



053 McKinly Laboratory
 University of Delaware
 Newark, DE 19716-2590
 Ph: (302) 831-8893
 Fax: (302) 831-4468
 www.udel.edu/PT

Timed Up and Go (TUG) Test

Description: Measure of function with correlates to balance and fall risk

Equipment: Stopwatch, Standard Chair, Measured distance of 3 meters (10 feet)

Patient Instructions: “My commands for this test are going to be ‘ready, set, go’. When I say go, I want you to stand up from the chair. You may use the arms of the chair to stand up or sit down. Once you are up, you may take any path you like, but I want you to move as QUICKLY as you feel safe and comfortable until you pass this piece of tape (or end of marked course) with both feet. Turn around and walk back to the chair. I will stop the clock when your back touches the back of the chair. You will complete one practice run and two that are counted.”

Therapist Instructions: Start timing on the word “GO” and stop timing when the subject is seated again correctly in the chair with their back resting on the back of the chair. The subject wears their regular footwear, may use any gait aid that they normally use during ambulation, but may not be assisted by another person. There is no time limit. They may stop and rest (but not sit down) if they need to.

Interpretation:

≤ 10 seconds = normal

≤ 20 seconds = good mobility, can go out alone, mobile without gait aid

≤ 30 seconds = problems, cannot go outside alone, requires gait aid

* A score of ≥ 14 seconds has been shown to indicate high risk of falls

Age Matched Norms:

Timed Up and Go	Age in years	Mean in seconds
	60-69	7.9 +/- 0.9
70-79	7.7 +/- 2.3	
80-89	No device: 11.0 +/- 2.2 With device: 19.9 +/- 6.4	
90-101	No device: 14.7 +/- 7.9 With device: 19.9 +/- 2.5	

1. Podsiadlo D, Richardson S. The Time “Up & Go”: A Test of Basic Functional Mobility for Frail Elderly Persons. *Journal of American Geriatrics Society* 1991; 39(2): 142-148.
2. Shumway Cook A, Brauer S, Woollacott M. Predicting the Probability for Falls in Community Dwelling Older Adults Using the Timed Up & Go Test. *Physical Therapy* 2000; 80(9): 896-903.
3. Lusardi MM, Pellecchia GL, Schulman M. Functional Performance in Community Living Older Adults. *Journal of Geriatric Physical Therapy* 2003; 26(3): 14-22.
4. Saskatoon Falls Prevention Consortium, Falls Screening and Referral Algorithm, TUG, Saskatoon Falls Prevention Consortium, June 2005



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6 Minute Walk Test (6 MWT)

Description: The 6 Minute Walk Test is a measure of endurance.

Equipment: Stopwatch, rolling tape measure, long hallway or loop walkway

Patient Instructions: "I am going to measure how far you can walk in 6 minutes. When I say 'go', I want you to walk around the hallway (track) for 6 minutes. Keep walking until I say 'stop' or until you are too tired to go any further. If you need to rest, you can stop until you feel ready to go again. You may also lean against the wall if necessary, but you should resume walking as soon as you are able. Remember that the object is to walk AS FAR AS POSSIBLE for 6 minutes, but don't run or jog. I will let you know at 2 minutes, 4 minutes, and when you have one minute left. You can begin when I say 'go'."

Therapist Instructions: Time the subject for 6 minutes, then say "stop." Measure the distance walked.

STOP testing based on the following criteria:

1. C/o angina symptoms (chest pain or tightness)
2. Any of the following symptoms
 - Light-headedness
 - Confusion
 - Ataxia, staggering unsteadiness
 - Pallor
 - Cyanosis
 - Nausea
 - Marked dyspnea
 - Unusual fatigue
 - Signs of peripheral circulatory insufficiency
 - Claudication or other significant pain
 - Facial expressions signifying distress
3. Abnormal cardiac responses
 - Systolic BP drops > 10 mmHg
 - Systolic BP rises to >250 mmHg
 - Diastolic BP rises to > 120 mmHg
 - Heart rate drops more than 15 beats per minute (given the subject was walking the last minutes of the test versus resting)

** Please notify the physician if the test is terminated for any of these reasons*

Age Matched Norms:

6 Minute Walk test	Age in years	Distance in feet	
		Men	Women
	60-64	1830-2205	1635-1980
	65-69	1680-2100	1500-1905
	70-74	1635-2040	1440-1845
	75-79	1410-1920	1290-1755
	80-84	1335-1885	1155-1620
	85-89	1401-1710	1020-1530
	90-94	915-1500	825-1320

1. American Thoracic Society (2002). ATS Statement: Guidelines for the Six-Minute Walk Test. American Journal of Respiratory Critical Care Medicine, 166, 111-117.
 2. Rikli, Roberta, and C. Jessie Jones. *Senior Fitness Test Manual*. Human Kinetics, 2001. Print.



