



STRETCHING and STRENGTH Training

The following stretches and exercises are designed to strengthen and stretch muscles used in running. We recommend that you make them a part of your weekly training regimen especially in the first few months when your bones and muscles are adapting to the rigors of running.

It is imperative that you maintain correct form when doing them. Never overdo the stretches. You may end up tightening the muscle you want to stretch. Ease gently into a stretch and hold it for 20-25 seconds. Remember to breathe when doing so. **NEVER BOUNCE WHEN STRETCHING.**

Before starting the following set, please warmup for a few minutes by doing a few jumping jacks or walking in place.

STRETCHES

ANKLE ROTATION

Stand up straight, holding on to a bar or a table for support. Lift one foot a few inches off the floor and rotate it at the ankle eight times each in the counterclockwise and clockwise directions. Switch legs and repeat the above 2 sets of eight ankle circles.

After the workout, if you are close to a grassy field, take off your shoes and run barefoot on the grass for 8-10 minutes. This is one of the best ways to strengthen the muscles of the lower leg in addition to improving proprioception (the brain's awareness of where the body's extremities, feet and hands, are in space).

CALF STRETCH (Fig. 1)

With every step you take, you push off with your calf muscles. It is very important to keep these muscles strong and supple. The big calf muscle is called the Gastrocnemius while the smaller one below it is called the Soleus.

Stretching the Gastrocnemius

Stand about 2-3 feet away from a wall. Put your palms against the wall and position your right leg close to the wall with the knee bent. Extend your left leg back without bending the knee. Make sure that both the feet are parallel and pointing at the wall.. Now lean into the wall. Make sure your left foot is planted flat on the ground and do not let your ankle collapse inward. You should feel a stretch in the big calf muscle in the back of your left leg. Hold the stretch for 15-20 seconds. Remember to breathe as you move into and hold the stretch. Switch legs. Do this stretch twice for each leg.



Stretching the Soleus

The soleus stretch is identical to the Gastroc stretch described above with the one difference – for this stretch YOU WILL BEND THE BACK LEG ALSO AT THE KNEES. You should feel a stretch in the inside of your leg, between the knee and the ankle.

Another version of the calf stretch is shown in **Fig. 15**. While standing erect, take the right leg and cross it across the left one so that the right foot is in front of and slightly to the LEFT of the left foot. Keeping the back leg (the left leg here) straight, bend down and hold the pose for 30 seconds. Switch legs and repeat.

HAMSTRING STRETCH (Fig. 2)

The three long muscles in the back of each thigh are the hamstrings. The hamstrings cross two joints (the knee and the hip) and help support those crucial areas.

Lie on your back with your right knee bent, right foot flat on the floor and your left leg straight out on the floor. Slowly lift your left leg as high as you can, keeping the toes flexed. When you have lifted the leg as high as you can without assistance, put your hands on the back of your left thigh and gently pull the leg a little farther, aiming your toes forward and downward. Hold the stretch for 20-30 seconds. Alternate legs, repeating each leg four times.

QUADRICEPS STRETCH (Fig. 3)

The quadriceps (“four heads”) are the large muscles in the front of your thighs. They do most of the work of running. Weak or fatigued quads can lead to knee pain. One of the biggest causes of runner knee pain, especially in beginning runners, is weak or tight quads.

Stand up straight, bracing yourself against a wall for balance. Bend the left knee and grasp the foot behind you with the left hand. Keeping the body erect and the left knee aiming directly down at the floor, gently pull the left foot in towards the buttock. You should feel the stretch in the front of the thigh. Hold the stretch for 20-25 seconds. Repeat three to four times with each leg.

GLUTEAL STRETCH

The gluteal muscles are commonly called the “butt” muscles. Tight glutes can lead to ITB (Iliotibial Band, a tendon running on the outside of your thigh between the hip and the knee) tightness or tight hamstrings.

One of the best stretches is the pretzel. Lie on your back and bend both knees. Place your right foot over the left knee. Move the left knee towards you. You should feel the stretch



in your right gluteal muscle. Hold for 30 seconds. Switch legs and repeat. **Fig 18** demonstrates the pretzel stretch.

INNER LEG AND GROIN STRETCH

Sit on the floor with your knees bent and feet pressed together. Hold on to your feet with both the hands and drop your knees towards the floor. Lean forward at the waist, keeping your back straight, to intensify the stretch. Hold for 25-30 seconds.

Fig. 16 shows another stretch for the inner leg. Stand with your feet wider than shoulder-width. Bend down from the waist without bending the knees. Hold the pose for 20-30 seconds.

Fig 17 shows yet another version of the groin stretch. From the position in the stretch in **Fig. 16**, turn your torso to the left, bend the back knee (the right leg here) and lower it towards the ground, making sure that the front knee does not go beyond the line of the toes. Hold for 30 secs. Switch legs and repeat.

ACHILLES STRETCH

Figs. 13 and **14** show stretches for the Achilles.

In order to stretch the Achilles tendon, stand 2-3 feet from a wall. Bend the right leg at the knee, raise the left leg and anchor it behind the right knee and, leaning on the wall for support, lean towards the wall. Hold the stretch for 30 seconds. Now point your right foot inward about 10-15 degrees and repeat the stretch for 20 seconds. Now point the right foot 10-15 degrees outward and hold again for 20 seconds. Repeat for the other leg. This is represented in **Fig 13**.

Another stretch, shown in **Fig. 14**, is to stand with your right foot in front, about 2 feet of AND in line with the left foot. Bend both feet at the knees and hold the stretch for 30 seconds. Switch legs and repeat.

