

My Aching Back!

Problems and solutions for Upper Back Pain

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Back pain is second only to the common cold as the leading reason people in the United States see a physician.¹ The most common causes of upper back pain are either muscle irritation or rib joint dysfunction.² Both neck and upper back pain are common among people who work in stressful jobs, especially requiring awkward and static postures. It is increasingly common among physically non-strenuous jobs including computer users and office workers, dentists, and dental hygienists where much of the day is often spent with the shoulders rounded and the head in a forward position.³

In this article we'll briefly discuss the physiology of the upper back and then focus on the prevention and treatment aspects of upper back pain.

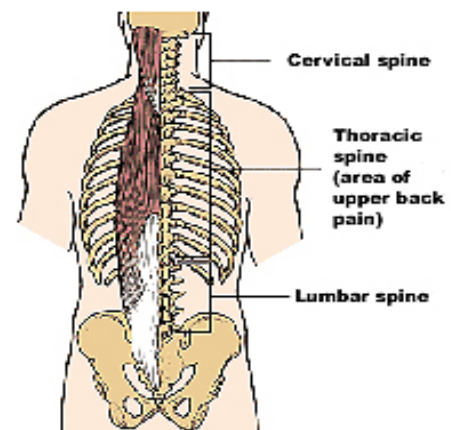
Should you see a physician?

Even though most upper back pain can be treated without advice from a doctor, there are some cases where medical help should be sought. Heart disease and other serious illnesses can manifest in the form of upper back pain. If upper back pain radiates to the front of your chest, lower part of your rib cage or your abdomen, if you have a family history of cardiovascular disease, or if you have no idea why your upper back hurts, you should make a visit to your doctor.⁴

Back pain in children should be treated seriously. Young children rarely experience back pain, so if there has been no injury, back pain could signal a serious condition such as a spinal tumor, growth, or an infection of the spine.⁵ Older children tend to be more aggressive in activities and sports, and carry heavy back packs, which increases the possibility of compression fractures and occasional disc injuries. Tumors and infection of the spine may occur in teens, but back pain in teens is most often caused by sports injuries or overuse syndromes.⁵

Anatomy of the Upper Back

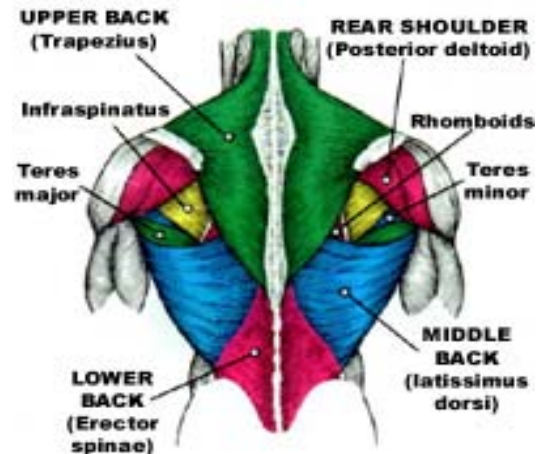
The thoracic spine, also called the upper or mid-back, is the portion of the spinal column that corresponds to the chest area. The word "thoracic" means pertaining to the chest. The thoracic spine is made up of twelve spinal vertebrae with attached ribs.² When viewed from the side, this section of spine is slightly concave. Each vertebra in the thoracic spine is connected to a rib on both sides at every level. The upper nine ribs are joined at the front of the chest, attaching to the sternum (breastbone). The lower three ribs are firmly attached at the back to the spine, but do not join together at the front. This creates a cage that provides the structural protection for the vital organs of the heart, lungs and the liver and also creates a cavity for the lungs to expand and contract.²



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The large upper back muscles are prone to developing irritation that can be painful and difficult to work out.² Muscular irritation and upper back pain is often due to either de-conditioning (lack of strength) or overuse injuries (such as repetitive motions).² Muscle strains, sports injuries, slip and falls and auto accidents result in pain from muscular irritation.

Recent research indicates that people with back pain guard the injured area by using more muscles than they need to. Abdominal muscles or other uninjured back and side muscles are used even though they are not needed for the activity.⁶ By doing this, twice as much twisting force and 1.5 times as much compressive force is inflicted on the spine during an activity such as lifting.⁶



Upper Back Pain

Because there is little motion and a lot of stability throughout the upper back, common disorders such as herniated disc, spinal stenosis, degenerative disc disease, or spinal instability are very rare in this part of the spine. Only about 1% of all disc herniations occur in the thoracic spine.² In rare cases, upper back pain can be caused by thoracic disc disease. Diagnostic tests such as an MRI scan and correlation with physical symptoms are required for diagnosis.²

Nearly all cases of upper back pain are due to either muscular irritation (myofascial pain) and/or dysfunction of the joints connecting the ribs to the thoracic vertebrae.²

Muscle tension is the main cause of muscular irritation and myofascial pain. Muscles tighten up for several reasons.⁷

