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Neck Pain

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Topic Overview

What is neck pain?

Neck pain can occur anywhere in your neck, from the bottom of your head to the top of your shoulders. It can spread to your upper back or arms. It may limit how much you can move your head and neck.

Neck pain is common, especially in people older than 50.

What causes neck pain?

Most neck pain is caused by activities that strain the neck. Slouching, painting a ceiling, or sleeping with your neck twisted are some things that can cause neck pain. These kinds of activities can lead to neck strain, a spasm of the neck muscles, or swelling of the neck joints.

Neck pain can also be caused by an injury. A fall from a ladder or whiplash from a car accident can cause neck pain. Some less common medical problems can also lead to neck pain, such as:

- An infection in the neck.
- Narrowing of the spinal canal (See figure 1 in appendix) in the neck (cervical spinal stenosis).
- Rheumatoid arthritis.

What are the symptoms?

You may feel a knot, stiffness, or severe pain in your neck. The pain may spread to your shoulders, upper back, or arms. You may get a headache. You may not be able to move or turn your head and neck easily. If there is pressure on a spinal nerve root, you might have pain that shoots down your arm. You may also have numbness, tingling, or weakness in your arm.

If your neck pain is long-lasting (chronic), you may have trouble coping with daily life. Common side effects of chronic pain include fatigue, depression, and anxiety.

How is neck pain diagnosed?

Your doctor will ask questions about your symptoms and do a physical exam. He or she may also ask about any injuries, illnesses, or activities that may be causing your neck pain.

During the physical exam, your doctor will check how well you can move your neck. He or she will also look for tenderness or numbness, tingling, or weakness in your arms or hands.

If your pain started after an injury, or if it doesn't improve after a few weeks, your doctor may want to do more tests. Imaging tests such as an X-ray, an MRI scan, or a CT scan

can show the neck muscles and tissues. These tests may be done to check the neck bones, spinal discs, spinal nerve roots, and spinal cord (See figure 2 in appendix).

How is it treated?

The type of treatment you need will depend on whether your neck pain is caused by activities, an injury, or another medical condition. Most neck pain caused by activities can be treated at home.

For neck pain that occurs suddenly:

- Reduce pain by putting an ice pack on the sore area and taking acetaminophen (such as Tylenol). Aspirin, ibuprofen, or another anti-inflammatory medicine can also help relieve pain.
- Avoid more injury to your neck by changing activities and habits, such as how you sit or sleep.
- Try exercises or physical therapy to help you move your head and neck more easily.

To treat chronic neck pain, your doctor may prescribe medicine to relax your neck muscles. Or you may get medicines to relieve pain and help you sleep. You might also try massage or yoga to relieve neck stress.

Surgery is rarely done to treat neck pain. But it may be done if your pain is caused by a medical problem, such as pressure on the spinal nerve roots, a tumor, or narrowing of the spinal canal.

Can you prevent neck pain?

You can avoid neck pain caused by stress or muscle strain with some new habits. Avoid spending a lot of time in positions that stress your neck. This can include sitting at a computer for a long time.

If your neck pain is worse at the end of the day, think about how you sit during the day. Sit straight in your chair with your feet flat on the floor. Take short breaks several times an hour.

If your neck pain is worse in the morning, check your pillow and the position you sleep in. Use a pillow that keeps your neck straight. Avoid sleeping on your stomach with your neck twisted or bent.

Learning about neck pain:

- What is neck pain?
- What causes it?
- Can I prevent it?
- What are the symptoms?
- What happens with neck pain?
- What increases my risk of getting it?

Being diagnosed:

- Who can diagnose neck pain?

- How is it diagnosed?

Getting treatment:

- How is neck pain treated?
- What other treatments are there?
- What medicine will I need?
- Will I need surgery?

Living with neck pain:

- What can I do to treat neck pain at home?
- When should I call my doctor?
- What exercises can prevent and treat neck pain?

Cause

Neck pain can be caused by an activity or injury that harms the neck or by another medical condition.

Activities that cause neck pain

Most neck pain is caused by activities that result in repeated or prolonged movements to the neck's muscles, ligaments, tendons, bones, or joints. This can result in a strain (an overstretched or overused muscle), a sprain (injury to a ligament), a spasm of the neck muscles, or inflammation of the neck joints.

These activities include:

- Holding your head in a forward or odd position for long periods of time while working, reading, watching TV, or talking on the telephone.
- Sleeping on a pillow (See figure 3 in appendix) that is too high or too flat or doesn't support your head, or sleeping on your stomach with your neck twisted or bent.
- Spending long periods of time resting your forehead on your upright fist or arm ("thinker's pose").
- Work or exercise that uses the upper body and arms, such as painting a ceiling or other overhead work.

Stress and focusing intensely on a task can contribute to neck pain. Tension may develop in one or more of the muscles that connect the head, neck, and shoulders. They may feel tight and painful.

Injuries that cause neck pain

The spine consists of interlocking bones (vertebrae) and discs that separate the vertebrae. The portion of the spine that runs through the neck is known as the cervical spine (See figure 4 in appendix). Muscles and ligaments in the neck hold the cervical spine together. Injury to any of these structures may result in neck pain.

See pictures of the neck (See figure 5 in appendix) and the vertebrae and discs (See figure 6 in appendix).

