

HEALTH HINTS

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“Back pain is ranked second only to headaches as the most frequent location of pain (Mayo Clinic, 2000).”

Back Pain

Back pain is one of the most common medical problems in America (National Library of Medicine, 2001). Eight out of ten people will experience back pain at some point in their life (American Academy of Orthopaedic Surgeons, 2001b). Back pain is ranked second only to headaches as the most frequent location of pain (Mayo Clinic, 2000).

Approximately 12 million visits are made to physicians' offices each year for back pain problems (American Academy of Orthopaedic Surgeons, 2001); mostly for lower back problems, since this part of the back bears the most weight and stress (Mayo Clinic, 2000).

Fortunately, nine out of ten acute back injuries will heal on their own within 8 to 12 weeks (Kemper, 1997). If not taken seriously, however, back pain can last for a long time, and can become disabling (National Library of Medicine, 2001).

Though back pain is rarely life-threatening, estimates of its total cost to society range from \$20-60 billion annually in the United States (Mayo Clinic, 1997; University of Washington Department of Orthopaedics and Sports Medicine, 2002;). With such

numbers in mind, it may be surprising that with exercise, weight management, and a few simple postural techniques, you can ward off back pain. Even if you've injured your back before, you can learn techniques to help avoid re-injury (Mayo Clinic, 1997).

In this issue of HealthHints we will look at:

- some common causes of back pain, and
- techniques for preventing and treating back pain.

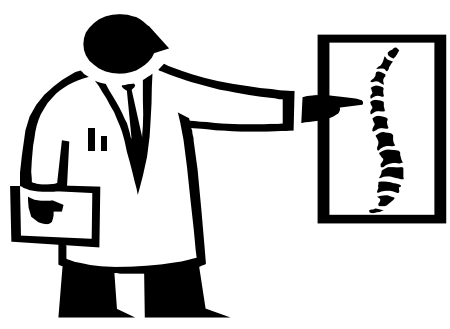
Your Back

The back has three primary parts, the:

- 1 backbone or spine (also referred to as the spinal column or vertebral column),
- 2 back muscles, and
- 3 nerves or spinal cord.

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Backbone

The backbone is actually not one long bone, but 24 separate bones called **vertebrae** as well as the sacrum and coccyx (also called the tailbone). The vertebrae are stacked one on top of the other to form the backbone or spine. The points where two vertebrae or bones fit together are called **joints** (University of Washington, Department of Orthopaedics and Sports Medicine, 2002). The joints make it possible for the spine to move and turn in different directions. Soft **discs** (made of fibrous, elastic cartilage) separate each vertebrae, allowing the spine to bend and flex, and act as *shock absorbers*, cushioning the hard vertebrae as we move (Mayo Clinic, 1997). The spine is joined to the pelvis, or hip, by the sacroiliac joints, which unlike most joints, are fixed and do not move (National Library of Medicine, 2001).

Back Muscles

The muscles of the back are attached to the spine (National Library of Medicine, 2001). There are 40 muscles and numerous connecting **tendons** (fastening muscles to the vertebrae) and **ligaments** (tough fibrous bands holding the vertebrae together) running from the base of the skull to the tailbone (Mayo Clinic, 1997).

Nerves

In addition to bones and muscles, there are 31 pairs of nerves in the back ((Mayo Clinic, 1997), which make up the **spinal cord**. These nerves connect the brain to the rest of the body. The vertebrae protect the nerves of the spinal cord. The nerves branch off from the spinal cord carrying instructions to the organs, muscles, and limbs. They also carry sensations, such as pain from different parts of the body to the brain (National Library of Medicine, 2001).

“Cars have four wheels; chairs have four legs. And fellow mammals from mice to monkeys walk on four feet. Four points make balance easy.... It takes [a] delicately balanced interworking of bones, muscles, ligaments, tendons and nerves to balance and bear the weight of your body and the loads you carry (Mayo Clinic, 1997).”

A Balancing Act

“Cars have four wheels; chairs have four legs. And fellow mammals from mice to monkeys walk on four feet. Four points make balance easy.

But humans stand and move about on two legs - a remarkable piece of engineering. Muscles contract and relax to enable you to stand and move. Tendons fasten muscles to the bones in your back (vertebrae). Ligaments - tough fibrous bands - hold your vertebrae together. Your backbone also protects the spinal cord, the main pathway for the central nervous system.

