



## Mid-Back Strain

### DESCRIPTION

A mid-back strain is an injury to the muscles and tendons of the middle back that attach to the ribs and chest wall and to the spine. These muscles stabilize the spine and allow its motion. The mid back provides a large portion of the back's overall motion, but it primarily allows for rotation of the back in a twisting motion.

### COMMON SIGNS AND SYMPTOMS

- Pain in the back that may affect only one side and is worse with movement
- Muscle spasms and often swelling in 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
- A single violent injury or force applied to the back

### FACTORS THAT INCREASE RISK

- Any sport that causes a bending or twisting force on the spine, including contact sports such as football, weightlifting, golf, tennis, racquetball, gymnastics, and diving
- Major exertion in an off-balance position, such as a shot putter throwing from an imperfect stance
- Poor physical conditioning (strength, flexibility)
- Inadequate warm-up before practice or play
- Previous back injury or surgery, especially fusion

### PREVENTIVE MEASURES

- Use proper sports technique.
- Appropriately warm up and stretch before practice and competition.
- Maintain appropriate conditioning that includes back flexibility exercises along with strength, endurance, and cardiovascular fitness training.

### EXPECTED OUTCOME

With appropriate conservative treatment, mid-back strain is usually curable within 6 weeks.

### POSSIBLE COMPLICATIONS

- Frequent recurrence of symptoms may result in a chronic problem; appropriately addressing the problem the first time decreases the frequency of recurrence.

- Chronic inflammation, scarring, and partial muscle-tendon tears may occur.
- Healing or resolution of symptoms may be delayed, particularly if activity is resumed too soon.
- Prolonged disability may result.

### GENERAL TREATMENT CONSIDERATIONS

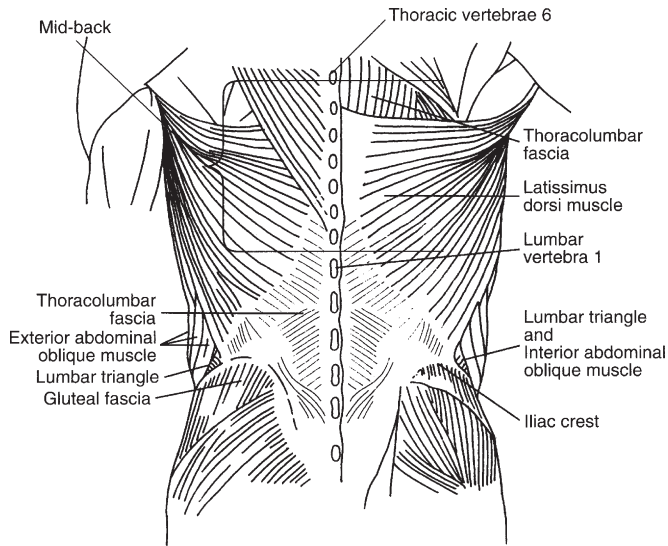
Injury to the back results in pain and inflammation. The pain and inflammation result in muscle spasms in the back, which in turn result in more pain. Thus the initial treatment consists of rest, medications, and ice to relieve pain, inflammation, and muscle spasms. As pain and spasms subside, exercises to improve strength and flexibility and education in the use of proper back mechanics and sports technique are started. Referral to a physical therapist or athletic trainer may be recommended for these and possibly other treatments, such as transcutaneous electronic nerve stimulation (TENS) and ultrasound. Biofeedback and psychotherapy may also be prescribed. Prolonged bed rest is felt to do more harm than good, but massage may be useful to help alleviate the spasms. Occasionally an injection of cortisone, with or without local anesthetics, may be administered to help relieve the pain and spasms.

### MEDICATION

- Nonsteroidal antiinflammatory medications, such as aspirin and ibuprofen (do not take for 7 days before surgery), or other minor pain relievers, such as acetaminophen, are often recommended. Take these as directed by your physician, and contact your doctor immediately if any bleeding, stomach upset, or signs of an allergic reaction occur.
- Topical analgesic ointments may be of benefit.
- Pain relievers and muscle relaxers may be prescribed as necessary. Use these only as directed, and take only as much as you need. Do not operate any heavy machinery or drive a car while taking these medications.
- Oral corticosteroids or injections of corticosteroids, with or without local anesthetics, may occasionally be administered into the spot of the most muscle spasm or pain.

### HEAT AND COLD

- Cold is used to relieve pain and reduce inflammation for acute and chronic cases. It should be applied for 10 to 15 minutes every 2 to 3 hours as needed and immediately after any activity that aggravates your symptoms. Use ice packs or an ice massage.



**FIGURE 1** From Herskowitz A, Selesnick H: Back injuries in basketball players, *Clin Sport Med* 12:298, 1993.

- 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.

