injection of steroids can be placed near where the nerve is being pinched. This takes advantage of the anti-inflammatory effects similar to oral steroids. The injection may be placed between the laminae (epidural steroid injection), in the foramen (selective nerve injection), or into the facet joint.

While steroid injections do not take the pressure caused by a narrow foramen or herniated disk off the nerve, they may lessen the swelling and relieve the pain enough to allow the nerve to recover with more time.

### ***Surgical Treatment***

There are several surgical procedures for radiculopathy. The procedure that is right for you will depend on many factors, most importantly the type of problem you have.

# Neck Sprain

The seven bones of the spinal column in your neck (cervical vertebrae) are connected to each other by ligaments--strong bands of tissue that act like thick rubber bands. A sprain (stretch) or tear can occur in one or more of these ligaments when a sudden movement, such as a motor vehicle accident or a hard fall, causes the neck to extend to an extreme position.

## Symptoms

- Pain, especially in the back of the neck, that worsens with movement
- Pain that peaks a day or so after the injury, instead of immediately
- Muscle spasms and pain in the upper shoulder
- Headache in the back of the head
- Sore throat
- Increased irritability, fatigue, difficulty sleeping, and difficulty concentrating
- Numbness in the arm or hand
- Neck stiffness or decreased range of motion (side to side, up and down, circular)
- Tingling or weakness in the arms

## Diagnosis

To diagnosis a neck sprain, your doctor will perform a comprehensive physical examination. During the physical examination, the doctor will ask you how the injury occurred, measure the range of motion of your neck, and check for any point tenderness.

Radiographs (X-rays) may be requested so the doctor can look closely at the bones in your neck. This evaluation will help the doctor rule out or identify other sources of neck pain, such as spinal fractures, dislocations, arthritis, and other serious conditions.