

Neck Owner's Manual



**A Guide to the Treatment
of Neck Problems**

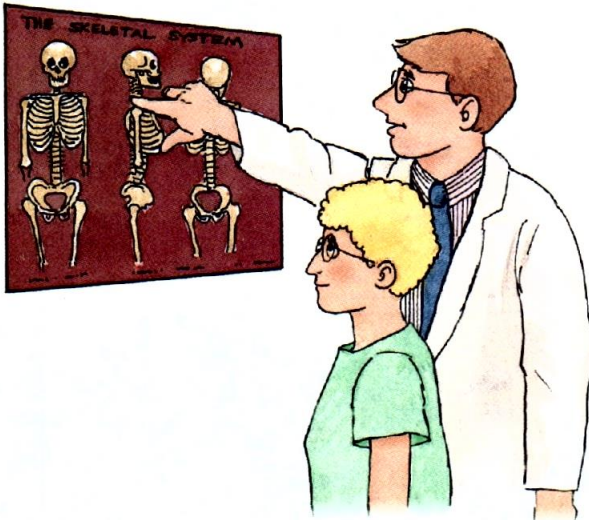
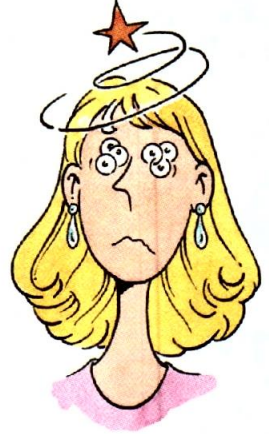
Your Neck: At Risk for Pain

Until it hurts, you don't think much about your neck. But the neck is the head's lifeline to the rest of the body. It holds the spinal cord as well as nerves and blood vessels. It also supports the head, which can weigh 15 pounds. With stresses such as poor posture, tension, wear and tear, and accidents, it's no wonder your neck is at risk of pain and injury. This booklet can help you understand neck problems and their treatments.

Common Symptoms

If you have a neck problem, you may not be able to move your head without some discomfort. You may have one or more of these symptoms:

- Pain or stiffness in your neck
- Pain in your head, arms, and shoulders
- Tingling or numbness in your fingers
- Frequent headaches
- Dizziness
- Nausea



You Can Get Relief

If you have neck pain, see your healthcare provider so you can learn the cause and get help. The treatment plan you are given can then help give you relief from your symptoms. Many neck problems improve with self-care. Your healthcare provider may also prescribe physical therapy and exercises. You can also learn ways to avoid neck problems in the future.

This booklet is not intended as a substitute for professional medical care. Only your doctor can diagnose and treat a medical problem.

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Your Medical Exam

Your healthcare provider needs to examine you to find the cause of your neck problem. During your visit, your healthcare provider will ask about your medical history and give you a physical exam. Diagnostic tests may also be done. Once your neck problem is diagnosed, your healthcare provider can suggest the best treatment for you.

Medical History

Your answers to your healthcare provider's questions can provide important clues about your neck problem. You may be asked:

- When did your pain start?
- Were you injured?
- What were you doing before the pain started?
- Have you had a problem like this before? If so, how was it treated?
- Where exactly does it hurt?
- Does the pain stay in one place? Or does it move to your face, shoulders, arms, or chest?
- How often does it hurt? Is it constant, or does it come and go?
- What motions cause pain?



Physical Exam

To see which movements cause pain, you will be asked to move your head in different ways. Your posture and spine will be checked. To test the health of the nerves that run down your neck and arms, your healthcare provider may prick your hands and arms with a pin.

Diagnostic Tests

Tests may be done to help your healthcare provider confirm a diagnosis.

- **X-rays** are pictures that show the bones of the neck.
- **MRI** (magnetic resonance imaging) produces images that show tears, inflammation, and changes in disks, nerves, and bone.
- **CT** (computed tomography) produces more detailed images of bone than x-rays.
- **Myelograms** are special x-rays of the spinal cord and nerves, during which contrast dye is injected into the spine.
- **Blood tests** may also be done.

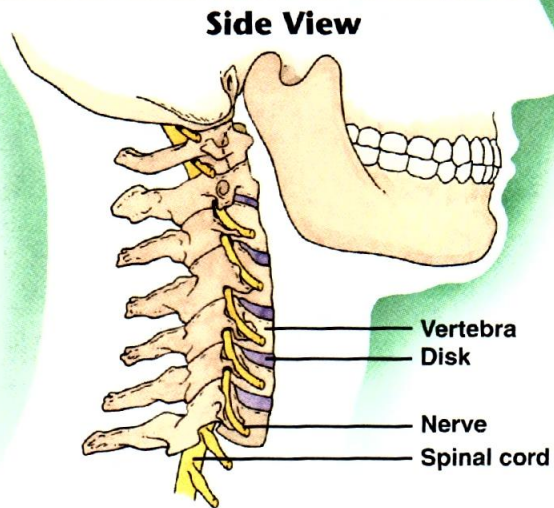
Know Your Neck

A healthy neck is strong and flexible. It keeps your head and spine in balance for good posture. Bones, muscles, and disks in the neck work together to give your head and neck their mobility, or **range of motion**. When any of these parts is damaged, you may find yourself unable to move your head, shoulders, or arms without having pain.