Additional stretches for the ITB, the hamstrings, the quadriceps and the lower back are shown in Figs. 19 – 24. The last stretch is one of the best stretches to do for all the muscles in the legs and the lower back. It is known as the Saigon stretch in the US.



STRENGTHENING

45-DEGREE SQUAT (Fig. 5)

The 45-degree squat is one of the best exercises you can do for your legs. It targets all the large muscles of the lower body.

Begin by placing your feet slightly wider than your shoulders and turn them outwards at a 45-degree angle. Align your knees with your toes and maintain the normal curvature of your spine throughout this exercise. Inhale as you lower the body and exhale as you come up, remembering to not change the posture. It is important that your knees not extend beyond the toes. Do not squat any lower than thighs parallel to the floor. Squeeze the muscles of your legs as you return to the top of the squat. Do one set of 10 repetitions.

LUNGE (Fig. 4)

This exercise requires strength and balance, making it the perfect exercise for good running technique. The thigh should not go lower than parallel to the floor and the knee should not extend beyond the toes.

Standing with toes pointing forward and feet hip width apart, step forward, bending at the knee to lower the body. Create right angles in both legs. The back retains its natural curvature and behaves like an elevator descending. Return to the starting position and switch legs. Keep your hands on your hips to maintain balance.

Inhale as you lower the body and exhale as you bring it back up. Do one set of 10 repetitions.

CALF RAISE (Fig. 6)

The calf raise strengthens the lower leg and increases flexibility. Perform this exercise on a raised platform or a step that will allow you to lift your heels.

Stand tall, leaning your palms on the wall for balance, and rise on your toes as high as you can. Imagine yourself being pulled up by a string attached to the top of your head. Exhale as you rise and inhale as you lower yourself. Do one set of 10 repetitions.



ABDOMINAL CRUNCHES (Figs. 8, 9 & 10)

Lie on your back, knees bent and flat on the floor. Cross your arms in front of you and keep them lightly on your chest. Keeping the small of your back flat on the floor and your face pointed up towards the sky, bring your shoulders off the ground. Without letting your shoulders touch the floor, pulse slowly up and down without resting, counting off each pulse for a total of 20. Exhale as you pulse up, sucking your navel in towards your spine. Inhale as you come back.

Rest for 30 seconds. Now twist your trunk slightly to the right and do the same exercise for 10 pulses. Twist the trunk to the left and repeat for 10 more pulses.

PUSHUPS (Fig. 7)

Lie facedown on the floor with your palms resting face down beside your shoulders. Keeping your back and legs straight, push off the floor to raise your body. Once your arms are straight, slowly lower yourself until your arms are parallel to the floor. Inhale as you push up and exhale as you go down. Do a set of 10-15 slowly. An easier version of this exercise is to do the same motion but with your knees on the floor.

HEEL WALKING

Most beginning runners experience pain in the front of their legs, between the knees and the ankles. This is because the muscles in the front of the leg are not as strong as the calf muscles in the back. Heel walking helps strengthen the front muscles.

In your shoes or barefoot, walk on your heels for 30-40 feet with your toes pointed ahead and up. Return back to the start. Rest for 10-15 seconds and perform the same exercise but with your toes pointed inward. Repeat. Now move your toes so that they are facing outward and repeat the walk.

HIP ABDUCTOR STRENGTHENING

Sometimes ITB pain can be a result of weak hip and leg abductor muscles. Strengthening them may help nip ITB pain in the bud. Abductor muscles lift the leg away from the body.

Stand with your feet shoulder width apart. Without bending the right knee, raise the right leg AWAY from the body on the right side. Bring it back but DO NOT place it on the floor. Start the next raise almost as soon as it is just above the ground. Do 10 of these lifts per leg.



KNEE RAISES (Fig. 11)

Stand with your feet shoulder-width apart. Lift the right knee towards your left elbow which you will swing down to try and meet the right knee. Put the right leg back on the floor and now lift your left leg towards a descending right elbow. Do 8 repetitions per leg.

ACHILLES STRENGTHENING (Fig. 12)

Doing the following exercise will make your Achilles as strong as a rock. Do them after your run at least twice a week. Stand about 3 feet from a wall. Stretch your right leg forward without bending the knee. Now, without putting your right foot on the ground, reach with the toes of your right foot (the one in the air) towards the wall. This will cause the back knee to bend, strengthening the Achilles tendon which is the tendon in the back of the ankle, connecting the calf muscle to your heel bone. Do 15 of these reaches. Switch to the other leg.

Initially, when still getting your balance, do these with your raised leg only reaching straight forward. Once your balance has improved, do 10 straight ahead, 10 to the right side and 10 to the left i.e. your right leg will reach across the other leg to the left side and vice versa. The tendon that is getting strengthened is that of the back leg i.e. the leg you are standing on.



Fig. 1 The Calf stretch



Fig. 2 The Hamstring stretch



Fig 3. The Quadriceps stretch



Fig 4. The Lunge



Fig 5. The 45-degree Squat



Fig 6. Toe raises



Fig 7. Pushup



Fig 8. Abdominal crunch



Fig 9. Abdominal crunch (obliques)



Fig 10. Abdominal crunch (obliques)



Fig. 11 Knee raises



Fig. 12 Achilles exercise



Fig. 13 Achilles stretch



Fig 14. Achilles stretch



Fig 15. Calf stretch



Fig 16. Inner leg/Groin stretch



Fig 17. Inner leg/Groin stretch



Fig. 18 The pretzel



Fig 19. Hamstring stretch



Fig. 20 Quad/Hamstring stretch



Fig. 21 Lower back stretch



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Fig. 22. Lower back/ITB stretch Fig 23. Groin stretch (butterfly) Fig. 24 Saigon squat