



ARE YOU BALANCED

Balance dictates our ability to control ourselves in space as we move about our lives. As a result, loss of balance occurs when we are unable to efficiently maintain our center of gravity and safely transfer our weight.

Causes for decreases in balance:

- physical weakness of the muscles
- impaired reflexes
- diminished coordination
- sensory problems like poor eyesight, hearing loss, and impaired sense of touch – all of which affect our sense of spatial awareness
- Certain medications

We want to keep you SAFE! We want to keep you HEALTHY! In order to do so we have equipped you with a self-assessment to gauge your own balance. Try one or more of the following four assessments and put your balance to the test.



1. Stork Balance Stand Test

HOW IT WORKS

This assessment simply requires you to stand on one leg, ideally on a non-slip surface. You'll need a stopwatch to time how long you can stay upright stork-style.

HOW TO DO IT

Take your shoes off, place your hands on your hips, raise one leg and bring that foot against the inside knee of the supporting leg. Once you're comfortable in that pose, raise the heel to balance on the ball of the foot and start the stopwatch. Try and stay in the position as long as you can, but halt the stopwatch if your hands come off the hips, your supporting foot moves in any direction, your non-supporting foot loses contact with the knee, or the heel of the supporting foot touches the floor. For an added element of difficulty, close your eyes. Record the best of three attempts.



WHAT YOUR RESULTS MEAN

You want to aim to maintain balance for more than 10 seconds. An 'average' score is 25-39 seconds and 'good' is 40-50 seconds.

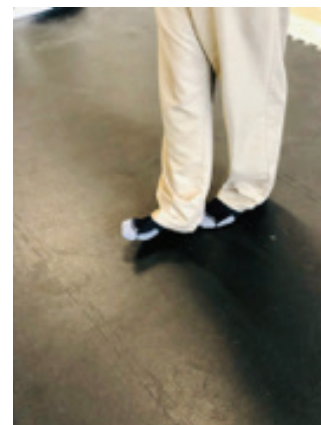
2. Tandem Stance Test

HOW IT WORKS

This is a good alternative to the standing balance test and requires you to, quite literally, put your best foot forward. Persuade a friend to time you on this one.

HOW TO DO IT

Stand upright and bring your right foot directly in front of your left foot so heel and big toe are touching. Flex your right foot so the toes are pointing upright, keep your hands by your side – or on your hips – and maintain the position for as long as you can, timing your efforts.



WHAT YOUR RESULTS MEAN

You want to be able to remain upright for at least 30 seconds for good balance.



3. Alternate Hand Wall Toss Test

HOW IT WORKS

This test measures hand-eye coordination and simply requires you to throw a tennis ball against a wall and succeed in catching it each time.

HOW TO DO IT

Stand three feet away from a smooth and solid wall. Throw the ball with one arm, in an underarm action at the wall. Catch it with the opposite hand as it bounces back at you. Throw it back at the wall with that hand and catch with the opposite. Repeat. Time how many successful catches you achieve in 30 seconds.



WHAT YOUR RESULTS MEAN

You want to have 20 or more successful catches on average. To be considered 'good' you should have between 30 and 35 catches, and to be 'excellent,' more than 35.

4. Functional Reach Test

HOW IT WORKS

This assesses your stability while leaning forward and reaching your arms as far forward as possible without falling. The results are measured with a yardstick/measuring tape, and ideally with the help of someone else.