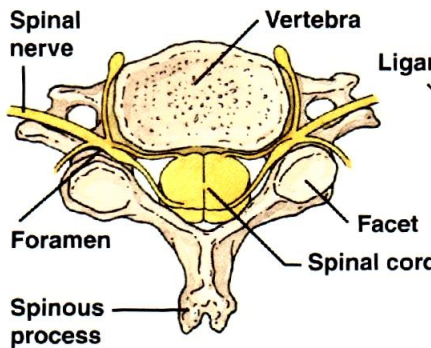
Anatomy of the Neck

The neck contains a stack of 7 bones called **vertebrae**. These make up the upper or **cervical spine**. The **spinal cord** passes through a large opening in the center of each vertebra. It connects the brain with the nerves of the body. **Nerves** branch from the spinal cord through small openings in the sides of vertebrae. Each opening is called a **foramen**.

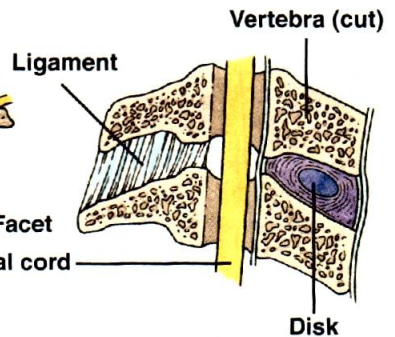
Each vertebra has a bony bump that you can feel in the back of your neck. This is called a **spinous process**. Separating the vertebrae are **disks**. These tough elastic pads absorb the shock of movement. Vertebrae meet at joints called **facets**. These facets allow the vertebrae to move. Ligaments connect vertebrae to each other.



Top View



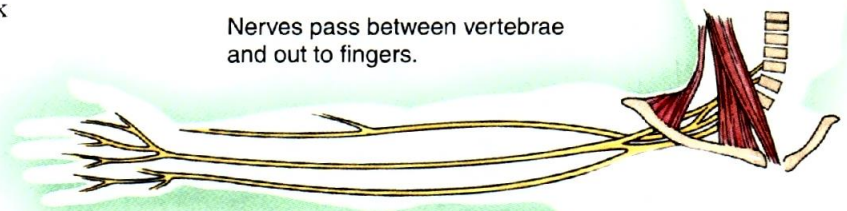
Inside View



Special Note

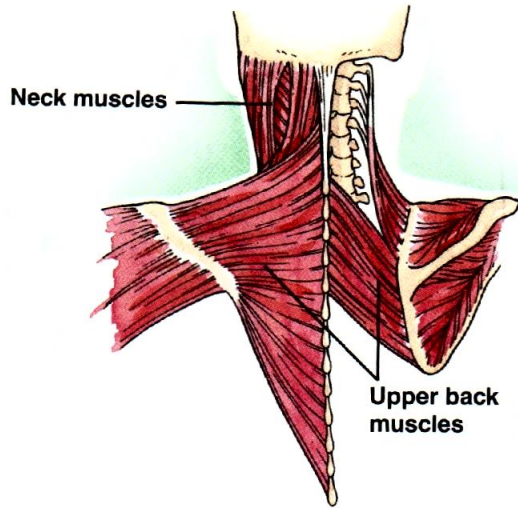
Pressure on nerves in the neck can cause pain or tingling in other parts of your body. This pain (called **referred pain**) can reach the scalp, face, ears, shoulders, arms, hands, fingers, or even the chest.

Nerves pass between vertebrae and out to fingers.



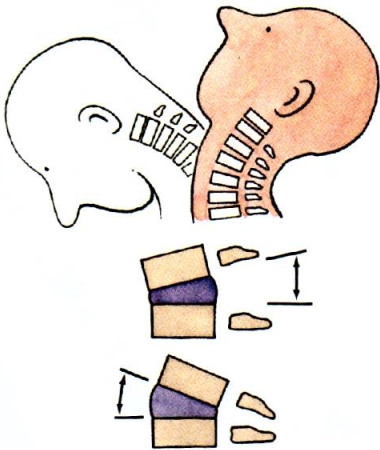
Muscles of the Neck

Muscles in the neck support your head and hold your vertebrae in place. Muscles in your shoulders, chest, and back help move and support the vertebrae. When you move your head and neck, muscles shorten (contract) on one side and stretch on the other. When your muscles shorten suddenly without your help, you have a painful muscle **spasm**. This can be caused by stress or by other neck problems.



