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LOW BACK STRAIN

■ ■ ■ Description

Low back strain is an injury to the muscles and tendons of the lower back. These muscles require great force to be able to stand upright, and the forces are tremendously increased when bending at the waist (such as to pick things up from the ground).

■ ■ ■ Common Signs and Symptoms

- Pain in the back that usually affects one side, is worse with movement, and may be felt in the hip, buttocks, or back of the thigh
- Muscle spasms of the muscles in the back
- Swelling along the muscles of the back
- Loss of strength of the back muscles
- Crepitation (a crackling sound) when the muscles are touched

■ ■ ■ Causes

- Prolonged overuse of the muscle-tendon units in the lower back, usually from incorrect back mechanics
- Possibly, a single violent injury or force applied to the back

■ ■ ■ Risk Increases With

- Any sport in which movement causes twisting force on the spine or a lot of bending at the waist; also, contact sports, such as football, weightlifting, bowling, golf, tennis, speed skating, racquetball, swimming, running, gymnastics, or diving
- Poor physical conditioning (strength and flexibility)
- Inadequate warm-up before practice or play
- Family history or of low back pain or disk disorders
- Previous back injury or surgery (especially fusion)
- Poor mechanics with lifting, especially heavy objects
- Prolonged sitting, especially with poor mechanics

■ ■ ■ Preventive Measures

- Use proper mechanics when sitting or lifting (maintain proper posture with sitting; lift using the knees and legs, not at the waist).
- Appropriately warm up and stretch before practice or competition.
- Maintain appropriate conditioning:
 - Ideal body weight
 - Cardiovascular fitness
 - Hamstring and back flexibility
 - Muscle strength and endurance

■ ■ ■ Expected Outcome

This condition is usually curable, with appropriate conservative treatment, within 6 weeks.

■ ■ ■ Possible Complications

- Frequent recurrence of symptoms, resulting in a chronic problem; appropriately addressing the problem the first time decreases frequency of recurrence
- Chronic inflammation, scarring, and partial muscle-tendon tear
- Delayed healing or resolution of symptoms
- Prolonged disability

■ ■ ■ General Treatment Considerations

The injury to the back results in pain and inflammation. The pain and inflammation result in muscle spasms of the back muscles, which in turn result in more pain. Thus the initial treatment consists of rest, medications, and ice to relieve pain, inflammation, and muscle spasms. As pain and spasms subside, exercises to improve strength and flexibility and proper back mechanics are started. Referral to a physical therapist or athletic trainer may be recommended for these exercises, education regarding back mechanics, and possibly other treatments, such as transcutaneous electronic nerve stimulation (TENS) or ultrasound. A corset or back brace (low back) may be recommended. Biofeedback and psychotherapy may also be prescribed. Prolonged bed rest is felt to be of more harm than good at this time. Bending your knees to pick things up off the ground (as opposed to bending at the waist), laying flat on your back on a firm mattress with a pillow under your knees, and using good posture when sitting are helpful. Occasionally an injection of cortisone, with or without local anesthetics, may be administered to help relieve the pain and spasms.

■ ■ ■ Medication

- Nonsteroidal anti-inflammatory medications, such as aspirin and ibuprofen (do not take within 7 days before surgery), or other minor pain relievers, such as acetaminophen, are often recommended. Take these as directed by your physician. Contact your physician immediately if any bleeding, stomach upset, or signs of an allergic reaction occur.
- Topical ointments may be of benefit.
- Pain relievers and muscle relaxants may be prescribed as necessary by your physician. Use only as directed and only as much as you need. Do not use any heavy machinery or drive a car while on these medications.
- Oral corticosteroids or injections of corticosteroids into the spot of the most muscle spasms or pain occasionally may be administered.

■ ■ ■ Heat and Cold

- Cold is used to relieve pain and reduce inflammation for acute and chronic cases. Cold should be applied for 10 to 15 minutes every 2 to 3 hours for inflammation and pain and immediately after any activity that aggravates your symptoms. Use ice packs or an ice massage.
- Heat may be used before performing stretching and strengthening activities prescribed by your physician, physical therapist, or athletic trainer. Use a heat pack or a warm soak.

