

CERVICAL WHIPLAS INJURY

Cervical whiplash is an injury to the neck that occurs when the head is jerked forward (hyperflexion) and back (hyperextension) very quickly as a result of sudden acceleration-deceleration movements. Whiplash can cause injuries to the bones, ligaments, muscles, tendons, and joints in the neck. Whiplash is commonly caused by rear-end car accidents but whiplash can also result from sports accidents, physical abuse and other types of traumas, such as a fall.

TYPES OF INJURY: There are two types of injury;

1. **Cervical hyperextension injuries:** It occurs in drivers/passengers of a stationary or slow-moving vehicle that is struck from behind. The person's body is thrown forwards but the head lags, resulting in hyperextension of the neck. When the head and neck have reached maximum extension, the neck then snaps into flexion.
2. **Cervical hyperflexion injury:** A rapid deceleration injury throws the head forwards and flexes the cervical spine. The chin limits forward flexion but the forward movement may be sufficient to cause longitudinal distraction and neurological damage. Hyperextension may occur in the subsequent recoil.

GRADES OF WHIPLAS INJURY:

Grade 0: no complaints or physical signs.

Grade 1: indicates neck complaints but no physical signs.

Grade 2: indicates neck complaints and musculoskeletal signs.

Grade 3: neck complaints and neurological signs.

Grade 4: neck complaints and fracture/dislocation:

-Most cervical spine fractures occur predominantly at two levels - at the level of C2 or at C6 or C7.

-Most fatal cervical spine injuries occur in upper cervical levels, either at the cranio-cervical junction C1, or at C2.

SYMPTOMS:

Signs and symptoms of whiplash usually develop within days of the injury and may include:

- Neck pain and stiffness
- Worsening of pain with neck movement
- Loss of range of motion in the neck
- Headaches, most often starting at the base of the skull
- Tenderness or pain in the shoulder, upper back or arms
- Tingling or numbness in the arms
- Fatigue
- Dizziness

Some people also have:

- Blurred vision
- Ringing in the ears (tinnitus)
- Sleep disturbances
- Irritability
- Difficulty concentrating
- Memory problems
- Depression

CAUSES:

Whiplash typically occurs when your head is forcefully and quickly thrown backward and then forward. This motion can injure bones in the spine, discs between the bones, ligaments, muscles, nerves and other tissues of the neck.

A whiplash injury may result from:

- Auto accidents: Rear-end collisions are major cause of whiplash.
- Physical abuse or assault: Whiplash can occur if you are punched or shaken. It's one of the injuries seen in shaken baby syndrome.
- Contact sports: Football tackles and other sports-related collisions can sometimes cause whiplash

DIAGNOSIS:

EXAMINATION: During the exam your doctor will need to touch and move your head, neck and arms. You will be asked to move and perform simple tasks so that your doctor can check the:

- Range of motion in your neck and shoulders
- Degree of motion that causes pain or an increase in pain
- Tenderness in your neck, shoulders or back
- Reflexes, strength and sensation in your limbs

IMAGING TEST:

- **X-rays:** Fractures, dislocations or arthritis can be identified by X-rays of the neck taken from many angles.
- **Computerized tomography (CT):** This special type of X-ray can produce cross-sectional images of bone and show possible bone damage.
- **Magnetic resonance imaging (MRI):** This imaging test uses radio waves and a magnetic field to produce detailed 3D images. In addition to bone injuries, MRI scans can detect some soft tissue injuries, such as damage to the spinal cord, disks or ligaments.

TREATMENT: It includes:

- **Rest:** Rest may be helpful for a day or two after your injury, but too much bed rest may delay recovery.
- **Heat or cold:** Either heat or cold applied to the neck for 15 minutes every three hours or so can help you feel better.
- **Over-the-counter pain medications:** Over-the-counter pain relievers, such as acetaminophen and ibuprofen often can control mild to moderate whiplash pain.
- **Prescription medications:** People with more-severe pain may be given certain antidepressant drugs that have been shown to relieve nerve pain.
- **Muscle relaxants:** Short-term use of these drugs may be recommended to loosen tight muscles and soothe pain.
- **Injections:** An injection of lidocaine (Xylocaine) a numbing medicine into painful muscle areas may be used to decrease pain so that you can do physical therapy.

PHYSIOTHERAPY MANAGEMENT:

A series of stretching and movement exercises are advised to do at home. These exercises can help restore range of motion in your neck and get you back to your normal activities.

Exercises may include:

Rotating your neck in both directions

Tilting your head side to side
Bending your neck toward your chest
Rolling your shoulders

Other treatment includes:

Massage – It is used to increase blood flow, decrease swelling, reduce muscle spasm and promote normal tissue repair.

Mobilisation – Is a manual technique where the joint and soft tissues are gently moved by the therapist to restore normal range, lubricate joint surfaces, and relieve pain.

Strengthening exercise: Strengthening exercises are given to increase the strength of neck and upper back muscles.

Ultrasonic therapy – It is given to reduce pain and improve healing process.

Manipulation – Is a high speed, short movement thrust given at the end of available range. It is used to break down adhesions, remove a blockage within a joint and restore full painless movement.

Interferential therapy – It can be used at varying frequencies for differing treatment effects. E.g. pain relief, muscle or nerve stimulation, promoting blood flow and reducing inflammation.

References:

<https://www.aapmr.org/about-physiatry/conditions-treatments/musculoskeletal-medicine/cervical-whiplash>

<https://www.mayoclinic.org/diseases-conditions/whiplash/symptoms-causes/syc-20378921>