## WHEN TO CALL YOUR DOCTOR

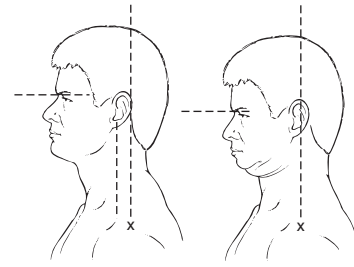
- Symptoms get worse or do not improve in 2 to 4 weeks despite treatment.
- You develop numbness, weakness, or loss of bowel or bladder function.
- New, unexplained symptoms develop. Drugs used in treatment may produce side effects.

## RANGE OF MOTION AND STRETCHING EXERCISES

Mid-Back Strain

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

- Flexible tissue is more tolerant of the stresses placed on it.
- A *gentle* stretching sensation should be felt.



## RANGE OF MOTION • Cervical Spine Axial Extension

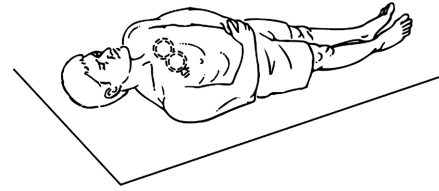
- Sit in a chair or stand in your normal posture.
- Gently tuck your chin and glide your head backward. Keep your eyes level as shown. You should not end up looking up or looking down.
- You will feel a stretch in the back of your neck and at the top of your shoulders. Hold this position for \_\_\_\_ seconds.
- Repeat this exercise \_\_\_\_ times, \_\_\_\_ times per day.

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### RANGE OF MOTION • Upper Thoracic Extension

1. Sit erect using good posture in a chair with a firm, high back as shown. If the chair does not have a lumbar support, place a small rolled-up towel in the small of your back as shown in the diagram.
2. Clasp your hands together behind your neck. Bring your elbows together in front of you, gently cradling and supporting your head and neck. This will prevent your neck from bending backward.
3. *Bend backward through the upper back* over the top of the chair. When you do this, your shoulders and elbows should move upward and backward. You should feel a stretch at the base of your neck and at the top of your shoulder blades.
4. Hold this position for \_\_\_\_ seconds, then return to the starting position.
5. Repeat this exercise \_\_\_\_ times, \_\_\_\_ times per day.



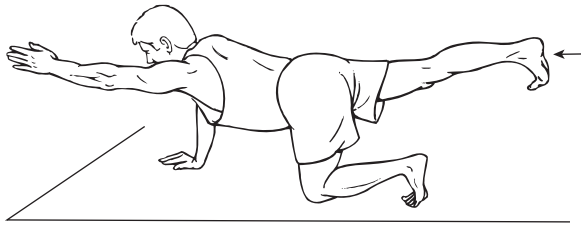
### RANGE OF MOTION • Mid-Thoracic Extension

1. Roll up a small to medium-sized towel lengthwise, until it makes a firm roll 3 to 5 inches in diameter.
2. Lie on your back with the towel aligned as shown in the diagram. Allow your shoulders to drape over the edges of the towel. For a greater stretch, you may straighten out your arms and place them on the floor at shoulder level.
3. Hold this position for \_\_\_\_ seconds.
4. Repeat this exercise \_\_\_\_ times, \_\_\_\_ times per day.

### STRENGTHENING EXERCISES Mid-Back Strain

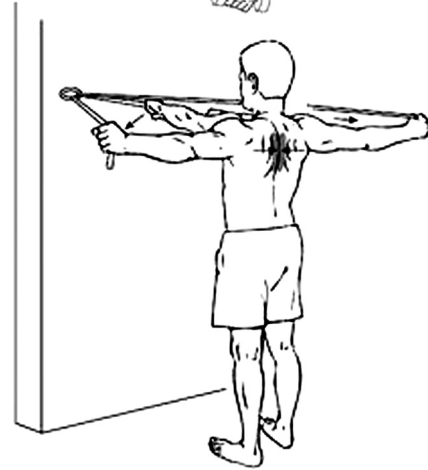
These are some of the *initial* exercises you may use to start your rehabilitation program, until you see your physician, physical therapist, or athletic trainer again, or until your symptoms resolve. Please remember:

- 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 under their guidance, gradually increasing the number of repetitions and weight used.



### STRENGTH • Quadruped Lift

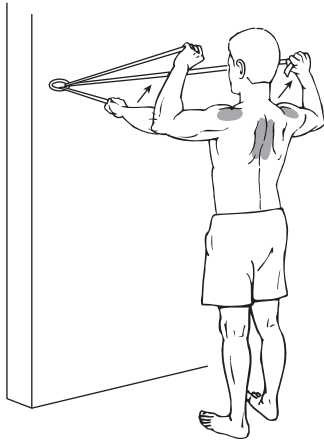
1. Position yourself on your hands and knees. Keep your back flat and parallel to the floor, and *do not allow it to arch or move during this exercise.*
2. Lift your *left* arm up to shoulder height. Hold this position and lift your *right* leg to the same height.
3. Balance and hold this position for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