It takes this delicately balanced interworking of bones, muscles, ligaments, tendons and nerves to balance and bear the weight of your body and the loads you carry....

Even minor damage to any one component of your back's structure can upset the delicate balance and make movement painful (Mayo Clinic, 1997).”



Causes of Back Pain

The majority of acute back pain problems are due to minor strains, sprains, and overuse, and can be exacerbated by emotional stress, which slows the rate of recovery

(University of Washington Department of Orthopaedics and Sports Medicine, 2002).

Anything that puts pressure on the back muscles or nerves can cause pain; and any illness or damage to the spine can also cause pain. Though back pain is one of the most common health problems in America, its cause is often unidentified. The majority of acute back pain problems, however, are most likely due to minor strains, sprains, spasms and overuse (National Library of Medicine, 2001; University of Washington Department of Orthopaedics and Sports Medicine, 2002), and can be exacerbated by emotional stress, which slows the rate of recovery (University of Washington Department of Orthopaedics and Sports Medicine, 2002).

Muscle Spasms and Strains

Muscle strains and spasms are thought to be the most common causes of back pain (Cluett, 2001; National Library of Medicine, 2001). An awkward movement of the back (even when sneezing, coughing, bending to tie a shoe, or incorrectly lifting a heavy object) can cause a muscle spasm. A muscle spasm causes the back to *lock up* and can cause severe pain. Muscle spasms tend to get better over time; severe cases can be treated with physical therapy and medication (National Library of Medicine, 2001).

Strained muscles, tendons, or ligaments or inflamed joints may cause pain along the spine (Mayo Clinic, 2000). If the back is strained, soreness or stiffness may develop over time or immediate pain may be felt (Mayo Clinic, 1997).



Herniated Disc

A herniated disc, also called a ruptured intervertebral disc or slipped disc, is among the most painful back problems, but is also one of the easiest to identify. Though vertebral discs don't actually *slip*, normal wear and tear or strain can cause a disc to bulge or rupture (herniate) into the spinal canal, pressing on the nerve roots. A herniated disc can cause back pain and muscle spasms, but more often causes sciatic pain - severe pain spreading down one leg and often into the foot (Mayo Clinic, 1997; University of Washington Department of Orthopaedics and Sports Medicine, 2002). A herniated disc can usually be detected with physical examination alone, but sometimes may require the use of computerized axial tomography (CAT) scan or magnetic resonance imaging (MRI) to confirm diagnosis (see What to Expect During Diagnosis section for more information) (University of Washington Department of Orthopaedics and Sports Medicine, 2002).

Sciatica

Compression or inflammation of nerves in the lower back or buttocks can cause sciatica, named after the sciatic nerve that extends down the leg from the hip to the heel. About 10 in 100 people with back pain will experience sciatica. Sciatica may cause pain radiating from the back down through the buttock to the lower leg. Tingling, numbness, or muscle weakness may also accompany nerve compression. Any activity that exerts pain on the spine can worsen sciatica, including sneezing and coughing, but pain usually resolves on its own. Severe nerve compression, however, can cause progressive muscle weakness (Mayo Clinic, 1997).

Osteoarthritis

Overloading, injury, and aging can slowly deteriorate cartilage, the soft, elastic material that covers the surface of vertebral joints and other joints in the body (Mayo Clinic, 1997; University of Washington Department of Orthopaedics and Sports Medicine, 2002). Discs between vertebrae may become worn,

narrowing the space between vertebrae, leading to a gradual stiffening of the back and loss of flexibility. Joints may also rub together, compress, and become irregular. When the cartilage becomes worn, pain may result. This wear and pain is known as osteoarthritis.

Lower back pain may become worse if osteoarthritis affects the hips or knees. Osteoarthritis can also directly affect the spine, causing muscles, tendons, or ligaments to become strained, leading to back and/or neck pain (Mayo Clinic, 1997; University of Washington Department of Orthopaedics and Sports Medicine, 2002).

Osteoporosis (compression fractures)

Osteoporosis is a disease that causes bones to become more porous due to calcium loss, which gradually makes them weaker and more brittle. Healthy bone is dense and strong, able to withstand a great deal of pressure. With osteoporosis, bones become fragile and can break more easily. In particular, osteoporosis contributes to compression fractures, or spinal fractures where the vertebrae become flattened (University of Washington Department of Orthopaedics and Sports Medicine, 2002).