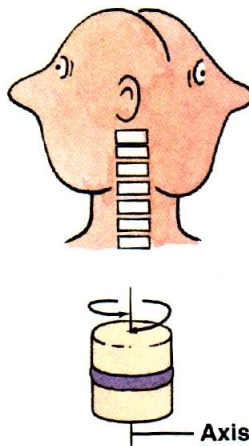
Neck in Action

Your neck moves more than any other part of your spine. Its range of motion is based on three basic moves: forward and backward (**flexion** and **extension**), side to side (**rotation**), and head to shoulder (**lateral bending**). These basic movements can be combined in countless ways. But a painful neck can limit your range of motion.



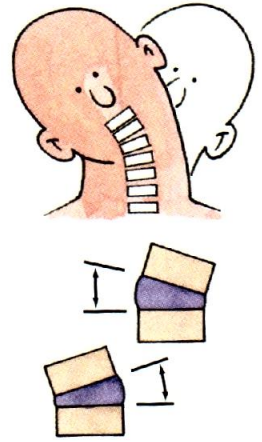
Flexion and Extension

Moving your head forward is called **flexion**. Moving it backward is called **extension**. Intervertebral disks compress with these movements.



Rotation

When you rotate your head, your head rotates on the **axis**, which is part of a vertebra in your neck.



Lateral Bending

When you tilt your head, the three vertebrae in the middle of your neck do the most bending. The foramina narrow on the side the head is tilted toward.

Posture and Stress

A painful, stiff neck may result from poor posture or emotional stress. With poor posture, your neck curves forward. This forces your neck muscles to tighten to support your heavy head. When you're stressed about situations in your life, certain muscles in your neck and shoulders can tighten. When the neck muscles stay tightened, your neck hurts. There are things you can do to help improve your posture and relieve stress.

Practice Good Posture

When you have good posture, your neck, head, and spine are in **alignment**. If you hunch your shoulders or are in a job that requires you to lean over, your head moves forward. This can make neck muscles tired and sore. The only cure is improved neck alignment while sitting, standing, and sleeping. To help maintain good posture, try the following tips:

Sitting

- Sit with your feet flat on the floor or on a footrest, such as a phone book. Your knees should be slightly lower than your hips. Don't sit with your wallet in your back pocket.
- Use a neck roll to help support your neck.
- Make sure your lower back is supported. Use a back roll or rolled-up towel.
- While driving, make sure your back and head are supported. Don't strain to reach the pedals.
- Avoid sitting or driving for too long. Take frequent breaks. Try to do the exercises on pages 14 and 15 at least once a day.
- Set up your computer desk or workstation so your monitor is at eye level. If you're looking at papers while you type, use a stand so the papers are at eye level as well.

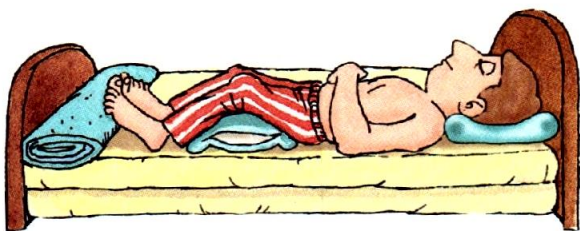
Standing

- Try to keep your ears, shoulders, and hips in a line when walking or standing.
- If you stand for long periods of time, put one foot on a low stool. Change feet often to keep pressure off your spine.
- To lower yourself, bend at the knees with a straight back.
- Work at eye level. Use a ladder instead of reaching up and tilting your head back.



Sleeping

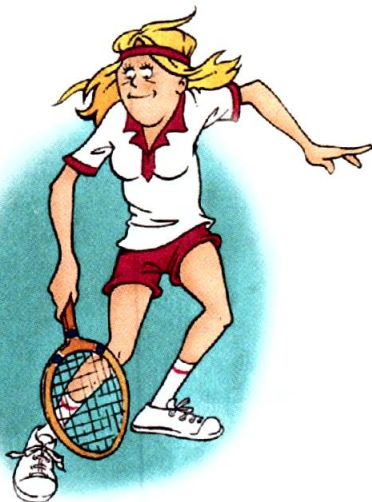
- Sleep or rest on a firm mattress.
- Avoid using too high a pillow or lying on your stomach. These may cause a “crick” (pain) in your neck.
- To help keep your spine aligned, lie on your side with your knees bent and a pillow between them. Or lie on your back with a pillow under your knees.
- Use a cervical roll or cervical pillow under your neck.



