

## Exercises for Optimizing Gait with Lower Limb Orthoses and Prostheses



Learning to walk with an orthopedic device is often a challenge. The exercises described here will assist you in your efforts to walk well. The main purpose of these exercises is to train your brain and body to shift your weight confidently and evenly from one leg to another with each step. After being fit with an orthopedic device, the tendency for most patients is to weight shift through side-to-side movement of their shoulders and head – this is what we want to prevent because it will cause back pain and limited mobility in the future. These exercises will help you to appropriately shift your weight through your hips instead of your shoulders. They will be most beneficial if you keep your head and shoulders still and engage your core abdominal muscles to focus on control and balance instead of speed. The circles at the center of the diagrams represent your center of mass and the arrows show how your center of mass should move during the exercises.

1. Stand in front of a mirror with your hands on the backs of two chairs facing away from each other with your feet about shoulder-width apart.

2. Slowly move your hips forward, rocking slightly onto your toes, and then back, rocking slightly back onto your heels. If you feel a stretch on the front of either of your hips when moving them forward, hold the forward position for about ten seconds at a time to provide a good stretch for the hip muscles. Go forward and back ten times each.

3. Slowly move your hips from side to side, **SHIFTING WEIGHT EVENLY TO BOTH SIDES**. This exercise is not beneficial if you only shift weight partially to your affected side. This exercise helps you to develop trust in your device. Move to each side ten times.

4. Slowly move your hips in a circular motion, **SHIFTING WEIGHT EVENLY TO BOTH SIDES**. Perform ten circles in each direction.

5. Position your feet with the right about halfway in front of the left, maintaining a shoulder's width between them. Slowly move your hips in a diagonal motion, as shown in the picture. As you move forward and to the right, the right knee may bend slightly and the left heel should rise. As you move back and to the left, the right toes may rise. Go forward and back ten times each.

6. Switch your feet so the left is about halfway in front of the right and move your hips in the opposite diagonal motion from #5. Go forward and back ten times each.

After gaining confidence in the above exercises, practice shifting your weight through hip movement while taking a step forward. Start with one or two steps on each side and move on from there.

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