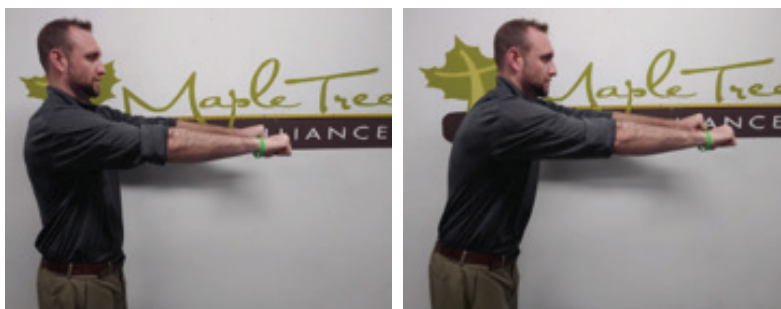
HOW TO DO IT

Attach a measuring tape or yardstick to a wall, parallel to the floor, at shoulder height. Face the side. Outstretch your arm so your shoulder is flexed to 90 degrees, and form a fist. Measure and record the point your middle finger knuckle reaches on the measuring device. Then, lean forward and reach along the length of the yardstick as far as you can without moving your feet. Measure and record this distance. The initial reading is subtracted from the final to obtain the functional reach score.

WHAT YOUR RESULTS MEAN

You want to be reaching beyond 10 inches. A score of six or less needs improvement. If you're between 20 and 40 years old, men should be able to reach to a maximum of 16.7in and women 14.6in.

If your results from the test are not what you were hoping for then fear not because we have many exercises to help you improve you balance and skyrocket your score! Similarly, we will also list how to make each exercise harder as you become much better at performing it!



BALANCE EXERCISES

The exercises below will help you improve your balance!

Work through all 8 of these exercises and make a list of which exercises give you the most trouble. Then, break them up and practice 4 each day. Pick 2 that challenge you, and 2 that don't challenge you as much.

Start with the lower repetition and set ranges if you scored poorly on the balance assessment, and gradually increase the volume over time so you can tolerate more sets and repetitions.

When an exercise gets too hard do not be afraid to try one of the modifications (consider having someone supervise you if you have any concerns while trying a new exercise).

Heel-to-Toe Rockers (2-3 sets of 10-15 repetitions)

Directions: Stand by a wall, counter or chair for support. Flex the foot down to go up on your toes, then pull the toes up and rock back on to your heels.

Considerations: Keep the shoulders, spine, hips and ankles in a straight line like they are stacked on top of each other. Do not start hinging forward or flexing the trunk as you go up on your toes or rock backwards.

Modifications:

- Reduce the amount of contact to: One hand, one finger, no hands and then progress to one foot at a time.
- Hold the rep a little longer when up on the toes or back on the heels.
- Add in some additional leg strengthening by performing a quarter squat between each repetition.

Benefit: When we walk we want to push off our back foot activating our glutes and calves. As the leg swings forward it is important that the toe does not drop. If it does drop then there is a chance that we may not effectively step over or "clear" an obstacle that could cause us to fall. This exercise will strengthen the muscles responsible for preventing foot drop and propelling us forward.

Identifying weakness: You can tell if you are at risk for a foot drop if you go over to a wall and begin performing alternating high knees. Start with 20-100 repetitions depending on the person. The tested participant should be able to keep the toe pulled up or parallel to the floor the whole time. If you are assessing a person and the toe immediately drops and points to the ground then you know this person is suffering from weakness of the muscles on the front of the lower leg.



Straight Leg Side Kicks or Penguin Kicks (2-3 sets of 5-15 repetitions per foot)

Directions: Stand by a wall and hold on for support. Place feet shoulder width apart. Alternate lifting your left leg to the side and away from the body while keeping the leg straight. Then do the same with the right.

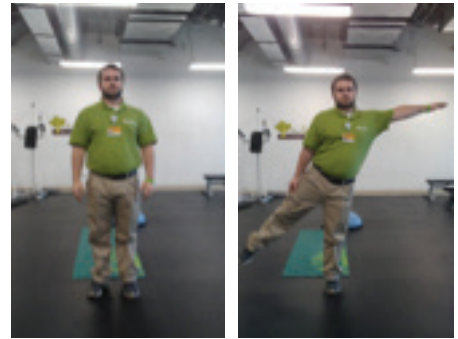
Considerations: Do not bend the trunk from side-to-side as you do this exercise. Keep the spine tall and straight (the only movement that should be occurring is at the hip joint). Lastly, keep the toe pointing forwards at all times, do not let it start to point sideways as you get tired.

