



## Cervical Strain and Sprain (Whiplash)

### DESCRIPTION

Whiplash is an injury to the neck caused when the neck is forcefully whipped or forced backward or forward. The structures involved are the muscles, ligaments, tendons, discs, and nerves in the neck.

### COMMON SIGNS AND SYMPTOMS

- Pain or stiffness in the front and back of neck, either immediately following or up to 24 hours after the injury
- Dizziness, headache, nausea, and vomiting
- Muscle spasm with soreness and stiffness in the neck
- Tenderness and swelling at the injury site

### CAUSES

Cervical strain and sprain are caused by injury, usually from contact sports or motor vehicle accidents.

### FACTORS THAT INCREASE RISK

- Osteoarthritis of the spine
- Situations that make accidents or direct trauma more likely, including tackling with the head (spearing), head butting, and landing on the top of the head
- High-risk sports, including football, rugby, wrestling, hockey, auto racing, gymnastics, diving, contact karate, and boxing
- Poor neck conditioning (flexibility, strength)
- Previous neck injury
- Poor tackling technique
- Ill-fitting equipment

### PREVENTIVE MEASURES

- Use proper technique and avoid tackling with the head, spearing, and head butting; use proper falling techniques to avoid landing on the head.
- Maintain appropriate conditioning, including neck strength and flexibility and cardiovascular fitness.
- Appropriately warm up and stretch before practice or competition.
- Wear protective equipment, such as padded soft collars, for participation in contact sports.

### EXPECTED OUTCOME

Cervical strain and sprain is usually curable in 1 week to 3 months with appropriate treatment based on the severity of the injury.

### POSSIBLE COMPLICATIONS

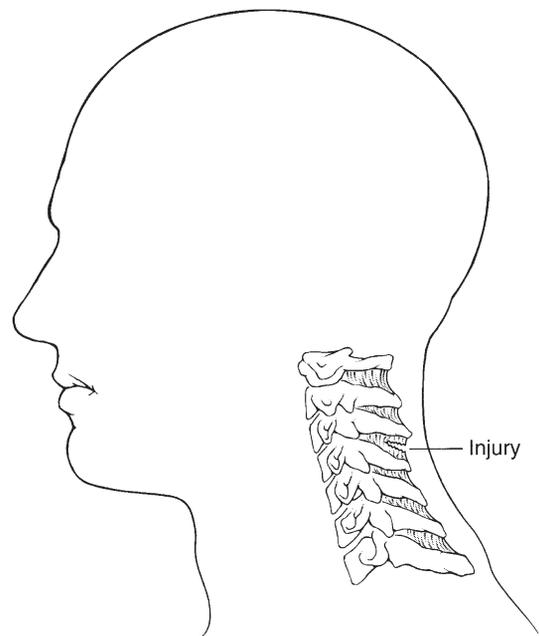
- If nerve roots are injured, temporary numbness and weakness in the arms may occur. This may persist until recovery.
- Frequent recurrence of symptoms may result in a chronic problem. Appropriately addressing the problem the first time and using proper technique decrease the frequency of recurrence and reduce disability.
- If activity is resumed too soon, before complete recovery, symptoms may last longer.

### GENERAL TREATMENT CONSIDERATIONS

Initial treatment usually consists of medications and ice to relieve pain, stretching and strengthening exercises, and modification of the activity that initially caused the problem. These can all be carried out at home for acute cases, although for acute or chronic cases, physical therapy may also be beneficial. If symptoms are severe, a soft, padded fabric or hard plastic cervical collar may be recommended until the pain subsides.

Improve your posture by pulling your chin and abdomen in while sitting or standing. Also sit in a firm chair, and force your buttocks to touch the chair's back. Sleep without a pillow; instead, use a small towel rolled to 2 inches in diameter, or use a cervical pillow or soft cervical collar. Poor sleeping positions delay healing.

If you have nerve root pressure and numbness and weakness in the hand or arm, a cervical traction apparatus may be recommended that can be hung over a doorway. Surgery



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to remove an injured spinal disc is rarely necessary. However, narrowing of the canal (stenosis), which may be congenital (you are born with it) or a result of aging, may require surgery to reduce pressure on the spinal cord.

### MEDICATION

- Nonsteroidal antiinflammatory medications, such as aspirin and ibuprofen (do not take for 7 days before surgery), or other minor pain relievers, such as acetaminophen, are often recommended. Take these as directed by your physician. Contact your doctor immediately if any bleeding, stomach upset, or signs of an allergic reaction occur.
- Pain relievers or muscle relaxers may be prescribed as necessary. Use only as directed, and take only as much as you need.

### HEAT AND COLD

- Cold is used to relieve pain and reduce inflammation for acute and chronic cases. It should be applied for 10 to 15 minutes every 2 to 3 hours for inflammation and pain and immediately after any activity that aggravates your symptoms. Use ice packs or an ice massage.
- Heat may be used before performing stretching and strengthening activities prescribed by your physician, physical therapist, or athletic trainer. Use a heat pack or a warm soak. At night, while asleep, wrap a towel loosely around your neck to help maintain warmth.