One in three women older than 50 is affected by compression fractures as a result of osteoporosis. Progressive compression of the vertebrae often leads to gradual loss of height, and sometimes structural changes to the spinal column that cause one to have a stooped posture or a *dowager's hump* (Mayo Clinic, 1997).

Injuries and Accidents

Many back injuries are caused by an unexpected twist or sudden motion (University of Washington Department of Orthopaedics and Sports Medicine, 2002), most often resulting in muscle strain and spasms. Muscle spasms are a common response to injury, and are

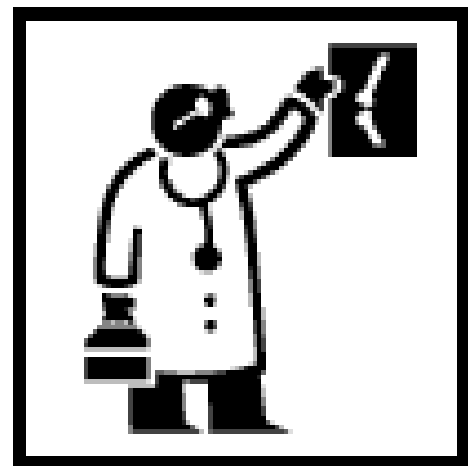
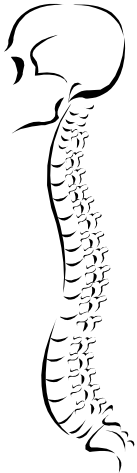
designed to immobilize the painful area and prevent further damage (Mayo Clinic, 2000). With injury or accident, severe muscle spasms usually last 48-72 hours, followed by days or weeks of less severe pain, and 2-4 weeks for complete recovery from mild back injury. For more severe injury, involving strained ligaments, it could take 6-12 weeks for recovery. Severe back injury involving a fall or other accident may require hospitalization and a longer recovery period (University of Washington Department of Orthopaedics and Sports Medicine, 2002).

Fibromyalgia

Fibromyalgia is a syndrome characterized by achy pain, tenderness, and stiffness in muscles and areas where tendons insert into bones, especially in the upper back and neck. Pain often worsens with inactivity and can be improved with movement (Mayo Clinic, 1997; University of Washington Department of Orthopaedics and Sports Medicine, 2002).

Ankylosing Spondylitis

Ankylosing Spondylitis is a form of arthritis initially causing pain and stiffness in the joints of the spine, followed by a fusing together (growing together) of these joints, limiting back movement (University of Washington Department of Orthopaedics and Sports Medicine, 2002). This is an uncommon type of back problem that typically affects young men (Mayo Clinic, 1997).



Spinal Stenosis

Spinal stenosis involves a narrowing of the spinal canal, which can develop because of a congenital defect or from osteoarthritis. As discs are worn and vertebrae and soft tissue are pushed into the spinal canal, nerves are compressed (Mayo Clinic, 1997). This nerve compression causes back pain, and can also cause numbness, pain, and weakness in the legs. The most common sign of spinal stenosis is pain that worsens when walking and subsides when sitting down (University of Washington Department of Orthopaedics and Sports Medicine, 2002).

Rheumatoid disorders

Rheumatic disorders that create acute and chronic inflammation, muscle soreness and stiffness, and pain in the joints and associated structures (Tabers, 1997), such as rheumatoid arthritis and Polymyalgia Rheumatica (PMR) commonly cause back and neck pain problems.

Paget's Disease

Paget's disease is a disorder in which calcium spreads unevenly in the bones. The bones most commonly affected are those in the lower back, pelvis, tailbone, skull, and long bones of the legs. Though back pain may be a symptom, Paget's disease often has no obvious symptoms, and is detected during an x-ray or bone scan done for other reasons (University of Washington Department of Orthopaedics and Sports Medicine, 2002).

Kyphosis (curvature of the spine)

Kyphosis or curvature of the spine may develop for several reasons:

- Slouching and poor posture in early life can stretch spinal ligaments, increasing the natural curvature of the spine. This usually develops in adolescence, and can be improved with exercises and improved posture - children often *outgrow* the problem.



