Functional Ability Screening Tools for the Clinic

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Objectives

- Review screening tools for physical or functional ability including Five Times Sit to Stand, Walking Speed, and Timed Up and Go
- Practice administering these brief assessments

Falls in the Elderly

Deaths by Falls in US In 2009

- 1,888 for ages 55-64
- 2,850 for ages 65-74
- 6,986 for ages 75-84
- 10,586 for ages ≥85

Sources:
Screening Tools in the Clinic

- Five Times Sit to Stand Test
  - Fast to administer
  - Reliable and sensitive
  - Applicable across a lot of the geriatric spectrum
  - Immediate results
  - Helpful in determining at risk population for falls and functional decline
  - Promote patient/clinician communication
  - Motivate patients!!!!

- 10 meter walk

- Timed Up and Go

Five Times Sit to Stand Test (FTTST)

- Knee extension strength
- Can be used for balance – however not as strong as other measurement tools in the clinic.

**FTSST**

**Requirements**
1. Chair 43cm height
2. Stopwatch

**Method**
1. Inform the patient of the test, instruct that the timer will start when they initiate the first stand.
2. Start timing when the patient initiates the first stand. He/she must achieve full erect standing each time before sitting.
3. Stop the timer once the patient sits after the 5th transition.
Average FTSST reference values

Age 60-69 = 11.4 seconds
Age 70-79 = 12.6 seconds
Age 80-89 = 14.8 seconds

Walking Speed “6th Vital Sign”


- Home and community ambulation status
- Discharge location
- Need for rehabilitation
- Mortality
- Fear of falling
- Fall predictor
- Predict future health status

Gait Speed (m/s)

Lusardi MM et al. Comfortable and fast gait speeds of frail community-living older adults. CSM paper 2002

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Gait speed indicators

Montero-Odasso M studied 102 well functioning adults age 75 and older. <0.7 m/s was a significant predictor of hospitalization, requirement of a caregiver, and new falls.

Perry J Post stroke patients
Household (<0.4 m/s)
Limited community (0.4-0.8 m/s)
Community (>0.8 m/s)

Testing Walking Speed

Requirements:
- 14 meter walking area with masking tape markers at 2 and 12m
- Stop watch

Method:
1. Measure and mark the course placing tape at 2 meters and 12 meters from your starting point.
2. Instruct the patient that on your cue, he/she is to walk a comfortable pace to a designated target beyond the 12 meter mark. Do NOT refer to the tape. Patients are allowed to use assistive devices if frequently used.
3. START THE STOPWATCH when the participant's first foot crosses the plane of the 2 meter line and STOP THE STOPWATCH when the participant's first foot crosses the plane of the 12 meter line. Have the participant continue walking until he/she reaches the target after the 14 meter line.
4. Repeat at comfortable pace.
5. Repeat 2 trials at pace “As quickly and safely as you can.”

Get Up and Go

Observe the patient's movements for any deviation from a confident, normal performance. Use the following scale:
1 = Normal
2 = Very slightly abnormal
3 = Mildly abnormal
4 = Moderately abnormal
5 = Severely abnormal
Timed Up and Go

Requirements:
1. Firm chair with arms
2. 3m distance-marker (tape on the floor) in front of chair
3. Stopwatch

“if the patient uses an assistive device for ambulation he/she should use it for the test.

Method:
1. Position the patient seated in the chair with back against backrest, arms resting in lap.
2. Instruct as follows “On the word ‘go,’ stand up, walk around the marker, come back and sit all the way back in your chair”
3. Timing begins on the word ‘go’ and ends when the back is rested on the chair.
4. Complete a practice trial first. Average two subsequent recorded trials.

Modifications for TUG

- Manual dual task – carry a full glass of water

- Cognitive dual task – either count backwards by 3’s from a randomly selected number or state days of week backwards

- Shumway-Cook et al - Study participants were community dwelling older adults grouped into no history of falls and history of 2 falls within previous 6 months.
  TUG ≥ 13.5 seconds classified as fallers with prediction rate of 90%.
  TUG_manual ≥ 14.5 seconds classified as fallers with prediction rate of 90%.
  TUG_cognitive ≥ 15 seconds classified as fallers with prediction rate of 87%.

- Lundin-Olsson and colleagues – frail older adults who had a time difference of greater than 4.5 seconds between the TUG_manual and the TUG were more prone to falls in the following 6 months.

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Food for thought

Kristensen et al: 79 consecutive elderly people who were hospitalized after hip fractures and were able to perform the TUG when discharged from inpatient rehabilitation to home or skilled nursing setting.

6 month follow-up: 32% of the follow-up group experienced 1 or more falls. 24 second cut off was the only significant fall predicting parameter compared to sex, type of fracture, residence, walking aides used, functional level before the fracture, mental status upon admission.

Nordin E et al – TUG cut-off times may not be reliable fall risk identifier in population of frail older people dependent in ADL and living in residential care facilities.
Bibliography


Questions?

Let’s practice