Modifications:

- Reduce the amount of contact by holding on with one or no hands.
- Wrap a closed loop exercise band around your ankles to increase resistance.
- Add a quarter squat or go up on your toes in between each rep to work the leg muscles more.
- While standing unaided, try extending the opposite arm out at the side at the same time that you kick your leg out to the side.

Benefits: Life makes us step in multiple directions. Our gluteus medius is responsible for stabilizing our hip and helps us push off in side-to-side movement. If this muscle is weak and underdeveloped, then you are more likely to become off balance if something bumps you sideways.

Identifying Weakness: You will know if this muscle is abnormally weak on you if you perform a single-leg balance test. Hold onto a wall or stand freely and flex the knee so you are on one leg. If you are assessing this test on someone then you are going to look at their pelvis/hips. If the hips immediately become unevenly shifted/drops/ is no longer parallel to the floor as soon as one foot is off the ground then you know that you have weakness of the gluteus medius.



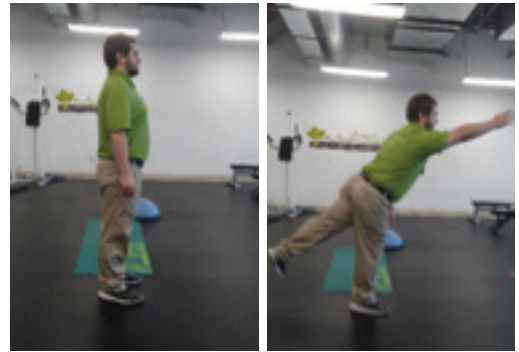
Straight Leg Kick Backs (2-3 sets of 5-15 repetitions per foot)

Directions: Stand by a wall, chair or counter for support. Hold onto the wall, chair or counter as you extend your leg behind you and squeeze the butt of the working leg as the leg moves further backwards.

Considerations: Do not start bobbing or leaning forward on each rep. Keep the spine tall/straight and parallel to the wall or supporting surface. We want the trunk to remain stationary with the only movement occurring in the upper leg bone.

Modifications:

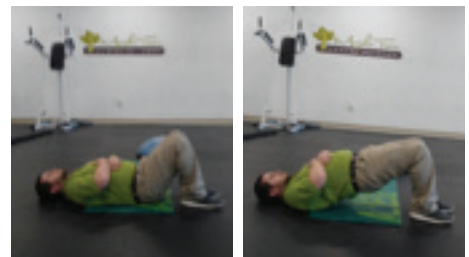
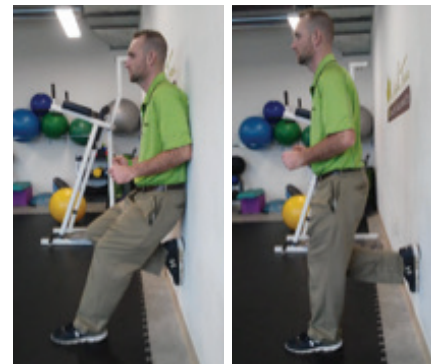
- Wrap a closed loop band around your ankle to increase the resistance.
- Reduce the amount of contact by holding on with one or no hands.
- While standing unaided, try raising the opposite arm of the working leg straight out in front of you as kick backwards.
- Prior to each rep try raising the knee up to 90 degrees and then kicking down and back.



Single-Leg Wall Push Off (2-3 sets of 6-15 repetitions per foot)

Directions: Stand in front of a wall by about 1 foot to start. Next, lean back into the wall so your back and shoulders are resting against the wall. Keep one leg on the ground and pick the other leg up, and place the sole of the foot against the wall (this will be your push off leg). Using your push off leg, propel yourself forward off the wall and into an upright position. Hold the upright position for 1-2 seconds before lowering yourself back to the wall and repeating.

Considerations: This is harder than you think. If you have tight ankles/poor ankle mobility/recent knee surgeries, then this will be one to avoid. Focus on squeezing your butt as you get off the wall. Our glutes (butt) is a big, thick muscle that has an important role as a stabilizer of the hip. If it becomes weak then the burden falls on the hamstrings which will become overworked, tight and can actually harm your balance by hindering your flexibility and creating an abnormal gait.