- In later life, osteoporosis may cause the development of a rounded (curved) spine often called stooped or a dowager's hump (American Academy of Orthopaedic Surgeons, 2000a).

Scoliosis

Scoliosis is similar in nature to kyphosis, but results in a c-shaped or s-shaped spine, rather than a rounded or curved spine. Scoliosis also occurs commonly in children, but the cause is often unknown. Most adult scoliosis develops in childhood.

Early detection is very important for treatment of scoliosis because it can be degenerative, and can lead to severe back pain, deformity, and difficulty in breathing. Most spine curves in children will remain small; however, early detection allows for orthopaedic intervention should the curve progress (American Academy of Orthopaedic Surgeons, 2000b). **Note:** Texas requires scoliosis screening in grades 6 and 9 in public and private schools for early detection (Texas Department of Health, 2002).

Referred pain

Occasionally, the brain mistakes pain signals from other organs as pain originating from the back; this is called *referred pain*. Problems with the kidneys (e.g. kidney infection or kidney stones), uterus and other reproductive organs in women, prostate in men, diseases of the intestines or pancreas, or cancers in other parts of the body are common sources of referred pain (Mayo Clinic, 1997; University of Washington Department of Orthopaedics and Sports Medicine, 2002).

Overweight

Excess weight adds stress to the spine. Additionally, increased fat around the abdomen may throw off balance and increase risk of an injury or accident (Pace, 2000; Mayo Clinic, 1997).

Pregnancy

Back pain is among the most common discomforts during pregnancy. Back pain during pregnancy can be due to a number of factors, usually resulting in strain on the back muscles:

- In mid-pregnancy the uterus becomes heavier, changing the woman's center of gravity, resulting in postural and movement changes. Most women begin to lean backwards in later pregnancy, causing the back muscles to work harder.
- Weakness of abdominal muscles can also contribute to back pain during pregnancy. The abdominal muscles usually support the spine, playing an important role in keeping the back in good health.
- Additionally, the hormones of pregnancy cause the muscles to relax and become loose, which may cause some back pain and can contribute to making one more injury prone during physical activity (American College of Obstetricians and Gynecologists, 1997).

Bad Posture

Bad posture in any circumstance - while standing or sitting for long periods, or while lifting, exercising, or doing any other type of activity - can contribute to back pain and problems.

Lifestyle

Lifestyle factors, such as stress and smoking are thought to play a part in some cases of back pain. The mechanisms for this association, however, have not yet been proven (Mayo Clinic, 1997).

"Regular exercise is the most potent weapon against back problems (Mayo Clinic, 1997)."

Prevention, diagnosis, treatment

Prevention, diagnosis, treatment - chronologically, this is the best way to treat back pain:

- 1 Try to prevent it.
- 2 Know when to see a doctor for diagnosis.
- 3 Understand and implement treatment options.

Preventing back pain

The first strategy for dealing with back pain is to try to prevent it. There are three primary areas one can focus on to keep a healthy back:

- 1 Exercise
- 2 Posture
- 3 Diet.

Exercise

"Regular exercise is the most potent weapon against back problems (Mayo Clinic, 1997)." Exercise has the potential to strengthen the back, increase aerobic capacity, improve overall fitness, reduce stress, and help shed excess pounds that put more pressure on the back (Mayo Clinic, 1997). By increasing strength and flexibility of back muscles, weight is better distributed, and less force is placed on the spine (Cluett, 2001).

Strengthening of back muscles is also one of the most important steps in treating most causes of back pain (Cluett, 2001).



Maintaining good posture helps to keep the back healthy.

The following are a few examples of back exercises:

Partial sit-up

Lie down on your back with bent knees. Slowly raise head and shoulders off the floor, and hold for 3 minutes.

Knee-to-chest raise

Lie down on your back. Slowly pull knees to chest, relaxing neck and back. Hold for 10 seconds; repeat 10 times.

Press-up

Lie down on your stomach. Place hands near shoulders and keep pelvis on floor. Press up painlessly. Hold for 10 seconds; repeat 10 times (National Library of Medicine, 2001).

It is recommended that these exercises be done 2-3 times a week (National Library of Medicine, 2001). Be sure to always stretch before doing any type of exercise (Pace, 2000), and always consult your doctor before beginning any new exercise activity.