Minor injuries may occur from tripping or falling a short distance or from excessive motion of the cervical spine. Severe neck injuries may occur from whiplash in a car accident, falls from significant heights, direct blows to the face or the back or top of the head, sports-related injuries, a penetrating injury such as a stab wound, or pressure applied to the outside of the neck, such as strangulation.

Pain from an injury may be sudden and severe. Bruising and swelling may develop soon after the injury. Sudden (acute) injuries can result in:

- A strain or a sprain in the neck.
- A break or dislocation of the spine. This may cause a spinal cord injury that may lead to lack of movement and feeling (paralysis). It is important to immobilize and move the injured person correctly to reduce the risk of further injury. For more information, see first aid for a spinal injury.
- A ruptured disc (herniated disc) in the cervical spine. If the rupture is large enough, the jellylike material inside the spinal disc may leak out and press against a spinal nerve. A herniated disc in the cervical spine can also occur as part of aging. See a picture of a herniated disc (See figure 7 in appendix).

Medical conditions that cause neck pain

Neck pain may be caused by or related to another medical condition. This can include:

- Conditions associated with increasing age, such as the narrowing of the spinal canal (cervical spinal stenosis) and arthritis of the neck (cervical spondylosis).
- Illnesses such as meningitis, which causes inflammation around the tissues of the brain and spinal cord (See figure 2 in appendix), and the flu (influenza). When neck pain is caused by flu, the neck and the rest of the body tend to ache all over, but there is no severe neck stiffness.
- Chronic conditions such as fibromyalgia, rheumatoid arthritis, or ankylosing spondylitis.
- Torticollis (wryneck). Torticollis is caused by severe muscle tightness or a shortened muscle on one side of the neck, causing the head to be tilted to one side. Torticollis is usually a symptom of another medical problem.
- Referred pain. Referred pain occurs when a problem in one place in the body causes pain in another place. For example, a problem with your jaw (temporomandibular disorder) or your heart (such as a heart attack) can cause neck pain.
- Infection or a tumor in the neck area.

Side effects of some medicines include neck pain.

Symptoms

Characteristics of neck pain include:

- Pain that occurs from the bottom of your head to the top of your shoulders. Pain may spread to the upper back or arms.
- Pain that is worse with movement.
- Limited head and neck movement. The neck may be stiff or tender.

- Headaches. These are common and may persist for months.

Nerve-related symptoms caused by pressure on the spinal nerve roots or spinal cord (See figure 2 in appendix) include:

- Numbness, tingling, or weakness in the arm or hand.
- A burning feeling when touched on the skin of the arm or hand.
- A pain that feels like a shock and extends into the arm or hand.
- Leg numbness or weakness, and loss of the ability to control urination (bladder control) or bowel movements. This occurs when there is considerable pressure or injury to the spinal cord.

If your neck pain is long-lasting (chronic), it may be difficult to cope with daily life. Common side effects of chronic pain include fatigue, depression, and anxiety. For more information, see the topic Chronic Pain.

What Happens

Most cases of neck pain caused by activities, such as computer use or sleeping position, improve within 4 to 6 weeks with treatment that includes taking steps to relieve pain, modifying activities, and doing exercises or physical therapy.¹

Neck pain caused by injuries, such as a fall resulting in a herniated disc (See figure 7 in appendix), usually improves within 3 months with nonsurgical treatment. Neck pain caused by an injury such as whiplash may take longer but usually improves within 6 to 12 months with occasional recurring pain.¹

Neck pain may become long-lasting (chronic) when it occurs in combination with other health conditions, such as conditions associated with increasing age. These include narrowing of the spinal canal (cervical spinal stenosis) and arthritis of the neck (cervical spondylosis). In some cases, chronic neck pain can be caused by repeated and prolonged movements, such as long hours working at a computer.

Chronic neck pain may result in increased irritability, fatigue, sleep disturbances, and poor quality of life. If treatment fails, neck pain may lead to depression, chronic pain syndrome, or drug dependence. For more information, see the topic Chronic Pain.

When To Call a Doctor

Call 911 or other emergency services immediately if you have been injured and you have:

- **A severe neck injury**, such as an injury caused by a:
 - Serious car accident.
 - Fall from a height of 15 ft (4.6 m) or more.
 - Major sports-related injury.
 - Very forceful blow to the head or neck.
 - High-energy strike on top of the head.
 - Penetrating injury, such as a stab or gunshot wound.

- **Signs of a spinal cord injury**, such as:
 - Weakness or inability to move the arms or legs.
 - Continuous numbness of one or both arms or legs.
 - Loss of bowel or bladder control.
- **Neck pain that occurs with chest pain** and other symptoms of a heart attack. These include:
 - Chest pain that is crushing or squeezing or feels like a heavy weight on the chest.
 - Chest pain that occurs with:
 - Sweating, shortness of breath, nausea, or vomiting.
 - Pain that spreads from the chest to the back, neck, or jaw, or one or both shoulders or arms.
 - Dizziness or lightheadedness.
 - A fast or irregular pulse.

Call your doctor immediately if you have:

- A stiff neck and/or severe headache, fever, vomiting, confusion, and/or difficulty staying awake or alert.
- Neck pain and severe arm pain.
- Neck pain and suddenly developing numbness, tingling, or weakness in one or both of your arms.
- Severe neck pain following an injury.
- Severe neck pain with no known cause.
- A new weakness in your arms and legs.
- A new loss of bladder or bowel control.

