



Name _____ Date _____
Instructor _____ Section _____

Assessing Flexibility and Back Pain Risk

Back pain is a multifactorial problem that is preventable in most cases. There are many sources of back pain, including improper lifting techniques, weak muscles, poor posture, inflexibility, and bone disorders. The following tests will assess the flexibility of your lower back, hamstrings, and hip flexors. Choose a partner, and use extreme caution in applying force.

Stretches and exercises to alleviate back pain or prevent future back injury are suggested in the Interpretation sections below.

TEST 1: BACK TO WALL

Stand with your back against a wall so that your head, shoulders, calves, and heels are all touching the wall. Try to flatten your neck and the hollow of your back by pressing your buttocks down. Your partner should be able to place just a hand between the wall and the small of your back.

Pass _____ Fail _____

Interpretation

If this space is greater than the thickness of a flattened hand, you may have lumbar lordosis (increased curvature in the lower back with a forward pelvic tilt) with shortened lumbar and hip flexor muscles. To correct or prevent lumbar lordosis, flexibility exercises to lengthen the hip flexor muscles, as well as strength and endurance exercises for the abdominal muscles, are generally recommended. See the descriptions and videos for Hip Flexor Stretch, Abdominal Curl, and Abdominal Curl (stability ball).

TEST 2: STRAIGHT LEG LIFT

Lie on your back with your hands behind your neck. Your partner will kneel on your left side and stabilize your right leg by placing her right hand on your knee. With the left hand, your partner should grasp your left ankle and raise your left leg as near to a right angle (90 degrees) as possible. In this position, your lower back should be in contact with the floor, and your right leg should remain straight and on the floor. Repeat this test on the opposite side.

Left side: Pass _____ Fail _____

Right side: Pass _____ Fail _____

Interpretation

If your left leg bends at the knee, your hamstring muscles are short. If your back arches and/or your right leg does not remain on the floor, short lumbar muscles, short hip flexors, or both are implicated. To correct this condition, perform exercises to stretch your hamstrings; lower back stretches can be used to lengthen the lumbar muscles. See the descriptions and videos for Hamstrings Stretch (seated), Modified Hurdler Stretch, Low Back Knee-to-Chest Stretch, Torso Twist and Hip Stretch, Back Bridge, and Cat Stretch.

TEST 3: KNEE TO CHEST

(No partner is needed.) Lie on your back on a table or bench, with your right leg extended beyond the edge of the table (about one-third of your thigh is off the table). Bring your left knee to your chest, and grasp the back of your thigh, pulling down tightly toward your chest. Your right thigh should remain in contact with the table. Repeat this test on the opposite leg.

Left side: Pass _____ Fail _____

Right side: Pass _____ Fail _____

Interpretation

If your right thigh lifts off the table while you hug your knee to your chest, you have a tight right hip flexor muscle; if your left thigh lifts, then you have a tight left hip flexor. To stretch the right hip flexor, place the left knee directly above the left ankle, and stretch the right leg backward so that the right knee touches the floor. Press your pelvis forward and downward. Do not bend your front knee more than 90 degrees. Repeat on the opposite side to stretch the left hip flexor. See the description and video for Hip Flexor Stretch (thigh stretch).

SUMMARY

Awareness of flexibility problems may help you alleviate back pain or prevent future back discomfort. Remember that exercises designed to increase flexibility and strength, reduce body fat, improve muscle balance between the trunk flexors and extensors, and prevent osteoporosis can decrease your risk of developing back problems.

To submit the completed lab, save the form to your computer and email it to your instructor or upload it to their digital dropbox as directed.