The Mechanics of Walking
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We learned to walk as a young child. Through trial and error, stumble and spin, trip and fall. We were light and durable and usually didn’t get hurt. Maybe we were a bit scared from a fall, but eventually we learned to walk, then run, then skip, then dance, etc. But no one taught us how to walk. There was no instruction manual, no classes, walking is just one of life’s skills we learned through practice. Putting words to movement can help us understand the mechanics of how we walk. With Parkinson’s, we begin to lose the automatic programming we’ve developed which allows us to walk with a normal gait. We must begin a life of understanding, planning and executing our movements.

The process of forward movement is one of leverage, countermovement and swing transferred from the upper body to the lower. As the right arm swings backward, and the left arm swings forward, leverage for the leg on the right side is created and allows the leg to lift and swing forward. The body moves forward as the right foot strikes it’s heel and draws the body over its landing position. The left arm then begins its swing backward, the right now forward, and leverage for the left leg is provided so that it may lift and propel forward.

The proper sequencing of the upper body movement with the lower body movement is necessary for a comfortable, efficient, safe and proper gait. Parkinson’s can make this difficult as there is a tendency to slouch forward with a flexed neck, slumped back and protracted shoulders. This causes a center of gravity that is too far forward, and leads to stumbles, falls, shuffle steps and back problems. Those of us with PD must become aware of our individual posture status and train for proper movement. The other tendency that tends to affect those with PD is to bring feet too close together. This makes it difficult to weight shift from one leg to the other and also makes balance and lateral stabilization difficult. Remember to keep space between your feet. A hip width distance is sufficient. Or imagine an invisible foot, the same size as yours, between your right and left foot.

The following exercises are designed to reinforce proper movement and sequencing of the upper and lower body. From now on, I want you to focus on allowing the upper body’s arm swing dictate your lower body movement, speed, and gait. As your arm swings backward, you should take a generous step forward with the same side leg, lifting the toes up and landing on your heel. In order to establish an effective neuromuscular walking pattern, you should focus on exaggerated, big movements. This will help minimize or avoid the freezes and shuffle steps. If you are unsteady, keep the back of a
sturdy chair or a counter nearby during the workout so that you may easily reach it and steady yourself.

1. Weight shift with knee lift and ankle dorsa flexion (2 sets of 24 reps, each leg lift counts as a repetition)
Standing in proper posture, shift weight on to left leg and lift right leg so that upper leg is parallel to the ground (as if you were ascending a giant step), bending leg at the knee. Flex ankle and lift toes up as high as possible, hold for a beat. Return leg to starting position and repeat on opposite side.

2. Soldier’s March (Perform for 2 sets of 24 steps)
Keeping arms straight and legs straight, march in place with large sweeps of the arm and kicks of the legs. Start with left arm straight and extended with hand just above shoulder. Right arm straight and extended behind you against the end of your range of motion. Hold arms in position, then initiate the march by lifting your right leg straight out from the hip as high as comfortable then begin swing of arms as right leg descends downward. If you are marching correctly, your each arm will swing forward with the opposite leg. Think of big, broad movements.

3. Step Forward, Step Back (perform 2 sets of 12 reps)
Step forward with right leg landing on the heel and shift weight to front foot and hold. Push back with right foot and swing leg back past left leg, landing on toes and shift weight back so that weight shifts back to right leg. Keep feet hip width apart for entire exercise.

4. Turn Around in Place (perform two turns each direction.)
When turning around it’s vitally important to keep feet apart and take small rotating steps. Whether you’re turning to your right or to your left, think of the movement as a forward turn, rather then a backward rotation. Whichever direction you turn, think of the opposite foot as the leader and the anchor. Turning to your right first, the left foot is the leader and the anchor. Take a small step forward and over with the left foot, and imagine anchoring it to the floor, then adjust right foot back so that feet are again hip width apart. Repeat stepping pattern until you are again facing the starting position. Reverse.

5. SLR (Straight Leg Raise) [2 sets of 12 reps]
Keeping leg straight, slowly lift leg as high as possible, hold for a beat when leg is fully flexed at the hip. Slowly lower leg back to starting position. Repeat.

For additional exercises and information on exercise for those with PD, select the Contact button at PreventionThruFitness.com.