

BERG FUNCTIONAL BALANCE SCALE

(Adapted from Berg, K., Wood-Dauphine, S.L. and Williams, J.L. Measuring balance in the elderly: validation of an instrument. *Can. J. Public Health*, 83(S2): S7-S11, 1992.)

Grading: Please mark the lowest category that applies.

1. **Sitting to standing** _____

Instruction: Please stand up. Try not to use your hands for support.

- (4) able to stand, no hands and stabilize independently
- (3) able to stand independently using hands
- (2) able to stand using hands after several tries
- (1) needs minimal assist to stand or to stabilize
- (0) needs moderate to maximal assist to stand

2. **Standing unsupported** _____

Instruction: Stand for two minutes without holding.

- (4) able to stand safely 2 minutes
- (3) able to stand 2 minutes with supervision
- (2) able to stand 30 seconds unsupported
- (1) needs several tries to stand 30 seconds unsupported
- (0) unable to stand 30 seconds unassisted

IF SUBJECT ABLE TO STAND 2 MINUTES SAFELY, SCORE FULL MARKS FOR SITTING UNSUPPORTED. PROCEED TO POSITION CHANGE STANDING TO SITTING

3. **Sitting unsupported feet on floor** _____

Instruction: Sit with arms folded for two minutes.

- (4) able to sit safely and securely 2 minutes
- (3) able to sit 2 minutes under supervision
- (2) able to sit 30 seconds
- (1) able to sit 10 seconds
- (0) unable to sit without support 10 seconds

4. **Standing to sitting** _____

Instruction: Please sit down.

- (4) sits safely with minimal use of hands
- (3) controls descent by using hands
- (2) uses back of legs against chair to control descent
- (1) sits independently but has uncontrolled descent
- (0) needs assistance to sit

5. Transfers _____

Instruction: Please move from chair or bed and back again. One way toward a seat with armrests and one way toward a seat without arm rests.

- (4) able to transfer safely with only minor use of hands
- (3) able to transfer safely with definite need of hands
- (2) able to transfer with verbal cueing and/or supervision
- (1) needs one person to assist
- (0) needs two people to assist or supervise to be safe

6. Standing unsupported with eyes closed _____

Instruction: Close your eyes and stand still for 10 seconds.

- (4) able to stand 10 seconds safely
- (3) able to stand 10 seconds with supervision
- (2) able to stand 3 seconds
- (1) unable to keep eyes closed 3 seconds but stays steady
- (0) needs help to keep from falling

7. Standing unsupported with feet together _____

Instruction: Place your feet together and stand without holding.

- (4) able to place feet together independently and stand 1 minute safely
- (3) able to place feet together independently and stand for 1 minute with supervision
- (2) able to place feet together independently but unable to hold for 30 seconds
- (1) needs help to attain position but able to stand 15 seconds feet together
- (0) needs help to attain position and unable to hold for 15 seconds

THE FOLLOWING ITEMS ARE TO BE PERFORMED WHILE STANDING UNSUPPORTED.

8. Reaching forward with outstretched arms _____

Instruction: Lift arm to 90 degrees. Stretch out your fingers and reach forward as far as you can. (Examiner places a ruler at end of fingertips when arm is at 90 degrees. Fingers should not touch the ruler while reaching forward. The recorded measure is the distance forward that the fingers reach while the subject is in the most forward lean position.)

- (4) can reach forward confidently >10 inches
- (3) can reach forward >5 inches safely
- (2) can reach forward >2 inches safely
- (1) reaches forward but needs supervision
- (0) needs help to keep from falling

9. Pick up object from the floor _____

Instruction: Pick up the shoe/slipper which is placed in front of your feet.

- (4) able to pick up slipper safely and easily
- (3) able to pick up slipper but needs supervision
- (2) unable to pick up but reaches 1-2 inches from slipper and keeps balance independently
- (1) unable to pick up and needs supervision while trying
- (0) unable to try/needs assist to keep from falling

10. Turning to look behind/over left and right shoulders _____

Instruction: Turn to look behind you over/toward your left shoulder. Repeat to the right.

- (4) looks behind from both sides and weight shifts well
- (3) looks behind one side only; other side shows less weight shift
- (2) turns sideways only but maintains balance
- (1) needs supervision when turning
- (0) needs assist to keep from falling

11. Turn 360 degrees _____

Instruction: Turn completely around in a full circle. Pause. Then turn a full circle in the other direction.

- (4) able to turn 360 safely in <4 seconds each side
- (3) able to turn 360 safely one side only in <4 seconds
- (2) able to turn 360 safely but slowly
- (1) needs close supervision or verbal cueing
- (0) needs assistance while turning

DYNAMIC WEIGHT SHIFTING WHILE STANDING UNSUPPORTED.

12. Count number of times step touch measured stool _____

Instruction: Place each foot alternately on the stool. Continue until each foot has touched the stool four times.

- (4) able to stand independently and safely and complete 8 steps in 20 seconds
- (3) able to stand independently and complete 8 steps in >20 seconds
- (2) able to complete 4 steps without aid with supervision
- (1) able to complete >2 steps needs minimal assist
- (0) needs assistance to keep from falling/unable to try

13. Standing unsupported, one foot in front _____

Instruction: (Demonstrate to subject) Place one foot directly in front of the other. If you feel that you cannot place your foot directly in front, try to step far enough ahead that the heel of your forward foot is ahead of the toes of the other foot.

