

# Whiplash: What Patients Need to Know

**Whiplash** is a term that describes the mechanism of injury to the neck that results from a sudden force that causes the neck to move beyond its normal range of motion, typically from a motor vehicle accident but also from sports or falls. In a rear impact collision, usually the occupant in the vehicle that gets struck is at the greatest risk of a whiplash-type of injury.

## How Whiplash Affects the Cervical Spine (Neck)

During the impact, the normal "C" shaped cervical spine (when viewed from the side) is briefly forced into an "S" shape. Locally, the individual joints may move beyond normal range, over-stretching the ligaments, discs and cartilage in that area. The muscles of the cervical spine, by reflex, contract quickly to try to minimize the effects of the impact on the ligaments and discs, but it may be too late. By the time the muscles can react, the whiplash injury has usually already occurred. The injury effects may be worse if the head is turned at the time of impact.

## Whiplash Symptoms

Whiplash symptoms usually occur immediately or within a few days following the accident and can include: neck pain and stiffness, limited movement, neck tenderness, swelling, muscle spasms, headaches, dizziness, blurred vision and fatigue, and sometimes pain down the arm. In some instances, whiplash may cause a mild concussion, affecting the patient's mental functioning, possibly leading to difficulties concentrating, memory loss, sleep problems, irritability and ringing in the ears; this post-concussive syndrome usually resolves over time.

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A variety of changes can occur throughout the structures in and surrounding the cervical spine, each becoming a potential source of pain. These include:

- **Joint Dysfunction**, when a joint loses its stability and resiliency, usually resulting in a reduced range of neck motion.
- **Muscle Dysfunction**, when muscles try to compensate for a joint injury by becoming overactive or underactive.
- **Faulty Movement Patterns**, when the control of muscle coordination is disrupted causing increased strain in muscles and joints, resulting in an altered posture.
- **Disc Protrusion (or Disc Herniation)**, when a spinal disc's inner core shifts from the center and comes in contact with and irritates a nearby spinal nerve root, causing symptoms that may include sharp, shooting pain down the arm and neurological symptoms like numbness, tingling and muscle weakness in the arms.

## Common Misconception about Whiplash Injury

A common misconception about whiplash is that "little damage to the vehicle means no injury." This simply is not true. The lack of crushing plastic or metal causes a lack of shock absorption and results in a transfer of more energy to the contents inside the vehicle, that is, the passengers. In reality, both low and high impact collisions can result in whiplash. In most cases, care by a healthcare professional should be sought immediately after any accident to identify potentially serious neck or other injuries.

# Treatment Options for Whiplash

## **Medical Treatment and Chiropractic Care for Whiplash**

The appropriate type of treatment is different for each whiplash patient, and will be determined based on a thorough physical exam, patient history and possibly imaging tests. Initial treatments may consist of a short period of rest, immobilization with a cervical collar, ice, heat, pain medications, gentle stretching, and sometimes mobilization and light manipulation.

## **Chiropractic Adjustment (also called Chiropractic Manipulation):**

Chiropractic adjustments are the primary whiplash treatment used for patients with joint dysfunction. Using a variety of possible techniques including joint manipulation and mobilization, the chiropractor will aim to restore flexibility and range of motion in the injured joint. Chiropractic care may also include soft tissue therapies.

## **How a Chiropractic Adjustment Works**

Chiropractic manipulation typically involves:

- A controlled, sudden force applied to a spinal segment to normalize motion and improve function. Adjustments may be performed using high velocity or low velocity techniques.
- Reducing joint restriction and restoring function allows the local inflammation and pain reflex responses to begin to subside.
- In some cases, an accompanying, audible release of gas (joint cavitation or cracking) that is caused by the release of oxygen, nitrogen, and carbon dioxide, may be heard. This is a phenomenon and has no known physiological effect but signifies that pressure was released from the joint.
- A relieving sensation is usually perceived. Less frequently, minor discomfort may occur (that usually lasts for only a short time duration) if the surrounding muscles are in spasm or tense.

## **Muscle Relaxation:**

Muscle-related dysfunctions from whiplash respond positively to relaxation techniques that can include gentle stretching of a tense muscle and massage therapy.

## **Exercise and Stretching:**

Various stretching and strengthening exercises may be used in the treatment of whiplash injuries. For example, McKenzie exercises may be used for disc herniations. Stabilization exercises may be applied for retraining nerves involved with faulty movement patterns to help the neck muscles stabilize the neck.

## **Ergonomic and Lifestyle Changes:**

Chiropractors may also suggest changes in home and work environments, as well as appropriate adaptations to recreational activities, to help avoid repetitive re-injury and ongoing irritation that can result from the whiplash accident. This may include stress reduction.

## **Other Whiplash Treatments:**

Other treatments may include foam neck collars, massage therapy, ultrasound, light therapy or low level laser therapy, cervical traction, electrical stimulation, pulsed electromagnetic field (PEMF), and other techniques to relieve the pain and discomfort associated with whiplash.

## **Prognosis for Whiplash Injuries:**

The chiropractor's general approach to managing a patient with whiplash injuries will typically focus on both rapid reduction of short-term symptoms as well as prevention of ongoing pain and other long-term symptoms.

After sustaining whiplash injuries, most people will recover within a few weeks or months. However, some people may suffer from chronic (ongoing) neck pain for months or years. As appropriate, a chiropractor may include other healthcare professionals in a whiplash treatment plan, such as a physical therapist, occupational therapist, massage therapist or pain management specialist, to help patients with ongoing neck pain learn how to better live and cope with their pain.