Relieve Stress

Emotional stress can be brought on by a number of things. You may be worried about your job or your family. Or you may be feeling angry, sad, or afraid about something in your life. This stress can show up as pain or muscle tension in your neck. It can also make existing injuries more painful. You can take steps to relieve and control your stress. Try these tips:

- Take a walk at lunch to get away from the pressures of work.
- Get plenty of regular exercise.
- Picture yourself in a place you'd like to be. Or, if you can, take a short trip.
- Learn how to manage your time.
- Get a massage to help relax your neck and shoulder muscles.
- Talk to a friend or counselor about your stress.



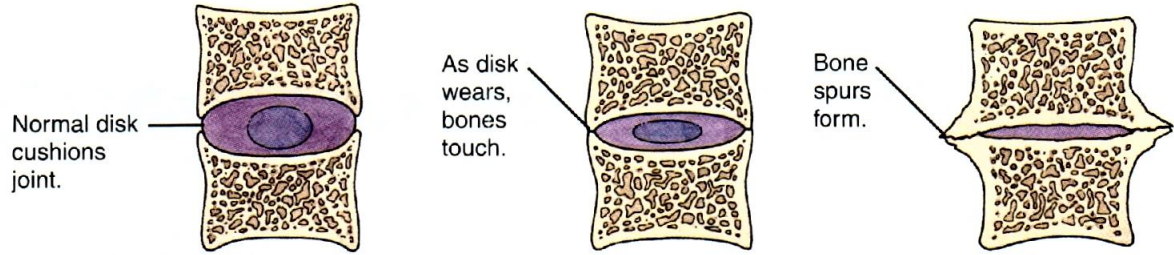
Wear and Tear

As you grow older, neck problems can occur from daily wear and tear. This is called **disk degeneration**. Worn vertebrae can result in swollen joints or **arthritis**. A worn disk may bulge or tear. This is called a **herniated disk**.

Disk Degeneration

As disks wear out, or **degenerate**, they become narrow and less elastic. This means they are not able to cushion the vertebrae as well as they used to. When disks wear down, vertebrae may rub against each other. This can cause growths called **bone spurs** to form. These spurs can pinch a nearby nerve, causing pain.

The Process of Disk Degeneration



Arthritis

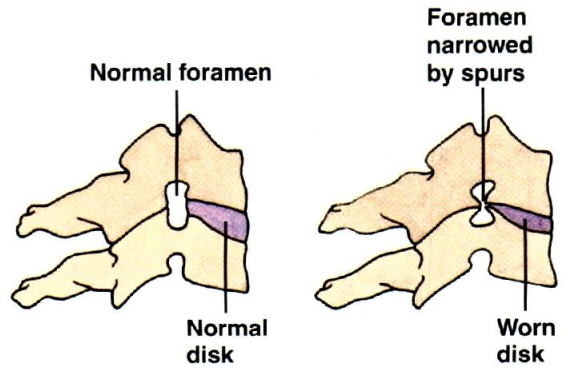
With overuse, the joints become swollen and stiff. This is a form of arthritis. It can reduce your neck's range of motion. The swollen tissue around the joint may also squeeze the nerves in the foramina, causing pain.

Herniated Disk

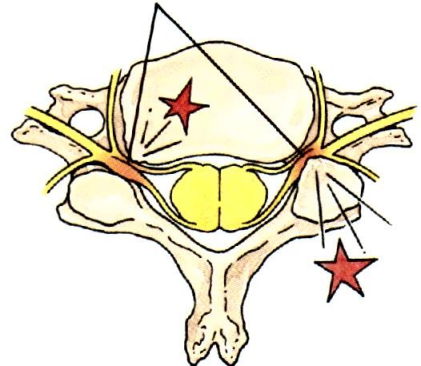
A worn disk sometimes bulges or tears. The damaged portion of this herniated disk may press on a nerve. This can cause pain or weakness in your arm. A herniated disk can also be caused by an injury or by sudden movement.

Special Note

- Treatment usually brings results in about 6 to 8 weeks.
- Your treatment may include the self-care measures on pages 10 and 11.
- It is common for problems to return.



Spurs pinch nerves in foramina.



Sprains and Other Injuries

The neck can be injured if it is forced to move past its normal range of motion. When this happens, the muscles and ligaments in the neck stretch and tear. This is called a **sprain**. Other neck injuries can occur if you hit something headfirst. If your neck is injured, see a health-care provider right away to get a diagnosis and begin treatment.

Whiplash

One common neck injury is a sprain. This is also known as “whiplash.” Car accidents are the main cause. When a car is hit from behind, the passenger’s head may snap backward, then forward. This is called **hyperextension**. If a car hits a solid object, the head may jerk forward then backward. This is called **hyperflexion**. With a sprain, you may feel only slight discomfort at first. But stiffness and pain become more severe a few hours later.



