



*Keller Therapeutics*

*Of Newburyport*

**Runner's Knee**

**Strengthen and Stretch**

### **How Strong?**

The strengthening exercises I include here are intended to provide basic muscle health and fitness. It is not my goal to get you ready for a cover photo on a body builder magazine. And so, for example while it is true that the best way to strengthen a muscle is to contract it while providing some increasing resistance to the contraction, the amount of resistance can vary widely. That is, strengthening with light or moderate resistance daily is more effective than using major resistance exercises one a week.

### **What and How to Do.**

The exercises below are intended to strengthen the main muscles related to Runner's Knee problems, and to leave them lengthened.

For strengthening I recommend a total of 30 repetitions of each exercise in batches of 10, but you must be the judge of what you can do. Start slow, and increase pressure as you feel comfortable; don't overwork these muscles. It's better to do 10 repetitions every day than to do 30 once a week.

For stretching, I suggest holding each stretch for 30 seconds, resting briefly, and repeating the stretch two to four times. Again, don't overdo the stretch. A light stretch is better than none at all, and as the muscle lengthens over a period of days, you may find stronger stretching to become comfortable.

**Cardinal Rule:** After you strengthen a muscle, lengthen it.

### **Quadriceps.**

The quadriceps (quads) is a group of four muscles with a common tendon just above the knee. Their main function is to extend the knee as well as to flex the hip and stabilize the kneecap. Strengthening the quads helps not only to sculpt the front of the thighs, but also improves running and walking and helps to prevent injuries.

Do the following for one thigh, and then repeat for the other side.

#### **Strengthen.**

Sit on a firm chair, and bend your knee so that your ankles are directly below your knees. Using a slow count to four, stretch out one leg, but not so far as to lock your knee. Hold this position for a count of four.

Then slowly lower to the starting position again to a count of four. That said, the slower you lower your leg the better.

If you desire to have more resistance than that provided by gravity then use a stretch band from the top of the active foot to the heel of the opposite foot.

#### **Lengthen.**

Stand in a position where you can stabilize yourself by holding onto a table or chair or some such. Now bend one knee, and grasp the ankle of that leg with your hand. Stand up straight, and pull the foot close to your buttocks.

Hold the stretch for about 30 seconds, and slowly return your leg to the floor, and repeat this three times.

## **Combining Strength and Length.**

Another approach alternately lengthens and strengthens the quads. You may wish to use this after becoming comfortable with the method above.

Stand in a position where you can stabilize yourself by holding onto a table or chair or some such. Now squat down as far as you can do; this puts a stretch in the quads.

Hold this for about 30 seconds, and then stand up straight to a count of four; this motion contracts the quads against the resistance of your body weight.

## **Hamstrings.**

The term 'hamstrings' actually refers to five tendons of the three muscles at the back of the thigh. It comes from Old English where 'ham' referred to the hollow back of the knee, and 'strings' references the tendons. Generally, however, we use the term to refer to the muscles. Their primary functions are to bend the knee and to extend the hip.

### **Strengthen.**

Lie face down on a mat or carpeted floor with a pillow under your waist so that the top of your foot is against the floor. Now bend both knees to a count of four bringing your heels as close as possible to your buttocks.

Extend your knees slowly until the top of your foot is back on the floor again to a count of four.

Repeat that move 10 times, and rest briefly. Repeat 10 times twice more for a total of 30 repetitions.

For more resistance in this case do the exercise one leg at a time using an exercise band from the back of the heel of the active foot to the ankle of the other foot.

### **Lengthen Hamstrings.**

From a standing position, bend over at the waist allowing your arms to hang down in front of you. DON'T try to touch your toes; that could easily over stretch the hamstrings. You are simply trying to get a gentle stretch in the hamstring muscles on the back of your thigh.

Hold the stretch for about 30 seconds, and slowly stand up. Repeat this three times.