

# EXERCISE: THE BACKBONE OF SPINE TREATMENT



NORTH AMERICAN  
SPINE SOCIETY  
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SERIES



# THE IMPORTANCE OF EXERCISE

Spine experts agree that physical activity is important for people with low back pain. This brochure will show you how to stay active while controlling your pain, and how proper activity may help protect against recurring back pain.

Your health care provider's goals in treating your low back pain include:

- Communicate well;
- Explain and reassure you about your condition;
- Reduce your fears;
- Promote physical activity;
- Teach proper exercise;
- Improve body mechanics; and
- Avoid prolonged use of passive therapies.

## WHAT KIND OF EXERCISE SHOULD BE DONE?

So how do you stay physically active without making your pain worse? Many people are surprised to learn that carefully selected exercises can *reduce* pain. Some of the exercises in this brochure can provide quick and significant relief, speeding recovery.

Once pain lessens or disappears, other exercises can help restore back movement and core muscle strength. These will help you reach full recovery and protect against recurring pain. Many doctors think an increase in pain during activity is okay as long as that increase doesn't continue after completing the activity. So try to stay active.

Remember, this is only a guide. Not all exercises are appropriate for everyone. If you experience substantially more pain while exercising, discontinue and let your health care provider know.

### *Monitoring your pain while selecting your exercise*

It is important to choose exercises carefully to avoid making your back pain worse. One way to know if your back is getting worse is when symptoms spread:

- Away from the center of your low back;
- Into your buttock; or
- Down into, or further down, your leg(s).

This can happen during exercise and activity or even in certain positions.

The good news is that the opposite is also true! Symptoms can move out of your leg(s) or buttock so they are felt closer to *the center* of your low

back (called “pain centralization”). This usually means that you are improving and moving toward recovery! You may find exercises and positions to make that happen. Once all symptoms have returned to the center of your low back, they will often improve and disappear with continued exercise.

Four exercises that most commonly centralize and reduce symptoms are:

- Walking on level ground (*Figure 1*);
- Standing backbends (*Figure 2*);
- Face-down on elbows (*Figure 3*); and
- Press-ups (*Figure 4*).

*(The figures and descriptions can be found on pages 6 and 7.)*

When doing these exercises, as well as other activities, monitor your pain. Make sure it is centralizing, going away or at least remaining the same—not getting worse.

### ***Posture is important, too***

Along with proper exercise, good posture is essential, whether standing (*see Figure 5, page 7*) or sitting (*Figure 6, page 7*). When seated, avoid sitting for longer than necessary and avoid slouching. If your symptoms get worse when sitting (and may even move toward or into the buttock or down your leg), check your posture. For many people, sitting erect may help centralize and lessen pain. It helps to think of sitting erect as an exercise to build muscle stamina and develop better sitting habits. Once pain-free, sitting erect often keeps symptoms from returning. When you must sit for a long time, it can be very helpful to put a

firm support behind your low back to deepen its natural inward curve and keep your hips slightly higher than your knees.

### *Exercising once pain has lessened*

In many cases, it may take only one or two days to control or eliminate symptoms. Once your pain is much better or gone, gradually and carefully increase your range of motion, starting with some simple forward-bending exercises (*Figures 7 and 8, page 8*). *Continue as long as your symptoms do not return, get worse or move away from the center of the back.*

For most people, continuing to sit erect is very helpful.

### *Strength training*

Many people with low back pain have weak core muscles. Strengthening exercises (*Figures 9-16, pages 9-11*) protect you from future problems. All body movements and posture (including sitting erect) need adequate muscle strength and flexibility that require some strength training as well as stretching. Moderate strength training is one of the most valuable things you can do for your overall health and is especially important if you have low back pain.

Low back strengthening is helpful in two ways: (1) it helps repair injury by increasing blood flow; and (2) improves function in daily life by increasing strength and stamina.

To heal and repair injuries, nutrients must be delivered to the injured area by good blood flow. Strength training for low back muscles (*Figures 9-11, page 9*) increases blood flow to the muscles exercised and to nearby tissues. This is also true for aerobic exercise (eg, walking, swimming, bicycling) but is especially true for strength training.

Building strong muscles also increases your ability to function throughout the day. In addition to strengthening the low back, the trunk (*Figures 12-14, page 10*) and large muscles of the upper and lower legs (*Figures 15-16, page 11*) deserve attention, too. These muscles provide important stability to the back and trunk by improving balance and gait. It allows you to do daily activities with greater ease and reduces the chance of falling.