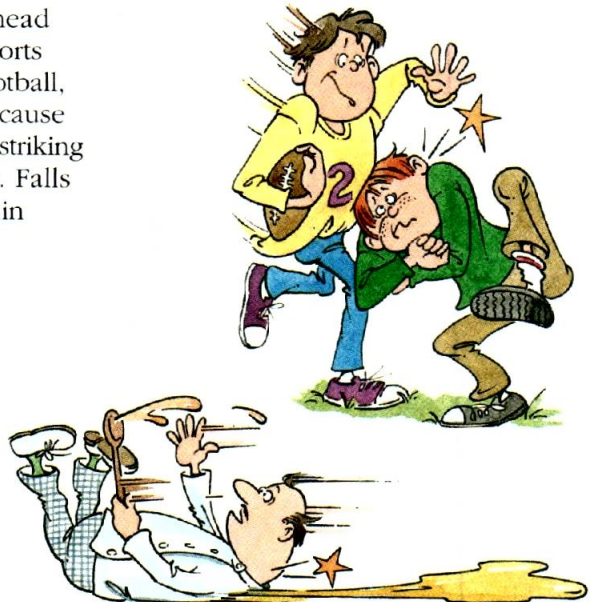
Special Note

Most whiplash victims recover within about 3 months. Problems may recur.



Other Injuries

The neck can also be injured if the head strikes something with great force. Sports account for many neck injuries. In football, using the head to block is a frequent cause of injury. Diving into shallow water or striking a submerged object are dangers, too. Falls at work and car accidents are also main causes of neck injuries.

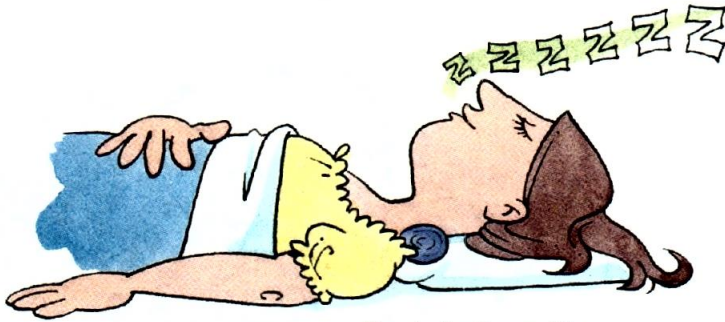


Treating Neck Pain: Care

With most neck problems, it's the pressure from the weight of your head that causes much of the pain. This pain causes muscle spasms, which increase your discomfort. The best way to break this cycle and stop the pain is to relieve the pressure and spasms. Your healthcare provider may suggest one or more of the following home treatments.

Breaking the Cycle of Pain

Lying down is one of the easiest things you can do to help relieve pain. This gives the muscles a chance to recover. To support your neck, rest or sleep with a cervical roll or cervical pillow under your neck. When resting or sleeping, lie on your side or back, not on your stomach.



Cervical rolls provide support while you sleep.

Home traction may be recommended. Traction takes the weight off neck muscles, disks, and nerves. It can also stretch tight neck muscles and give squeezed blood vessels and nerves room. Follow your healthcare provider's instructions about what type of traction to buy and how to use it. It may take a week or two for traction to relieve your pain. If pain increases, call your healthcare provider.

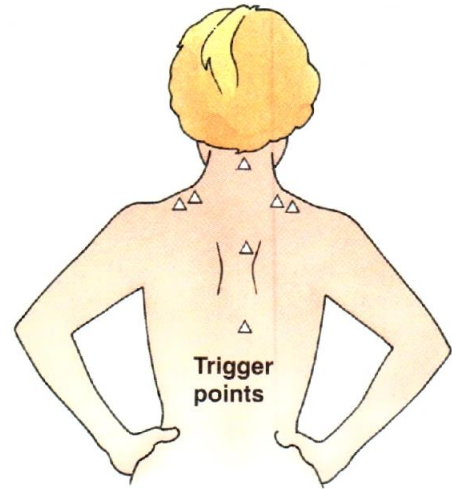


Different types of home traction are available. Your healthcare provider will suggest the one that's best for you.

Relief of Muscle Spasms

Spasms are sudden, prolonged, and painful muscle contractions. You may feel the small knots of tissue in your neck. These knots are also called **trigger points**. Treatments for spasms include heat, ice, exercise, and medicine. Your healthcare provider will advise you about which treatments may be best for you.

