

BACK OWNER'S MANUAL

A Guide to the Care of the Low Back

There is no simple answer to back pain, but a healthy, pain-free back is almost always up to you. Only you can improve your posture and learn ways to prevent back strain in your daily life. And only you (with your healthcare provider's advice) can follow a daily exercise program to build strong supporting abdominal leg and back muscles. You'll need to keep the muscles surrounding your spine strong and flexible. This will help your back's three natural curves stay in alignment.

Since ancient times, people have suffered from low back pain. This is because the low back bears most of the body's weight. The low back also carries the stress of daily living, poor posture, lack of regular exercise, overeating and poor body mechanics.

Most low back discomfort is not serious. Rather, it reflects only minor injury, too much exertion or normal aging. Sadly, when our backs have had enough, they cannot take a break. Their work goes on, even when they hurt. We often ignore the warning signs of acute back pain (short-term pain lasting hours or days) and do not give our backs proper care. This can result in chronic back pain (long-term pain lasting months or years).

ANATOMY OF THE HEALTHY BACK

A healthy back is strong and flexible. It supports your upper body and protects your spinal cord. Attached to your backbone (spine) are muscles and ligaments that help the body move. The back has three natural curves: the neck (cervical) curve, the upper back (thoracic) curve and the lower back (lumbar) curve. Each curve is made up of bones (vertebrae) and pads of soft tissue (disks). The lumbar curve has five vertebrae (L1 through L5). It is often where people have back pain. To be healthy, your back's three curves should be aligned in a balanced position. To do this, they need to be supported by strong muscles.

COMMON DISK PROBLEMS

The most common back problems occur when disks tear, bulge, rupture or wear out (degenerate). Each of these makes it harder for disks to cushion the vertebrae and absorb shock. As a result, the area around the vertebrae can become inflamed, and spinal nerves can become irritated. The resulting pain often makes back muscles tighten (spasm) to protect the spine. This adds to the pain you feel.

Torn Annulus

The annulus is the disk's tough outer ring. A sudden movement may cause a tiny tear in an annulus. Nearby ligaments may also stretch. Because the annulus and ligaments contain nerve endings, a torn annulus can cause back pain.

Bulging Disk

As a disk wears out, its spongy center (nucleus) can put pressure on the annulus. This can cause back pain and may force the disk to bulge (herniated). The bulging disk can press on spinal nerves and cause back and leg pain. In severe cases, spinal injections or surgery may be used to treat a bulging disk.

Ruptured Disk

A ruptured disk (sometimes called a slipped disk) is one whose nucleus has pushed out through the annulus. The nucleus can then press on or pinch spinal nerves. If the resulting pain radiates down the back of the buttock, thigh and leg, it is called sciatica. If pressure continues on the spinal nerves, nerve damage can occur. This can result in numbness or muscle weakness in the leg. It can also cause severe pain and disability. In severe cases, spinal injections or surgery may be advised. During surgery, the surgeon often removes whatever is irritating the spinal nerves. This could be a part of the bony vertebra (laminotomy/laminectomy) or part of a damaged disk (discectomy). Your surgeon may join (fuse) adjacent vertebrae to make the spine more stable.

Osteoarthritis

In rare cases, a young person may have osteoarthritis due to an injury, but in most cases, osteoarthritis is just part of the aging process. As disks wear out over time, growths of bone (bone spurs) form on the vertebrae. These spurs may irritate spinal nerves and inflame the area. This often causes back pain. Good posture, exercise and proper use of your back may slow the development of osteoarthritis.

SOME OTHER CAUSES OF BACK PAIN

Something as simple as constant slouching may lead to back pain or disk problems. So may moving in the wrong way. Even emotional stress can throw your back muscles into a painful spasm. However, you can help control these causes of back pain, and when you do, you improve your chances of having a healthy back.

Poor Posture, Excess Weight and Lack of Exercise

These can be your back's worst enemies. Poor posture puts unwanted pressure on disks and vertebrae, which can strain the back. It also makes you more likely to use your back in the wrong way and injure it. Excess weight adds to the pressure on your back, and too little exercise weakens the muscles that support the spine.