Special equipment and gyms can be helpful but there are good, low-tech and inexpensive ways to strengthen low back muscles at home. In *Figure 9 (page 9)*, simply placing a pillow or two beneath your waist adds more resistance. Two simple pieces of equipment often used and very helpful include the popular Swiss balls (*Figures 10, 14 and 16, page 9-11*) or a basic Roman chair (*Figure 11, page 9*).

### *Summary*

Good low back care includes pain-relieving exercises and proper stretching, followed by moderate strengthening. Taking care of yourself using these techniques can help you recover and provide a good defense for preventing future symptoms.

## WHERE SHOULD YOU BEGIN?\*

*\*See text for indications for each exercise.*



**Figure 1. Walking:** Begin with 10 minutes and increase to 30 minutes or more. Increase distance and pace as tolerated.

### **Figure 2. Standing Extension:**

Place hands with fingers in the small of back. Bend backward as far as tolerated, pressing inward with fingers. Hold for 1-2 seconds. Repeat 10 times, trying to bend further each time. Unless pain gets worse, repeat every 2 hours.



**Figure 3. Face Down on Elbows:** Raise up on elbows, letting the low back sag. Hold for 10 seconds. Repeat 3 times. Unless pain gets worse, repeat every 2 hours.



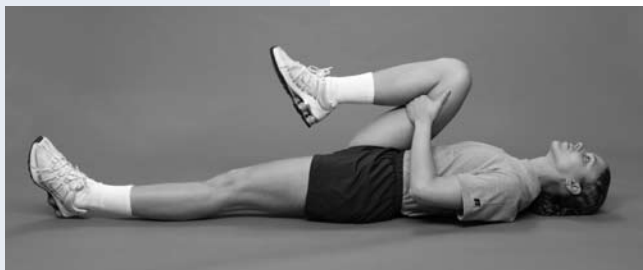


**Figure 4. Press-up:** Push upward with arms, letting the low back sag. Hold for 1-2 seconds. Return to lying position. Repeat 10 times with a deeper sag each time. Unless pain gets worse, repeat every 2 hours.

**Figure 5. Standing Posture:** Draw the head backward, tucking your chin; ears and shoulders should be vertically aligned with the hips and balanced above the legs (*good posture on left; poor posture on right*).



**Figure 6. Seated Posture:** Ears and shoulders should be aligned over the hips, reproducing the same hollow in the low back as when standing (*poor posture on left; good posture on right*).



**Figure 7. Single Knee-to-Chest:** Pull one knee up to the chest and gently pull for 10 seconds. Repeat 3 times. Do this for each leg.



**Figure 8. Double Knee-to-Chest:** Pull both knees up to the chest and gently pull for 10 seconds. Repeat 3 times. Be sure pain is not getting worse. Unless pain is getting worse, perform 2-3 times per day.

## STRENGTHENING CAN HELP!



**Figure 9. Face-Down Extension:** Place hands behind the back and lift head and shoulders from the floor. Hold for 5-10 seconds. Repeat 3 times.



**Figure 10. Face-Down Ball Extension:** Place hands behind the back and lift head and shoulders upward. Hold for 5-10 seconds. Repeat 3 times.



**Figure 11. Roman Chair Extension:** *This is a more advanced exercise and may not be appropriate for everyone.* Hip pad is placed at the crest of the hips. Bend forward as far as possible and lift the trunk using your low back muscles. Perform exercise slowly (3 count up and 4 count down). Repeat 5-10 times.



**Figure 12. Curl Up:** Place arms out toward the knees, tilt pelvis to flatten back. Raise head and shoulders from the floor. Hold for 5-10 seconds. Repeat 3 times.



**Figure 13. Cat/Camel:** Place hands under the shoulders and knees under the hips. (1) Raise and round back by contracting the stomach muscles. Hold for 5-10 seconds. (2) Release and let the back sag.



**Figure 14. Supine Ball Extension:** Place hands on the floor and raise hips from the floor. Hold for 5-10 seconds. Repeat 3 times.



**Figure 15. Chair Stand:** Sit with arms across the chest; stand slowly and slowly return to seated position (count to 3 up and 3 down). Repeat 5-10 times.



**Figure 16. Ball/Wall Stand:** Stand with straight knees and ball at your back. Bend knees slowly (3 second count) to three quarters position and hold for 5 seconds. Return to standing position slowly (3 second count). Repeat 5-10 times.

# NOTES

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#### **DISCLAIMER**

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