

Gait Training Exercises for Stroke Patients

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Your *gait* refers to your manner of walking, and *gait training* refers to the process of improving your ability to walk. The side effects of stroke often impair patients' gait, so most individuals will participate in gait training.

To help you improve your gait, let's first look at the common ways that stroke can affect your gait, and then we will discuss some exercises that can help.

What's the Purpose of Gait Training?

The motor impairments that often accompany stroke can affect your ability to walk. Here are some common examples:

- Limited dorsiflexion (the ability to lift the front part of your foot back towards your shin)
- Lack of knee flexion and extension (bending and straightening your leg)
- Limited hip extension (the ability to move your thigh at the hip)

Gait training helps improve all of these problems. While gait training places a heavy emphasis on your legs, it also focuses on your core, which plays a heavy role in your balance.

To help improve these issues, the goal of gait training is to:

- Increase muscle strength and coordination in the lower limbs
- Retrain voluntary response in the lower muscle groups
- Increase flexibility, cardiovascular fitness, and balance

Now, how do we get there?

Treatment for Impaired Gait After Stroke

Walking becomes difficult after stroke because your brain is telling your body to move correctly, but your body is having a hard time hearing those commands. **To improve your gait after stroke, you need to relink your mind to your muscles by activating neuroplasticity.**

Neuroplasticity is the mechanism that allows your brain to rewire itself and form new connections, and it can be activated through repetitive practice. The more you practice something, the more your brain rewires itself.

Targeted Muscle Groups for Gait Training After Stroke

That's why the best way to improve your gait is to practice lots of walking and rehab exercises. Some of the major muscle groups that need to be strengthened for improved gait are your feet, legs, and core.

Foot Exercises for Gait Training

Proper gait starts with your feet. You need the ability to strike the ground with your heel, follow through, and push off your toes. Stroke survivors with foot drop lack the ability to lift the front part of their foot (i.e. engage dorsiflexion).

The following foot drop exercises can help with that.

1. Ankle Dorsiflexion (Passive)



From a seated position, cross your affected leg over your other leg.

Then, move your foot into *dorsiflexion* (image 1) by using your unaffected hand to move your foot up towards your knee.

Then, move into *plantar flexion* (image 2) by extending your foot back down.

Focus on imitating all movement from your ankle. Repeat 10 times. For added challenge, complete these exercises actively without the use of your hand.

2. Assisted Toe Raises (Passive)

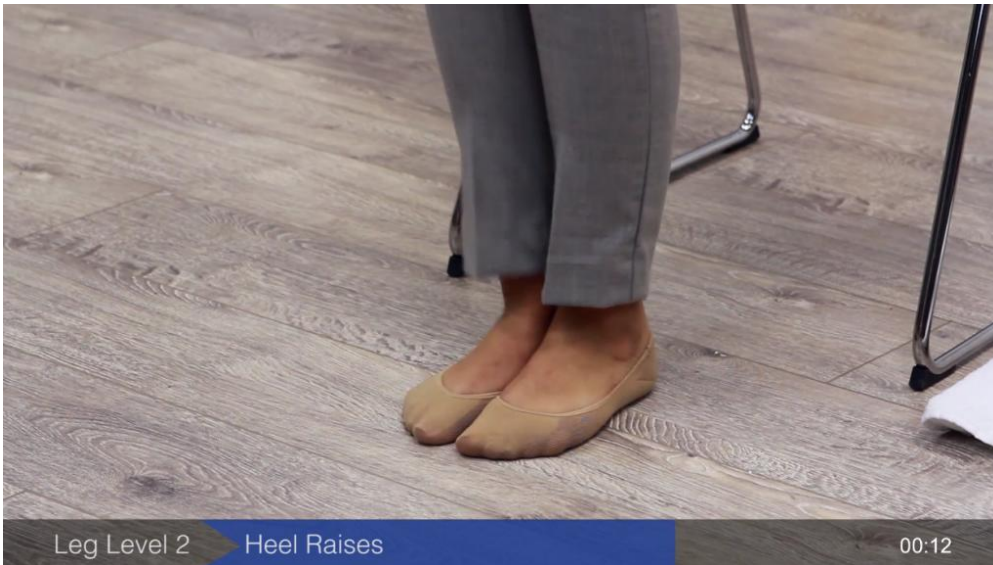


Toe raises are the most difficult movement to perform with foot drop. If you have difficulty with this movement – that's okay!