- Poor posture is *the most frequent* cause of upper back muscle tension. Most people hold their head in front of their body instead of aligning it with their hips while they walk and sit. This position progressively tightens the upper back and shoulder muscles and could cause numbness in the hands and arms and as well as restrict blood flow to the head.⁸
- Overuse causes small microtears in the muscles. The muscles then tighten up to protect themselves.
- Poor stretching routines, especially after training, can cause muscle tears.
- If you have scoliosis, a sideways curve in the spine, then some muscles will be put under more strain than they can tolerate.
- Unresolved emotional issues can be manifested as muscle tension.⁹

1. Is it difficult to turn your head to see traffic when driving?
2. Do you recline while you use the computer?
3. When you tilt your head to the side (ear to the shoulder), do you lift your shoulder?
4. Is your head normally pulled forward? Ask someone to check the normal seam line on your shirt and the center of your ear. The center of the ear should be over the seam line.
5. Are your shoulders uneven in height?
6. Do your feet turn outward?
7. Can you not take a really deep breath?
8. Do you have problems reaching for things over your head?

Upper Back Pain Prevention

1. *Take frequent stretch breaks* to restore circulation and prevent muscle fatigue, which can offset the negative effects of static posture.³

2. *Improve your posture and body mechanics.*^{4,9} Poor posture eliminates the natural weight-supporting S-curve of your back and weakens the muscles of the upper back, making them susceptible to strain.⁴ You can take a free class through your HMO or at the Balance Center in Palo Alto to learn better body mechanics (<http://www.balancecenter.com/free.htm#free>). Or seek out a practitioner in the Alexander Technique to help you improve your posture.

In your car, adjust the seat and steering wheel to minimize your reach and shoulder elevation while driving. Try to adjust these so your arms hang relaxed from your shoulders and your elbows are bent at about a 90° angle. Never lean on the armrests or window while holding the steering wheel.

3. *Strengthen your neck, upper and lower back.*⁴ A strong back is much less likely to get injured.⁴ Symptoms experienced by 8 out of 10 patients with back problems are due to weak back muscles.¹¹ Poor posture is often not just a bad habit, but a result of weak muscles.¹¹ It is possible to slow down the physical degeneration associated with aging, prevent osteoporosis, retain mobility, and speed up recovery time from illness and injury by maintaining a strong back.¹¹ There are some great upper back exercises to strengthen your muscles on the website for Reference 12. Lower back exercises are also important to keep your whole back strong and healthy.

4. *Modify your various work and hobby environments* to keep the spine in neutral position. Adjusting your chair and the height of the work surfaces are two major changes at a workstation that can reduce sources of awkward posture and muscle tension.³ If the backrest is not supporting your lumbar curve or it is tilted incorrectly, you will overuse your upper back muscles.¹⁰ If the chair is too low, your head will be thrown forward due to a backwards tilted pelvis. Refer to the SRI Ergonomics web pages regarding the correct chair adjustments (<http://www.working-well.org/chair.html>). Use the chair correctly by sitting all the way back against the backrest to allow your back muscles to relax. If the seat pan is too long, slide it back, if possible, or replace the chair.

Refer to http://www.working-well.org/wkstn_design.html for information regarding the correct workstation height. To prevent injury, adjust the height according to the task being done.

Keep tools and materials needed for the task at hand within your neutral reach area. When you reach out of this zone during any of your daily activities, or if tools and machines are at an inconvenient height, the upper back muscles are overloaded. Make sure the tools you are using are close to your body or within easy reach to eliminate twisting or bending.¹⁰



Lateral (Side)
Spinal Column



Illustration courtesy of
Spine Universe,
www.spineuniverse.com

5. *Learn more about osteoporosis to prevent the degeneration of the spine.* Osteoporosis is the reason for approximately 700,000 fractures of the wrist, hip, ribs, or vertebrae each year. Vertebral compression fractures often heal in a collapsed position resulting in loss of height and a "dowager's hump". This is one of the few upper back ailments that is not muscular irritation, but it can be prevented or minimized if proper diet and back strength is maintained throughout life.¹³

6. *Hold your head up.* When reading, elevate the material to avoid dropping your head.⁴ Slantboards and document holders at the desk or in front of the computer are critical. We recommend a number of quality products (<http://www.working-well.org/pdochldr.html>). When using any of your phones while doing something else, either hold the phone in your hand, use a softalk phone rest, or if multi tasking regularly or for long periods of time, always use a headset. Cradling the phone (as pictured on the right) is extremely dangerous to the neck and upper back.

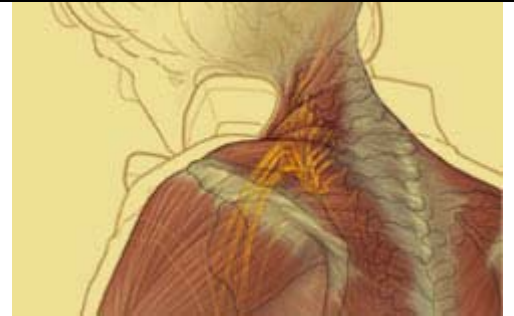


Illustration courtesy of Ergoboy, Reference 3

Softalk phone rests can be purchased at local office supply stores (<http://www.working-well.org/pheadset.html>).