- **Heat** relaxes sore muscles and increases circulation. It can be applied to the painful area with a wet towel or during a bath or shower. Use heat before traction, exercise, or massage to make those treatments more effective.
- **Ice** relieves small “knots” and decreases inflammation in your neck. Put ice in a bag, wrap it in a damp towel, and apply it to the trigger point.
- **Exercises** can help relax the muscles and prevent stiffness. Drape a hot, wet towel around your neck and shoulders. Then try the range-of-motion exercises on page 14.
- **Medicines** may be prescribed for pain. These include anti-inflammatories, such as ibuprofen, aspirin, or other medicines. Certain medicines may need to be taken regularly for conditions such as arthritis.



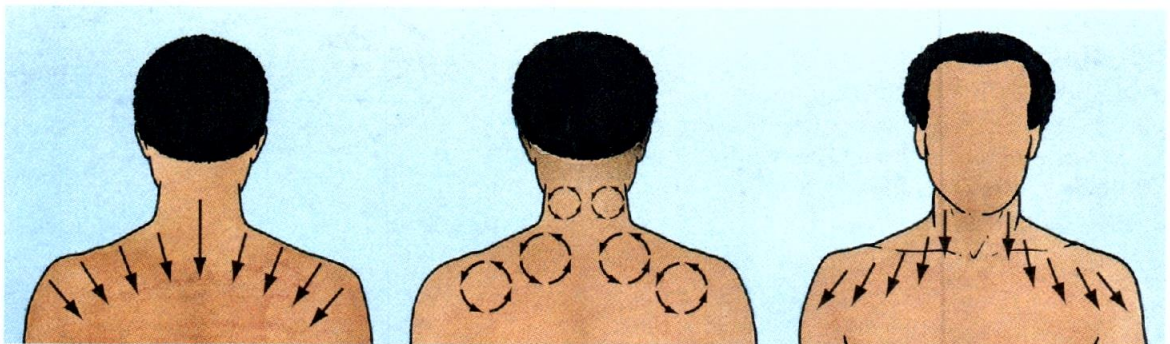
Heat relaxes sore shoulders.



Ice can help a “knot.”

Other Neck Pain Relief

Massage may be advised for severe neck pain. It provides short-term relief. After a shower, gently rub your neck for up to 15 minutes. Try using lotion to prevent skin irritation.



Common Massage Techniques

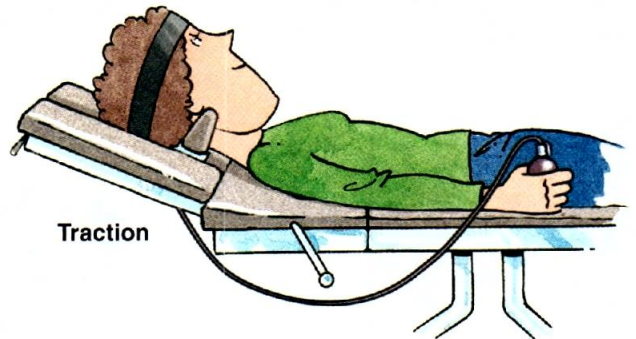
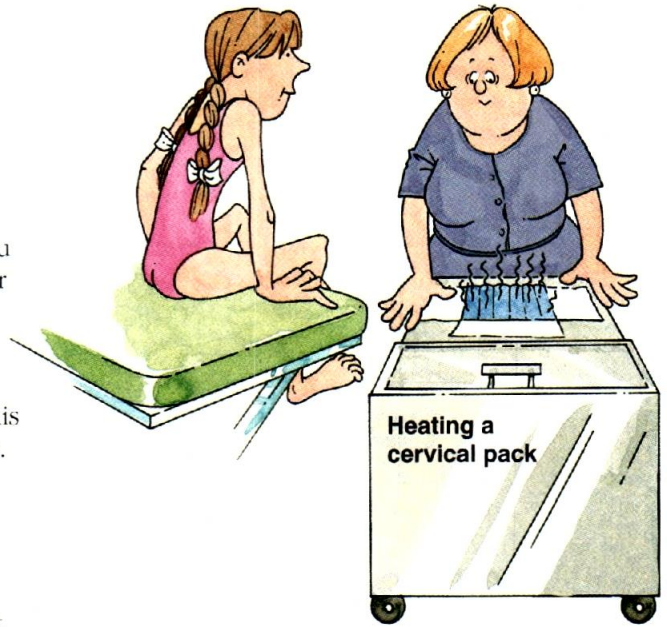
Treating Neck Pain: Physical Therapy

Your healthcare provider may suggest physical therapy as part of your treatment. Physical therapists are specially trained to treat problems such as neck injuries. Therapy can help relieve pain, strengthen muscles, improve spinal alignment, and increase mobility. After evaluating your neck problem, your therapist will plan a program for you.

