



### Rehabilitation Exercises for Low Back Injuries

If instructed by your medical doctor, you may begin these exercises when the pain has started to decrease.

**Williams Back Exercises:** The start position for the following four exercises is lying on the floor on your back, arms by your side and both legs bent. Keep your hips in contact with the floor during each exercise.



- A. Single Knee: From the starting position, pull one knee to the chest, keeping hips on the floor. Then straighten the leg until it is flat on the floor, return it to the starting position and repeat on other side. Do 3 sets of 10 reps on each side.



- B. Double Knee: From the starting position, pull both knees to the chest. Don't roll up; keep hips on the floor. You should feel a stretch in the back of the upper legs. Repeat for 3 sets of 10 reps.



- C. Single Leg Raise: From starting position, straighten one leg until it is flat on the floor. Then raise that leg as high as possible without jerking or kicking. Return the leg to the floor, and then back to starting position. Repeat with other leg. Perform 3 sets of 10 reps on each side.

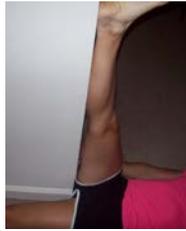


- D. Half Sit-up: From the starting position, raise and outstretch your arms. Exhale, tightening your abdominal muscles and pulling shoulders off the floor. Hold for 5 seconds, repeat for 3 sets of 10 reps.



### Hamstring Stretch:

- A. Lying hamstring stretch: Lie on your back with your buttocks close to a doorway and extend your legs straight out in front of you along the floor. Raise your injured leg and rest it against the wall next to the door frame. Hold this position for 30-60 seconds. You will feel a stretch in the back of your thigh. Repeat 3 times on each leg.



- B. Standing hamstring stretch: Stand with the heel of your injured leg resting on a chair, counter, etc. that is at least 15 inches high but not higher than your hips. Keep your knee straight and gently lean forward from your hips, keeping your shoulders in line with your trunk, until you feel a stretch in the back of your thigh. Hold this position for 30-60 seconds. Return to the starting position. Repeat this exercise 3 times on each leg. \*Do not round your shoulders bringing your head towards your toes as this will stretch your low back instead of your hamstring.



### Piriformis Stretch:

Option 1: Lie on your back with your legs straight out in front of you. Pull one knee up and across your trunk so you feel a comfortable stretch in the top buttocks and back. Hold for 30 seconds and repeat 3 times on each side.



Option 2: Lie on your back with both knees bent and the foot on your uninjured side flat on the floor. Rest the ankle of your injured leg over the knee of your uninjured leg. Grasp the thigh of your uninjured leg and pull the knee toward your chest. You will feel a stretch along the buttocks and possibly along the outside of your thigh. Hold for 30 seconds and repeat 3 times on each side.



**Cat and Camel:** Get down on your hands and knees. Let your stomach sag, allowing your back to curve downward. Hold this position for 5 seconds. Now arch your back and hold for 5 seconds. Repeat 10 times, do 2 sets.



**Dead Bug:** Lie on your back on the floor or another firm surface. Tighten your stomach muscles and press your lower back into the floor. Lift up one leg several inches off the floor, hold for 5 seconds, and then lower it. Lift the other leg off the floor, hold for 5 seconds, and then lower it. Alternate legs, doing 5 reps with each leg and then relaxing the pelvic tilt. Do 3 sets of 10.



**Partial Curl:** Lie on your back on the floor or another firm surface. Clasp your hands behind your neck for support, keeping your elbows pointed out to the side. Look straight up at the ceiling and tighten your stomach muscles by a pelvic tilt. Lift your shoulders off the floor toward the ceiling. Make sure to keep your elbows pointed out to the side and don't use your arms to lift your upper body off the floor. Hold for 5 seconds and then slowly lower your shoulders to the floor. Repeat 10 times, do 3 sets.



**Straight Leg Raise:** Sit on the floor with your injured leg straight and the other leg bent so that foot is flat on the floor. Turn the toes of your injured leg slightly outward and pull the toes toward you as far as you can comfortably while tightening the muscles on the top of your thigh. Raise your injured leg 6-8 inches off the floor. Hold this position for 5 seconds and then slowly return to the starting position. Repeat 10 times, do 3 sets of 10 and repeat on opposite side if needed.



**All-Fours-to-Heels Sit:** Kneel on the floor on all fours. Your palms should be flat on the floor in front of you and your back should be kept flat. Shift your weight backward and try to sit on your heels. Be sure to keep your back flat. Hold this position for 10 seconds. Return to the starting position. Repeat 10 times.



**Pelvic Tilt:** Lie on your back with your knees bent and your feet flat on the floor. Tighten your stomach muscles to flatten your lower back against the floor. Hold for 5 seconds, and then relax. Repeat 10 times, do 3 sets.



**Lower Trunk Rotation:** Lie on your back with your knees bent and your feet flat on the floor. Tighten your stomach muscles to flatten your lower back against the floor and keep your shoulders down flat on the ground. Gently rotate both your knees to one side, then to the other side as far as you can. Repeat 20 times.



**Prone Hip Extension:** Lie on your stomach with your arms resting on the floor next to your chest and legs straight out behind you. Tighten your buttock muscles and lift your right leg off the floor, keeping your knee straight. Hold this position for 5 seconds. Then lower your leg and relax. Repeat the same with your left leg. Hold 5 seconds and then lower the leg and relax. Repeat 10 times on each side, do 3 sets.



**Prone Hip Rotation:** Lie on your stomach on the floor. Bend your knees so your thighs stay on the floor and your lower legs are perpendicular to the floor. Keep your knees on the floor and shoulder width apart. Cross your legs over each other as far as you can. Keeping your knees on the floor, uncross your lower legs and move them as far apart as possible. Hold for 5 seconds, repeat 10 times.



**Prone Lying Exercises:** Lie face down on the floor for 5 minutes. If this hurts too much, lie face down with a pillow under your stomach which should help relieve leg pain. When you can lie on your stomach for 5 minutes without pillows, then you can move on to the exercises below.

- A. **Prone on Elbows:** Lie on your stomach on the floor. Place your arms underneath you and prop yourself up on your elbows. Allow your back to relax and sag. Hold this position for 30 seconds. Return to the starting position of lying on your stomach flat on the floor. Repeat 3 times.



- B. Prone Press Ups: Lie on your stomach on the floor. 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. Hold for 30 seconds. Return to the starting position. Repeat 3 times.



**Supermans:** Get down on your hands and knees. Keep your back flat and parallel to the floor. Do not let it arch during this exercise. Lift your left arm up to shoulder height. Hold this position and lift your right leg to the same height. Balance and hold this position for 30 seconds. Return to the starting position and repeat with the opposite arm and leg and hold for 30 seconds. Repeat 3 times on each side.



**Plank:** Lie face down on the floor or a mat resting on your forearms with your palms flat on the floor. Push off the floor, raising up onto your toes and resting on your elbows. Keep your back flat, in a straight line from head to heels. Tilt your pelvis and contract your abdominals to prevent your rear end from sticking up in the air or sagging in the middle. Hold for 20 to 60 seconds, lower and repeat for 3-5 reps.



**Side Plank:** Lie on your right side with your right hand on the ground or a mat. For beginners, it is recommended to begin this exercise on your elbow. Lift yourself up to form a plank with your right arm straight and your left arm on your side. Hold for 20 to 60 seconds, lower and repeat for 3-5 reps. Switch so you are lying on your left side and repeat exercise on the left side. Hold each rep for 20-60 seconds, do 3-5 reps.