For more exercise ideas, see the following websites:

- About back pain (UW) at:
<http://www.orthop.washington.edu/arthritis/types/backpain>.
- Back pain exercises (AAOS) at:
http://orthoinfo.aaos.org/fact/thr_report.cfm?thread_ID=17&topcategory=Spine.
- Low back exercises (AAOS) at:
http://orthoinfo.aaos.org/booklet/thr_report.cfm?thread_id=18&topcategory=spine.

Also, check your *Healthwise Handbook* for pictures of exercises for the back.



Posture

Maintaining good posture can keep the back healthy. Postural techniques can also help relieve back pain. Here are some tips to follow for good posture:



When sitting

- Sit in a firm chair with armrests.
- Keep the back straight and shoulders relaxed.
- Keep the stomach pulled in, and maintain the proper curve in the back - this can be done by tightening the stomach and buttocks.
- If it is more comfortable, place the back of the chair at a 15-20 degree angle. A small cushion behind the lower back to maintain the natural curve of the back can also be helpful.
- Keep the knees slightly higher than the hips - use a footstool or book under the feet if necessary.
- Keep your feet flat on the floor, stool, or book.
- Do not sit for long periods of time. Stand up occasionally to stretch tight muscles and give them a chance to relax.

When standing

- Stand with weight equal on both feet.
- Avoid locking your knees.
- Place one foot on a footstool to ease tension in your back.
- Wear flat or low-heeled shoes if you must stand for long periods of time.
- Keep your back straight by tightening your stomach muscles and buttocks.

When sleeping

- Use a firm mattress.
- Lie on your side with your knees bent.
- Place a pillow between your knees if it is more comfortable.
- If you sleep on your back, consult your doctor to find out if placing a pillow under your knees would help or worsen lower back pain for you.

(Adapted from University of Washington Department of Orthopaedics and Sports Medicine, 2002).

Body Mechanics When in Motion

Keeping good posture in motion requires using good body mechanics and proper footwear. Here are some tips to help:

Lifting

- Always lift with your legs.
- Bend down with your knees, keeping the back straight; avoid arching the back.
- Hold the object close to your body.
- Straighten your legs to lift the object.
- Always get help with an object that is too heavy.
- Avoid twisting your back at all times, but particularly when carrying a load; move your feet rather than twisting your torso.



Footwear

Because footwear can affect your posture...

- Wear low or flat heeled shoes; high heels may put more stress on the lower back by changing your posture.
- Choose cushion-soled shoes to provide *shock absorbcency* for your spine.



(Adapted from University of Washington Department of Orthopaedics and Sports Medicine, 2002)



Diet

At first glance, diet may seem a strange factor in maintaining back health; however, maintaining a healthy weight is very important in maintaining back health. Excess weight adds pressure to the back and can throw off balance, often resulting in injury. The best way to lose or maintain weight is to:

- eat a well-balanced diet, and
- exercise regularly.

Remember to avoid fad diets and quick weight loss programs (University of Washington Department of Orthopaedics and Sports Medicine, 2002). If a weight loss program sounds too good to be true, it usually is. The healthiest way to lose weight is at a gradual rate (about 1-2 lbs weight loss per month). For more information on weight loss, consult your Texas Cooperative Extension Nutrition Specialist, or a physician, dietician, or nutritionist in your area.

When Back Pain Strikes

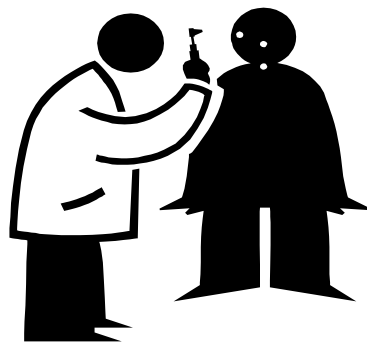
When back pain strikes the first line of defense is to decide whether it can be treated at home or needs a doctor's care. Here are some guidelines for when to consult a doctor, what to expect during diagnosis, and when/how to treat back pain at home.