- (4) able to place foot tandem independently and hold 30 seconds
- (3) able to place foot ahead of other independently and hold 30 seconds
- (2) able to take small step independently and hold 30 seconds
- (1) needs help to step but can hold 15 seconds
- (0) loses balance while stepping or standing

14. Standing on one leg _____

Instruction: Stand on one leg as long as you can without holding.

- (4) able to lift leg independently and hold >10 seconds
- (3) able to lift leg independently and hold 5-10 seconds
- (2) able to lift leg independently and hold = or >3 seconds
- (1) tries to lift leg; unable to hold 3 seconds but remains standing independently
- (0) unable to try or needs assist to prevent fall

TOTAL SCORE: _____/56

BESTest
Balance Evaluation – Systems Test
Fay Horak PhD Copyright 2008

TEST NUMBER/SUBJECT CODE _____ DATE _____

EXAMINER NAME _____

EXAMINER Instructions for BESTest

1. Subjects should be tested with flat heeled shoes or with shoes and socks off.
2. If subject must use an assistive device for an item, score that item one category lower

Tools Required

- Stop watch
- Measuring tape mounted on wall for Functional Reach test
- Approximately 60 cm x 60 cm (2 X 2 ft) block of 4-inch, medium-density, Tempur® foam
- 10 degree incline ramp (at least 2 x 2 ft) to stand on
- Stair step, 15 cm (6 inches) in height for alternate stair tap
- 2 stacked shoe boxes for obstacle during gait
- 2.5 Kg (5-lb) free weight for rapid arm raise
- Firm chair with arms with 3 meters in front marked with tape for Get Up and Go test
- Masking tape to mark 3 m and 6 m lengths on the floor for Get Up and Go

SUMMARY OF PERFORMANCE: CALCULATE PERCENT SCORE

Section I:	_____ /15 x 100 = _____	Biomechanical Constraints
Section II:	_____ /21 x 100 = _____	Stability Limits/Verticality
Section III:	_____ /18 x 100 = _____	Transitions/Anticipatory
Section IV	_____ /18 x 100 = _____	Reactive
Section V:	_____ /15 x 100 = _____	Sensory Orientation
Section VI:	_____ /21 x 100 = _____	Stability in Gait
TOTAL:	_____ /108 points = _____	Percent Total Score

BESTest- Inter-rater Reliability
Balance Evaluation – Systems Test

Subjects should be tested with flat heeled shoes or shoes and socks off. If subject must use an assistive device for an item, score that item one category lower. If subject requires physical assistance to perform an item score the lowest category (0) for that item.

I. BIOMECHANICAL CONSTRAINTS

SECTION I: _____/15 POINTS

1. BASE OF SUPPORT

- (3) Normal: Both feet have normal base of support with no deformities or pain
- (2) One foot has deformities and/or pain
- (1) Both feet has deformities OR pain
- (0) Both feet have deformities AND pain

2. COM ALIGNMENT

- (3) Normal AP and ML CoM alignment and normal segmental postural alignment
- (2) Abnormal AP OR ML CoM alignment OR abnormal segmental postural alignment
- (1) Abnormal AP OR ML CoM alignment AND abnormal segmental postural alignment
- (0) Abnormal AP AND ML CoM alignment

3. ANKLE STRENGTH & RANGE

- (3) Normal: Able to stand on toes with maximal height and to stand on heels with front of feet up
- (2) Impairment in either foot of either ankle flexors or extensors (i.e. less than maximum height)
- (1) Impairment in two ankle groups (eg; bilateral flexors or both ankle flexors and extensors in 1 foot)
- (0) Both flexors and extensors in both left and right ankles impaired (i.e. less than maximum height)

4. HIP/TRUNK LATERAL STRENGTH

- (3) Normal: Abducts both hips to lift the foot off the floor for 10 s while keeping trunk vertical
- (2) Mild: Abducts both hips to lift the foot off the floor for 10 s but without keeping trunk vertical
- (1) Moderate: Abducts only one hip off the floor for 10 s with vertical trunk
- (0) Severe: Cannot abduct either hip to lift a foot off the floor for 10 s with trunk vertical or without vertical

5. SIT ON FLOOR AND STANDUP

Time _____ *secs*

- (3) Normal: Independently sits on the floor and stands up
- (2) Mild: Uses a chair to sit on floor OR to stand up
- (1) Moderate: Uses a chair to sit on floor AND to stand up
- (0) Severe: Cannot sit on floor or stand up, even with a chair, or refuses

II. STABILITY LIMITS

SECTION II: _____/21 POINTS

6. SITTING VERTICALITY AND LATERAL LEAN

		<u>Lean</u>			<u>Verticality</u>
<u>Left</u>	<u>Right</u>		<u>Left</u>	<u>Right</u>	
(3)	(3)	Maximum lean, subject moves upper shoulders beyond body midline, very stable	(3)	(3)	Realigns to vertical with very SMALL or no OVERSHOOT
(2)	(2)	Moderate lean, subject's upper shoulder approaches body midline or some instability	(2)	(2)	Significantly Over- or under-shoots but eventually realigns to vertical
(1)	(1)	Very little lean, or significant instability	(1)	(1)	Failure to realign to vertical
(0)	(0)	No lean or falls (exceeds limits)	(0)	(0)	Falls with the eyes closed

