

[EQUIPMENT REVIEW]**Modified Portable Model Functional Reach Test Tool.****Ganvir Shyam¹, Thokal Deepti², Sidhaye Aishwarya³**¹ Principal Cum Professor, ² Associate Professor,³ Postgraduate Student, Department of Community Physiotherapy, DVVPF's College of Physiotherapy, Ahilyanagar

The Modified portable model Functional Reach Test tool is a single item test developed as a quick screening for balance problems in community dwelling older adults.

It is also an objective measurement tool for checking dynamic balance and also it predicts fall risk in elderly.

The drawback of this tool is there are chances of subjective error. The height differences of individual height may lead to errors in measurements.

Objective intervention

- For checking and quick screening of balance problems among elderly population.
- Easily available and cost effective measuring tool.
- Easy to carry in community.
- Gives feedback to participant.
- Can use to measure the side balance in sitting or standing, both conditions.

Statement of the intervention: To develop a novel adjustable tool for assessing the risk of falls in community dwelling elderly population with ease

Description of intervention: development of instrument:

- The instrument consists of one metal scale which is fixed on the wooden platform for the measurement of the distance, achieved by individual.
- The wooden base is fixed on metal plate rod, which has adjustable height levels.
- The tool consists of metal handle to which the participant can hold the hand (fist)
- One transparent sliding plate has been placed

with the marking on it for reducing the measurement errors.

- The whole tool is placed on the movable base, which has wheels, for carrying purposes in community.
- Wheels can be stabilized by the breaks for static, fixed position.

Instructions for the participant:

- Position the patient close to the instrument so that he or she may reach forward along the length of the yardstick.
- The patient is instructed to stand with feet shoulder distance apart then make a fist and raise the arm up so that it's parallel to the floor. At this time, the practitioner takes an initial reading on the yard stick, usually spotting the knuckle of the third metacarpal.
- The patient is instructed to reach forward along the yardstick without moving the feet.
- Any reaching strategy is allowed, but the hand should remain in a fist.
- The practitioner takes a reading on the yardstick of the farthest reach attained by the patient without taking a step. The initial reading is subtracted from the final to obtain the functional reach score.

*Corresponding author

Ganvir Shyam

E-mail: shyam.ganvir@gmail.com

D.V.V.P.F's College of Physiotherapy, Ahilyanagar

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Fig. 1 : Position of the subject

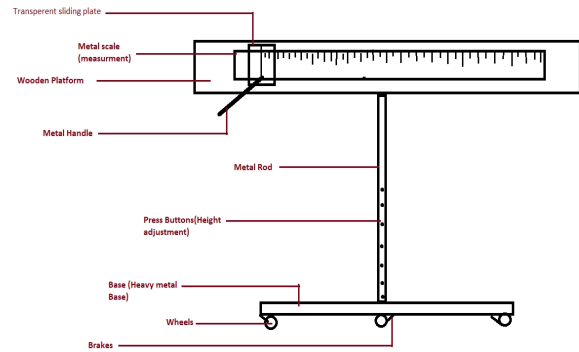


Fig. 1 : Modified Portable model functional reach test tool.

8. Method of use of instrument :

- Modified portable model Functional Reach Test tool was developed for assessing the risk of falls in community dwelling elderly population.
- In this measuring tool, we have a adjustable height levels for measuring the static balance in both standing and sitting position.
- Our modified tool is also fixed on the vertical metal stand which has the base with wheels and breaks. Wheels will help therapist to easily carry the tool, while measuring on the participant, we can apply the brake.

Interpretation:

- A score of 6 or less indicates a significant, 6 increased risk for falls.
- A score between 6-10 inches indicates a moderate risk for falls.

Table 1 : Age related norms for the functional reach test

Age	Men (in inches)	Women (in inches)
20 -40yrs	16.7 ± 1.9	14.6 ± 2.2
41 -69yrs	14.9 ± 2.2	13.8 ± 2.2
70 -87 yrs	13.2 ± 1.6	10.5 ± 3.5

Advantages of the tool:

- Easy to understand and perform.
- Easy to carry.
- Can be used in any both standing and sitting position.
- Cost effective.
- Effective measuring tool.

Reliability : Inter-rater agreement on reach measurement = 0.98

Parts of the tool and its use:

- Transparent sliding plate:
 - a. The transparent plate has specific marking on it and is used for measuring the distance which is achieved by the participant.
 - b. It should be kept on “Zero” while initiating the test to reduce the errors in measurement.
- Wooden platform:
 - a. The wooden platform is used for stable support to the metal scale.
 - b. The whole platform is attached with the metal rod which is vertically placed.
- Metal handle:
 - a. The metal handle is used for the sliding transparent plate on the metal scale.
 - b. Holding the metal rod while testing also can avoids the measurement errors.
- Metal scale:
 - a. The measuring scale is attached to the wooden platform for measuring the distance of functional reach test.
- Metal rod with press buttons:
 - a. The metal rod is supporting vertically placed.
 - b. It attaches the bottom base with the upper wooden platform.
 - c. It consists of the height adjustable pegs and holes to adjust according the test position (In sitting forward and sideways OR in standing forward and sideways)
- Base:
 - a. The metal base has a vertical metal rod placed in it.
 - b. It also consists of the wheels and the brakes to it for the easily carrying purpose.
 - c. Also the breaks which will help us to stabilize the tool while performing the test.

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