When to Consult a Doctor

It is important to consult a doctor if you experience any of the following:

- Severe pain that makes it difficult to move.
- Fever and/or vomiting with back pain.
- Loss of bowel or bladder control. Constipation and frequent or urgent urination are common in some people with low back pain, but any new problems with bowel or bladder should be discussed with a doctor.
- New numbness in the genital or rectal area.
- Pain, numbness, or tingling in another part of the body.
- Leg weakness that is not solely due to pain. Significant leg weakness should be evaluated, especially if you are unable to bend your foot upward, get up out of a chair, or climb stairs.
- Weakness in another part of the body.
- New or increased back pain with unexplained fever, painful urination, or other signs of urinary tract infection (e.g., burning with urination, itching or pain in urethra, lower abdominal discomfort, urge to urinate without passing much urine).
- Dramatic increase in chronic back pain, especially when unrelated to any change in physical activity.
- A history of cancer or HIV infection with the development of new or increased back pain.
- New back pain that does not improve after one week of home treatment (Pace, 2000; Kemper, 1997).



What to Expect During Diagnosis

It can be difficult to diagnose back pain, since there can be so many possible causes. For this reason, your family doctor or general practitioner may suggest you see an orthopaedist, rheumatologist, neurosurgeon, neurologist, physical therapist, chiropractor or other medical specialist for diagnosis (Kemper, 1997; University of Washington Department of Orthopaedics and Sports Medicine, 2002).

Regardless of the type of doctor you see, there are some things you can expect in common from any type of doctor.

Medical History

Most doctors will ask questions about your medical history as well as past and current symptoms. These questions may include the following:

- What are your symptoms?
- Where is the pain?
- Where is the pain most severe?
- When did the pain begin, and how long have you had it?
- Did something specific cause your back pain (e.g. accident or injury)?
- What home treatments have you tried?
- Were you under any additional stress when the pain began?
- What type of work do you do?
- In what types of recreational activities have you participated?

Think through the answers to these questions prior to any doctor's visit if possible. You may also want to prepare a list of your own questions. As you think of questions you'd like to ask, jot them down and take them to your appointment.

After the discussion of your medical history, the doctor will most likely perform a physical examination, including some or all of the following:

- observing your muscles and joints,
- asking you to sit or lie down,
- asking you to move your back in different positions,
- observing and feeling the areas of most pain,
- checking to see if other areas of the body are tender or in pain (e.g., kidneys, intestines, or other organs).

Diagnostic Testing

Your doctor may need to run some diagnostic tests if more information is needed to help diagnose the problem. These tests may include one or several of the following:

X-ray - X-ray pictures may help determine if pain is due to injury to back bones, tumor, deformity in spine, or ankylosing spondylitis.

CT or CAT (computerized axial tomography) Scan - A CT scan takes an x-ray that is turned into a 3-dimensional image.

MRI (magnetic resonance imaging) - MRI provides pictures of soft tissues such as muscles, cartilage, ligaments, tendons, and blood vessels, in addition to bone structure.

Myelogram - A myelogram uses a dye injected into the spinal column to detect spinal stenosis, spinal tumors, or other neurological problems. This is often used by neurologists prior to back surgery.

Bone Scan - In a bone scan, a small amount of radioactive liquid is injected into a vein. A radioactive machine scans the area of concern creating a picture to look for damage or tumors in the bones themselves. (**Note:** Back pain is rarely related to diseases of the bones.)

Electrodiagnostic Studies - There are two types of electrodiagnostic tests; one that uses electrical stimulation to measure the speed of nerve impulses as related to possible nerve compression; the other is a needle test (electromyogram [EMG]) to study the effect of nerve compression on the muscle.

Blood Tests - Blood tests may be ordered, in which a laboratory technician will draw a small amount of blood from your arm. Blood tests may be used to look at a number of things, including a chemical profile, hemoglobin and hematocrit, white blood cell count, etc., which could help the doctor to better determine the cause of your back pain.

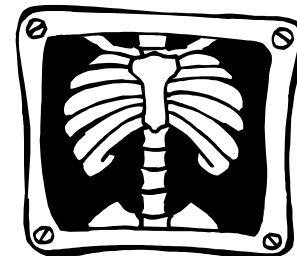
(Adapted from University of Washington Department of Orthopaedics and Sports Medicine, 2002.)

Doctor recommendations

In addition to diagnosing back pain, your doctor may recommend ~

- an individualized exercise and home care plan or modified work plan if needed
- prescribed muscle relaxants antiinflammatory drugs, or pain relievers
- physical therapy
- back surgery (Kemper, 1997, pp 99).