Even with passive exercise you can start reintroducing movement into that area.

To get into the starting position, place your unaffected foot underneath your affected foot. Then, use your non-affected foot to assist your affected foot up while keeping your heel on the ground. Then release back down. Repeat 10 times. Once you regain the ability to perform these without assistance, do active exercise for added challenge.

3. Heel Raises (Active)



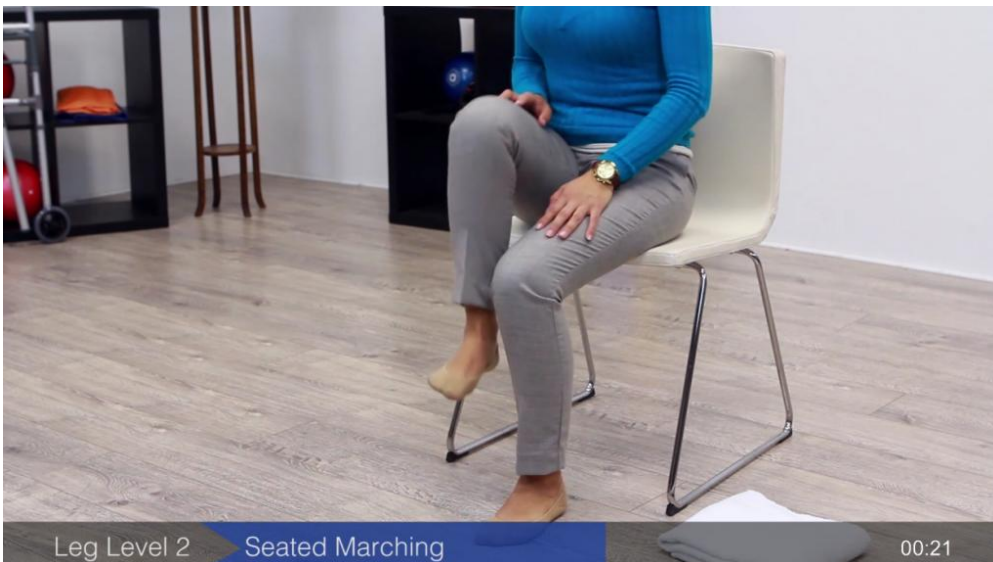
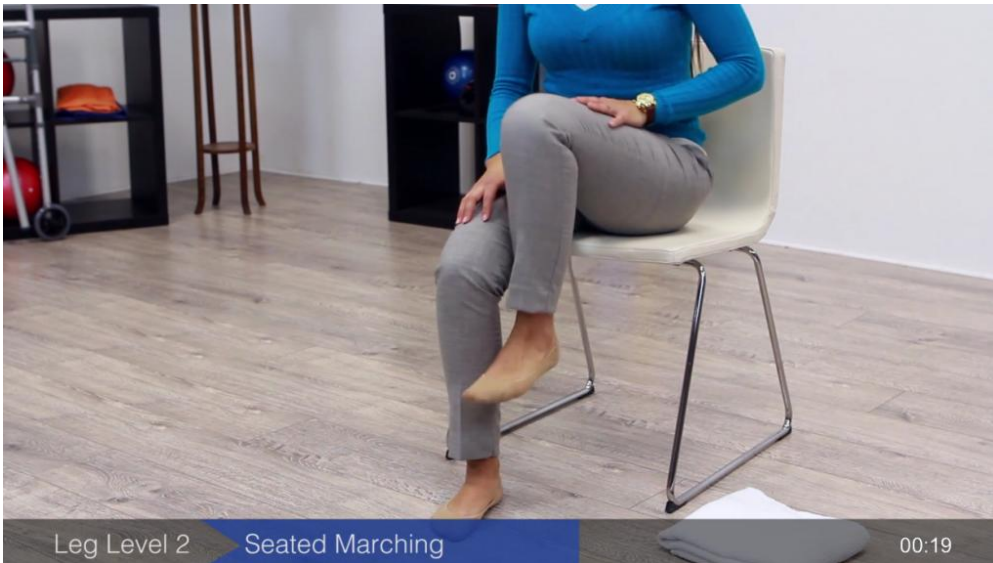
This exercise is the opposite of toe raises. Although this may not feel like it's helping with your foot drop, it will help train the surrounding muscles.

