

## **The Complete Guide to Balance Training - Part 4 of 5**

### Assessment Protocols to Assess Function and Fall Risk

Appropriate assessment is the fundamental starting point for anyone who wants to provide safe and effective falls prevention exercise programs for older adults. The selection of physical assessment(s) is dependent on several factors, most importantly the professional performing the assessment and the physical capabilities of the older adult. Physical therapists and other licensed clinical professionals are often trained to deliver several different subjective assessments that evaluate the quality of movement in doing various tasks (e.g., stepping up stairs, walking in a circle). Some of the common subjective assessments include the Berg Balance Test, the Dynamic Gait Index, and the Performance Oriented Mobility Assessment. These tests have many different components, requires a highly trained eye and take a large amount of time to complete, therefore they are recommended to be completed by a physical therapist or another qualified geriatric specialist. More useful in fitness settings are objective assessments that are scored based on measurable values such as repetitions, time, or distance. A large number of both subjective and objective tests of older adult physical function are described in detail at the online assessment repository [www.rehabmeasures.org](http://www.rehabmeasures.org).

For the purposes of this training course, 3 validated and widely used assessments are to be performed as a short battery. The assessments are the Functional Reach Test, the Timed Up-and-Go Test, and the 30-second Chair

Stand Test (32,33,34). These assessments provide an accurate overview of the older adult's functional capacity in the areas of Joint Mobility (both range of motion and stability), Sensory Function, Muscle Strength and Muscle Power, Static Balance, Dynamic Balance and Gait.

### Assessment Battery Instructions

#### Functional Reach Test (Assessment of Static Balance and Joint Mobility)

The Functional Reach Test (FRT) is an indicator of Limits Of Stability. It is meant to determine the distance that an older person can move his/her center of

of



gravity forward while maintaining balance.

#### Instructions:

1. Have person stand next to a wall free of obstructions with the feet hip width apart. The dominant arm should be closest to the wall.

2. Tape a yardstick to the wall at the level of the mid-shoulder capsule. Have the high values of yardstick closest to the person.
3. Have person make a fist and extend his/her arm to the front at shoulder height. The person MAY NOT touch the yardstick or wall at any point. Watch for any scapular protraction before the reach and correct the participant by bringing shoulders into alignment. Make the initial measurement in this position.
4. Reach should be performed while keeping fist at the height of the yardstick. Have person raise it up if it drops below the level of the yardstick. Hold maximum reach position for approximately 2 seconds and make the final measurement.
5. Score is the total distance traversed by longest knuckle of reach hand (subtract starting from ending position). Measure to the nearest  $\frac{1}{4}$ ". Use a straight edge to determine start and end point.

Provide the following instructions:

“Reach forward as far as you can at the level of the yardstick by shifting your weight forward on your feet. Hold your endpoint until I tell you to stop. Do not take a step and keep your feet flat on the floor. You may not touch the yardstick. Keep the other arm at your side.” Have the person repeat the instructions to you to ensure understanding.

See a video of the Functional Reach Test at:

[https://player.vimeo.com/external/255827840.hd.mp4?s=470a0c9e41a8dcb54a06fc229fe48cdcd97cbf00&profile\\_id=175](https://player.vimeo.com/external/255827840.hd.mp4?s=470a0c9e41a8dcb54a06fc229fe48cdcd97cbf00&profile_id=175)

Timed Up and Go Test (Assessment of Dynamic Balance and Gait)

The Timed Up and Go (TUG) test measures, in seconds, the time taken by a person to stand up from a standard folding chair, walk a distance of 3 meters (approximately 10 feet), turn around, walk back to the chair, and sit down again.



Instructions: The person wears his/her regular footwear. If the person usually uses a cane, he/she should use it during the test. No physical assistance can be given by the tester.

1. Setting up the test area:

- Determine a path free from obstruction.
- Place a standard folding chair at one end of the path.
- Ensure that the chair is supported from behind and will not tip over.
- Mark off a 3 meter (9 feet, 10 inches) distance using a tape measure from the base of the chair. Put a piece of tape at the 3 meter mark.
- Place a cone to mark turn-around point (back edge of the cone on the tape).

2. Person starts with their back against the chair, their hands resting on

their lap, and walking aid in hand (if needed).

Start the test:

3. Provide the following instructions: “When I say GO, you will stand up from the chair, walk forward and around the cone you see in front of you, walk back to the chair and sit down. Walk as fast as you can, safely, without falling. I will be timing you using a stopwatch.” Have the person repeat the instructions to you to ensure understanding.
4. Use a cue like “Ready, Set, Go!” Start the stopwatch upon saying the word “Go”. Stop the stopwatch as soon as the person’s buttocks contact the chair at the end of the test.
5. Record result to nearest 0.1 second. Perform two trials. Circle fastest time.

See a video of the Timed Up-and-Go Test at:

[https://player.vimeo.com/external/255828402.hd.mp4?s=9dfd4854bd889810561e7b772efc6375d0f34b17&profile\\_id=175](https://player.vimeo.com/external/255828402.hd.mp4?s=9dfd4854bd889810561e7b772efc6375d0f34b17&profile_id=175)

### 30-Second Chair Stand Test (Assessment of Muscle Strength and Power)

The 30-second chair stand (CS) test measures the total number of sit-to-stands that can be completed by a person in 30 seconds. The objective is to stand up fully from a standard folding chair, return the buttocks to the chair, and repeat for as many times possible in 30 seconds.



#### Instructions:

1. Use a standard folding chair and ensure that the chair is supported from behind and will not tip over.
2. The person starts with their back against the chair with their hands crossed over their chest. The hands must stay in this position the entire test.
3. Provide the following instructions: “When I say GO, you will fully stand up from the chair and sit back down making sure that the buttocks contact the chair on each repetition. Perform as many repetitions as possible and continue until I say “Stop”. You may take a break during the test if you need to, but please perform as many repetitions as possible. I will be timing you using a stopwatch.” Have the person repeat the instructions to you to ensure understanding.
4. Use a cue like “Ready, Set, Go!” Provide encouragement throughout the test, but do not give time indicators.
5. Use a stopwatch to time the performance and count the number of

completed trials in 30 seconds. If the person is performing incorrectly (e.g., not fully standing up), stop the test, explain the correction, and begin again.

See a video of the 30-Second Chair Stand Test at:

[https://player.vimeo.com/external/255828073.hd.mp4?s=17acae1a0d6986d86d2186c121cf6cf62223ca37&profile\\_id=175](https://player.vimeo.com/external/255828073.hd.mp4?s=17acae1a0d6986d86d2186c121cf6cf62223ca37&profile_id=175)

You can check out DETAILED INSTRUCTIONS for delivering all 3 of these assessments by following this link:

<https://www.mobilitymatters.fit/news/support/the-assessment-process>