■ ■ ■ Notify Our Office If

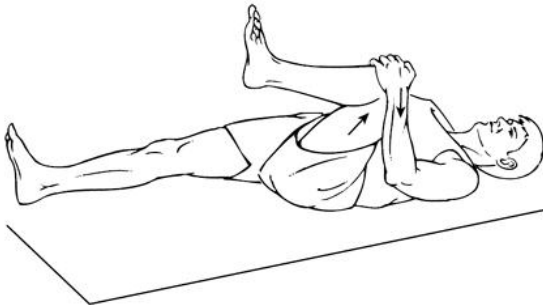
- Symptoms get worse or do not improve in 2 to 4 weeks despite treatment
- You develop numbness, weakness, or loss of bowel or bladder function
- New, unexplained symptoms develop (drugs used in treatment may produce side effects)

RANGE OF MOTION AND STRETCHING EXERCISES • Low Back Strain

The exact range of motion and stretching exercises appropriate for you *usually* need to be determined on an individual basis. Some individuals respond better to flexion (pulling your knees to your chest), whereas others respond better to extension (placing an arch in your back). *The key point to remember is that if any exercise (range of motion, stretching, or strengthening) causes pain to radiate away from your back and toward your buttocks or legs, stop immediately. The purpose of these exercises is to begin to decrease the intensity and the size of the area of your pain.*

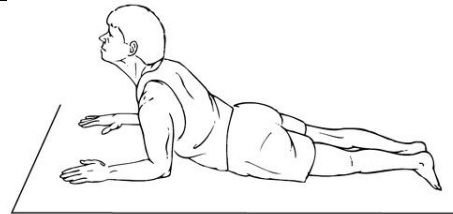
These are some of the *initial* exercises you may start your rehabilitation program with until you see your physician, physical therapist, or athletic trainer again or until your symptoms are resolved. Flexion and extension exercises are presented. *The specific exercises that are appropriate for you must be specified by your physician, physical therapist, or athletic trainer before you start them.* Please remember:

- Flexible tissue is more tolerant of the stresses placed on it during activities.
- Each stretch should be held for 20 to 30 seconds.
- A *gentle* stretching sensation should be felt.
- If pain or other symptoms radiate away from the back toward the buttocks or legs, stop the exercises immediately.



LUMBAR FLEXION • Single Knee to Chest

1. Lie on your back with both legs flat on the floor.
2. Bend one hip and knee up toward your chest.
3. Grasp knee with your hand(s) and pull it gently toward your chest.
4. Keep the other leg flat on the floor while doing this exercise.
5. Repeat with the opposite side.
6. Repeat exercise 5 times, 2 times per day. Hold each repetition 5 to 10 seconds.



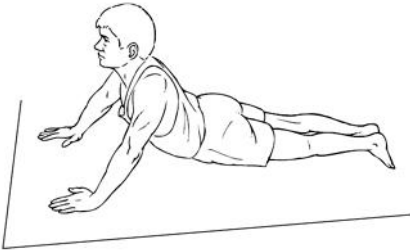
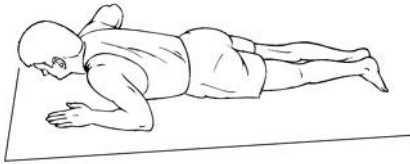
LUMBAR EXTENSION • Prone on Elbows

1. Lie on your stomach on the floor.
2. Place your arms underneath you and “prop” up on your elbows as shown.
3. Allow your back to relax and sag. Hold this position for 30 to 45 seconds.
4. Return to your starting position, lying on your stomach, flat on the floor.
5. Repeat exercise 3 times, 2 times per day.



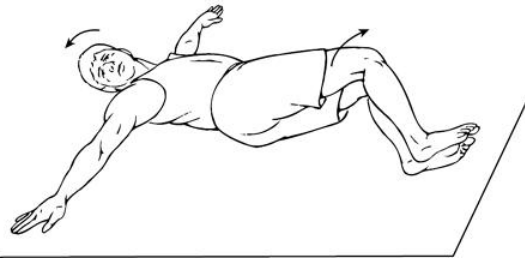
LUMBAR FLEXION • Double Knee to Chest

1. Lie on your back with both legs flat on the floor.
2. Bend one hip and knee up toward your chest and then the other.
3. Grasp your knees with your hands and pull them gently toward your chest.
4. Hold this stretch position for 5 to 10 seconds.
6. Repeat exercise 5 times, 2 times per day.



LUMBAR EXTENTION • Prone Press Ups

1. Lie on your stomach on the floor as shown in the picture.
2. Place your palms flat on the floor. Push down on your hands, straightening out your arms and putting an arch in your back. Straighten your elbows fully, while keeping your hips on the floor.
3. Return to your starting position.
4. If you are unable to fully straighten your elbows while keeping your back relaxed, place your hands farther in front of you and try again.
5. Repeat exercise 5 times 2 times per day. Hold each repetition 5 to 10 seconds.