7. FUNCTIONAL REACH FORWARD *Distance reached: _____ cm OR _____ inches*

- (3) Maximum to limits: >32 cm (12.5 in)
- (2) Moderate: 16.5 cm - 32 cm (6.5 – 12.5 in)
- (1) Poor: < 16.5 cm (6.5 in)
- (0) No measurable lean – or must be caught

8. FUNCTIONAL REACH LATERAL *Distance reached: Left _____ cm (_____ in) Right _____ cm (_____ in)*

Left Right

- (3) (3) Maximum to limit: > 25.5 cm (10 in)
- (2) (2) Moderate: 10-25.5 cm (4-10 in)
- (1) (1) Poor: < 10 cm (4 in)
- (0) (0) No measurable lean, or must be caught

III. TRANSITIONS- ANTICIPATORY POSTURAL ADJUSTMENT SECTION III. _____/18 POINTS

9. SIT TO STAND

- (3) Normal: Comes to stand without the use of hands and stabilizes independently
- (2) Comes to stand on the first attempt with the use of hands
- (1) Comes to stand after several attempts or requires minimal assist to stand or stabilize or requires touch of back of leg or chair
- (0) Requires moderate or maximal assist to stand

10. RISE TO TOES

- (3) Normal: Stable for 3 sec with good height
- (2) Heels up, but not full range (smaller than when holding hands so no balance requirement)
-OR- slight instability & holds for 3 sec
- (1) Holds for less than 3 sec
- (0) Unable

11. STAND ON ONE LEG

Left *Time in Sec: _____* Right *Time in Sec: _____*

- | | |
|-------------------------------|------------------------------|
| (3) Normal: Stable for > 20 s | (3) Normal: Stable for > 20s |
| (2) Trunk motion, OR 10-20 s | (2) Trunk motion, OR 10-20 s |
| (1) Stands 2-10 s | (1) Stands 2-10s |
| (0) Unable | (0) Unable |

12. ALTERNATE STAIR TOUCHING *# of successful steps: _____ Time in seconds: _____*

- (3) Normal: Stands independently and safely and completes 8 steps in < 10 seconds
- (2) Completes 8 steps (10-20 seconds) AND/OR show instability such as inconsistent foot placement, excessive trunk motion, hesitation or arrhythmical
- (1) Completes < 8 steps – without minimal assistance (i.e. assistive device) OR > 20 sec for 8 steps
- (0) Completes < 8 steps, even with assistive devise

13. STANDING ARM RAISE

- (3) Normal: Remains stable
- (2) Visible sway
- (1) Steps to regain equilibrium/unable to move quickly w/o losing balance
- (0) Unable, or needs assistance for stability

IV. REACTIVE POSTURAL RESPONSE

SECTION IV: _____/18 POINTS

14. IN PLACE RESPONSE- FORWARD

- (3) Recovers stability with ankles, no added arms or hips motion
- (2) Recovers stability with arm or hip motion
- (1) Takes a step to recover stability
- (0) Would fall if not caught OR requires assist OR will not attempt

15. IN PLACE RESPONSE- BACKWARD

- (3) Recovers stability at ankles, no added arm / hip motion
- (2) Recovers stability with some arm or hip motion
- (1) Takes a step to recover stability
- (0) Would fall if not caught -OR- requires assistance -OR- will not attempt

16. COMPENSATORY STEPPING CORRECTION- FORWARD

- (3) Recovers independently a single, large step (second realignment step is allowed)
- (2) More than one step used to recover equilibrium, but recovers stability independently OR 1 step with imbalance
- (1) Takes multiple steps to recover equilibrium, or needs minimum assistance to prevent a fall
- (0) No step, OR would fall if not caught, OR falls spontaneously

17. COMPENSATORY STEPPING CORRECTION- BACKWARD

- (3) Recovers independently a single, large step
- (2) More than one step used, but stable and recovers independently OR 1 step with imbalance
- (1) Takes several steps to recover equilibrium, or needs minimum assistance
- (0) No step, OR would fall if not caught, OR falls spontaneously

18. COMPENSATORY STEPPING CORRECTION- LATERAL

- | | |
|---|---|
| <u>Left</u> | <u>Right</u> |
| (3) Recovers independently with 1 step of normal length/width (crossover or lateral OK) | (3) Recovers independently with 1 step of normal length/width (crossover or lateral OK) |
| (2) Several steps used, but recovers independently | (2) Several steps used, but recovers independently |
| (1) Steps, but needs to be assisted to prevent a fall | (1) Steps, but needs to be assisted to prevent a fall |
| (0) Falls, or cannot step | (0) Falls, or cannot step |

V. SENSORY ORIENTATION

SECTION V: _____/15 POINTS

19. SENSORY INTEGRATION FOR BALANCE (MODIFIED CTSIB)

A -EYES OPEN, FIRM SURFACE	B -EYES <u>CLOSED</u>, FIRM SURFACE	C -EYES OPEN, FOAM SURFACE	D -EYES <u>CLOSED</u>, FOAM SURFACE
Trial 1 _____sec	Trial 1 _____sec	Trial 1 _____sec	Trial 1 _____sec
Trial 2 _____sec	Trial 2 _____sec	Trial 2 _____sec	Trial 2 _____sec
(3) 30s stable	(3) 30s stable	(3) 30s stable	(3) 30s stable
(2) 30s unstable	(2) 30s unstable	(2) 30s unstable	(2) 30s unstable
(1) < 30s	(1) < 30s	(1) < 30s	(1) < 30s
(0) Unable	(0) Unable	(0) Unable	(0) Unable