To perform heel raises, start with your feet flat on the ground. Then, point your toes and lift your heels off the ground. Repeat 10 times.

Leg Exercises for Gait Training

Now that you're all set up with some foot drop exercises, let's move onto the legs.

1. Seated Marching

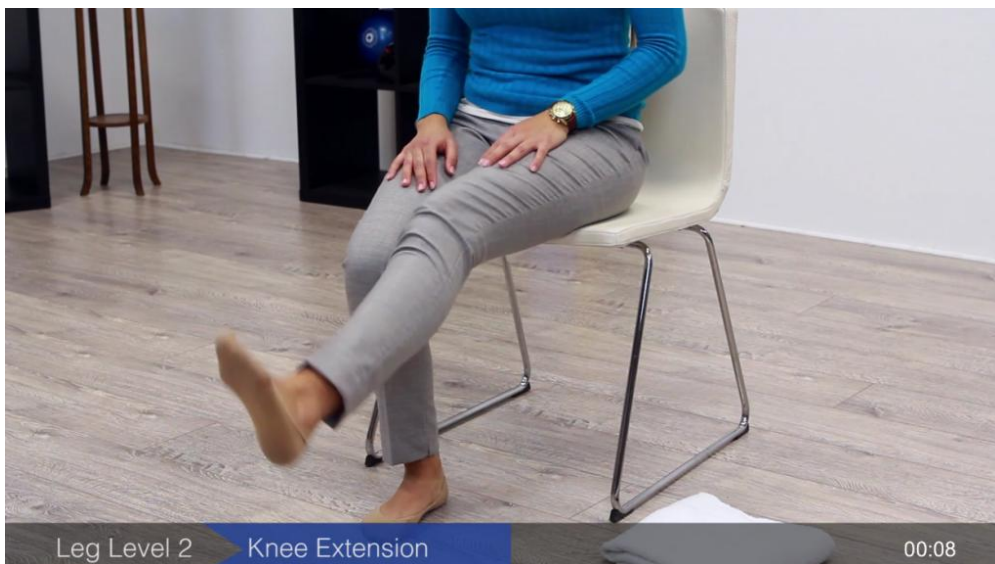
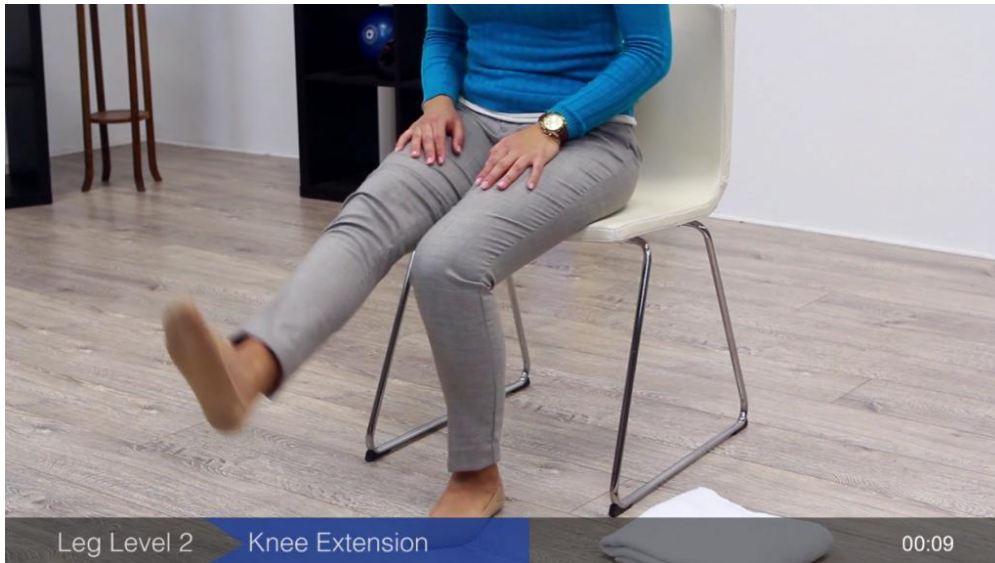