Note: Be sure to always inquire what medications are for, how they might affect you, and for how long you will need to use them (University of Washington Department of Orthopaedics and Sports Medicine, 2002). If surgery is recommended, consider all the factors, including second opinions. The most common back surgeries are to remove herniated discs or fuse the lumbar spine. Be sure to discuss the long-term outcome of any surgery with your doctor (Mayo Clinic, 1997).



How to Treat Back Pain at Home

Successful home treatment can be your avenue to more rapid relief.

When back pain develops or injury occurs that does not warrant a doctor's care, successful home treatment can be your avenue to more rapid relief. Here are some steps that can help you treat back pain at home:

Apply cold, then heat. Immediately after back injury, apply ice for 15-20 minutes three to four times a day for the first three days. Place ice in a plastic bag and wrap with a cloth or towel to keep a thin barrier between the ice and your skin. After spasms or acute pain subside, you can apply a heating pad to help loosen tight muscles. Limit heat applications to 20 minutes.

Get in a comfortable position. Do not sit up in bed or on soft couches. Avoid positions that worsen symptoms, such as sitting for long periods of time or in a position that requires your back to be twisted.

Rest only for short periods. Short periods of rest, lying flat on your back with knees bent, can help relieve back pain. Long periods of bed rest, however, are not recommended since it may weaken the muscles and delay recovery. More than three days of bed rest is not recommended and could actually delay healing.

Use over-the-counter pain relievers. Non-prescription pain relievers, such as acetaminophen may help control pain. Nonsteroidal antiinflammatory drugs, such as ibuprofen can also reduce inflammation that affects muscles and joints.

Perform light exercise. Take a short walk (3-5 minutes) on a level surface every three hours. Walk only distances you can manage without pain. Try pelvic tilts (i.e., lie on back with knees bent and slowly tighten stomach pressing the lower back against the floor, hold for 10 seconds and relax) to gently move the spine and stretch the lower back (Pace, 2000; Kemper, 1997; Mayo Clinic, 2000).

If You are Pregnant...

During pregnancy the body goes through many changes; some may cause discomfort - that's normal. Back pain is one of the most common complaints among pregnant women. By following a few tips (see below), and doing exercises to strengthen your muscles, you can ease some of the discomfort.

Tips for easing back pain during pregnancy:

- Consult with your doctor, especially if back pain is accompanied by fever, burning during urination, or vaginal bleeding.
- Exercise for a healthy back. Consult with your doctor, and see the following website for exercises ideas http://medem.com/search/article_display_for_printer.cfm?path=n:&mstr=/ZZZIVT1487C.html&soc=ACOG&srch_typ=NAV_SERCH.
- Wear low-heeled (but not flat) shoes with good arch support.
- Ask for help when lifting heavy objects.
- If your bed is too soft, have someone help you place a board between the mattress and box spring.
- Don't bend over from the waist to pick something or someone up - squat down, bend your knees, keep your back straight, and use your legs to lift.
- Sit in chairs with good back support, or use a pillow behind the lower part of your back.
- Try to sleep on your side with one or two pillows between your legs for support.
- Apply cold, followed by heat (if needed) to the painful area or massage it.

If back pain continues, your doctor may suggest you wear a maternity girdle, special elastic sling, or back brace (American College of Obstetricians and Gynecologist, 1997).



Activity Ideas

Including hands on, visual, fun and meaningful activities in your programming can help participants to better remember and implement the ideas you present. Here are a couple of ideas that may help:

Postural Pitfalls

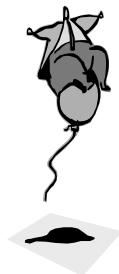
Objective: To understand the importance of and practice good posture.

As participants enter, have large pieces of butcher paper on the floor or taped against the wall. Pair participants and have one participant lie on or stand against the paper while the other draws an outline of the body. Keep in mind with adults, some people may already be experiencing back pain, so be sensitive to individual needs if possible. You may want to just ask for one volunteer and draw his/her outline among adults, while kids will almost always enjoy having their outlines drawn.

Blow up balloons and tape them to the body outline. Tell participants the balloons represent their vital organs (e.g., stomach, liver, heart, etc.).