20. INCLINE- EYES CLOSED

Toes Up

- (3) Stands independently, steady without excessive sway, holds 30 sec, and aligns with gravity
- (2) Stands independently 30 SEC with greater sway than in item 19B -OR- aligns with surface
- (1) Requires touch assist -OR- stands without assist for 10-20 sec
- (0) Unable to stand >10 sec -OR- will not attempt independent stance

VI. STABILITY IN GAIT

SECTION V: _____/21 POINTS

21. GAIT – LEVEL SURFACE

Time _____ *secs.*

- (3) Normal: walks 20 ft., good speed (≤ 5.5 sec), no evidence of imbalance.
- (2) Mild: 20 ft., slower speed (>5.5 sec), no evidence of imbalance.
- (1) Moderate: walks 20 ft., evidence of imbalance (wide-base, lateral trunk motion, inconsistent step path) – at any preferred speed.
- (0) Severe: cannot walk 20 ft. without assistance, or severe gait deviations OR severe imbalance

22. CHANGE IN GAIT SPEED

- (3) Normal: Significantly changes walking speed without imbalance
- (2) Mild: Unable to change walking speed without imbalance
- (1) Moderate: Changes walking speed but with signs of imbalance,
- (0) Severe: Unable to achieve significant change in speed AND signs of imbalance

23. WALK WITH HEAD TURNS – HORIZONTAL

- (3) Normal: performs head turns with no change in gait speed and good balance
- (2) Mild: performs head turns smoothly with reduction in gait speed,
- (1) Moderate: performs head turns with imbalance
- (0) Severe: performs head turns with reduced speed AND imbalance AND/OR will not move head within available range while walking.

24. WALK WITH PIVOT TURNS

- (3) Normal: Turns with feet close, FAST (≤ 3 steps) with good balance.
- (2) Mild: Turns with feet close SLOW (≥ 4 steps) with good balance
- (1) Moderate: Turns with feet close at any speed with mild signs of imbalance
- (0) Severe: Cannot turn with feet close at any speed and significant imbalance.

25. STEP OVER OBSTACLES

Time _____ *sec*

- (3) Normal: able to step over 2 stacked shoe boxes without changing speed and with good balance
- (2) Mild: steps over 2 stacked shoe boxes but slows down, with good balance
- (1) Moderate: steps over shoe boxes with imbalance or touches box.
- (0) Severe: cannot step over shoe boxes AND slows down with imbalance or cannot perform with assistance.

26. TIMED “GET UP & GO”

Get Up & Go: Time _____ *sec*

- (3) Normal: Fast (<11 sec) with good balance
- (2) Mild: Slow (>11 sec with good balance)
- (1) Moderate: Fast (<11 sec) with imbalance.
- (0) Severe: Slow (>11 sec) AND imbalance.

27. Timed “Get Up & Go” With Dual Task

Dual Task: Time _____ *sec*

- (3) Normal: No noticeable change between sitting and standing in the rate or accuracy of backwards counting and no change in gait speed.
- (2) Mild: Noticeable slowing, hesitation or errors in counting backwards OR slow walking (10%) in dual task
- (1) Moderate: Affects on BOTH the cognitive task AND slow walking ($>10\%$) in dual task.
- (0) Severe: Can't count backward while walking or stops walking while talking

INSTRUCTIONS FOR BESTEST

BIOMECHANICAL CONSTRAINTS

1. BASE OF SUPPORT

Examiner Instructions: Closely examine both feet to look for deformities or complaints of pain such as abnormal pronation/supination, abnormal or missing toes, pain from plantar fasciitis, bursitis, etc).

Patient: Stand up in your bare feet and tell me if you currently have any pain in your feet or ankles or legs.

2. COM ALIGNMENT

Examiner Instructions: Look at the patient from the side and imagine a vertical line through their center of body mass (CoM) to their feet. (The CoM is the imaginary point inside or outside the body about which the body would rotate if floating in outer-space.) In an adult, standing erect, a vertical line through the CoM to the support surface is aligned in front of the vertebrae at the umbilicus and passes about 2 cm in front of the lateral malleolus, centered between the two feet. Abnormal segmental postural alignment such as scoliosis or kyphosis or asymmetries may or may not affect CoM alignment.

Patient: Stand relaxed, looking straight ahead

3. ANKLE STRENGTH & RANGE

Examiner Instructions: Ask the patient rest their fingertips in your hands for support while they stand on their toes as high as possible and then stand on their heels. Watch for height of heel and toe lift.

Patient: Rest your fingers in my hands for support while you stand on your toes. Now stand on your heels by lifting up your toes. Maintain each position for 3 sec.

4. HIP/TRUNK LATERAL STRENGTH

Examiner Instructions: Ask the patient to rest their fingertips in your hands while they lift their leg to the side off the floor and hold. Count for 10 sec while their foot is off the floor with a straight knee. If they must use moderate force on your hands to keep their trunk upright, score as without keeping trunk vertical.

Patient: Lightly rest your fingertips in my hands while you lift your leg out to the side and hold until I tell you to stop. Try to keep your trunk vertical while you hold your leg out.

5. SIT ON FLOOR AND STANDUP

Examiner Instructions: Start with the patient standing near a sturdy chair. The patient can be considered to be sitting when both buttocks are on the floor. If the task takes more than 2 minutes to complete the task, with or without a chair, score 0. If the patient requires any physical assistance, score 0.