Call your doctor today if you have:

- Severe restriction of neck movements.
- Neck pain or stiffness after starting a new medicine.
- Constant numbness or tingling in one arm or hand.
- Constant weakness in one arm.
- Moderate pain following an injury.
- Arm weakness, numbness, or tingling that has become worse since you were evaluated by your doctor.
- Ongoing (chronic) pain that is getting worse.

Watchful Waiting

Watchful waiting is a period of time during which you and your doctor observe your symptoms or condition without using medical treatment. Most neck pain does not require medical care. In general, pain relief and neck movement should improve after a couple of days of home treatment that includes:

- Limiting activities that increase neck pain.
- Taking nonprescription pain relievers and using ice to reduce pain.
- Doing gentle exercises to keep the neck flexible.

If you have severe neck pain that has not gone away after 1 or 2 days and you are not able to do your normal daily activities, call your doctor.

Who To See

Health professionals who can evaluate and treat neck pain include:

- Emergency medicine doctors.
- Primary care providers. This includes:
 - Internists.
 - Family medicine doctors.
 - Nurse practitioners.
 - Physician assistants.

If your neck pain is severe or long-lasting, health professionals who can treat you include:

- Physical therapists.
- Orthopedists.
- Rheumatologists.
- Neurologists.
- Osteopathic doctors.
- Psychiatrists.

Alternative health professionals who can provide care include:

- Acupuncturists.
- Certified massage therapists.
- Chiropractors.

To prepare for your appointment, see the topic [Making the Most of Your Appointment](#).

Treatment Overview

Treatment for neck pain consists of reducing the pain with ice and medicine, improving neck movement and flexibility with exercises or physical therapy, and avoiding further neck injury by changing activities and body mechanics, such as how you sit or sleep. The specific treatment may depend on whether your neck pain is caused by activities, an injury, or another medical condition. Home treatment is often all that is needed for neck pain.

Because most neck pain is caused by repeated or prolonged movements to the neck's muscles, ligaments, tendons, bones, or joints, nonsurgical treatment is usually effective. Most cases of neck pain caused by activities resolve within 4 to 6 weeks.¹

Acute neck pain

For sudden (acute) neck pain:

- Place an ice pack or cold pack over painful muscles for 48 to 72 hours. This will help decrease any pain, muscle spasm, or swelling. If the problem is near the shoulder or upper back, ice the back of the neck. If you prefer, try ice massage. Massage the painful area with ice for 7 to 10 minutes, long enough to numb the pain. Ice frozen in a paper cup works well. Be sure not to damage your skin (frostbite).
- Avoid things that might increase swelling, such as hot showers, hot tubs, hot packs, or alcoholic beverages, for the first 48 hours after an injury. After 48 to 72 hours, if swelling is gone, apply heat. Use a warm pack or heating pad set on low. Some experts recommend alternating between heat and cold treatments.
- Return to your normal daily activities as soon as possible. Research suggests that continuing normal activities after a neck-strain injury helps resolve some symptoms faster than taking time off from work and using neck immobilization.²
- Gently massage or rub the area to relieve pain and encourage blood flow. Do not massage the injured area if it causes pain. Nonprescription creams or gels, such as Bengay, may provide pain relief.
- Take pain relievers. Acetaminophen (such as Tylenol) can help relieve pain. Nonsteroidal anti-inflammatory drugs, including aspirin (such as Bayer), ibuprofen (such as Advil), or naproxen sodium (such as Aleve), can help relieve pain and reduce inflammation. **Do not give aspirin to anyone younger than 20** because of the risk of Reye syndrome.

For severe pain or muscle spasm, your doctor also may prescribe:

- Muscle relaxants, which treat severe pain spasms when neck pain begins. They include diazepam (such as Valium), cyclobenzaprine (such as Flexeril), and carisoprodol (such as Soma).
- Narcotic pain relievers, which are used short-term for severe neck pain. They include codeine, acetaminophen and hydrocodone (such as Vicodin, Lortab), aspirin and oxycodone (such as Percodan), and acetaminophen and oxycodone (such as Percocet).

The treatment that is right for you may be different from the treatment for someone else with neck pain. Some treatments have been studied more than others. Many treatments for neck pain haven't been very well researched, even if they are used a lot. A review of studies shows that exercise and manual therapy, used either separately or together, are likely to be beneficial in the treatment of uncomplicated neck pain.²

Your doctor may recommend that you wear a cervical collar to support your neck. Cervical collars may reduce neck pain, but they should be used only for a day or two. See a picture of a cervical collar (See figure 8 in appendix).

Chronic neck pain

For long-lasting (chronic) neck pain, you can use the same treatment used for acute pain, although you do not have to worry about swelling. Your doctor may prescribe other medicines, such as antidepressants. These include doxepin (such as Sinequan) and amitriptyline.

You can aid healing and prevent further injury by:

- Having physical therapy. For home treatment, you can use heat and massage. A physical therapist can teach you exercises to do at home. These can keep your neck flexible and strong and prevent stiffness.
- Changing or avoiding any activities that may be causing your neck pain, such as prolonged computer work or overhead work.
- Maintaining good health habits. If possible, reduce stress and tension at work and home. Stop smoking. Smoking slows healing because it decreases blood supply and delays tissue repair. Exercise regularly, including aerobic exercise such as walking. For more information, see the topics Stress Management, Quitting Smoking, and Fitness.
- Trying manual therapy. A trained practitioner may use slow twisting, pulling, or pushing movements. When slow, measured movements are used, it is known as "mobilization." Avoid rapid, forceful movements, which are known as "manipulation." Talk to your doctor before trying manual therapy.