7. Women with large breasts should try wearing a *sports bra*, which has better support than traditional bras.⁴

Upper Back Pain Treatment

Please research products hyped to help back pain before you buy! Since back pain is such a prevalent problem, there are lots of products sold to "help" people with this problem, but in fact these products have unproven results, usually don't work, and/or may be potentially dangerous. One such product is the Inversion Table, sold on many back care and health websites. The idea is that by inverting yourself, you will reverse the force of gravity on your spine and other organs resulting in healing. There is no scientific evidence demonstrating that inversion therapy provides more than temporary relief.¹⁴ In fact, hanging upside down can cause headaches and bleeding into the retina, and can be very risky for pregnant women and people with heart disease, hypertension, and glaucoma or other eye diseases.¹⁴

Muscular irritation is best treated by:^{2,15,9}

- Exercise
- Physical Therapy. During physical therapy, it's important not only to strengthen back muscles, but to re-learn how to use the correct muscles naturally again.⁶
- Chiropractic or osteopathic manipulation
- Acupuncture
- Ultrasound
- Ice packs for 20-30 minutes every 4-6 hours for the first 2-3 days of muscle spasms. After 2-3 days of ice, use moist heat to help loosen stiff muscles.
- Ibuprofen or other NSAIDs (non-steroidal anti-inflammatories) can be useful in reducing the inflammation associated with muscular irritation. Steroidal injections are usually not warranted.²

- **Massage**

- ♦ *Deep tissue massage.* A good massage therapist can not only release muscle tension, but also remind the body to relax and let go of unnecessary tensions.⁹ There are forms of massage that work on the nervous system, lymphatic and craniosacral system.⁹ Frequency is more important than duration, so schedule a massage before your back becomes painful.⁹

A friend may be able to help release muscle tension in areas that you can't reach. Either kneading or using the elbow to press into the point of pain for 15-30 seconds can help. Pressing on the area with the elbow slows the blood supply briefly and then releases it, flooding the area with blood and oxygen and often relaxing muscle spasms.⁴

- ♦ *Self-massage.* One minute of self-massage each hour in the problem area of your upper back can help relieve muscle spasms in the upper back.^{4,9} Reach across with your hand to the opposite shoulder and gently knead the sore part of the trapezius muscle, which increases circulation and helps relax tense muscles.⁴ Another way to self-massage is to put a couple of tennis balls in a sock, then lean against a wall with one ball on either side of the spine and roll up and down the wall while the tennis balls knead your back. You can also buy a Healthy Body Ball (www.healthybodyball.com) with rounded knobs that help knead the back muscles.

Yamuna body rolling works the way a massage therapist works, but you learn to do it yourself using a 6-10 inch ball (varying sizes and densities are available), starting at the origin of the muscle tendon and rolling out the muscles while also stimulating bone and soft tissues.⁹ For people with osteoporosis, there are balls available to accommodate fragile bones.



Illustration courtesy of Reference 9

- ♦ *Trigger point massage.*¹⁶ If stretching and exercise seem to make your back pain worse, you may want to explore trigger point massage. Trigger points are small knots in muscles that may refer pain to other parts of the body. By stretching and strengthening certain muscles that contain trigger points, this theory maintains that you are actually stimulating the triggers and making the problems worse.¹⁶ Trigger point massage requires a knowledge of where the triggers are located and what effect they may have on the rest of the body.
- Examination of your emotional state can lead to clues about psychological tension that manifests as neck, shoulders and upper back tension.⁹ How are you feeling emotionally? Do you have unfinished issues or conflicts in your life? From a metaphysical standpoint, upper back pain is associated with withheld resentment and being overburdened.⁹ Resolve emotional issues and you will eliminate a lot of physical pain in your body. Unresolved experiences are held as tension in the muscles and organs of the body. Seek help from a counselor or therapist to learn successful strategies.⁹

Joint dysfunction is best treated by manual manipulation (osteopath, chiropractor, or physical therapist trained in manipulation) to help mobilize the joint and reduce discomfort.² A home exercise program to stretch and strengthen the spine and shoulders is very important to maintain lasting upper back pain relief.² Aerobic conditioning is also essential for joint health. As with muscular irritation, steroidal injections are usually not recommended.²

RESOURCES:

- *Healthy Body Ball*. 1-800-455-4346.
<http://www.healthybodyball.com/>
- *All About Massagers*. 1-800-456-9655.
<http://www.allaboutmassagers.com/app/category/Body-Rolling>
- *Gaiam*. Neck and upper back rests. 1-800-869-3446.
<http://www.gaiam.com>



Illustrations courtesy of Gaiam.com

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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3. *Neck and Upper Back Pain*. ©2000-2004 ergoboy.com.
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http://www.med.umich.edu/1libr/sma/sma_upperbak_sma.htm

16. *Clair Davies talks about Trigger Points and Referred Pain. Treatment and Relief for Spinal Stenosis and Chronic Pain in the Upper, Middle, and Lower Back.* <http://www.triggerpointbook.com/backpain.htm>