Patient: Are you able to sit on the floor and then stand up, in less than 2 minutes? If you need to use a chair to help you go onto the floor or to stand up, go ahead but your score will be affected. Let me know if you cannot sit on the floor or stand up without my help.

SITTING STABILITY LIMITS

6. VERTICALITY AND LATERAL LEAN

Examiner Instructions: Patient is sitting comfortably on a firm, level, armless surface (bench or chair) with feet flat on floor. It is okay to lift ischium or feet when leaning. Watch to see if the patient returns to vertical smoothly without over or undershooting. Score the worst performance to each side.

Patient: Cross your arms over your chest. Place feet shoulder width apart. I'll be asking you to close your eyes and lean to one side as far as you can. You'll keep your spine straight, and lean sideways as far as you can without losing your balance OR using your hands. Keeping your eyes closed, return to your starting position when you've leaned as far as you can. It's okay to lift your buttocks and feet. Close your eyes Lean now. (REPEAT other side)

7. FUNCTIONAL REACH FORWARD

Examiner Instructions: Examiner places the ruler at the end of the fingertips when the arms are out at 90 degrees. The patient may not lift heels, rotate trunk, or protract scapula excessively. Patient must keep their arms parallel to ruler and may use less involved arm. The recorded measure is the maximum horizontal distance reached by the patient. Record best reach.

Patient: Stand normally. Please lift both arms straight in front of you, with fingertips held even. Stretch your fingers and reach forward as far as you can. Don't lift your heels. Don't touch the ruler or the wall. Once you've reached as far forward as you can, please return to a normal standing position. I will ask you to do this two times. Reach as far as you can.

8. FUNCTIONAL REACH LATERAL

Examiner Instructions: Have subject align feet evenly so that the fingertips, when the arm is out at 90 degrees is at the start of the ruler. The recorded measure is the maximum horizontal distance reached by the patient. Record the best reach. Make sure the subject starts in neutral. The patient is allowed to lift one heel off the floor but not the entire foot.

Patient: Stand normally with feet shoulder width apart. Arms at your sides. Lift your arm out to the side. Your fingers should not touch the ruler. Stretch your fingers and reach out as far as you can. Do not lift your toes off the floor. Reach as far as you can. (REPEAT other side)

TRANSITIONS – ANTICIPATORY POSTURAL ADJUSTMENT

9. SIT TO STAND

Examiner Instructions: Note the initiation of the movement, and the use of hands on the arms of the chair or their thighs or thrusts arms forward

Patient: Cross arms across your chest. Try not to use your hands unless you must. Don't let your legs lean against the back of the chair when you stand. Please stand up now.

10. RISE TO TOES

Examiner Instructions: Allow the patient to try it twice. Record the best score. (If you suspect that subject is using less than their full height, ask them to rise up while holding the examiners' hands.) Make sure subjects look at a target 4-12 feet away.

Patient: Place your feet shoulder width apart. Place your hands on your hips. Try to rise as high as you can onto your toes. I'll count out loud to 3 seconds. Try to hold this pose for at least 3 seconds. Look straight ahead. Rise now.

11. STAND ON ONE LEG

Examiner Instructions: Allow the patient two attempts and record the best. Record the sec they can hold posture, up to a maximum of 30 sec. Stop timing when subject moves their hand off hips or puts

Patient: Look straight ahead. Keep your hands on your hips. Bend one leg behind you. Don't touch your raised leg on your other leg. Stay standing on one leg as long as you can. Look straight ahead. Lift

a foot down.

now. (REPEAT other side)

12. ALTERNATE STAIR TOUCHING

Examiner Instructions: Use standard stair height of 6 inches. Count the number of successful touches and the total time to complete the 8 touches. It's permissible for subjects to look at their feet.

Patient: Place your hands on your hips. Touch the ball of each foot alternately on the top of the stair. Continue until each foot touches the stair four times (8 total taps). I'll be timing how quickly you can do this. Begin now.

13. STANDING ARM RAISE

Examiner Instructions: Use 2.5 Kg (5 lb) weight. Have subjects stand and lift weight with both hands to shoulder height. Subjects should perform this as fast as they can. Lower score by 1 category if weight must be less than 2.5 Kg (5 lb) +/- lifts < 75 deg.

Patient: Lift this weight with both hands from a position in front of you to shoulder level. Please do this as fast as you can. Keep your elbows straight when you lift and hold. Hold for my count of 3. Begin now.

REACTIVE POSTURAL RESPONSES

14. IN PLACE RESPONSE- FORWARD

Examiner Instructions: Stand in front of the patient, place one hand on each shoulder and lightly push the patient backward until their anterior ankle muscles contract, (and toes just start to extend) then suddenly release. Do not allow any pre-leaning by patient. Score only the best of 2 responses if the patient is unprepared or you pushed too hard.

Patient: For the next few tests, I'm going to push against you to test your balance reaction. Stand in your normal posture with your feet shoulder width apart, arms at your sides. Do not allow my hands to push you backward. When I let go, keep your balance without taking a step

15. IN PLACE RESPONSE- BACKWARD

Examiner Instructions: Stand behind patient, place one hand on each scapula and isometrically hold against patient's backward push, until heels are about to be lifted, not allowing trunk motion. Suddenly release. Do not allow any pre-leaning by patient. Score the best of 2 responses if patient is unprepared, or you pushed too hard.