LUMBAR ROTATION

- 1 Lie on your back with your hips and knees bent, feet flat on the floor.
2. Keep your arms out at your sides and your shoulders flat on floor.
3. Rotate hips and knees to one side as far as you can while keeping arms and shoulders flat on floor. Hold this position for 5 seconds.
4. Reverse position and rotate your hips and knees to the opposite side. Hold this position for seconds.
5. Repeat exercise 10 times, 2 times per day.



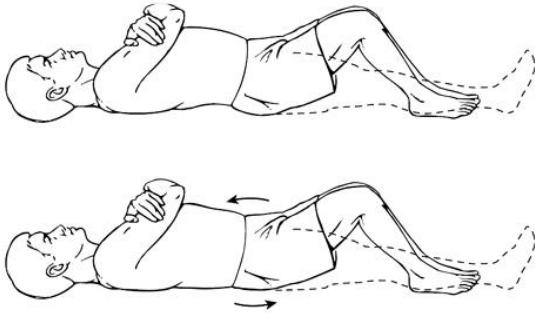
LUMBAR NEUTRAL POSITION

1. Position yourself on your hands and knees as shown.
2. Tighten your stomach muscles and tuck your pelvis/hips under, arching your back as shown in the diagram. Hold this position for 5 seconds.
3. Tighten your back muscles, rotating your buttocks up and allowing your back to arch/sag as shown. Hold this position for 5 seconds.
4. Find a middle/neutral position. Tighten your stomach and back muscles. Hold this position for 5 seconds.
5. Repeat exercise 10 times, 2 times per day.

➤ STRENGTHENING EXERCISES • Low Back Strain

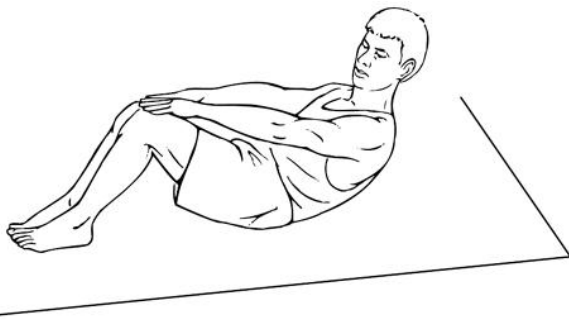
These are some of the *initial* exercises you may start your rehabilitation program with until you see your physician, physical therapist, or athletic trainer again or until your symptoms are resolved. Please remember:

- Strong muscles with good endurance tolerate stress better.
- Do the exercises as *initially* prescribed by your physician, physical therapist, or athletic trainer. Progress slowly with each exercise, gradually increasing the number of repetitions and weight used under their guidance.
- If pain or other symptoms radiate away from the back toward the buttocks or legs stop the exercises immediately.



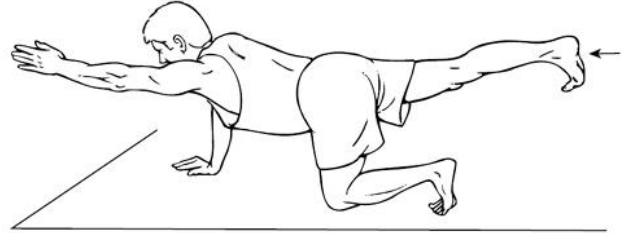
PELVIC TILT

1. Lie on the floor as shown. You may do this exercise with your knee bent or straight. It is harder with the knees straight.
2. Tighten your stomach and buttock muscles and push back flat onto floor. If you do this properly your pelvis will rotate in the direction shown in the diagram. Hold each repetition 15 to 20 seconds.
3. Repeat exercise 5 times 2 times per day. **Do not hold your breath. Count out loud!**



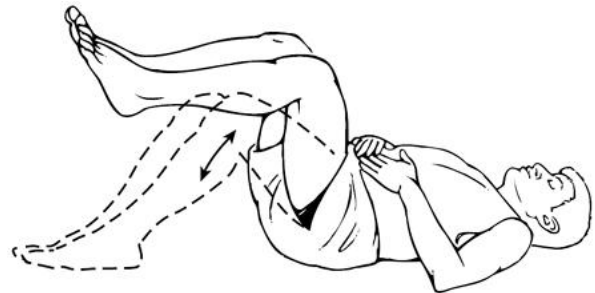
PARTIAL SIT UPS

1. Lie flat on your back with your hands resting on your thighs.
2. Tuck your chin to your chest.
3. Slowly sit up until you touch the top of your knees.
4. Hold this position for a count of 15. **Count out loud. Do not hold your breath!**
5. Return to the starting position.
6. Repeat exercise 5 times, 2 times per day.