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Single Leg Stance Test

Description: A measure of the ability to stand on one leg and maintain balance

Equipment: Stopwatch

Patient Instructions: "I am going to time how long you can stand on one leg for each leg, keeping your hands on your hips. We will randomly pick one leg to start. I will start the clock when your foot lifts off the floor. You may balance using any method that you like as long as you are on one leg and the other leg is unsupported. I will stop the clock either when your foot touches the ground, your hands come off your hip, you move your standing foot or the opposite foot braces against the standing leg."

Therapist Instructions: The test should, ideally, be performed with the patient's shoes off. Demonstrate the test for the patient. Use a coin to determine randomly which leg they will do first each time. Repeat three times for each leg. Average the scores.

Age Matched Norms:

Single Limb Stance	Age in years	Mean in seconds
	20-29	30.0
	30-39	30.0
	40-49	29.7 +/- 1.3
	50-59	29.4 +/- 2.9
	60-69	22.5 +/- 8.6
	70-79	14.2 +/- 9.3

Timed single leg stance (SLS) has been correlated with amplitude and speed of sway in people without disease (Billek, 1990). The ability to maintain SLS generally decreases with increasing age (Bohannon et al, 1985; Ekdahl et al, 1989). Single leg stance has been shown to improve over the course of 6 months of rehabilitation (Judge et al, 1993) and during multi-site FIXCIT trials. Initial foot position affects the ability to stand in single leg stance (Kirby, Price, and Macleod, 1987). Rossiter and Wolf et al (1995) found that older adults in the community could maintain SLS for 10 sec about 89% of the time and nursing home residents for 45% of the time.



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Stair Climbing Test

Description: A measure of ability to ascend and descend a flight of stairs

Equipment: Stopwatch, flight of stairs with rail

Patient Instructions: “I am going to ask you to stand at the bottom of the stairs so that your first step is up. My commands will be ‘ready, set, go’. Then you are going to walk as QUICKLY as you feel safe and comfortable to the top of the stairs, turn around, and come back down. I will stop the clock when your second foot touches the landing. You may use the rail but I only want you to use one rail (determine which), if you can go without the rail try to do so.”

Therapist Instructions: The patient will perform one practice and two real trials. Average the trials.

Age Matched Norms:

Stair Climbing Test	Age Group in years	N	Mean in seconds	SD in seconds	Range in seconds
	50-59	24	7.92	1.31	5.13
	60-69	21	10.02	2.39	9.10
	70-79	16	10.9	1.99	6.82
	All subjects (age range 50-82)	63	9.53	2.47	11.96

1. Mizner RL, Petterson SC, Stevens JE, Snyder-Mackler L (2005). Preoperative quadriceps strength predicts functional ability one year after total knee arthroplasty. *The Journal of Rheumatology*, 32(8), 1533-1539.
2. Mizner RL, Petterson SC, Snyder-Mackler L (2005). Quadriceps strength and the time course of functional recovery after total knee arthroplasty. *Journal of Orthopaedic & Sports Physical Therapy*, 35(7), 424-436.



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Single Limb Step Test

Description: Measure of time to raise and lower the body 20 times from 6" block

Equipment: 6" block, stopwatch, knee immobilizer

Patient Instructions: "I am going to time how long it takes for you to lower and raise your body on this 6" block. The leg not being tested will be in a knee immobilizer so it cannot help. You will start by placing your foot of the leg being tested in the center of the 6" block. My commands will be 'ready, set, go' and then you will step up and down 20 times in a row as quickly as possible. I will keep track of the number of steps during the test. The heel and toe of the leg with the immobilizer must touch the top of the block and the floor to count as one."

Therapist Instructions: Demonstrate the test for the patient. Use a coin to randomly determine which leg they will do first each time. Explain to the patient why they will wear the immobilizer on the limb opposite that being tested.



Age Matched Norms:

Single Limb Step Test	Age Group in years	N	Mean in seconds	SD in seconds	Range in seconds
	50-59	48	17.49	2.83	10.32
	60-69	40	21.26	8.40	41.26
	70-79	32	21.12	15.19	15.19
	All Subjects (age range 50-82)	122	19.98	6.12	41.26