Patient: Stand with your feet shoulder width apart, arms at your sides. Do not allow my hands to push you forward. When I let go, keep your balance without taking a step

16. COMPENSATORY STEPPING CORRECTION-FORWARD

Examiner Instructions: Stand in front to the side of patient with one hand on each shoulder and ask them to push forward. (Make sure there is room for them to step forward). Require them to lean until their shoulders and hips are in front of their toes. Suddenly release your support when the subject is in place. The test must elicit a step. Be prepared to catch patient.

Patient: Stand with your feet shoulder width apart, arms at your sides. Lean forward against my hands beyond your forward limits. When I let go, do whatever is necessary, including taking a step, to avoid a fall.

17. COMPENSATORY STEPPING CORRECTION - BACKWARD

Examiner Instructions: Stand in back and to the side of the patient with one hand on each scapula and ask them to lean backward. (Make sure there is room for them to step backward.) Require them to lean until their shoulders and hips are in back of their heels. Release your support when the subject is in place.

Patient: Stand with your feet shoulder width apart, arms down at your sides. Lean backward against my hands beyond your backward limits. When I let go, do whatever is necessary, including taking a step, to avoid a fall.

Test must elicit a step.

NOTE: Be prepared to catch patient.

18. COMPENSATORY STEPPING CORRECTION- LATERAL

Examiner Instructions: Stand behind the patient, place one hand on either the right (or left) side of the pelvis, and ask them to lean their whole vertical body into your hand. Require them to lean until the midline of pelvis is over the right (or left) foot and then suddenly release your support.

Patient: Stand with your feet together, arms down at your sides. Lean into my hand beyond your sideways limit. When I let go, step if you need to, to avoid a fall.

NOTE: Be prepared to catch patient.

SENSORY ORIENTATION

19. SENSORY INTEGRATION FOR BALANCE (MODIFIED CTSIB)

Examiner Instructions: Do the tests in order. Record the time the patient was able to stand in each condition to a maximum of 30 seconds. Repeat condition if not able to stand for 30 s and record both trials (average for category). Use medium density Temper® foam, 4 inches thick. Assist subject in stepping onto foam. Have the subject step off the foam between trials. Include leaning or hip strategy during a trial as “instability.”

Patient: For the next 4 assessments, you'll either be standing on this foam or on the normal ground, with your eyes open or closed. Place your hands on your hips. Place your feet together until almost touching. Look straight ahead. Each time, stay as stable as possible until I say stop.

20. INCLINE EYES CLOSED

Examiner Instructions: Aid the patient onto the ramp. Once the patient closes their eyes, begin timing. Repeat condition if not able to stand for 30 s and average both trials/ Note if sway is greater than when standing on level surface with eyes closed (Item 15B) or if poor alignment to vertical. Assist includes use of a cane or light touch any time during the trial.

Patient: Please stand on the incline ramp with your toes toward the top. Place your feet shoulder width apart. Place your hands on your hips. I will start timing when you close your eyes.

STABILITY IN GAIT

21. GAIT – LEVEL SURFACE

Examiner Instructions: Place two markers 20 feet (6 meters) apart and visible to the patient on a level walkway. Use a stopwatch to time gait duration. Have subjects start with their toes on the mark. Start timing with the stopwatch when the first foot leaves the ground and stop timing when both feet stop beyond the next mark.

Patient: Walk at your normal speed from here past the next mark and stop.

22. CHANGE IN SPEED

Examiner Instructions: Allow the patient to take 2-3 steps at their normal speed, and then say “fast”, after 2-3 fast steps, say “slow”. Allow 2-3 slow steps before they stop walking.

Patient: Begin walking at your normal speed, when I tell you “fast” walk as fast as you can. When I say “slow”, walk very slowly.

23. WALK WITH HEAD TURNS – HORIZONTAL

Examiner Instructions: Ask the patient to turn their head and hold it so they are looking over their shoulder until you tell them to look over the opposite

Patient: Begin walking at your normal speed, when I say “right”, turn your head and look to the right. When I say “left” turn your head and look to the left. Try to

shoulder every 2-3 steps. If the patient has cervical restrictions allow combined head and trunk movements (enbloc).

24. WALK WITH PIVOT TURNS

Examiner Instructions: Demonstrate a pivot turn. Once the patient is walking at normal speed, say “turn and stop.” Count the steps from turn until the subject is stable. Instability is indicated by wide stance width, extra stepping or trunk and arm motion.

25. STEP OVER OBSTACLE

Examiner Instructions: Place the 2 stacked boxes (9” or 22.9 cm height) 10 ft. away from where the patient will begin walking. Use a stopwatch to time gait duration to calculate average velocity by dividing the number of seconds into 20 feet. Look for hesitation, short steps and touch on obstacle.

26. TIMED “GET UP & GO”

Examiner Instructions: Have the patient sit with their backs against the chair. Time the patient from the time you say “go” until they return to sitting in chair. Stop timing when the patient’s buttocks hit the chair bottom. The chair should be firm with arms to push from if necessary. **TOOLS: TAPE ON FLOOR 3 METERS FROM THE FRONT OF THE CHAIR LEGS.**

27. TIMED “GET UP & GO” WITH DUAL TASK

Examiner Instructions: Before beginning, practice with the patient how to count backward from a number between 90 and 100 by 3s, to make sure they can do the cognitive task. Then ask them to count backwards from a different number and after a few numbers say GO for the GET UP AND GO TASK. Time the patient from when you say “go” until they return to sitting. Stop timing when the patient’s buttocks touch the chair bottom. The chair should be firm with arms to push from if necessary.

keep yourself walking in a straight line.