Surgery

Surgery is rarely required for neck pain. It may be considered to treat neck pain caused by pressure on the nerve roots or spinal cord (See figure 2 in appendix), a severe injury that has broken a neck bone (vertebra), a tumor, infection, or a spinal condition such as narrowing of the spinal canal (See figure 1 in appendix) (cervical spinal stenosis) or arthritis of the neck (cervical spondylosis). Surgical options include:

- Discectomy (with or without fusion). For more information on discectomy, see the Surgery section of the topic Herniated Disc.
- Cervical spinal fusion, in which selected bones in the neck are joined (fused) together.
- Spinal decompression, in which pressure is reduced on the spinal cord or spinal nerve roots by removing part of a bone or disc.

What To Think About

A review of studies reports that:²

- Exercise reduced pain better than medicine for muscle pain or spasm, stress management, or no exercise.
- There is not enough evidence to determine whether medicines, transcutaneous electrical nerve stimulation (TENS), ice and heat, soft cervical collars, or special pillows are helpful for neck pain.

In one small study, women with chronic neck pain were taught and used neck endurance and strengthening exercises for 1 year. Compared with people who had chronic neck pain and were not using the exercises, the exercise group had less pain and disability.³

Keeping your neck moving improves its function and helps it heal. In general, cervical collars are only used after a surgery or for a day or two after a neck sprain.

People who have chronic pain syndrome and its associated problems, such as depression or drug dependence, may respond to treatment more slowly. Counseling in addition to medical treatment may help in recovery.

Prevention

Neck pain caused by stress or muscle strain can often be prevented by using good posture, getting regular exercise, and avoiding long periods in positions that stress the neck, such as prolonged computer work or painting a ceiling.

- If neck pain is worse at the end of the day, evaluate your posture and body mechanics.
 - Avoid slouching or a head-forward posture. Sit straight in your chair with your lower back supported, feet flat on the floor, and shoulders relaxed. Avoid sitting for long periods without getting up or changing positions. Take short breaks several times an hour to stretch your neck muscles (See figure 9 in appendix).
 - If you work at a computer, adjust the monitor so the top of the screen is at eye level. Use a document holder that puts your work at the same level as the screen. See a picture of using a computer workstation (See figure 10 in appendix). For more information, see the topic Office Ergonomics.
 - If you use the telephone a lot, consider using a headset or speaker phone. Do not cradle the phone on your shoulder.
 - Adjust your car seat to a more upright position that supports your head and lower back. Make sure that you are not reaching for the steering wheel while driving. Your arms should be in a slightly flexed, comfortable position.
 - Use proper lifting techniques (See figure 11 in appendix). Lifting with your knees, not your back, can also help prevent neck pain.
- If neck pain is worse in the morning, check your pillow and sleeping posture (See figure 3 in appendix).
 - Use a pillow that keeps your neck straight, neither too high nor too flat. Special neck support pillows called cervical pillows or rolls may relieve neck stress. You can also fold a towel lengthwise into a pad that is 4 in. (10 cm) wide, wrap it around your neck, and pin it in position for good support.
 - Use a pillow that doesn't force your head forward when you lie on your back and that allows you to align your nose with the center of your body when you lie on your side.
 - Avoid sleeping on your stomach with your neck twisted or bent.
 - If you read in bed, prop the book up so you are not using your arms to hold it up and bending your neck forward. Consider using a wedge-shaped pillow to support your arms and keep your neck in a neutral position.
- If stress is contributing to your neck pain, practice muscle relaxation exercises. Consider getting a massage. For more information, see the topic Stress Management.
- Strengthen and protect your neck by doing neck exercises once a day.

You can also help prevent neck pain by staying at a healthy body weight.

Home Treatment

Even if you need medical treatment such as prescription medicines for your neck pain, the following home treatment measures will help speed your recovery.

For sudden (acute) neck pain:

- Place an ice pack or cold pack over painful muscles for 48 to 72 hours. This will help decrease any pain, muscle spasm, or swelling. If the problem is near the shoulder or upper back, ice the back of the neck. If you prefer, try ice massage. Massage the painful area with ice for 7 to 10 minutes, long enough to numb the pain. Ice frozen in a paper cup works well. Be sure not to damage your skin (frostbite).
- Avoid things that might increase swelling, such as hot showers, hot tubs, hot packs, or alcoholic beverages, for the first 48 hours after an injury. After 48 to 72 hours, if swelling is gone, apply heat. Use a warm pack or heating pad set on low. Some experts recommend alternating between heat and cold treatments.
- Return to your normal daily activities as soon as possible. One study found some evidence that continuing normal activities after an acute whiplash injury helps heal some symptoms faster than taking time off from work and using neck immobilization.²
- Gently massage or rub the area to relieve pain and encourage blood flow. Do not massage the injured area if it causes pain. Nonprescription creams or gels, such as Bengay, may provide pain relief.
- Take pain relievers. Acetaminophen (such as Tylenol) can help relieve pain. Nonsteroidal anti-inflammatory drugs, including aspirin (such as Bayer), ibuprofen (such as Advil), or naproxen sodium (such as Aleve), can help relieve pain and reduce inflammation. **Do not give aspirin to anyone younger than 20** because of the risk of Reye syndrome.

For long-lasting (chronic) pain, you can use the same pain relief measures used for acute pain, but you do not have to worry about swelling.

