

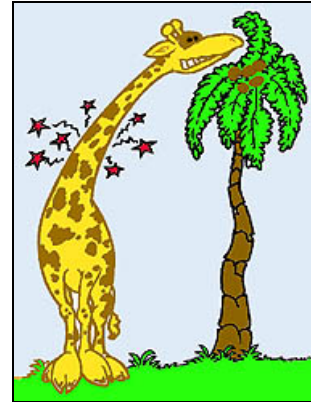
It's a Pain In the Neck!

Part I

Problems and solutions for your neck

By Tamara Mitchell

Edited by Sally Longyear



It's not surprising that the neck is a very common area for pain. The neck is a narrow, flexible structure of nerves, bones, joints, cartilage, blood vessels and muscles which must hold up the head, which weighs 10-15 lbs. Neck pain is the third most common reason that people seek alternative medicine therapies (behind back pain and colds).¹ In this article, we'll look briefly at the structure of the neck, sources of neck problems, ways to prevent neck problems, and treatments for neck pain and problems.

Should you seek medical attention?

Neck pain can indicate some rare, but severe problems, so before launching into our discussion, we need to preface it with a few cautions. If you have any of the following symptoms, seek medical attention rather than attempting self-treatment because time could mean a matter of life or death, or at least avoiding further damage to an injured structure.

1. If, in addition to your neck pain, you have a fever, rash, sensitivity to light, headache, or nausea, and your neck is so stiff that you cannot touch your chin to your chest, you should go to the emergency room immediately. These are signs of meningitis (a potentially deadly infection of the brain) that should be investigated without hesitation.^{2,3,5}
2. If you have severe or worsening neck pain, dizziness, numbness, weakness, coolness, or color changes in your limbs, you should seek medical attention before attempting self-care.^{2,4,6} These are signs that the blood flow to your limbs and/or brain are being restricted, that nerves are being pinched, or that muscles have been damaged. You should receive medical help without question.^{2,4,6}
3. If you have swelling, a lump, or deformity, including the appearance of a sunken area, seek medical attention right away. Swelling may affect a whole limb, such as a whole arm, or just the neck. Dislocation or fracture of a neck bone structure, or a swollen gland may cause such swelling and should be checked out by a medical professional.^{2,4}
4. If your neck pain was caused by a fall, blow, or injury you need to seek medical attention immediately.²

Structure

Neck pain may originate from any of the structures in the neck. Neck pain may also come from regions near the neck, like the shoulder, jaw, and upper arms.³ Conversely, problems in the structures of the neck may not involve neck pain at all, but may result in pain and/or numbness in another body part affected by a nerve being pinched in the neck.²

The neck is composed of *vertebrae* stacked in a column to form the upper section of the spine.⁶ Between each vertebra bone is a *disc* made of fibrocartilage.^{6,7} The purpose of these discs is to absorb the shock from walking, running, jumping, turning, and twisting.⁷ Each vertebra is linked to the next by two *facet joints*, one on each side.^{6,7} The *spinal cord* runs through the neck vertebrae and is protected from outside damage by these bones.⁶ Between each disc, *nerves* come out from the spinal cord through an opening in the side of the spine. These are called *nerve roots* and these join for form the nerve trunks that run into the arms. Finally, the *vertebral artery* which carries blood from the heart to the brain runs inside the vertebrae of the spine and supplies the part of the brain that controls your balance.⁶

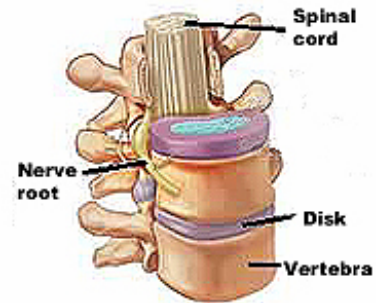


Illustration courtesy of Reference 8.

Many *ligaments and muscles* are attached to the spine and these fan out at the base to attach to the shoulders and the back.⁶ The ligaments keep the vertebrae in place and the muscles control movements of your head.^{6,7}

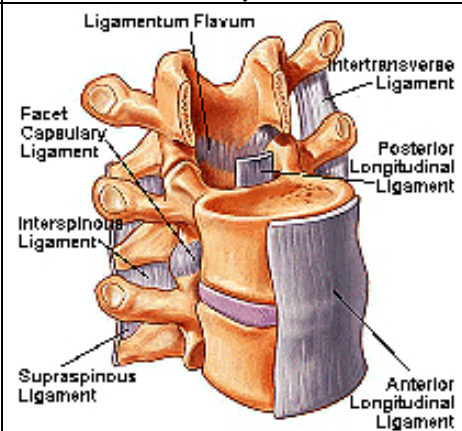


Illustration courtesy of Reference 9

The impulses transmitted by the nerve roots send sensations of touch and pain from the arms and hands to the brain and messages from the brain to the muscles.⁶