Treatments

Your physical therapist may use one or more of these methods to treat your neck problem:

- **Heat.** A special heating pad called a **cervical pack** may be applied to your neck. **Diathermy** and **ultrasound** use special devices to heat deeper tissues. They can be used on the neck or on areas of referred pain.
- **Exercises.** Your therapist may teach you special exercises to help strengthen your neck and improve its range of motion.
- **Mobilization.** With this technique, the therapist gently moves your vertebrae. This helps restore motion to your neck joints.
- **Traction.** A traction machine may be used to relieve pressure in your neck.
- **Electrical stimulation.** This equipment applies electrical impulses to your neck to decrease soreness and inflammation.
- **Massage.** You lie flat while the therapist gently rubs your neck and shoulders.



Special Note

Your therapist may teach you about the cervical spine, proper posture, and the effects of a neck problem. This will help you help yourself to a faster, safer recovery.

Further Diagnostic Tests

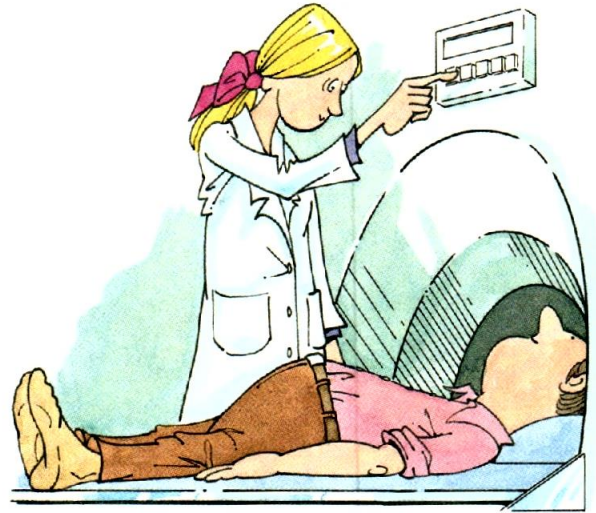
Sometimes more tests are needed to help detect the cause of your neck pain. These tests include magnetic resonance imaging (**MRI**), computed tomography (**CT**), nerve conduction studies, electromyography, and myelography. The MRI and CT scans will most likely be done at an imaging center or hospital radiology department. The other tests may be done in your healthcare provider's office.

MRI

This test uses magnetic fields and radio waves to make images of your neck. The MRI machine produces images of soft tissue, such as muscle, disks, and nerves. You lie inside the machine on a padded table.

CT Scan

This test uses a special scanner and computer to produce images of bones and soft tissue, such as nerves and blood vessels. You lie inside the CT machine on a padded table.



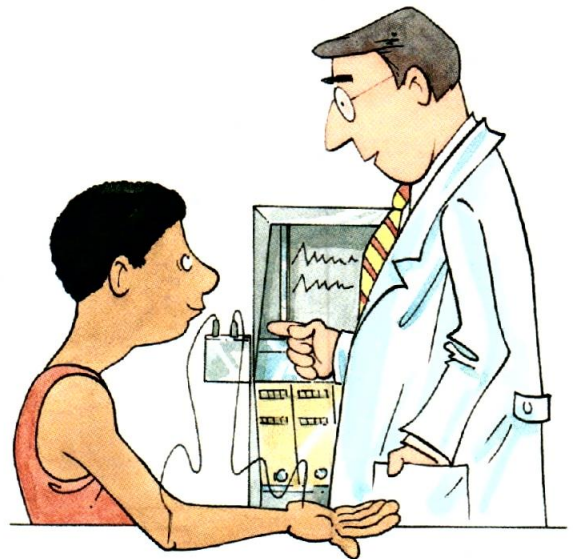
CT scan

Nerve Conduction Studies and Electromyography

These studies help find out which, if any, nerves in your neck are affected by an injury. One or more needles are placed in the arm muscles. Wires attached to the needles measure the electrical activity of the nerves. Because it takes time for signs of nerve damage to appear, these tests are not done until a few weeks after an injury.

Myelography

This test is done to produce clearer images of nerves. Dye is used to outline the spinal cord and cervical nerves. Then a special x-ray (**myelogram**) is taken to show where there may be pressure on nerves.



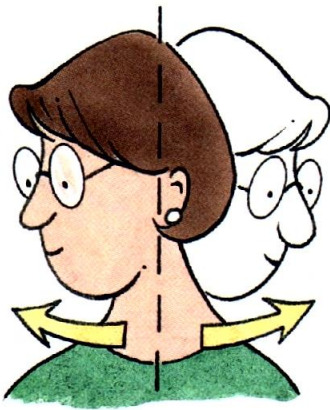
Nerve conduction study and electromyography

ome Exercises

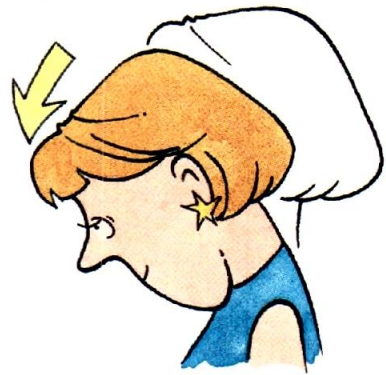
To stretch and strengthen your neck muscles, your treatment plan may include doing neck exercises like those shown here. Apply moist heat to your neck before you start. Then do 5 sets of each exercise, 3 times a day. Stop any exercise that causes pain. **Do only those exercises recommended by your healthcare provider or physical therapist.**