You can aid healing in both acute and chronic neck pain and prevent further injury by:

- Doing stretching and strengthening exercises for your neck to keep your neck flexible and strong and prevent stiffness.
- Avoiding or modifying any activities that may be causing your neck pain, such as prolonged computer work or overhead work.
- Having good health habits. Try to reduce stress and tension at work and home. Practice muscle relaxation exercises and consider getting a massage. Stop smoking: smoking slows healing because it decreases blood supply and delays tissue repair. Exercise regularly, including aerobic exercise such as walking. For more information, see the topics Stress Management, Quitting Smoking, and Fitness.

You can help prevent future neck pain by paying attention to how you move and hold yourself (body mechanics). This includes:

- Avoiding slouching or a head-forward posture. Sit straight in your chair with your lower back supported, feet flat on the floor, and shoulders relaxed. Avoid sitting for long periods without getting up or changing positions. Take short breaks several times an hour to stretch your neck muscles (See figure 9 in appendix).
- Adjusting your workstation (See figure 10 in appendix) if you work at the computer. Keep the monitor so the top of the screen is at eye level. Use a document holder that puts your work at the same level as the screen. For more information, see the topic Office Ergonomics.
- Using a headset or speaker phone if you use the telephone a lot. Do not cradle the phone on your shoulder.

- Adjusting your car seat to a more upright position that supports your head and lower back. Make sure that you are not reaching for the steering wheel while driving. Your arms should be in a slightly flexed, comfortable position.
- Using a pillow that keeps your neck straight, neither too high nor too flat. Special neck support pillows called cervical pillows or rolls may relieve neck stress. You can also fold a towel lengthwise into a pad that is 4 in. (10 cm) wide, wrap it around your neck, and pin it in position for good support. Avoid sleeping on your stomach with your neck twisted or bent. See a picture of proper sleeping positions (See figure 3 in appendix).
- Having the right posture when reading in bed. Prop the book up so you are not using your arms to hold it up and bending your neck forward. Consider using a wedge-shaped pillow to support your arms and keep your neck in a neutral position.
- Using proper lifting techniques (See figure 11 in appendix). Lifting with your knees, not your back, can also help prevent neck pain.

Your doctor may recommend that you wear a cervical collar to support your neck. Cervical collars may reduce neck pain, but they should be used only for a day or two. When the pain begins to get better, start doing gentle neck exercises. See a picture of a cervical collar (See figure 8 in appendix).

Credits for Neck Pain

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Primary Medical Reviewer	William M. Green, MD - Emergency Medicine
Specialist Medical Reviewer	Robert B. Keller, MD - Orthopedics
Last Revised	February 24, 2010

Appendix

Topic Images

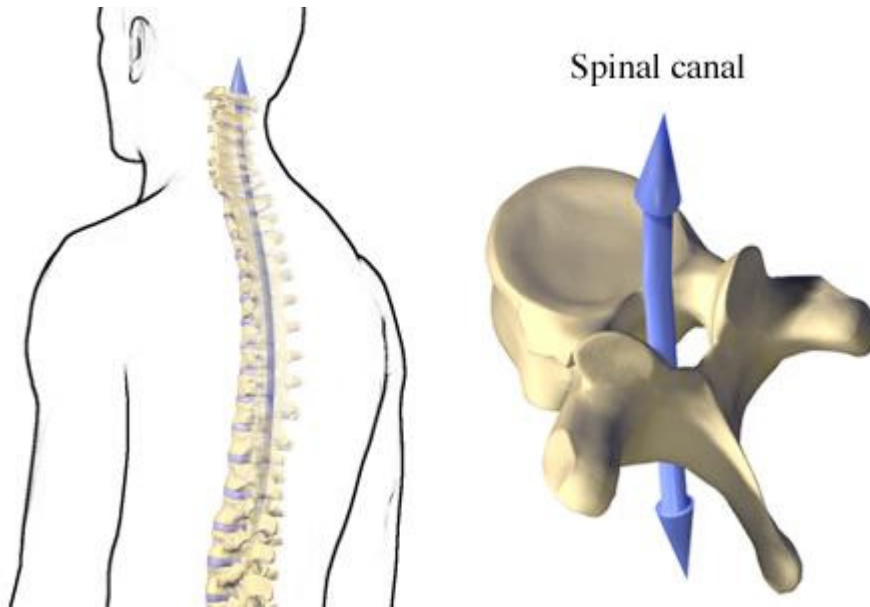
Figure 1**Spinal canal**

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The spine (backbone) is a column of bones (vertebrae) stacked on top of one another. Each vertebra has a hole in its center. The spinal canal is the opening in the vertebrae through which the spinal cord runs.