### WHEN TO CALL YOUR DOCTOR

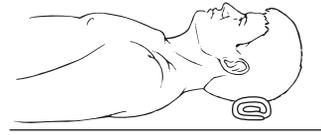
- Symptoms get worse or do not improve in 2 weeks despite treatment.
- New, unexplained symptoms develop. Drugs used in treatment may produce side effects.

#### RANGE OF MOTION AND STRETCHING EXERCISES

Cervical Strain and Sprain

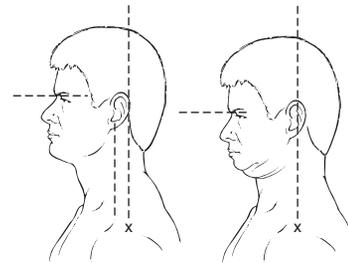
Maintaining a proper posture is the key for most problems related to the neck. The exercises detailed below are presented to help you obtain and maintain good posture. These are some of the *initial* exercises you may use to start your rehabilitation program, until you see your physician, physical therapist, or athletic trainer again, or until your symptoms resolve. Please remember:

- Flexible tissue is more tolerant of the stresses placed on it during activities.
- Each stretch should be held for 20 to 30 seconds.
- A *gentle* stretching sensation should be felt.



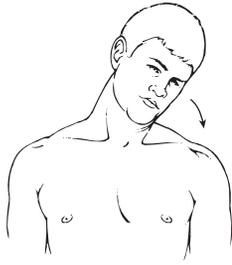
#### RANGE OF MOTION • Cervical Spine, Pivots

1. Lie on a firm surface. Roll up a washcloth or small towel (1 to 3 inches in diameter), and place it directly under your head as shown.
2. Gently tuck your chin down toward the floor. You will feel a stretch in the back of your neck.
3. Hold this position for \_\_\_\_\_ seconds.
4. Repeat this exercise \_\_\_\_\_ times, \_\_\_\_\_ times per day.



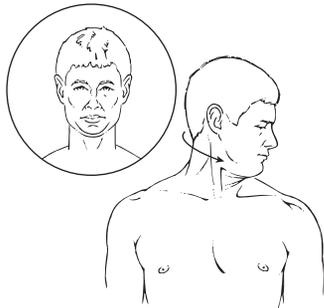
#### RANGE OF MOTION • Cervical Spine Axial Extension

1. Sit in a chair or stand in your normal posture.
2. Gently tuck your chin and glide your head backward. Keep your eyes level as shown; you should not end up looking up or looking down.
3. You will feel a stretch in the back of your neck and at the top of your shoulders. Hold this position for \_\_\_\_\_ seconds.
4. Repeat this exercise \_\_\_\_\_ times, \_\_\_\_\_ times per day.



### RANGE OF MOTION • Cervical Spine, Side Bends

1. Sit in a chair or stand in your normal posture.
2. Gently dip your ear toward your shoulder as shown.
3. Do not turn your head when you do this exercise. Keep looking forward.
4. You will feel a stretch on the side of your neck. Hold this position for \_\_\_\_\_ seconds.
5. Repeat this exercise \_\_\_\_\_ times, \_\_\_\_\_ times per day.



### RANGE OF MOTION • Cervical Spine Rotation

1. Sit in a chair or stand in your normal posture.
2. Turn your head and look over your shoulder.
3. Keep your head level. Do not dip your ear toward your shoulder when you do this exercise.
4. You will feel a stretch on the side and back of your neck. Hold this position for \_\_\_\_\_ seconds.
5. Repeat this exercise \_\_\_\_\_ times, \_\_\_\_\_ times per day.



### RANGE OF MOTION • Cervical Spine, Neck Circles

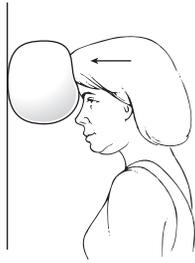
1. Sit in a chair or stand in your normal posture.
2. Gently circle your head and neck in a clockwise and a counterclockwise direction. Work within your pain-free range of motion, and strive to obtain a gentle feeling of stretching and relaxation.
3. Repeat in each direction \_\_\_\_\_ times.
4. Repeat this exercise \_\_\_\_\_ times, \_\_\_\_\_ times per day.

### STRENGTHENING EXERCISES Cervical Strain and Sprain

These are some of the *initial* exercises you may use to start your rehabilitation program, until you see your physician, physical therapist, or athletic trainer again, or until your symptoms resolve. Please remember:

- Strong muscles with good endurance tolerate stress better.
- Do the exercises as *initially* prescribed by your physician, physical therapist, or athletic trainer. Progress slowly with each exercise under their guidance, gradually increasing the number of repetitions and weight used.

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**STRENGTH • Cervical Spine Flexion**

1. Obtain a child's playground ball or a towel rolled approximately 6 to 8 inches in diameter.
2. Stand erect 12 to 18 inches from the wall. Place the ball or towel between your forehead and the wall.
3. Gently push your forehead into the ball/towel.
4. Hold this position for \_\_\_\_ seconds. Count out loud, and do not hold your breath.
5. Repeat this exercise \_\_\_\_ times, \_\_\_\_ times per day.