Patient: Begin walking at your normal speed. When I tell you to “turn and stop”, turn as quickly as you can to face the opposite direction and stop. After the turn, your feet should be close together.

Patient: Begin walking at your normal speed. When you come to the shoe boxes, step over them, not around them and keep walking.

Patient: When I say “GO,” stand up from the chair, walk at your normal speed across the tape on the floor, turn around, and come back to sit in the chair. I will time how long it takes.

Patient: a) Count backwards by 3’s starting at 100 OR b) List random numbers and when I say “GO,” stand up from the chair, walk at your normal speed across the tape on the floor, turn around, and come back to sit in the chair but continue listing numbers.

Dynamic Gait Index

(Shumway-Cook, A. and Woollacott, M. *Motor Control Theory and Applications*, Baltimore: Williams & Wilkins, 1995, pp. 323-324)

1. Gait level surface _____

Instructions: Walk at your normal speed from here to the next mark (20').

Grading: Mark the lowest category that applies.

- (3) Normal: Walks 20', no assistive devices, good speed, no evidence for imbalance, normal gait pattern.
- (2) Mild impairment: Walks 20', uses assistive devices, slower speed, mild gait deviations.
- (1) Moderate impairment: Walks 20', slow speed, abnormal gait pattern, evidence of imbalance.
- (0) Severe impairment: Cannot walk 20' without assistance, severe gait deviations or imbalance.

2. Change in gait speed _____

Instructions: Begin walking at your normal pace (for 5'), when I tell you "go", walk as fast as you can (for 5'). When I tell you "slow", walk as slow as you can (for 5').

Grading: Mark the lowest category that applies.

- (3) Normal: Able to smoothly change walking speed without loss of balance or gait deviation. Shows a significant difference in walking speeds between normal, fast, and slow speeds.
- (2) Mild impairment: Is able to change speed but demonstrates mild gait deviations, or no gait deviations but unable to achieve a significant change in velocity, or uses an assistive device.
- (1) Moderate impairment: Makes only minor adjustments to walking speed, or accomplishes a change in speed with significant gait deviations, or changes speed but loses significant gait deviations, or changes speed but loses balance but is able to recover and continue walking.
- (0) Severe impairment: Cannot change speeds, or loses balance and has to reach for wall or be caught.

3. Gait with horizontal head turns _____

Instructions: Begin walking at your normal pace. When I tell you to "look right", keep walking straight, but turn your head to the right. Keep looking right until I tell you, "look left", then keep walking straight and turn your head to the left. Keep your head left until I tell you, "look straight", then keep walking straight, but return your head to the center.

Grading: Mark the lowest category that applies.

- (3) Normal: Performs head turns smoothly with no change in gait.
- (2) Mild impairment: Performs head turns smoothly with slight change in gait velocity, i.e., minor disruption to smooth gait path or uses walking aid.
- (1) Moderate impairment: Performs head turns with moderate change in gait velocity, slows down, staggers but recovers, can continue to walk.
- (0) Severe impairment: Performs task with severe disruption of gait, i.e., staggers outside 15" path, loses balance, stops, reaches for wall.

4. **Gait with vertical head turns** _____

Instructions: Begin walking at your normal pace. When I tell you to “look up”, keep walking straight, but tip your head and look up. Keep looking up until I tell you, “look down”. Then keep walking straight and turn your head down. Keep looking down until I tell you, “look straight”, then keep walking straight, but return your head to center.

Grading: Mark the lowest category that applies.

- (3) Normal: Performs head turns smoothly with no change in gait.
- (2) Mild impairment: Performs head turns smoothly with slight change in gait velocity, i.e., minor disruption to smooth gait path or uses walking aid.
- (1) Moderate impairment: Performs head turns with moderate change in gait velocity, slows down, staggers but recovers, can continue to walk.
- (0) Severe impairment: Performs task with severe disruption of gait, i.e., staggers outside 15” path, loses balance, stops, reaches for wall.

5. **Gait and pivot turn** _____

Instructions: Begin walking at your normal pace. When I tell you, “turn and stop”, turn as quickly as you can to face the opposite direction and stop.

Grading: Mark the lowest category that applies.

- (3) Normal: Pivot turns safely within 3 seconds and stops quickly with no loss of balance.
- (2) Mild impairment: Pivot turns safely in >3 seconds and stops with no loss of balance.
- (1) Moderate impairment: Turns slowly, requires verbal cueing, requires several small steps to catch balance following turn and stop.
- (0) Severe impairment: Cannot turn safely, requires assistance to turn and stop.

6. **Step over obstacle** _____

Instructions: Begin walking at your normal speed. When you come to the shoe box, step over it, not around it, and keep walking.

Grading: Mark the lowest category that applies.

- (3) Normal: Is able to step over box without changing gait speed; no evidence for imbalance.
- (2) Mild impairment: Is able to step over box, but must slow down and adjust steps to clear box safely.
- (1) Moderate impairment: Is able to step over box but must stop, then step over. May require verbal cueing.
- (0) Severe impairment: Cannot perform without assistance.