Figure 2

Spinal cord anatomy

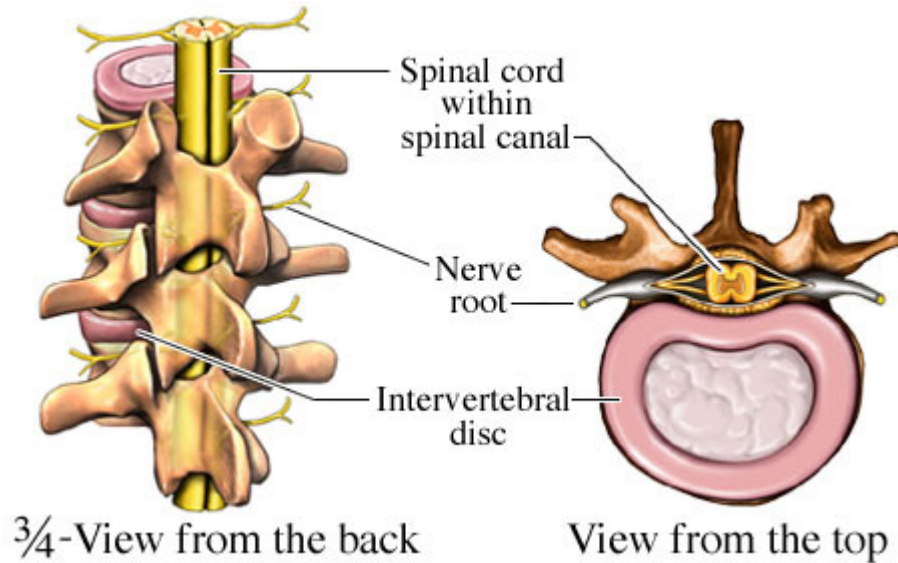
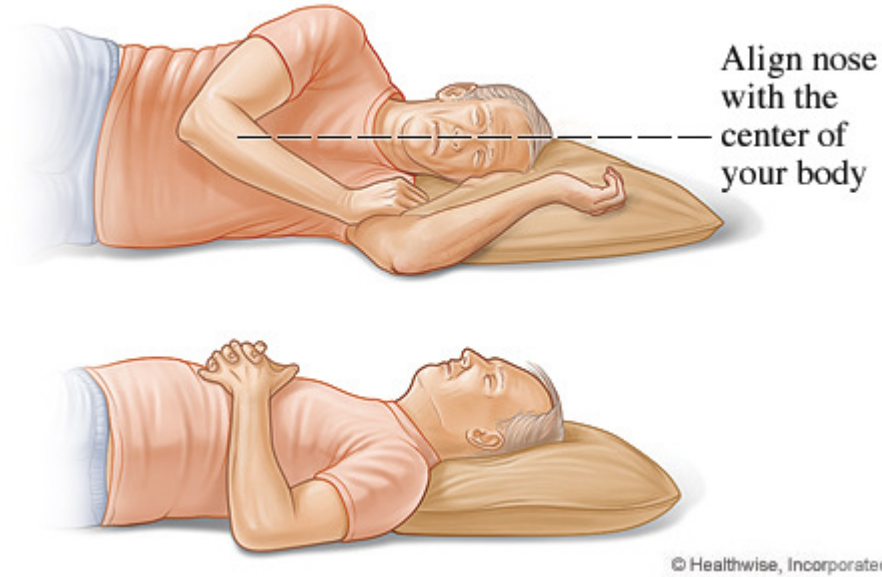


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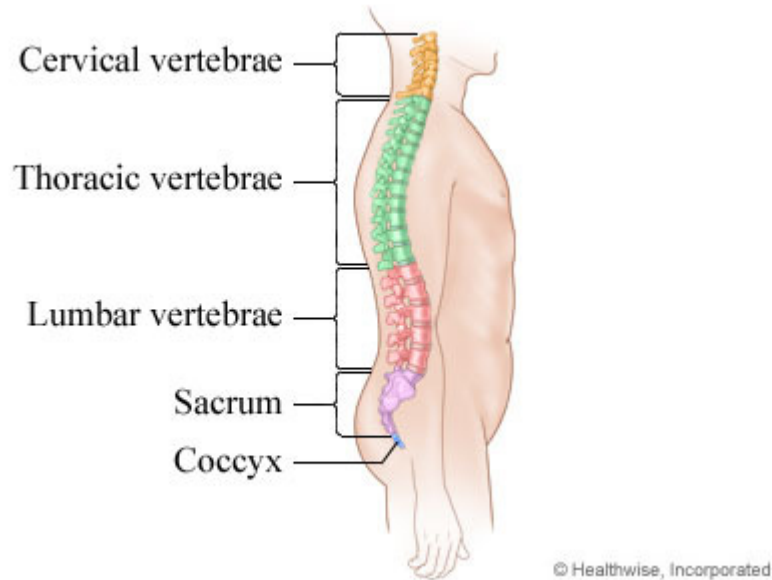
The spinal cord is a soft bundle of nerves that extends from the base of the brain to the lower back. It runs through the spinal canal and is protected by the bones of the spine (vertebrae). Messages between the brain and the nerve roots travel up and down the spinal cord, making it possible for the brain and body to communicate. The discs cushion the vertebrae and provide flexibility to the spine and spinal cord.

