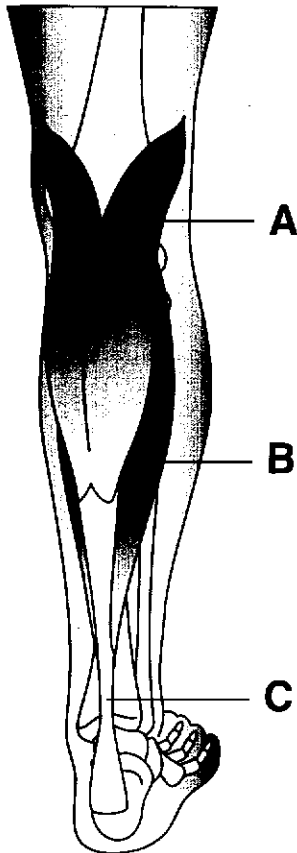


## CALF (SOLEUS) STRETCHING EXERCISES

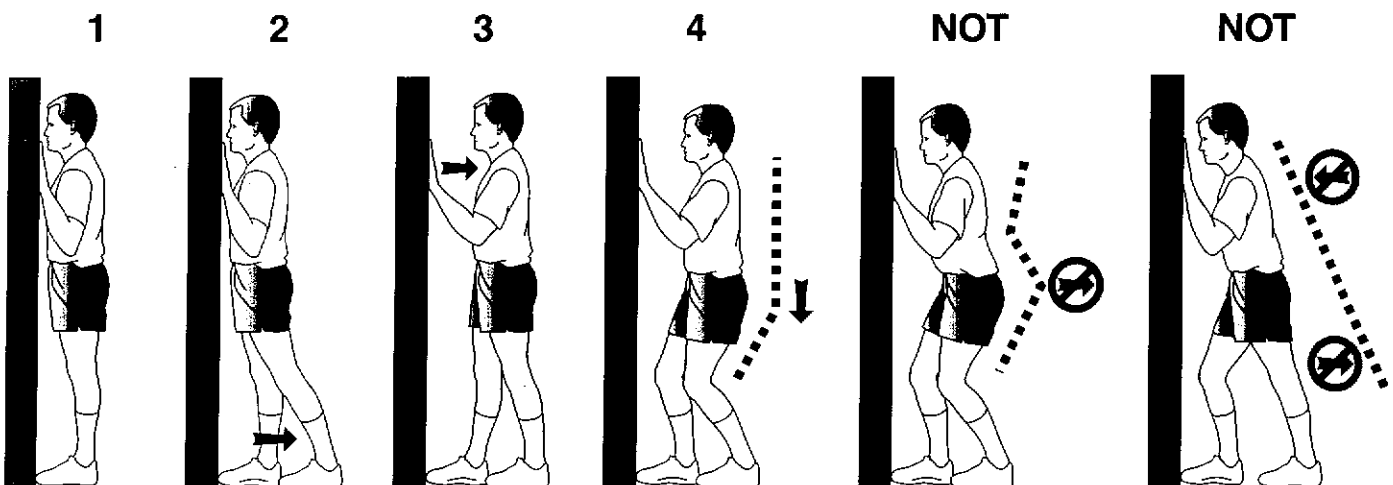


*Muscles and Tendons of the Calf*

There are three muscles in the back of a person's calf that connect to the top of the Achilles tendon (C), a tough, fibrous tissue at the back of the ankle. The lower end of this tendon connects to the back of the heel bone (calcaneus) and has fibers that wrap around the bone to a ligament on the sole of the foot (plantar fascia). Of the three muscles attached to the Achilles tendon, one is very small, but the other two "power" the tendon to help a person lift their heel off the ground and move forward onto their toes. The upper, outside muscle (A – *gastrocnemius*) is attached to the lower end of the thighbone (femur) and crosses behind the knee. This is the main muscle of the calf. The lower, inside muscle (B – *soleus*) is attached to the back of the shinbone (tibia) and some of the tough tissue around the other muscles. The following exercise stretches the soleus muscle and can reduce pain from inflammation of the Achilles tendon or plantar fascia ligament. It can also relieve tightness of the Achilles tendon if it hasn't been exercised for a while (for example, if the leg has been in a cast).

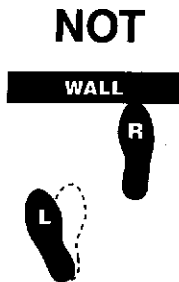
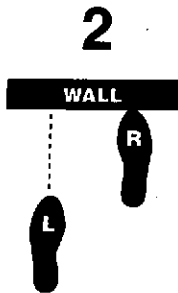
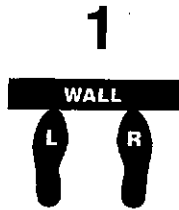
To stretch the soleus muscles:

- 1) Stand facing a wall with your feet comfortably spread apart (usually 8-10") and your toes touching the wall (*fig. 1*).



*continued on back*

## Calf (Soleus) Stretching Exercises, continued from front



Placement of Feet

- 2) Move the foot that you want to stretch back about 10", flat on the floor and still pointing straight at the wall (*fig. 2*). You might feel a little "pigeon-toed".
- 3) Place your hands lightly on the wall and push back, shifting your weight fully onto the back foot (*fig. 3*). The forward foot and hands, touching the wall, are only used for balance.
- 4) Keeping your back straight and your hips directly below your shoulders, slowly bend BOTH your knees, keeping your weight on the back leg (*fig. 4*).
- 5) Hold this position for thirty seconds before slowly rising to a standing position, and then repeat with the other leg.

If you are doing the exercise correctly, you will feel a pulling sensation in your Achilles tendon in the lower calf. If you don't feel this pull, check your position by paying special attention to the following:

- Make sure your toes are pointing directly at the wall (*fig. 7*).
- Keep your weight on the back (stretching) leg.
- As you squat down, do not allow your hips to move backward or "stick out" (*fig. 5*).
- Do not lean forward into the wall (*fig. 6*).
- Do not straighten the back knee while squatting (*fig. 6*). Both knees should be bent.

As you become used to the position and "feel" of this exercise, you can do it without standing against a wall, but doing it against the wall at the beginning is helpful in training your upper body to remain straight up and down, parallel to the wall.

You cannot "overdo" this stretch, and it is something you can often fit into your regular schedule as you talk on the phone or do other tasks. At a minimum, however, I suggest you set aside enough time to do at least ten stretches of EACH leg twice a day. This will take about 12–15 minutes twice a day.

Hopefully, this information has been interesting and helpful to you. As with any general information, some of it may not apply to your case and it is not intended to take the place of an orthopedic evaluation and personalized treatment plan. If you still have questions, please do not hesitate to discuss them with Dr. Nickel.

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