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## Team Up for Thigh Stretches

### Exercises for Flexibility or Recovery

**T**he thigh contains some of the largest muscles in the body—muscles you use in scores of activities. Because of their size and frequency of use, these muscles are often tight or subject to injury. And because the thigh muscles are powerful, having a partner to stretch them can be especially helpful in increasing or maintaining flexibility.

There are four major thigh muscle groups: (1) the hamstrings in the back of the thigh, which work to bend the knee, (2) the adductor or groin muscles—the inner thigh muscles that work to bring the thighs toward each other, (3) the quadriceps at the front of the thigh, which help straighten the knee, and (4) the hip flexors at the front of the pelvis, which help you raise your thighs. (One of the four quadriceps muscles acts as a hip flexor as well as a knee straightener.)

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Figure 1. Two-person hamstring stretch.



Figure 2. Two-person thigh adductor stretch.

jury, an examination by a doctor or other health professional can rule out an avulsion fracture (in which a piece of bone pulls away where the muscle attaches) or a tear at either end of the muscle. Once such serious but rare injuries have been ruled out, gentle pain-free stretching can begin.

The two-person contract-relax stretches described below help restore needed flexibility to injured and uninjured muscles alike. In addition, the exercises for the hamstrings and adductors will help build strength.

**One note of caution:** Two-person stretches can cause injury if done incorrectly or too forcefully, so you must be

sure that your partner stretches your muscles at a slow, steady pace. And always stop if you feel pain. Older or less flexible people should be especially careful to start slowly.

These muscles are used in virtually all athletic activities and therefore tend to be very strong. Thus, almost anyone can benefit from increasing and maintaining the flexibility of their thigh muscles. Thigh stretches may help improve movement regardless of your activity or sport. People who have tight or injured hamstrings, adductors, quadriceps, or hip flexors may especially benefit.

For patients who have a thigh in-

jured, an examination by a doctor or other health professional can rule out an avulsion fracture (in which a piece of bone pulls away where the muscle attaches) or a tear at either end of the muscle. Once such serious but rare injuries have been ruled out, gentle pain-free stretching can begin.

#### General Procedure

In partner thigh stretches, the partner stretches your muscle to the point at which you feel tightness (but not pain). You then contract, or tighten, the muscle without causing

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pain as your partner resists the movement of your leg. When your muscle feels too tired to contract any more, relax it.

As soon as you have relaxed your muscle, your partner stretches it to a new point of tightness for at least 20 seconds. (Tiring the muscle typically allows it to stretch farther.) Again contract the muscle without pain against your partner's resistance until the muscle tires, then relax it. Have your partner again stretch to a new point of tightness and hold for at least 20 seconds. Repeat for a total of three or four contract-relax sets. Gaining 10° to 20° of thigh motion in one session of these stretches is quite possible, especially in recently strained muscles.

Do these stretches every day, if possible, especially before and after engaging in a bout of physical activity. If you're recovering from a thigh injury, you need to stretch several times a day.

### Specific Stretches

**Hamstring stretch.** To stretch your hamstrings (figure 1), lie on your back on the floor, ground, or a sturdy table. (If you're on a table, your partner will stand on the floor.) Place your right ankle (or the ankle of your injured leg) on your partner's shoulder.

Your partner, while keeping your leg fully extended by placing one hand on your kneecap, gently pushes your leg toward your head by moving his or her body forward. Tell your partner to stop when you feel tightness. Next, contract your ham-



Figure 3. Two-person stretch for the quadriceps and hip flexors.

string as tightly as possible without causing pain and push against your partner's shoulder. When your hamstrings tire, relax them.

Your partner again stretches the muscle group to the new point of tightness. Repeat three or four times. For general flexibility, repeat with the left leg. If you are injured, the goal is to match the flexibility and strength of your uninjured thigh.

**Adductor stretch.** To work your adductors (figure 2), lie on your side on the floor, ground, or a table with the inside part of your ankle on your partner's shoulder. While your partner keeps a hand on your kneecap to keep your leg straight, he or she stretches your adductors by moving his or her body forward—and your leg up—until you feel tightness. At this point, contract your adductor muscles as tightly as possible without pain by pushing against your partner's shoulder till the adductors tire. Then relax the muscle group.

Repeat as with the hamstring stretch. For general flexibility, repeat on the other side. For injured adductors, the goal is to match the

flexibility and strength of the uninjured thigh.

**Quadriceps and hip flexors.** For flexibility of the quadriceps and hip flexors (figure 3), lie on the floor or ground on your back. Bend your right knee (or the knee on the injured side) and place your right heel near your right hip as shown. Your partner then kneels beside you and places his or her right knee next to the inside of your right ankle to keep your right heel close to your hip. He or she then places his or her left hand on the right side of your pelvis to keep the pelvis flat, which is crucial for an effective stretch.

Your partner then presses your right knee toward the floor with his or her right hand to the point of tightness and holds for at least 20 seconds. No muscle contraction is involved in this exercise. Repeat this quadriceps and hip flexors exercise three or four times and then repeat with the other leg. As with the other stretches, the goal for an injured thigh is to gradually have equal the strength and flexibility of the uninjured thigh.

### Proven Effectiveness

Provided that a health professional has ruled out a serious injury, gentle stretching can begin within 24 hours of a minor muscle strain as long as you stop if you feel pain. I've found these stretches to be very effective at the Naval Academy in both preserving and restoring flexibility and strength while minimizing discomfort. **FSM**

*Remember: This information is not intended as a substitute for medical treatment. Before starting an exercise program, consult a physician.*