Figure 3

Sleep positions for your neck

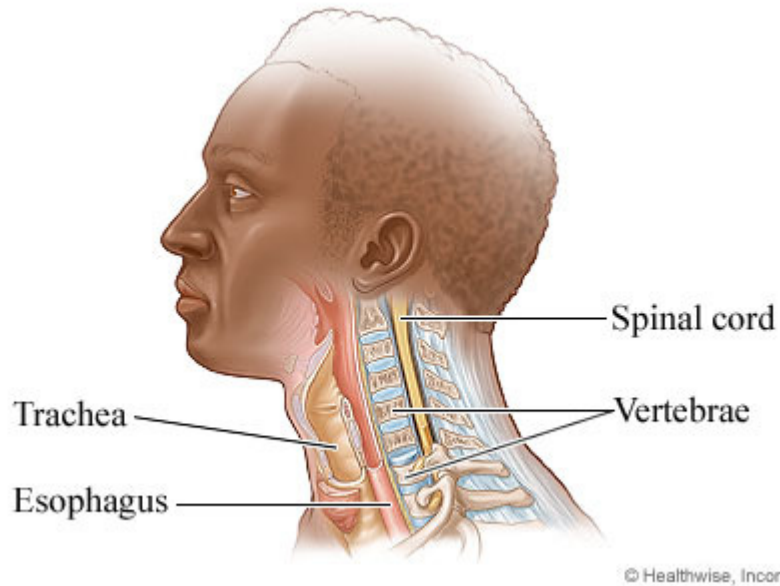


To help prevent neck pain, use a pillow that keeps your neck straight, neither too high nor too flat. Use a pillow that doesn't force your head forward when you lie on your back and that allows you to align your nose with the center of your body when you lie on your side.

Figure 4**Spine**

The spine (backbone) is composed of 33 interlocking bones called vertebrae that are separated by soft, compressible discs and supported by many different ligaments and muscles. It is divided into five segments: cervical (neck), thoracic (upper and middle back), lumbar (lower back), sacrum (pelvis), and coccyx (tailbone). In each segment, the vertebrae are numbered from top to bottom. For example, a C3 is the third vertebra in the neck area, while a T6 is the sixth vertebra in the thoracic area.

The vertebrae in the spine normally form 3 curves. These curves allow the spine to absorb shock as you move.

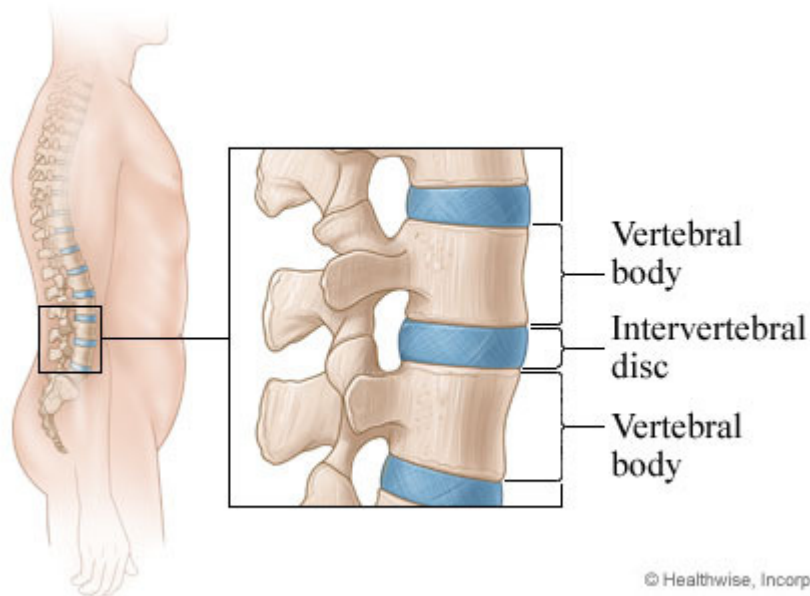
Figure 5**Neck anatomy (partial)**

The vertebrae are the bones of the spine. Discs between the vertebrae support and cushion these bones. The spinal cord runs through the vertebrae and carries messages back and forth between the brain and the rest of the body.

The front of the neck contains the esophagus, which carries food and liquid to the stomach, and the trachea, which carries air to the lungs.

Figure 6

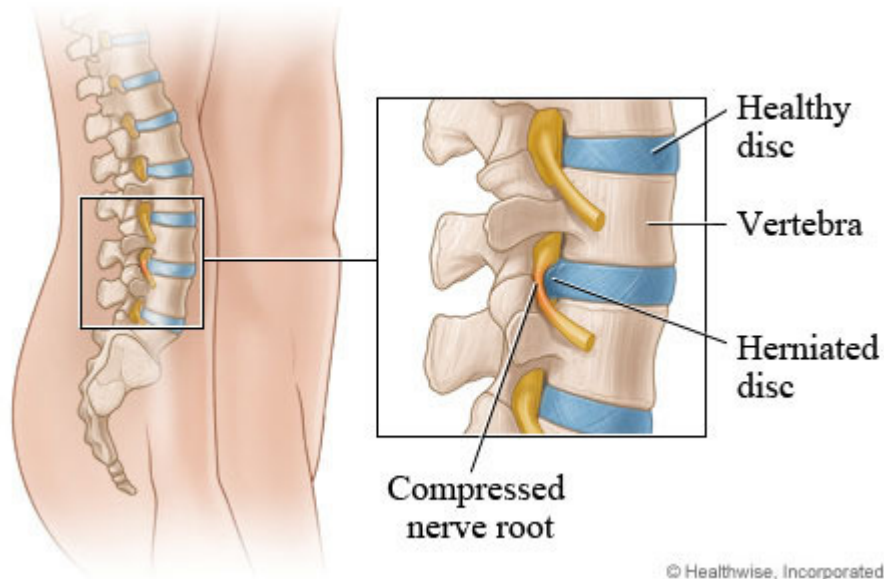
Discs of the spine



The spine is formed by 33 interlocking bones called vertebrae. Located between each pair of vertebrae is a disc. The disc is composed of a capsule of connective tissue surrounding a soft, jellylike center. These discs absorb shock and provide flexibility within the spine.