From a seated position, lift your affected leg up into your chest, and then place it back down onto the floor. Keep your back straight and maintain a controlled movement. Then repeat on the other leg, alternating back and forth for a total of 10 repetitions.

How to make it harder:

Pause at the top for a second or two. And, if you have the control to do this safely, slightly push down on your quads to add a bit of resistance.

2. Knee Extension



From a seated position, extend your left leg out in front of you parallel to the floor. Avoid locking your knee. Then, slowly bring your foot back down to the floor. This will feel like a kicking motion.

Then repeat with your right leg, alternating back and forth between your right and left legs for a total of 20 repetitions (10 on each leg).

How to make it harder:

Pause for a second at the top of each extension.

Balance and Core Exercises for Gait Training

Now let's move onto some balance and core training.

Building a strong core and good balance is absolutely essential for improving your gait.

1. Toe Taps



While lying on your back, lift your legs up and bend your knees at a 90 degree angle. Your shins should be parallel to the floor and your thighs should be perpendicular. Your core should be fully engaged.

This is your starting position, which is also referred to as tabletop position.

From tabletop position, bring your left leg down and gently tap the floor with your left foot. Then, bring your leg back up by using your core muscles. Maintain a 90 degree bend in your knee the entire time. Repeat on the other leg, all while keeping your core as tight as possible. This completes one set.

Perform 10 sets total.

2. Knee to Chest



From a comfortable lying position, hug your knees into your chest. Then, hold on to left leg with your left arm and then extend your right leg onto the floor. This is your starting position.

From your starting position, bring your right leg back into your chest. Try not to use your leg muscles to achieve this movement. Focus specifically on engaging your core and using your core muscles to lift your leg up.

Once your leg is back in your chest, give your core muscles a good squeeze, then release your leg back down.

Perform 10 repetitions with each leg.

3. Flamingo Stands

Do you know what a flamingo looks like when it's standing on one leg? That's what you'll need to look like during this exercise. Practice standing on one leg for about 30 seconds and then switch to the other foot, holding on to a chair, counter top, or table for extra stability.

4. Side Leg Raises

This balance exercise is also single-legged, but you'll be keeping your leg straight this time.

From a standing position, lift your leg out to your side about 45 degrees (or as much as you can do) and hold it there for a couple seconds, using any furniture that you need to help you keep your balance. Then, bring your foot back down to the floor and complete 10 total repetitions on each leg.

Should You Do Rehab Exercises or Walking Exercises?

These rehab exercises will help improve your gait by building the strength and coordination in your feet, legs, and core.

Aside from these exercises, another great way to improve your gait is to practice walking. Some stroke survivors don't have enough mobility to practice walking, though, and rehab exercises are a great place to start if that's the case for you.

For those who have sufficient mobility in their body, it's a great idea to practice both rehab exercises and practice walking regularly. The more you practice moving and walking, the better you will move and walk! So practice, practice, practice.

Rehab Tools to Improve Gait

Another way to improve your gait is to use rehab tools that help strengthen your lower muscle groups and balance. Our home therapy tool, FitMi, does just that – and it helps you see results faster than traditional therapy.