Place the outline in a chair behind a desk or table if possible. Make sure the chair and desk or table are turned sideways so all can see. Now bend the body outline and balloons over in a slouching position - this will put pressure on the balloons.

Ask participants to tell what is happening (there isn't much room for the body organs, blood can't flow as easily to the body organs, the person probably does not look or feel good, either).



"More than 13,260 injuries related to back packs were treated at hospital emergency rooms, doctor's offices, and clinics in the year 2000 (American Academy of Orthopaedic Surgeons, 2001a)."

Discuss the postural tips when sitting, standing, and sleeping, as well as the body mechanics for lifting from this newsletter.

Explain that strong muscles help to keep the body in correct posture. Practice sitting with feet flat on the floor (or on a book or stool, if needed). Have participants place their hands palms down next to their hips and count to six - then relax. Participants will now be sitting with correct posture. This exercise makes muscles used for correct sitting posture strong. Try some of the other back strengthening exercises in this issue of HealthHints or see the suggested websites.

Be sensitive to participant limitations or needs such as disability, current back pain, or pregnancy. Be prepared with varied ideas so you can adapt with your audience.

(Adapted from Meeks, 1992.)

Back Pack Basics

Objective: To understand how to wear a back pack safely to prevent injury.

Note: This activity would be particularly good for safety camps for kids or at health fairs.

Explain that overloading back packs has recently received a lot of attention in schools among parents and school administrators. "More than 13,260 injuries related to back packs were treated at hospital emergency rooms, doctor's offices, and clinics in the year 2000 (American Academy of Orthopaedic Surgeons, 2001a)."

Purchase or borrow a few backpacks that have the correct components (e.g., hip straps, and padded straps and back) for safety as well as some that don't have these features to use as examples. Then, present the following tips, allowing participants to try the back packs on, tighten them, pack them appropriately (provide a few books of different sizes and weights, or other items that might be carried), etc.

Back pack tips to prevent injury:

- Use a hip strap for heavier weights.
- Use a back pack with padded, wide straps and a padded back.
- Use both shoulder straps, firmly tightened, to hold the back pack two inches above the waist.
- Use correct lifting techniques, bending both knees, keeping the back straight, and lifting with the legs when picking up a heavy back pack.
- Neatly pack the back pack, placing the heaviest items close to your back - try to keep items in place. (Consider features that help keep items organized and in place when purchasing a pack.)
- For kids in school, try to make frequent trips to your locker between classes to replace books.
- Consider purchasing a back pack with wheels.
- If possible borrow or purchase a second set of books for home to avoid carrying heavy loads between home and school each day.
- Engage in exercises that strengthen and condition the back muscles. (Note: Provide participants ideas for exercises from this issue of HealthHints, or suggest they consult a doctor, orthopaedic surgeon, or physical therapist for advice).

(Adapted from American Academy of Orthopaedic Surgeons, 2001a).



Educational Resources

Need more resources about back pain? Try these items from our Educational Resource Library. (Note: These resources are only available to employees of Texas Cooperative Extension. If you are a Texas resident, you can call your County Extension Agent to view one of these videotapes.)

Back Fitness (VHS 1174)

Building your back: 1) posture (tips for posture in various positions), 2) lifting, 3) rest and relaxation, 4) nutrition, 5) flexibility and strength (examples of exercise).

Back Care and Safe Lifting (VHS 1190)

A 5 minute videotape that demonstrates correct lifting procedures aimed at avoiding back injuries in a work setting. A color brochure explains and supports points made in the video.

Exercise Therapy for Osteoporosis and Postural Back Pain (VHS 2518)

Shows exercises used to treat osteoporosis, including weight bearing, breathing patterns, balance, postural alignment and flexibility.

Sit and Be Fit: Osteoporosis (VHS 2551)

This video designed by Mary Ann Wilson, R.N., includes warm-up, circulation, stretching, and strengthening exercises appropriate for the condition of osteoporosis.

Sit and Be Fit: Tone and Stretch IV (VHS 2545); Sentado y Capaz (VHS 2554)

This video designed by Mary Ann Wilson, R.N., shows ideas for improving muscle strength, coordination, circulation, posture, ranges of motion, and mobility through toning and stretching. All exercises done sitting in a chair.

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