Back Strains or Sprains

Strains or sprains occur when the back's muscles or ligaments are stretched or torn. Back sprains most often result from moving the wrong way when doing things such as bending, lifting, standing or sitting. A back-wrenching car accident or sports injury can also cause back strain or sprain. Back sprains can heal completely if they are properly treated. Maintaining a good posture and moving correctly can prevent most back sprains.

Tension and Emotional Stress

The tension and stress of daily living play a key role in back pain. Money worries, family pressures and fatigue can cause back spasms. Reducing the stresses in your life can often lessen your back pain. It also makes you better able to cope with the pain you have.

Miscellaneous Causes

Many conditions affect the spine or nearby areas and may cause back pain. Some, like birth defects and curvature of the spine (scoliosis), sometimes cause back pain. Others, like prostate trouble or gynecological problems, are more common causes of back pain. Another source of back pain is a weakness or break in part of the vertebra (spondylolysis). This can cause a vertebra to shift forward over the vertebra below it (spondylolisthesis), which can also lead to back pain.

YOUR MEDICAL EVALUATION

Your healthcare provider can best help you with your back problem if its cause is found and treated early. To find the cause, a complete medical history and physical exam are done. Sometimes, lab and x-ray studies are also needed. Your treatment plan will most likely be aimed at relieving pain and increasing your activity.

Medical History

To find clues to your back problem, you may be asked questions. They may include:

- How and when did your pain first start? Were you injured?
- Where is your pain? How often does it bother you?
- Does it stay in one place, or does it radiate down your thigh and leg?
- What makes it better? What makes it worse?
- What kind of work do you do?
- How does your back pain affect your life?
- What are your daily routines and activities?
- What is your state of mind?

Physical Exam

Your healthcare provider can learn a lot by looking at your back in various positions. Observing your posture, muscle tone and range of motion also helps. Areas of local tenderness and muscle spasms are noted. Your healthcare provider also checks for muscle weakness and sensory changes in your legs or feet. Depending on your symptoms, a more thorough physical exam may be done.

Diagnostic Tests

Any of the following tests may be ordered to help your healthcare provider learn more about your back:

- X-rays
- MRI (magnetic resonance imaging)
- CT (computerized tomography) scan
- Diskogram (an x-ray of the disks using a special dye)
- Myelogram (an x-ray of nerves using a special dye)
- EMG (electromyography—an electronic nerve and muscle study)

USE GOOD BODY MECHANICS—AVOID BACK STRAIN!!

Do's—To Maintain the Three Natural Back Curves

Lifting

- Bend your knees, not your back!
- Always be sure of your footing.
- Lift with your legs.
- Hold objects close to your body.
- Lift objects only chest-high.
- Get help with heavy loads.

Standing/Walking

- Stand with one foot up; change positions often.
- Use good posture: head high, chin tucked in, toes straight ahead.
- Wear comfortable, low-heeled shoes.

Driving

- Adjust your car seat so that knees are at or just below hip level.
- Sit upright and drive with both hands on the wheel.
- Shift weight often.
- Keep back pockets empty.

Sitting

- Sit with both feet flat on the floor.
- Keep knees at or slightly below the level of your hips.
- Sit firmly against the chair back.
- Protect your lower back with a lumbar support or rolled-up towel.

Sleeping

- Get a good night's sleep on a mattress that supports your back's natural curves.
- Sleep on your side with a pillow between bent knees or on your back with a pillow under the knees.

Don'ts—To Avoid a Swayed or Rounded Back

Lifting

- Don't bend over with legs straight.
- Don't twist while lifting.
- Don't lift above shoulder level.

These movements may cause injury.

Standing/Walking

- Don't stand too long in one position.
- Don't bend forward with straight legs.
- Don't walk with poor posture.
- Avoid wearing high-heeled or platform shoes.

Driving

- Don't drive sitting far back from the wheel. Stretching for the pedals and wheel lessens your low-back curve and strains your back.
- Don't drive with your knees higher than the level of your hips.

Sitting

- Don't slump.
- Don't sit in a chair that's too high or too far from your work.
- Avoid leaning forward.
- Avoid arching or rounding your back.