### STRENGTH • Horizontal Abduction

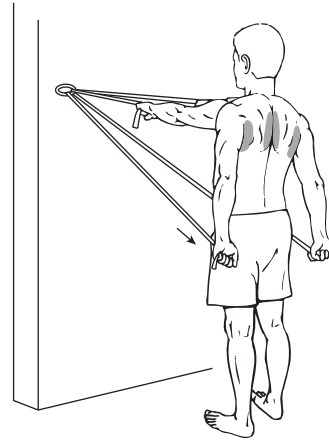
1. *If using a weight:* Lie on your stomach with your \_\_\_\_ arm over the edge of the bed as shown, holding a \_\_\_\_ pound weight in your hand.
2. Raise your arm up *slowly* until it is level with the edge of the bed. Keep your elbow straight.
3. Hold this position for \_\_\_\_ seconds, and *slowly* return to the starting position.
4. Repeat this exercise \_\_\_\_ times, \_\_\_\_ times per day.
1. *If using a rubber band/tubing:* Anchor the rubber band/tubing to a solid object, and hold one end in each hand as shown, with your arms straight out in front of you.
2. Spread your arms apart, pulling straight backward, keeping your arms parallel to the floor.
3. Hold this position for \_\_\_\_ seconds, and *slowly* return to the starting position.
4. Repeat this exercise \_\_\_\_ times, \_\_\_\_ times per day.

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### STRENGTH • Shoulder Extension

1. Secure a rubber band/tubing around a stable object, such as a stair post, or around the knob of a closed door.
2. Stand holding the rubber band/tubing in front of you with your arms extended as shown.
3. Squeeze your shoulder blades together, and pull your arms down and backward as shown. *Do not pull your arms past the midline of your body.*
4. Hold this position for \_\_\_\_ seconds, and *slowly* return to the starting position.
5. Repeat this exercise \_\_\_\_ times, \_\_\_\_ times per day.



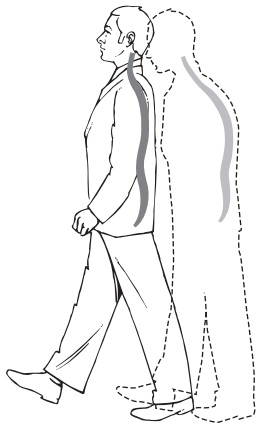
### STRENGTH • Shoulder External Rotation

1. Secure a rubber band/tubing around a stable object, such as a stair post, or around the knob of a closed door.
2. Stand holding the rubber band/tubing in front of you with your arms extended as shown.
3. Squeeze your shoulder blades together and pull your arms back as shown, bending your elbows. Your fists should end at shoulder height and close to your body.
4. Hold this position for \_\_\_\_ seconds, and *slowly* return to the starting position.
5. Repeat this exercise \_\_\_\_ times, \_\_\_\_ times per day.

**POSTURE EXERCISES****Mid-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.
- Incorporate these posture principles into all of your daily and recreational activities.

**SLOUCHING**

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

**WORKSTATION**

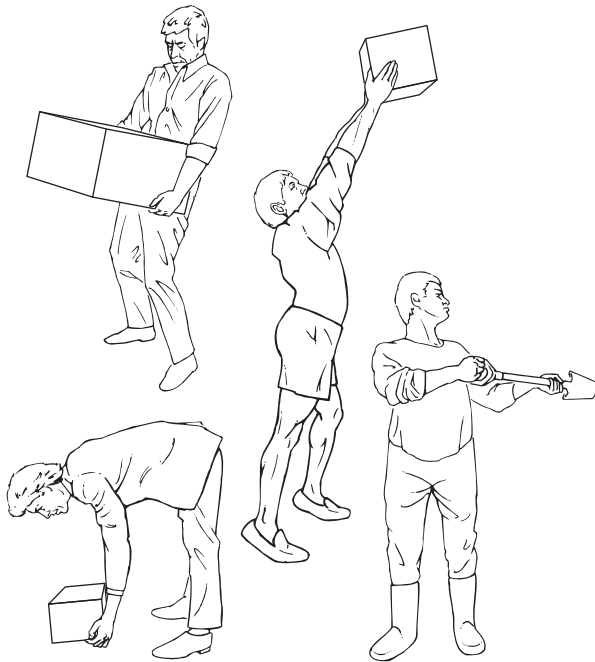
When sitting at a desk or workstation, make sure you attempt to do the following:

1. Have an adjustable-height chair. It is critical that your feet touch the floor. If this is not possible because of the chair and/or desk height, obtain a footrest.
2. Make sure that your chair can fit under the desk and that you can pull as close to your work surface as you need to.
3. Avoid slouching. Use a lumbar roll, cushion, or pillow behind your lower back.
4. Make sure that your work surface is the appropriate height.

**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 to lift heavy or awkward objects.

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**INCORRECT LIFTING TECHNIQUES****DO NOT**

- Do *not* lift with your legs straight and your back bent.
- Do *not* lift objects that are too heavy over your head.
- *Never* lift and twist at the same time.
- Do *not* lift an object that is too heavy or awkwardly shaped without help.

**INCORRECT STANDING POSTURES**

Do not slouch or maintain flexed standing postures for prolonged periods.

**CORRECT STANDING POSTURES**

Stand upright and erect whenever possible.