Range-of-Motion Exercises

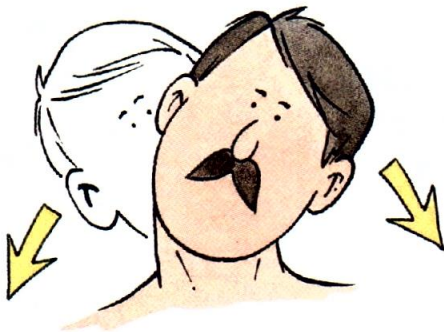
Range-of-motion exercises stretch your neck muscles. When doing the exercises below, sit with good posture, stay relaxed, and move gently.



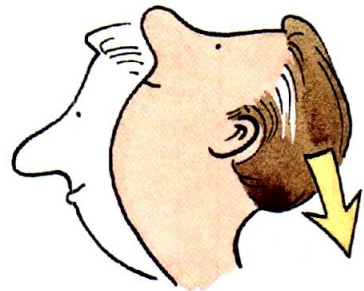
Slowly turn your head to the right as far as is comfortable. Hold for 3 seconds. Return your head to center. Do the same turn to the left side.



Drop your chin down slowly toward your chest as far as is comfortable. Hold for 3 seconds. Bring your head back up.



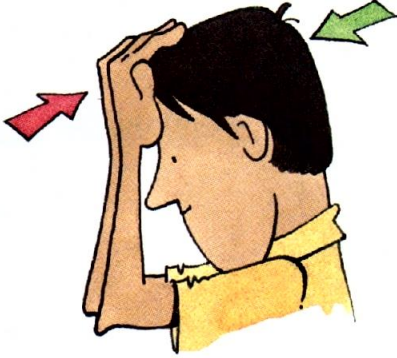
Tilt your head to the side toward your left shoulder. Hold for 3 seconds. Return your head to center. Do the same toward the right side.



Tilt your head backward so you can see the ceiling. Hold for 3 seconds. Then bring your head upright. **Do this exercise only if you are told to do so.**

Isometric Exercises

These exercises strengthen neck muscles. Remember to breathe as you do these. For each exercise, press for 5 to 6 seconds. Then relax.



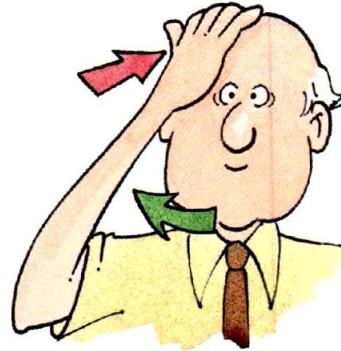
Press your forehead into your palms slowly. Resist any forward motion with your hands.



Place your hand against the side of your head. Push slowly with your hand while resisting with your neck muscles.



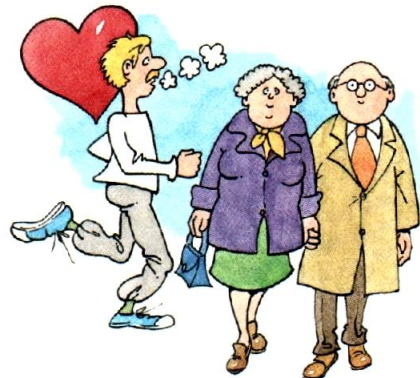
Place both hands against the back of your head. Try to push your head back, while resisting any movement with your hands.



Place your hand on the side of your head. Try to turn your chin to your shoulder, but resist any motion with your hand.

Cardiovascular Exercise

Do any activity that raises your heart and breathing rate. Exercise strengthens the spine, and the neck and shoulder muscles, too. Walking, jogging, biking, and swimming are all good ways to help you stay healthy. But check with your healthcare provider before starting any exercise program.



Helpful Hints for a Healthy Neck

Help your neck out by following these tips. They'll make a real difference in how you and your neck feel:

- Follow your treatment plan faithfully.
- Keep your neck strong and problem free by doing simple exercises.
- Use good posture to keep your neck straight.
- Take frequent breaks from sitting or standing.
- Play it safe: Use protective equipment in rough sports. Always check the depth of the water before you dive.
- Practice safety at work and at home. Watch out for hazards that can cause trips and falls.



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