Sleeping

- Don't sleep or lounge on soft, sagging, non-supporting mattresses or cushions. This can cause back strain, especially when you sleep on your stomach.

BACK HELPERS

Learn and practice good posture and body mechanics. They can prevent backaches. Maintaining your back's three natural curves is key to good back care.

Check your posture by standing with your back against a wall. There should only be a small space between your back and the wall. A lazy, slouched posture or "military" position throws off your back's natural curves.

A rounded or swayed back can cause backaches.

Tips to Improve Your Posture

- Breathe deeply.
- Relax your shoulders, hips and knees.
- Think of the ears, shoulders, hips and ankles as a series of dots. Now, adjust your body to connect the dots in a straight line.
- Tuck your buttocks in a bit if your back is swayed.

Rest Positions

These rest positions can relieve your back by moving the pelvis and straightening the spine.

1. (At work or home) Check with your healthcare provider before trying this. Stand in a comfortable position. Place hands on the low back and bend slightly backward. Hold for 15 seconds. Return to an upright position. Repeat 2-3 times.
2. (At work or home) Lean forward in your chair. Lower your head to your knees 1 minute only.
3. (At home) Lie on your back, flat on the floor and place your legs on a chair. A pillow under your legs will make you more comfortable. For the best relief, hold this position for 15 minutes.

BACK SUPPORTERS

Besides maintaining good posture, the greatest support you can give your back is building strong and flexible supporting muscles. You can do this through a good exercise program. Some people think that because their arms and legs are strong, their backs are strong, too. Not true!

[PHOTO]

The role of back muscles is like that of guide wires supporting a growing tree. If the wires are strong and taut, the tree will grow straight and be flexible. But if the wires are loose, the tree may become crooked. Or, in the case of your spine, you may have unbalanced curves.

It's a good idea to have a medical evaluation before starting any exercise program for your back. That way, the correct exercises for your back problem may be selected. You may be advised to take some time to recover before starting your program. And your healthcare provider may refer you to a physical therapist or to a back class.

A Physical Therapist May Help

Physical therapists are trained to evaluate and treat low back problems. They may treat you in a hospital or in an outpatient clinic.

First, the therapist evaluates your problem. He or she then plans a program to treat it. The therapist can teach you special exercises and techniques and suggest positions to begin treating yourself. A therapist may perform gentle movement of the vertebrae (called mobilization). Other treatment may also include using machines that produce heat, cold or electrical stimulation.

EXERCISE PROGRAM

Here are a few simple, key tips for a healthy back exercise program:

- **If you are recovering from a back problem, do only the exercises your healthcare provider or physical therapist suggests. This can help you avoid further injury.**
- Doing the exercises in this book daily can help keep a healthy back strong and fit. So will regular activities such as walking or swimming.
- Exercise **each day**. Occasional, excessive exercising can harm your back. Reserve 30 minutes each day, preferably 15 minutes in the morning and 15 minutes at night.
- Don't overdo it at first. Stop any activity that causes repeated back or leg discomfort. Consult your healthcare provider or physical therapist if you experience pain while exercising.
- Always warm up your muscles for 2-3 minutes while standing before starting to exercise. Try marching in place while moving your arms.

Starting position for some of the exercises on these pages is lying flat on back.

You'll most likely be advised to ease into your exercise program. If you feel your program needs changes, check with your healthcare provider or physical therapist.

Rx Knee-to-Chest Raise

To help limber up a stiff back and hips:

1. Get into starting position.
2. Raise right knee to chest.
3. Use arms to hold knee as you count to 5.
4. Release.
5. Repeat 5 times.
6. Repeat steps 1-4 with left leg.

Note: Do not lift your legs with your arms or hands.

Rx Pelvic Tilt

To strengthen front and back muscles and to increase mobility:

1. Get into starting position but put hands—palms up—under your head.
2. Tighten abdomen and buttocks.
3. Tilt hips slightly toward the ceiling until your lower back flattens against the floor.
4. Hold as you count to 5.
5. Release.
6. Repeat 5 times.

Rx Half Sit-ups

To strengthen the abdominal muscles:

1. Get into starting position but put hands on chest.
2. Slowly raise head and neck to top of chest.
3. Reach both hands forward and place on knees.
4. Hold as you count to 5.
5. Slowly return to starting position.
6. Repeat 5 times.