Modifications:

- Instead of holding the single-leg pose, try letting the push off leg swing through like in a normal step.
- To make it harder stand further from the wall.
- Take it to the floor and lay on your back with the heels pulled up close to the butt. Next push through the heels to lift the hips up and off the ground creating a straight line between the shoulders, hips and knees.

Benefits: Our glutes often become neglected and weak due to all the sitting we tend to do. Not only will the pushing off the wall strengthen them but the added practice time on one supporting leg will tremendously help your balance.

Opposing Arm and Leg Reach back and crunch (2-3 sets of 5-15 repetitions per side)

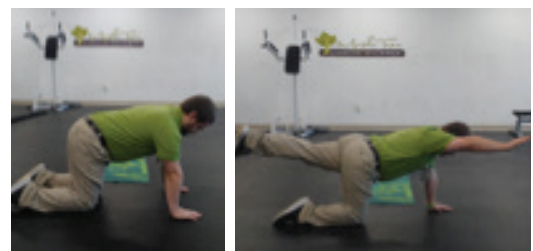
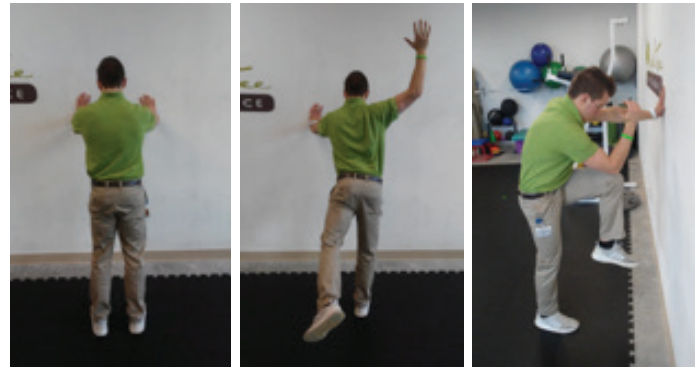
Directions: Keep the hands and feet shoulder width apart. Extend the arms forward and place the hands directly out in front of you on the wall. From this position we will work one side at a time. Bring the arm backwards (squeezing the shoulder blade back) and the opposite leg backwards (squeezing the butt as the leg comes back). After reaching back you will bring them both forwards and try to touch the opposing knee and elbow.

Considerations: One cause of loss of balance is due to a change in our center of gravity. If our center of gravity shifts forward, then we are more likely to fall forwards or trip. This works the back, glutes and hamstrings which help us stay upright and as a result minimize our risk for falls.

Modifications:

- Skip the crunch if it is too hard.
- Take it to the floor and get on your hands and knees. Hands under shoulders, knees under hips. Then simultaneously extend the opposite arm and leg. You may hold weights if this becomes too easy. Perform it without the opposite side elbow and knee touch if this is too hard.

Benefits: The longer we sit the tighter certain muscle groups become. As they become tighter or hypertonic, they pull us forward which is when you can start to see people walking around bent forwards/stooped over posture. Besides being hard on the back, it is dangerous because it shifts our center of gravity forward and it also makes it harder for us to look up and around in order to avoid oncoming obstacles in our grocery store, home ect. This exercise strengthens just about everything on the posterior of your body which will enable you to control your movement better and catch yourself if you do become off balance.



Single-Leg Wall Balance Push Up (2-3 sets of 3-15 repetitions)

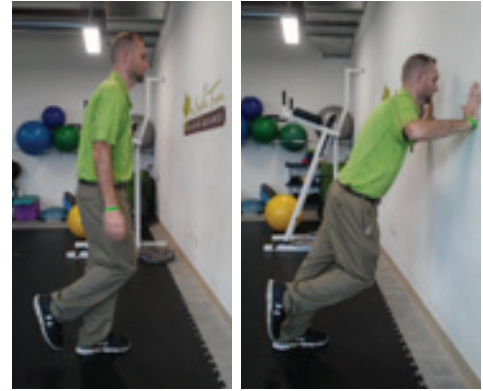
Directions: stand facing a wall while on one leg. Space yourself about 1-2 feet apart from the wall. Perform a controlled fall into the wall and then catch yourself with your hands. Then, bend the elbows to 90 degrees then spring yourself off the wall and back to your upright starting position to repeat.

