



## Spine SECRETS

The five most common causes of chronic neck pain:

1. Degenerative disc and/or facet disease
2. Neurologic compression syndrome secondary to herniated disc or cervical stenosis.
3. Cervical instability
4. Posttraumatic soft tissue or facet injury after whiplash
5. Inflammatory arthritis, such as rheumatoid arthritis or ankylosing spondylitis

## Back TALK

### Did you know . . .

Physical therapy can be an effective conservative treatment for various types of cervical pain.

- Symptoms of radicular pain related to disc involvement can be improved with cervical traction.
- Improving cervical alignment through muscle energy techniques may also be used to decrease pain and increase range of motion.
- Increasing strength and stability, especially along the posterior aspect of the spine can be advantageous as well.
- Muscular tightness and spasms present another common source of cervical pain. Soft tissue mobilizations in conjunction with modalities such as ultrasound and electrical stimulation can relieve these symptoms.
- Improving flexibility may be the most valuable activity for this type of pain. Effective stretching of the scalenes, the upper trapezius, the levator scapula, and other cervical musculature should be implemented.

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#### INSIDE THIS ISSUE:

Cervical Radiculopathy	2
Physician Spotlight	3
Spine Secrets	4
Back Talk	4



## Cervical Radiculopathy



### What is cervical radiculopathy?

Neck pain develops in almost all populations of patients and is depicted as axial pain, myelopathy, radiculopathy, or a combination of the three. Cervical radiculopathy is generally defined as pain originating in the cervical spine that radiates through the arm. The pain can be associated with motor and/or sensory degenerations. Radiculopathy is infrequent and in one study only occurs in 83/100,000 people. The same study determined males from 50 to 54 years old are most at risk to develop cervical radiculopathy. The compression or irritation of cranial nerve roots is the cause of cervical radiculopathy. The compromise of nerve roots can be the result of disc herniations, stenosis, trauma, or degenerative changes in the cervical spine.

### How is cervical radiculopathy diagnosed?

The primary symptom patients with cervical radiculopathy describe is sharp pain, tingling, or burning sensations in the symptomatic area. The neck or arm pain is often severe and may cause patients to alter the position of the neck or arm for relief. Also, extension or lateral movement to the affected side often aggravates the symptoms. Degeneration of the cervical spine can be accelerated by the following factors: genetics, smoking, obesity, occupational risks, and psychological predispositions. The degeneration often starts with the intervertebral disc losing height and water/proteoglycan content. Spondylosis and other degenerative changes may develop after the disc begins to degenerate and compress



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# Cervical Radiculopathy

# Pain In The Neck

## A Pinched Nerve?

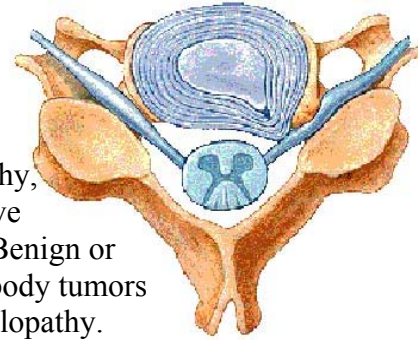
*Cervical radiculopathy is caused by any condition that puts pressure on the nerves where they leave the spinal column. This is much different than mechanical neck pain. Mechanical neck pain is caused by injury or inflammation in the soft tissues of the neck, such as discs, facet joints, ligaments, or muscles.*

*The main cause of cervical radiculopathy include degeneration, disc herniation, and spinal instability.*

or irritate the nerve roots. Plain film radiographs should be initiated and followed by magnetic resonance imaging (MRI) to determine the continuity of the intervertebral disc and neural components. Electromyography is also important in the diagnosis of cervical radiculopathy to differentiate between cervical radiculopathy, peripheral neuropathy, and peripheral nerve root entrapment.

## Differential Diagnosis:

Cervical pain may be caused by differing sources and the clinical history and presentation must be used to make a proper diagnosis. Shoulder injuries can mimic cervical radiculopathy. It is important to determine history and examine the shoulder for rotator cuff impingement, tears, bicipital tendonitis, or acromioclavicular pathology. MRI of the shoulder joint may be necessary to confirm or rule out shoulder pathology. Neuropathy of the peripheral nerves is also a possible cause of pain in the distal arm. Clinical examination of peripheral nerves and electromyography can be used to rule out neuropathy in patients with metabolic disorders such as diabetes or thoracic outlet syndrome. Anatomical changes of the body may cause compression of neural or vascular components into the distal arm. Diagnosis is difficult and often requires various examinations



including arteriography, venography, and nerve conduction testing. Benign or malignant vertebral body tumors can also cause radiculopathy. Fever, weight loss, or persistent non-mechanical neck pain may be indicators for tumors or infections. MRI can be utilized to determine the presence or absence of such cause. There are also many neurological conditions that mimic cervical radiculopathy including multiple sclerosis, idiopathic brachial plexus neuritis, as well as others. Finally, cervical radiculopathy may be the result of referred symptoms from the heart, lungs, viscera, and the temporomandibular joint.

## Treatment Options

### Nonoperative:

Patients with neck pain will often recover over time with conservative treatment. Pain control is the primary goal of treatment. Medication such as narcotics, anti-inflammatory agents (including corticosteroids such as Medrol dosepaks), muscle relaxants, and antidepressants can be used initially. The medication is only used temporarily to allow the patient to gain pain relief and use other conservative treatments. Ice may provide pain relief for the patient with acute pain and spasm. Exercise is the most reliable method of treatment and can include flexibility, aerobic, and resistive training. The most important aspect of the exercise program is the active participation of the patient.

### Surgical:

Patients who have been treated conservatively without success and patients who have progressive neurological deficit are candidates for surgical treatment. There are many options for surgical proce

dures and approaches, which often depends on the cause of the neck pain as well as the surgeons training and preferences. One common surgical procedure for cervical radiculopathy includes discectomy with fusion. The anterior approach involves removing a portion of the intervertebral disc and initiating a bony fusion with or without instrumentation. Another common procedure is posterior cervical foraminotomy, which removes the need for fusion. Surgical treatment has been successful for cervical radiculopathy with patient satisfaction as high as 95%.



## References:

1. Herkowitz HN, et al. The Spine. Saunders Elsevier. Philadelphia, PA 2006.
2. Devlin VJ. Spine Secrets: Questions and Answers Reveal the Secrets to Successful Diagnosis and Treatment of Spinal Disorders. Hanley and Belfus. Philadelphia, PA 2003.

## Important Points to Remember?

Cervical radiculopathy can be mimicked by many other disease patterns and complete physical examination and history should be utilized to confirm the appropriate diagnosis. Patients will often present with severe pain and possible sensory and/or motor deficits in the peripheral arm. Conservative treatment should be initiated with exercise being the most successful. If a course of conservative treatment is unsuccessful, a referral to an orthopedic surgeon for surgical options should be advocated.

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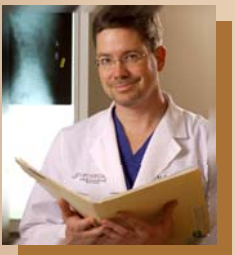
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For more outreach information and schedules  
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## PHYSICIAN SPOTLIGHT

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Dr. Johnson is an orthopedic surgeon who specializes in neck and back surgery and general orthopedics. A graduate of the University of Health Sciences: College of Osteopathic Medicine in Kansas City, Missouri, Dr. Johnson completed his residency training at Oklahoma State University/Tulsa Regional Medical Center, and a spine fellowship at the Texas Back Institute. Prior to attending medical school, Dr. Johnson was a chiropractor for several years.



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