Note: Keep head in line with shoulders.

Rx Elbow Props

To help maintain the normal lumbar curve and to strengthen the low back muscles:

1. Lie on your stomach as pictured.
2. Prop up on elbows.

3. Hold this position for 10–20 seconds.
4. Return to first position and relax for 1 minute.
5. Repeat 5 times.

Note: Keep your lower back completely relaxed.

Rx Lower Back Rotation

To stretch and strengthen the back muscles:

1. Get into starting position but extend arms out to the side with palms on the floor.
2. Slowly drop both knees to one side while turning your head to the opposite side; keep your shoulders on the floor.
3. Hold as you count to 5.
4. Repeat 10 times, slowly alternating sides.
5. Return to starting position.

Rx Hamstring Stretch

(Check with your healthcare provider before doing this exercise.) To help limber up and stretch the hamstring:

1. Get into starting position but straighten right leg.
2. Slowly raise right leg as high as you can comfortably, supporting it with your hands.
3. Hold as you count to 15.
4. Return leg to floor.
5. Repeat 5 times.
6. Repeat steps 1-5 with left leg.

Note: Use your hands to bring outstretched leg gently toward you.

Rx Hip Hyperextension (Advanced)

(Check with your healthcare provider before doing this exercise.) To stretch and strengthen hip, buttock and back muscles:

1. Lie on your stomach as pictured (placing a small, flat pillow under your lower stomach may help).
2. Straighten left leg and tighten buttock muscles.
3. Slowly raise left leg from hip.
4. Return leg to floor.
5. Repeat 5 times.
6. Repeat steps 2-5 with right leg.

Note: Keep pelvis pressed to the floor as you raise leg. Keep leg straight.

THE ROAD TO RECOVERY

After your healthcare provider has diagnosed your back problem, you will be ready to start on the road to recovery.

Lap 1: Treating Your Back Pain

This lap begins with the treatment of your back pain and muscle spasm. Treatment may include **brief** bed rest, local hot or cold packs, massage, electrical nerve stimulation, back support and medications.

Physical therapy may be suggested. An exercise treatment program can be designed for you. A therapist works with you to restore lost movement and function, reduce pain and prevent re-injury.

Lap 2: Learning Good Posture

This lap involves learning to maintain your back's three natural curves. It also involves using good body mechanics at work, home and play. A weight management and exercise program may be advised. A healthy lifestyle can help you feel better. It includes physical activity, eating right and getting enough rest and relaxation.

Spinal injections may be suggested in some cases. Medications are injected to relieve pain or inflammation. They may be injected into the muscles and ligaments or outer part of the spinal column. If spinal injections don't relieve symptoms, back surgery may be needed.

Back surgery may be needed for disk problems that have not responded to other treatment. Special diagnostic studies may be ordered. In most cases, surgery reduces back pain, but be aware that an operated back is **not** a new back. You will most likely still have certain limitations.

Lap 3: Following a Maintenance Program

This lap **never** ends. It is a maintenance program that includes changes needed in home or work routines to avoid back strain. It also includes an ongoing daily exercise program.

BACK OWNER'S MAINTENANCE GUIDE

- Maintain your back's three natural curves by always being aware of your posture and correcting it.
- Avoid a swayed or rounded back at all times.
- Help relieve back strain by maintaining a healthy weight.

- Lift with your legs, not with your back. Do this by squatting and bending your knees. Hold the object as closely to your body as possible and do not twist.
- Change positions often during the day. Break up tasks, such as long drives, into shorter segments.
- Stand with one foot raised up on a box or stool.
- Exercise daily to build strong supporting muscles. Walking and swimming are excellent ways to work out.
- Do not bend straight over or turn or twist to pick up something, even if it is a light object.
- Don't lift or carry anything heavier than you can manage with ease.
- Don't slouch or bend forward while sitting or driving.
- Sleep on your back or side on a mattress that supports your back's natural curves.
- See your healthcare provider as soon as possible if you have persistent back pain.
- Check with your healthcare provider if you have any questions.