Oh, My Aching Back

If you have lower back pain, you are not alone. Nearly everyone at some point has back pain that interferes with work, routine daily activities or recreation. Americans spend at least $50 billion each year on low back pain, the most common cause of job-related disability and a leading contributor to missed work. Back pain is the second most common neurological ailment in the United States - only headache is more common. Fortunately, most occurrences of low back pain go away within a few days. Others take much longer to resolve or lead to more serious conditions.

Acute or short-term low back pain generally lasts from a few days to a few weeks. Most acute back pain is mechanical in nature - the result of trauma to the lower back or a disorder such as arthritis. Pain from trauma may be caused by a sports injury, work around the house or in the garden, or a sudden jolt such as a car accident or other stress on spinal bones and tissues. Symptoms may range from muscle ache to shooting or stabbing pain, limited flexibility and/or range of motion, or an inability to stand straight.

Occasionally, pain felt in one part of the body may "radiate" from a disorder or injury elsewhere in the body. Some acute pain syndromes can become more serious if left untreated.

Chronic back pain is measured by duration - pain that persists for more than three months is considered chronic. It is often progressive and the cause can be difficult to determine.

What Structures Make up the Back?

The back is an intricate structure of bones, muscles and other tissues that form the posterior part of the body's trunk, from the neck to the pelvis. The centerpiece is the spinal column, which not only supports the upper body's weight but houses and protects the spinal cord - the delicate nervous system structure that carries signals that control the body's movements and convey its sensations. Stacked on top of one another are more than 30 bones - the vertebrae - that form the spinal column, also known as the spine. Each of these bones contains a roundish hole that, when stacked in register with all the others, creates a channel that surrounds the spinal cord. The spinal cord descends from the base of the brain and extends in the adult to just below the rib cage. Small nerves ("roots") enter and emerge from the spinal cord through spaces between the vertebrae. Because the bones of the spinal column continue growing long after the spinal cord reaches its full length in early childhood, the nerve roots to the lower back and legs extend many inches down the spinal column before exiting. This large bundle of nerve roots was dubbed by early anatomists as the cauda equina, or horse's tail. The spaces between the vertebrae are maintained by round, spongy pads of cartilage called intervertebral discs that allow for flexibility in the lower back and act much like shock absorbers throughout the spinal column to cushion the bones as the body moves. Bands of tissue known as ligaments and tendons hold the vertebrae in place and attach the muscles to the spinal column.

What Causes Lower Back Pain?

As people age, bone strength and muscle elasticity and tone tend to decrease. The discs begin to lose fluid and flexibility, which decreases their ability to cushion the vertebrae.

Pain can occur when, for example, someone lifts something too heavy or overstretches, causing a sprain, strain or spasm in one of the muscles or ligaments in the back. If the spine becomes overly strained or compressed, a disc may rupture or bulge outward. This rupture may put pressure on one of the more than 50 nerves rooted to the spinal cord that control body movements and transmit signals from the body to the brain. When these nerve roots become compressed or irritated, back pain results.

Low back pain may reflect nerve or muscle irritation or bone lesions. Most low back pain follows injury or trauma to the back, but pain may also be caused by degenerative conditions such as arthritis or disc disease, osteoporosis or other bone diseases, viral infections, irritation to joints and discs, or congenital abnormalities in the spine. Obesity, smoking, weight gain during pregnancy, stress, poor physical condition, posture inappropriate for the activity being performed and poor sleeping position also may contribute to low back pain. Additionally, scar tissue created when the injured back heals itself does not have the strength or flexibility of normal tissue. Buildup of scar tissue from repeated injuries eventually weakens the back and can lead to more serious injury.

Occasionally, low back pain may indicate a more serious medical problem. Pain accompanied by fever or loss of bowel or bladder control, pain when coughing, and progressive weakness in the legs may indicate a pinched nerve or other serious condition. People with diabetes may have severe back pain or pain radiating down the leg related to neuropathy. People with these symptoms should contact a doctor.

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immediately to help prevent permanent
damage.

Can Back Pain be Prevented?

Recurring back pain resulting from
improper body mechanics or other non-
traumatic causes is often preventable. A
combination of exercises that don't jolt or
strain the back, maintaining correct post-
ure, and lifting objects properly can help
prevent injuries.

