PROACTIVE HEALTH GROUP
PROFESSIONAL HEALTH CARE FOR THE ACTIVE INDIVIDUAL

HEEL STRENGHTENING PROGRAM

What is Eccentric Loading?

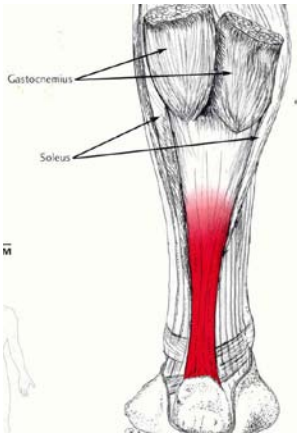
Eccentric loading is a type of exercise designed to strengthen the muscles and tendons. This article will focus on how eccentric loading can benefit your calf muscles and the tendon attaching the calf muscle to the heel bone (Achilles Tendon). By doing the exercises described below, the calf muscle is made to work while it is contracting, and also while it is being stretched. In essence, the calf muscle is both stretching and working at the same time! This unique form of exercise is called *eccentric loading*, and is different than most strengthening programs. It more closely simulates the actual movements and loads during sport and exercise. We call eccentric loading exercises for your calf muscles *"heel drops".*

Why Should I do " Heel Drops"?

One of the main reasons recovery from injuries such as Achilles tendinitis is difficult stems from the fact that the calf muscles often remain weak after injury. Strength does not return on it's own. Inadequate strength is one of the causes of injury. Therefore, correcting any weakness is a very important part of recovery from injury and of preventing future injury.

Gastrocnemius

Soleus



Even if the strength of the calf muscle / tendon unit is strong enough for normal daily activity, it may not be strong enough for more intense exercise activities.

The *"heel drop"* program has been designed to mimic the type of loads experienced during exercise, so it is especially useful in returning to sports that involve running.

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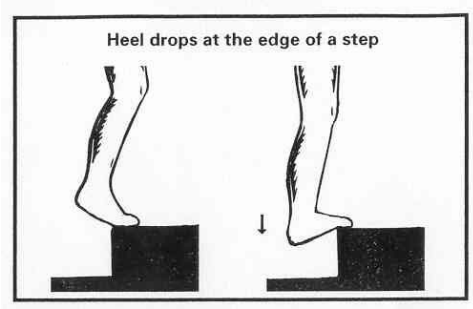
How To Do "Heel Drops"

The important components of this program are your body position, the speed of the exercise and the progression.



1. ***Position***

- Stand with your feet shoulder width apart, with the balls of both feet over the edge of a step. You can use a handrail for balance, but not support.
- Ensure your toes are pointing straight ahead (don't toe-in or out).
- Raise up on your toes and then lower your heels below the level of the step.

2. ***Speed***

- The program has two speeds, which mimic the load that the legs experience during exercise. To begin with, you go down and up at a slow, comfortable speed. Later you progress to fast drops (this stage begins after 7 successful days of the initial exercise).
- When you do fast drops, you should drop very quickly. At the bottom of the drop your movement should stop suddenly so that you feel a "jerking" or "bouncing" sensation. Then, raise slowly back up.
- You may be a bit apprehensive about doing these quick drops at first. However, you will find that once you begin, you will gain confidence quickly. This is the most important part of the program, so be brave!

3. ***Progression***

- There are two parts to the progression: the build up and the maintenance.
- Start by doing 3 sets of 20 repetitions of the slow drops. Wait a minute or two between each of the 3 sets. Continue doing this every day for 7 days straight.
- After 7 days, you can move on to the next stage. When doing the single leg exercises, make sure to exercise both left and right sides.

Build Up

- 3 sets of 20 repetitions daily

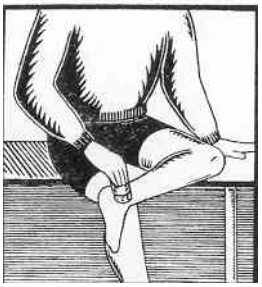
Both legs slow----------7 days
Both legs quick drop; slow up---7 days
Single leg slow----------7 days
Single leg quick drop; slow up----7 days

28 days total

Maintenance

Once you have reached the single leg, quick drop level for 7 days, switch over to the maintenance program. This involves performing the last stage every other day. Then, continue with the maintenance program as part of your regular exercise routine.

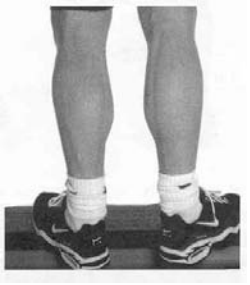
- To maintain strength- decrease the single leg quick drops to every other day.



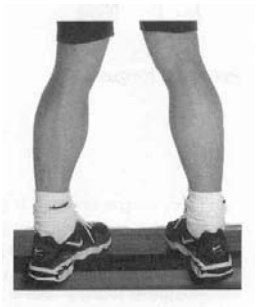
Routine

- Warm up (10 minute easy walk)
- Do heel drops
- Stretch (hold for 30 seconds, no bouncing)
- Ice if painful (10 minutes on, 10 minutes off, repeat 3 times)

Calf stretch with toes forward and knees straight.



Calf stretch with toes pointed out and knees straight.



And finally with toes pointed inwards with knees straight.

This is a stretch for the deeper soleus muscle, which lies underneath the gastrocnemius (calf) muscle.

What To Expect During the Program

If you are near full recovery from an injury or simply strengthening muscles for prevention of injury, the only sensation you experience should be an improvement in strength. However, if you are using the program as rehabilitation from an injury, you may find that you do not feel much better during the build-up part of the program. A small amount of discomfort or irritation is to be expected. Consider that your rehabilitation is akin to kicking a ball up a hill; you have to keep at it in order to succeed. Be encouraged by the fact that *feeling the same while you are increasing the strength means that you are making progress!*

You should not feel worse. If you experience irritation when you progress from one stage to the next, back off to a previous level where you were comfortable. For example, if you were doing the quick drops with both feet and experienced a flare-up when you tried the single foot drops, return to the double foot drops for a few days, then try to increase again. If you still have trouble, come talk to us.

Staying Active

As long as you can progress through the program, continue your other activities and sports. However, if you keep aggravating the area as you try to do this program, you will have to reduce any activities that are irritating your legs. The heel drop program should take priority. Your doctor will be able to help you modify your activity level safely.

***please refer to our handout on "Current Concepts of Stretching" for more stretching tips.**

Please ask us if you have any questions about this program!