Considerations: This exercise will help you generate reflexes and generate a sense of spatial awareness. If there is any discomfort in the wrist, elbow or shoulder then you should be gentle and cautious when trying this exercise.

Modifications:

- Use an object with a lower height like a counter
- Stand back further from the wall (or closer)
- Face parallel to the wall and push off sideways
- Start with 2 feet if 1 foot is too hard
- Perform shallower wall push ups

Benefits: this exercise strengthens the upper body, but is also a great exercise for developing a sense of space/when you are falling and works your reflexes to reach out for something.



Forwards/Backwards High Knee Walking (2-3 sets of 10-30 or more steps, in each direction)

Directions: Walk alongside a wall so you can use it if need be to catch your balance. Focus on taking long but controlled steps forward. Push off the back foot and then pull the leg forward so the hip flexed at 90 degrees and repeat. If going backwards, push off the front foot, bring it to 90 degrees and then let the foot come to rest behind you.

Considerations: Be sure to keep the torso upright, and keep the abs contracted. To practice balance we must practice controlling our center of gravity and leaning forward as we begin walking shifts our weight forward and increased our odds of falling forwards.

Modifications:

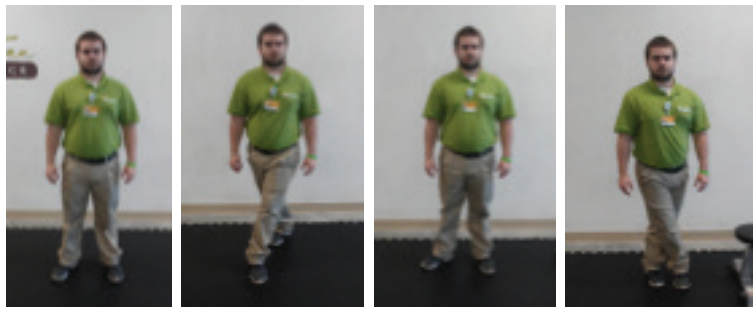
- Decrease the amount of contact with the stabilizing surface from 2 hands, to 1 hand, to 1 finger and then unaided.
- Start from a seated position. Stand up, and then walk forwards 4 steps followed by 4 steps backwards.
- Take longer steps.
- Move on the toes or balls of your feet.

Benefits: Life is multidirectional, so it is important to become comfortable moving in different directions (forward, backward and laterally).



Lateral Crossover Stepping (2-3 sets of 10-30 or more steps, in each direction)

Directions: Hold onto a wall for support if need be. Take a large step out to one side while keeping the toe pointed forwards and shift your weight onto that outside foot. Next, push off of that outside foot, return to center and then step over and across the opposing foot. Shift your weight onto the crossed foot before pushing off and returning back to center. Keep the trunk upright/tall and abs squeezed to control your torso as you move.



Considerations: Keep a slight bend in the knee and the toes facing forward.

Modifications:

- Start from a chair: perform the same movement but start in a seated position. After you stand up you will immediately step out to the side and then back and crossover the other foot before sitting back down.
- Moving: alternate stepping out to the side with your leading leg and then have the trailing leg step backwards, behind and across the lead leg before stepping back out again with lead leg (aka. Karaoke step or Grapevine step pattern).

You should notice results in 4-8 weeks depending on your current health and activity level. The key to all of these is consistency! There are many more balance and strengthening exercises that your Maple Tree Exercise Oncology Instructor can help you with if you struggle performing any of the above exercises. These act as a simple and solid foundation to get you started and can become more difficult as you progress to more challenging exercises.

If you desire additional cancer coaching consider our online Maple Tree Cancer Alliance Membership. The membership is available for purchase on www.mapletreecanceralliance.org and includes custom workouts, exclusive videos and cancer fighting meal ideas and recipes!

