

# Neck Pain Overview – Causes, Diagnosis and Treatment Options



Neck pain is one of the most common forms of pain for which people seek treatment. Most individuals experience neck pain at some point during their lives for a variety of reasons. Data shows that women are slightly more prone to neck pain than men.

The causes of neck pain are many, but are generally divided into acute causes such as injury or chronic neck pain lasting more than three months. When the condition is acute, it is normally caused by injury such as whiplash or a muscle strain from sleeping awkwardly.

Acute neck pain is characterized by sudden pain that lasts less than three months. Neck pain moves into the chronic category if it persists more than three months no matter the genesis.

## Why is the Neck Susceptible to Injury?

The neck is one of the most complex and important structures in the human body. An understanding of the unique anatomy and complex physiology of the neck are critical in providing a sound diagnosis of neck pain. The bony structures of the neck are specifically created and positioned for the individual vertebrae to provide mobility and support. The combination of flexibility and support makes the neck unique, but susceptible to injury.



Located between each vertebra are discs that function like shock absorbers in an effort to mitigate trauma and impact to the spine. Because these discs are made up of soft, spongy material they have a tendency to herniate (squeeze out backwards) and cause inflammation and irritation to surrounding nerves or the spinal cord itself.

Degenerative disc disease is a common cause of neck pain and may be a result of an acute, sudden injury or trauma to the spine or a result of disc thinning and dehydration over time. Unless a disc herniates and pinches on a nerve root, most of the time the issue is treated nonoperatively.



Whiplash often injures the muscles and ligaments of the neck.

Attached to each vertebra are ligaments that allow the spine to remain mobile yet strong. There are also several muscles within the environment responsible for spinal movement. Nerves are attached to the cervical spinal cord that exit out from the spine into the skin, muscles and areas of the upper back and neck. During strenuous activities muscles and ligaments can become strained/sprained. These types of injuries account for the majority of neck pain.

The cervical spine consists of seven vertebrae along with the surrounding muscles, joints and ligaments. All of these structures are designed to give the neck and spine functionality and protection. The cervical spine is the most flexible portion of the spine because it is responsible for head and neck movement. Because of the area's flexibility, it is susceptible to injuries such as whiplash.

### **What are the Most Common Causes of Neck Pain?**

Neck pain is experienced for a wide variety of reasons, but the main culprits are typically:

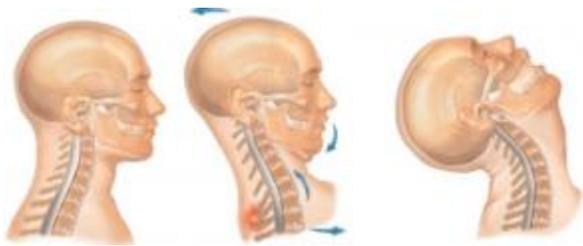
- Muscle strains due to overuse, misuse or injury
- Ligament sprains due to trauma
- Trauma or acute injury (example, motor vehicle accident, strain from heavy lifting)
- Stress
- Herniated cervical disc (disc that squeezes out backwards)

- Neck arthritis that flares up
- Whiplash injury

Continuous overuse and falling asleep in awkward positions are common reasons for neck strains. When the neck muscles in the back of the neck are strained too often, acute or chronic pain can develop.

## Whiplash

One of the most common causes of neck pain is whiplash. Whiplash typically occurs during a motor vehicle accident when the driver of a vehicle is rear-ended causing their neck to overextend in a sudden motion. This sudden motion causes the neck muscles to be instantly strained leading to hyperextension of the soft tissues. Whiplash symptoms include soreness and pain that can be exacerbated by movement. Symptoms can last for a few days to months.



## Neck Arthritis

After soft tissue inflammation and spasms, arthritis of the neck is the most common disease of the cervical spine (Mt. Sinai Journal of Medicine, Gordon 1994). The disease is caused by degeneration in the cervical spine disks due to age, overuse or trauma. As disks degenerate, the joints in the back of the neck, called facet joints, see increased stresses and arthritis develops along with resulting pain.



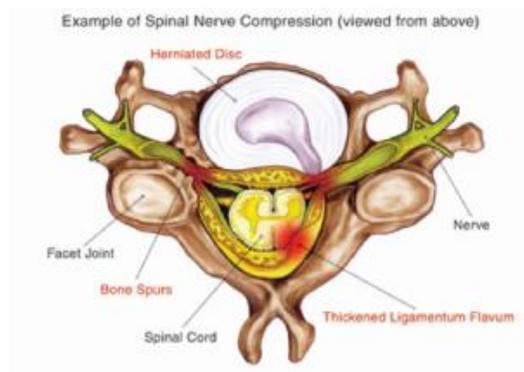
## Spinal Stenosis

Spinal stenosis occurs when the spinal canal narrows, which leads to the nerves being compressed. The compression can cause various symptoms including shooting pain, numbness, tingling and cramping in the neck, back, legs and arms.

So if an individual has a combination of spinal arthritis and stenosis in the neck, which is very common, the end result may be significant neck pain along with shoulder aching and arm pain as well.

### What are the Symptoms of Neck problems?

Along with having neck pain itself, the pain may radiate into the shoulder blade and shoulder area. In addition, upper cervical spine arthritis may lead to headaches as well.



With a disc herniation in the neck that is pushing on a nerve root, pain will radiate into the arm. The place it radiates to will depend on which root is being pinched, such as all the way into the thumb with a C6 nerve root compression. In certain situations, a person may have numbness, pins and needles sensation, or motor weakness. If the C7 nerve root is compressed, a person may have weakness while trying to extend the wrist.

### What are the Treatment Options for Neck Pain?

There are several invasive and non-invasive treatment options available to mitigate and eliminate neck pain. If the injury and/or pain are not severe your healthcare provider will typically commence with non-invasive treatment options such as ibuprofen, acetaminophen and muscle relaxers. They may also recommend rest and ice treatments to reduce swelling.

[Physical therapy](#), [chiropractic treatment](#) and [spinal decompression therapy](#) may be extremely effective in settling down one's neck pain and preventing acute pain from turning chronic.

For pain that is situated in the neck itself, medial branch blocks and facet injections for arthritic joints work very well. A double-blind trial utilizing cervical medial branch blocks showed this form of injection therapy was quite effective at reducing pain while increasing functional ability at 3, 6 and 12 month intervals (Manchikanti 2006). This injection therapy is used to reduce inflammation in the facet joints of the spine that are often the genesis of neck pain.

If the pain relief from these injections, works and wears off, they may be repeated or a radiofrequency ablation may be performed. This treatment has been revolutionary in neck pain management, offering up to 18 months of neck pain relief.

Another effective minimally invasive treatment option for neck pain is occasional epidural steroid injections at the location where the irritated nerves are located. This would be for the patient who is having shoulder and arm pain due to the pinched nerve. The steroid medication bathes the inflamed nerve root and relieves pain over 75% of the time. The injections are often administered as a series and may be repeated every few months.