*Note:* You can also do this exercise by using your hands in place of the ball; however, this technique may cause some discomfort from using your arms.

**STRENGTH • Cervical Spine Extension**

1. Obtain a child's playground ball or a towel rolled to approximately 6 to 8 inches in diameter.
2. Stand erect 12 to 18 inches from a wall. Place the ball or towel between the back of your head and the wall.
3. Gently push the back of your head into the ball/towel.
4. Hold this position for \_\_\_\_ seconds. Count out loud, and do not hold your breath.
5. Repeat this exercise \_\_\_\_ times, \_\_\_\_ times per day.

*Note:* You can also do this exercise by using your hands in place of the ball; however, this technique may cause some discomfort from using your arms.

**STRENGTH • Cervical Spine, Side Bends**

1. Obtain a child's playground ball or a towel rolled to approximately 6 to 8 inches in diameter.
2. Stand with your shoulder next to a wall. Place the ball or towel between the side of your head and the wall.
3. Gently push the side of your head into the ball/towel.
4. Hold this position for \_\_\_\_ seconds. Count out loud, and do not hold your breath.
5. Repeat this exercise \_\_\_\_ times, \_\_\_\_ times per day.

*Note:* You can also do this exercise by using your hands in place of the ball; however, this technique may cause some discomfort from using your arms.

### POSTURE AND BODY MECHANICS CONSIDERATIONS

Cervical Strain and Sprain

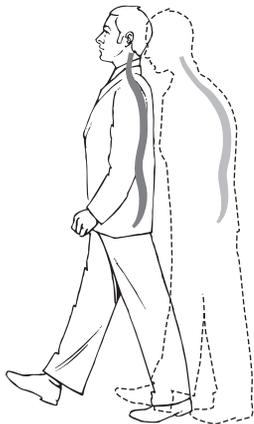
Maintaining the appropriate posture and using correct body mechanics can have a significant effect on neck pain. The following are basic suggestions regarding proper posture and body mechanics. These should be specifically discussed with your physician, physical therapist, or athletic trainer. Please remember:

- Good posture minimizes the stress and strain on any portion of your spine.
- Do the exercises as *initially* prescribed by your physician, physical therapist, or athletic trainer.
- Incorporate these exercises and posture principles into all of your daily and recreational activities.



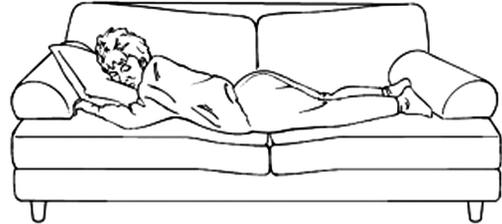
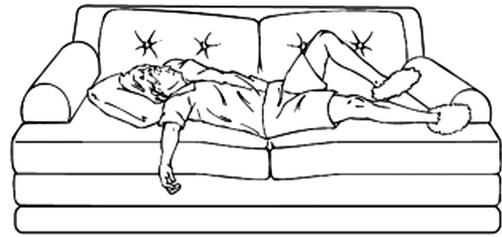
### PROLONGED STANDING IN SLIGHT FLEXION

When you must stand in a position that requires a long period of slight flexion, consider finding a footstool or other object to place one foot on. This will assist in minimizing the load on your back.



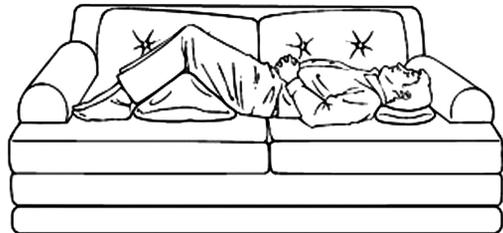
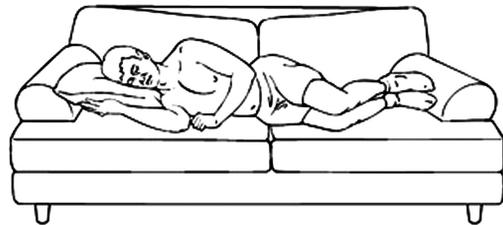
### SLOUCHING

Avoid slouching when you walk or stand. Stand up straight, and walk erect and tall.



### INCORRECT REST POSTURES

Make sure that you have good support; this will minimize the chance of prolonged postural stress on your spine.



### CORRECT REST POSTURES

Find a comfortable position on a surface firm enough to support your body weight. The most commonly suggested positions are side lying with a pillow between your knees or on your back with a pillow under your knees.

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When sitting at a desk or workstation, make sure you attempt to do the following:

- Have an adjustable-height chair. It is critical that your feet touch the floor, but if this is not possible because of the chair and/or desk height, obtain a footrest.
- Make sure that your chair can fit under the desk, so you can pull as close to your work surface as you need to.
- Avoid slouching. Use a lumbar support (a roll, cushion, or pillow) behind your lower back.
- Make sure your work surface is the appropriate height.