QUADRIPED • Opposite UE/LE Lift

1. Position yourself on your hands and knees.
2. Keep your back flat and parallel to the floor. **Do not allow it to arch or move during this exercise.**
3. Lift your *left* arm up to shoulder height. Hold this position and lift your *right* leg to the same height.
4. Balance and hold this position for 15 to 30 seconds.
5. Return to starting position and repeat with the opposite arm and leg.
6. Repeat exercise 5 times, 2 times per day. Do not hold your breath. Count out loud.



DOUBLE LEG HOLD

1. Lie on your back with your hips and knees bent.
2. Bend your legs/hips toward you as shown.
3. Tighten your stomach muscles and press your back flat into the floor.
4. While keeping your back flat on the floor, *slowly* let your legs back down. When you feel your back start to arch, stop and hold that position. **Count out loud to 15. Do not hold your breath!**
5. Return to the starting position.
6. Repeat exercise 5 times, 2 times per day.

➤ **POSTURE AND BODY MECHANICS CONSIDERATIONS • Low Back Strain**

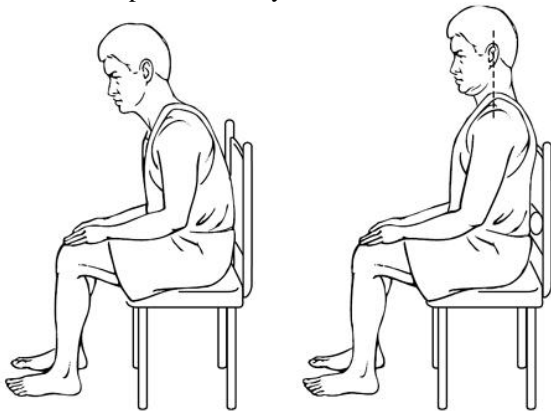
Maintaining the most appropriate posture and using correct body mechanics can have a significant effect on back pain. The following are basic suggestions regarding proper posture and body mechanics. These should be specifically discussed with your physician, physical therapist, or athletic trainer. Please remember:

- Good posture minimizes the stress and strain on any portion of your spine.
- Do the exercises as *initially* prescribed by your physician, physical therapist, or athletic trainer.
- Incorporate these exercises and posture principles into all of your daily and recreational activities.



RESTING POSITIONS

Sleep or rest on a firm surface. Find a position of comfort. The most commonly suggested positions are sidelying with a pillow between your knees or on your back with a pillow under your knees.



PROPER SITTING POSTURE

Do not slouch sit! Sit with a small rolled-up towel, foam cushion, or pillow in your low-back area, just above your belt. Sit with your buttocks all the way back in the chair.



CORRECT LIFTING TECHNIQUES

DO:

- Lift with your legs, keeping your back straight.
- Use a footstool for objects that need to be placed or retrieved from high locations.
- Use two people for heavy or awkward objects.



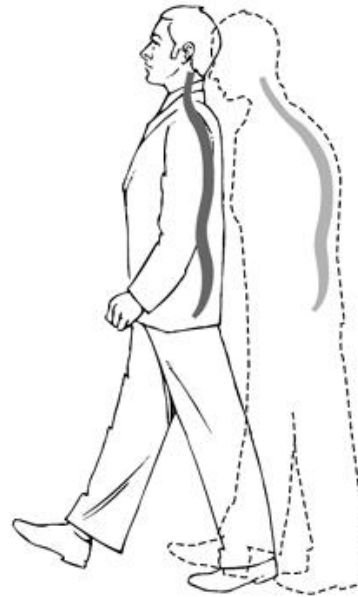
INCORRECT LIFTING TECHNIQUES

DO NOT:

- Lift with your legs straight and your back flexed/bent.
- Lift objects that are too heavy over your head.
- Ever lift and twist at the same time.
- Lift an object that is too heavy or awkwardly shaped without help.



CORRECT STANDING POSTURES
Stand upright and erect whenever possible.



SLOUCHING
Avoid slouching when you walk or stand. Stand up straight. Walk erect and tall.



LIFTING
Do not round out your back when lifting any object. You should make sure that you bend your knees and attempt to maintain a normal curve in your spine.



CORRECT SITTING POSTURES
Sit Erect. Use a lumbar roll, cushion, or pillow. Use a chair that has a high enough back to support your back up to your shoulder blades.

INCORRECT SITTING POSTURES
Do not slouch or slump. Maintain a proper position in the chair.