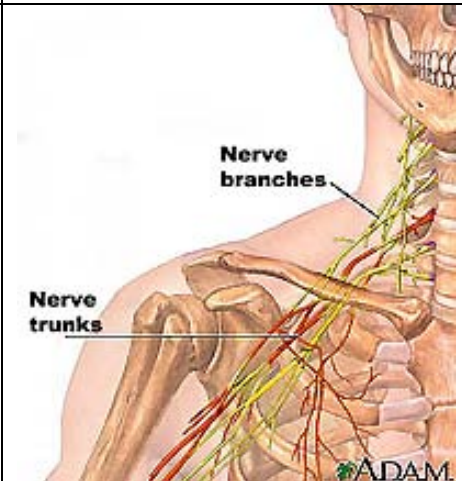
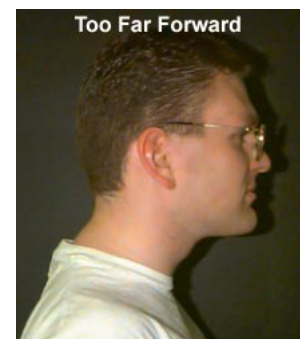
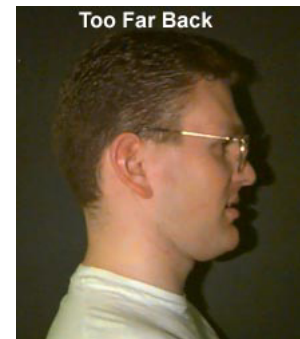


Illustration courtesy of Reference 2

Sources of problems

Clearly, there is a lot of complexity in your neck and if any of these structures is malfunctioning, it can cause problems for you.

Postural stress. The most common type of neck pain is due to incorrect postures.⁶ Generally the neck is not damaged in any way, but the pain is usually a result of muscle strain or tension resulting from everyday activities such as bending over a desk for hours, having poor posture while watching TV or reading, placing the computer monitor too high or too low, sleeping in an uncomfortable position, or twisting and turning the neck in a jarring manner while exercising.^{2,7} Improper postures can increase the amount of stress placed on the muscles, ligaments, facets, and discs in and surrounding your neck, resulting in pain.⁷ Even depression, can be a factor in postural stress. Postural stress can contribute to chronic neck pain with symptoms extending into the upper back and the arms. These neck problems can lead to chronic muscular tightness, which may contribute to nerve "entrapment" leading to numbness and pain extending into the arms.⁹



Illustrations courtesy of
Reference 7

Stress. The muscles at the back of your neck must always be tensed or your head would fall forwards when you are sitting or standing.⁶ Excess muscle tension can be a result of postural problems, but it can also result from stress. Many people unconsciously hold stress in their neck and shoulder muscles resulting in fatigue and pain.^{1,6}

Cervical spondylosis. Don't worry about the scary name. This medical term simply refers to changes in the neck that occur as a result of everyday use and wear to the discs and facet joints of the neck.^{6,7} The discs become thinner, causing the spaces between the vertebrae to narrow. Spurs of bone known as osteophytes, form at the edges of the vertebrae and the facet joints.^{6,7} These changes are present in almost everyone by the age of 65.⁶ Many people have no neck pain even though x-rays reveal significant changes in the neck.⁶ Pain can occur when the facets rub or grind together, or osteophytes pinch the nerve roots that sprout between the vertebrae.^{6,7} Pain may occur from the linings of worn joints or from stretched ligaments.⁶ If the vertebral artery is pinched, this reduces the blood supply to the area of the brain that controls balance, leading to dizziness.⁶ In very rare cases, the spinal cord may be squeezed causing weakness and numbness in the arms and legs.⁶

Cervical herniated disc. Sometimes the discs protrude out of their normal space and can cause pain by putting pressure on nerves or the spinal cord.⁷ This usually develops in the 30-50 year old age group.¹⁰ It may originate from some sort of trauma or injury to the neck and the symptoms vary depending on what nerves are affected.¹⁰ Everyone is "wired" differently, so nerves sprouting from between each vertebrae do not always control the same body parts in everyone, but the nerves emerging from the spine in the neck can cause weakness and pain, numbness and tingling in the muscles of the shoulder, upper and lower arm, and fingers.¹⁰

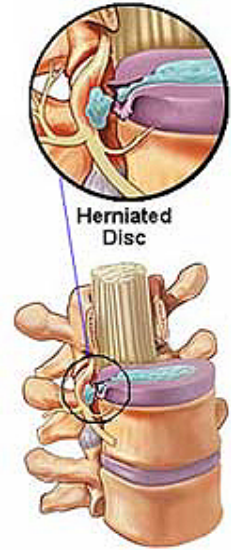


Illustration courtesy of Reference 8.

Whiplash. During a rear-end collision in a car, the body is carried forward and the head flips backwards. Then, as the body stops, the head is thrown forward. There is usually a delay before the pain and stiffness start and, although whiplash can severely damage the neck, it generally doesn't cause major damage.⁶ The injury generally results in strain or sprain of the muscles surrounding and supporting the neck and within a few weeks or months most cases feel better.^{6,7} With properly adjusted headrests and seat belts, this injury is significantly reduced.⁶

This article and all of our articles are intended for your information and education. We are not experts in the diagnosis and treatment of specific medical or mental problems. When dealing with a severe problem, please consult with a healthcare or mental health professional and research the alternatives available for your particular diagnosis prior to embarking on a treatment plan. You are ultimately responsible for your own health and treatment!

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