Figure 7

Herniated disc



The bones (vertebrae) that form the spine (backbone) are cushioned by small, round, flat discs. When these discs are damaged from an injury, normal wear and tear, or disease, they may bulge abnormally or break open. This is called a herniated or slipped disc.

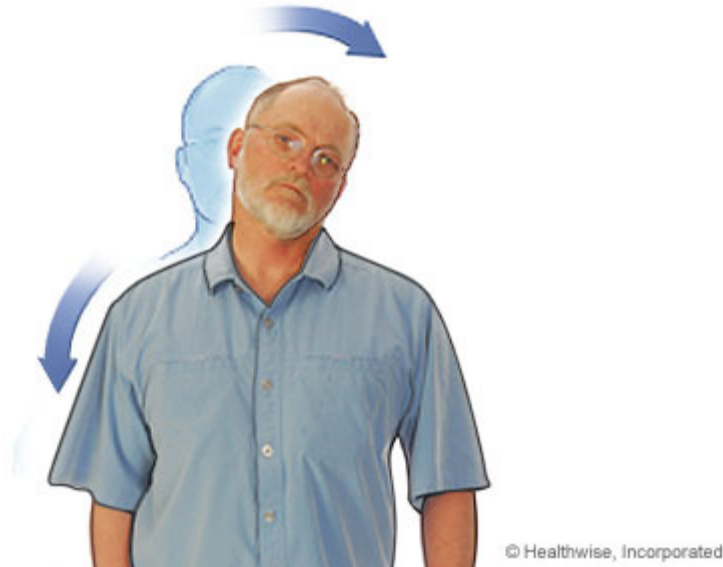
Figure 8**Cervical collar**

Cervical (neck) collars are sometimes used to support the neck for a short time. They may be soft and made from felt, foam, or rubber. Or they may be hard and made from plastic. Soft collars allow some movement of the neck.

Figure 9**Stretches to ease neck fatigue**

The following exercises should cause you to feel a gentle stretch, but no pain.

Neck stretch



1. This stretch works best if you keep your shoulder down as you lean away from it. To help you remember to do this, start by relaxing your shoulders and lightly holding on to your thighs or your chair.
2. Tilt your head toward your shoulder and hold for 15 to 30 seconds.
3. If you would like a little added stretch, use your hand to gently and steadily pull your head toward your shoulder. For example, keeping your right shoulder down, lean your head to the left. Let the weight of your head stretch your muscles, or use your left hand to pull gently down on your head.
4. Repeat 2 to 4 times toward each shoulder.

Diagonal neck stretch



1. Turn your head slightly toward the direction you will be stretching, and tilt your head diagonally toward your chest and hold for 15 to 30 seconds.

2. If you would like a little added stretch, use your hand to gently and steadily pull your head forward on the diagonal.
3. Repeat 2 to 4 times toward each side.

Figure 10

Ergonomic workstation



This is one example of an ergonomically correct workstation. Some people would be more comfortable with slight adjustments such as tilting the keyboard up a bit or removing the armrests from the chair. But this picture shows many of the important pieces of a good workstation.

1. The **top of the monitor screen** is at eye level.
2. A **telephone headset** helps you to avoid awkward positions while talking and doing other tasks, such as typing.
3. A **wrist pad** at the bottom of the keyboard helps keep the wrists in a neutral, almost straight position during brief rests from typing. Wrist pads are not designed to be used while you type. But some people find the pads helpful even when they are using their keyboard or mouse. When you type or use your mouse, try raising your forearms a little so your wrists are in a neutral position and your arms and hands can move freely. If you have arm rests on your chair, you may be able to adjust them so your forearms are parallel to the floor and your wrists are neutral. You may want to alternate between resting your wrists on the pads and raising them up. If you use a wrist pad, it's best to rest your palm or the heel of your hand on the support, rather than your wrist.

4. If your feet do not rest flat on the floor when you sit in your chair, a **footrest** raises your feet to reduce pressure on the lower back.
5. **Armrests** are adjusted so that the elbows are close to the side of the body and bent at an angle between 90 and 100 degrees.
6. An **adjustable chair** has a height adjustment to allow the feet to rest on the floor or on a footrest. Also the back of the chair adjusts for different positions.

Sitting with the ears directly above the shoulders, which in turn are over the hips, helps prevent back strain. Placing a lumbar pillow or roll against the small of the back provides extra support.

Figure 11

Proper lifting technique



Follow these tips to avoid compressing the spinal discs or straining your lower back when lifting:

- **Keep a wide base of support.** Your feet should be shoulder-width apart, with one foot slightly ahead of the other (karate stance).
- **Squat** down, bending at the hips and knees only. If necessary, put one knee to the floor and your other knee in front of you, bent at a right angle (half kneeling).
- **Maintain good posture.** Look straight ahead, and keep your back straight, your chest out, and your shoulders back. This helps keep your upper back straight while maintaining a slight arch in your lower back.
- **Slowly lift** by straightening your hips and knees (not your back). Keep your back straight, and don't twist as you lift.
- **Hold** the load as close to your body as possible, at the level of your belly button.

- **Use your feet** to change direction, taking small steps.
- **Lead with your hips** as you change direction. Keep your shoulders in line with your hips as you move.
- **Set down** your load carefully, squatting with the knees and hips only.

Keep in mind:

- Do not attempt to lift by bending forward. Bend your hips and knees to squat down to your load, keep it close to your body, and straighten your legs to lift.
- Never lift a heavy object above shoulder level.
- Avoid turning or twisting your body while lifting or holding a heavy object.

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