Many work-related injuries are caused
or aggravated by stressors such as heavy
lifting, contact stress (repeated or constant
contact between soft body tissue and a
hard or sharp object, such as resting a
wrist against the edge of a hard desk or
repeated tasks using a hammering motion),
vibration, repetitive motion and
awkward posture. Applying ergonomic
principles - designing furniture and tools
to protect the body from injury - at home
and in the workplace can greatly reduce
the risk of back injury and help maintain
a healthy back. More companies and home-
builders are promoting ergonomically
designed tools, products, workstations
and living space to reduce the risk of
musculoskeletal injury and pain.

The use of wide elastic belts that can be
tightened to "pull in" lumbar and abdomi-
nal muscles to prevent low back pain
remains controversial. A landmark study
of the use of lumbar support or abdomi-
nal support belts worn by persons who lift or
move merchandise found no evidence that
the belts reduce back injury or back pain.

The two-year study, reported by the
National Institute for Occupational Safety
and Health (NIOSH) in December 2000,
found no statistically significant difference
in either the incidence of workers' com-
ensation claims for job-related back
injuries or the incidence of self-reported
pain among workers who reported they
wore back belts daily compared to those
workers who reported never using back
belts or reported using them only once or
twice a month.

Although there have been anecdotal
case reports of injury reduction among
workers using back belts, many compa-
nies that have back belt programs also
have training and ergonomic awareness
programs. The reported injury reduction
may be related to a combination of these
or other factors.

Quick Tips to a Healthier Back

Following any period of prolonged
inactivity, begin a program of regular low-
impact exercises. Speed walking, swim-
moving or stationary bike riding 30 minutes
da day can increase muscle strength and
flexibility. Yoga can also help stretch and
strengthen muscles and improve posture.
Ask your physician or orthopedist for a
list of low-impact exercises appropriate
for your age and designed to strengthen
lower back and abdominal muscles.

+ *Always stretch* before exercise or
other strenuous physical activity.

+ *Don't slouch* when standing or sit-
ting. When standing, keep your weight
balanced on your feet. Your back supports
weight most easily when curvature is
reduced.

+ *At home or work, make sure your
work surface is at a comfortable height
for you.*

+ *Sit in a chair with good lumbar sup-
port and proper position and height for
the task. Keep your shoulders back.
Switch sitting positions often and periodi-
cally walk around the office or gently
stretch muscles to relieve tension. A pil-
low or rolled-up towel placed behind the
small of your back can provide some lum-
bar support. If you must sit for a long
period of time, rest your feet on a low
stool or a stack of books.

+ *Wear comfortable, low-heeled
shoes.*

+ *Sleep on your side* to reduce any
curve in your spine. Always sleep on a
firm surface.

+ *Ask for help when transferring an
ill or injured family member from a
reclining to a sitting position or when
moving the patient from a chair to a bed.

+ *Don't try to lift objects too heavy for
you.* Lift with your knees, pull in your
stomach muscles, and keep your head
down and in line with your straight back.
Keep the object close to your body. Do not
twist when lifting.

+ *Maintain proper nutrition and diet
to reduce and prevent excessive weight,
especially weight around the waistline
that taxes lower back muscles. A diet with
sufficient daily intake of calcium, phos-
phorus and vitamin D helps to promote
new bone growth.

+ *If you smoke, quit.* Smoking reduces
blood flow to the lower spine and causes
the spinal discs to degenerate.

(Editor's Note: This article was prepared
by the Office of Communications and Public
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Modifying Truckster
Tailgate Simplifies
Depositing Gravel
At Dacotah Ridge

Over time heavy rain events had
taken their toll on the bunkers at
Dacotah Ridge. The resulting con-
tamination from the sub grade with
fines and silt reached a point that the

water would not pass through to the
tile very readily, leaving us with
water hazards. Have you heard that
story before? You've probably been
there, done that.

In late fall we went in and
removed the sand a couple feet on
each side of the trench then removed
the pea gravel and the tile. After the
tile was cleaned it was replaced
along with the gravel. The staff dis-
cussed and came up with an idea for
depositing gravel in the trenches. The
truckster, with the modified tail-
gate, would simply drive along and
fill in the trench. The tailgate is a 2 x
12 with a 4-inch hole. The flow of
gravel is easily monitored by the
angle of the dump bed and the piv-
ning gate located on the outside of
the tailgate. This simple modifica-
tion saved a lot of backs and labor
hours. It worked slick. Give it a try if,
I mean when you do your next
drainage project.

-- Mike Nelson
Dacotah Ridge Golf Club.

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