7. **Step around obstacles** _____

Instructions: Begin walking at normal speed. When you come to the first cone (about 6’ away), walk around the right side of it. When you come to the second cone (6’ past first cone), walk around it to the left.

Grading: Mark the lowest category that applies.

- (3) Normal: Is able to walk around cones safely without changing gait speed; no evidence of imbalance.
- (2) Mild impairment: Is able to step around both cones, but must slow down and adjust steps to clear cones.
- (1) Moderate impairment: Is able to clear cones but must significantly slow , speed to accomplish task, or requires verbal cueing.
- (0) Severe impairment: Unable to clear cones, walks into one or both cones, or requires physical assistance.

8. Steps _____

Instructions: Walk up these stairs as you would at home (i.e., using the railing if necessary). At the top, turn around and walk down.

Grading: Mark the lowest category that applies.

- (3) Normal: Alternating feet, no rail.
- (2) Mild impairment: Alternating feet, must use rail.
- (1) Moderate impairment: Two feet to a stair, must use rail.
- (0) Severe impairment: cannot do safely.

TOTAL SCORE: _____/24

Mini-BESTest: Balance Evaluation Systems Test

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ANTICIPATORY

SUB SCORE: /6

1. SIT TO STAND

Instruction: "Cross your arms across your chest. Try not to use your hands unless you must. Do not let your legs lean against the back of the chair when you stand. Please stand up now."

(2) Normal: Comes to stand without use of hands and stabilizes independently.

(1) Moderate: Comes to stand WITH use of hands on first attempt.

(0) Severe: Unable to stand up from chair without assistance, OR needs several attempts with use of hands.

2. RISE TO TOES

Instruction: "Place your feet shoulder width apart. Place your hands on your hips. Try to rise as high as you can onto your toes. I will count out loud to 3 seconds. Try to hold this pose for at least 3 seconds. Look straight ahead. Rise now."

(2) Normal: Stable for 3 s with maximum height.

(1) Moderate: Heels up, but not full range (smaller than when holding hands), OR noticeable instability for 3 s.

(0) Severe: ≤ 3 s.

3. STAND ON ONE LEG

Instruction: "Look straight ahead. Keep your hands on your hips. Lift your leg off of the ground behind you without touching or resting your raised leg upon your other standing leg. Stay standing on one leg as long as you can. Look straight ahead. Lift now."

Left: Time in Seconds Trial 1: _____ Trial 2: _____

Right: Time in Seconds Trial 1: _____ Trial 2: _____

(2) Normal: 20 s.

(2) Normal: 20 s.

(1) Moderate: < 20 s.

(1) Moderate: < 20 s.

(0) Severe: Unable.

(0) Severe: Unable

To score each side separately use the trial with the longest time.

To calculate the sub-score and total score use the side [left or right] with the lowest numerical score [i.e. the worse side].

REACTIVE POSTURAL CONTROL

SUB SCORE: /6

4. COMPENSATORY STEPPING CORRECTION- FORWARD

Instruction: "Stand with your feet shoulder width apart, arms at your sides. Lean forward against my hands beyond your forward limits. When I let go, do whatever is necessary, including taking a step, to avoid a fall."

(2) Normal: Recovers independently with a single, large step (second realignment step is allowed).

(1) Moderate: More than one step used to recover equilibrium.

(0) Severe: No step, OR would fall if not caught, OR falls spontaneously.

5. COMPENSATORY STEPPING CORRECTION- BACKWARD

Instruction: "Stand with your feet shoulder width apart, arms at your sides. Lean backward against my hands beyond your backward limits. When I let go, do whatever is necessary, including taking a step, to avoid a fall."

(2) Normal: Recovers independently with a single, large step.

(1) Moderate: More than one step used to recover equilibrium.

(0) Severe: No step, OR would fall if not caught, OR falls spontaneously.

6. COMPENSATORY STEPPING CORRECTION- LATERAL

Instruction: "Stand with your feet together, arms down at your sides. Lean into my hand beyond your sideways limit. When I let go, do whatever is necessary, including taking a step, to avoid a fall."

Left

Right

(2) Normal: Recovers independently with 1 step (crossover or lateral OK).

(2) Normal: Recovers independently with 1 step (crossover or lateral OK).

(1) Moderate: Several steps to recover equilibrium.

(1) Moderate: Several steps to recover equilibrium.

(0) Severe: Falls, or cannot step.

(0) Severe: Falls, or cannot step.

Use the side with the lowest score to calculate sub-score and total score.

SENSORY ORIENTATION

SUB SCORE: /6

7. STANCE (FEET TOGETHER); EYES OPEN, FIRM SURFACE

Instruction: "Place your hands on your hips. Place your feet together until almost touching. Look straight ahead. Be as stable and still as possible, until I say stop."

Time in seconds: _____

(2) Normal: 30 s.

(1) Moderate: < 30 s.

(0) Severe: Unable.

8. STANCE (FEET TOGETHER); EYES CLOSED, FOAM SURFACE

Instruction: "Step onto the foam. Place your hands on your hips. Place your feet together until almost touching. Be as stable and still as possible, until I say stop. I will start timing when you close your eyes."

Time in seconds: _____

- (2) Normal: 30 s.
- (1) Moderate: < 30 s.
- (0) Severe: Unable.

9. INCLINE- EYES CLOSED

Instruction: "Step onto the incline ramp. Please stand on the incline ramp with your toes toward the top. Place your feet shoulder width apart and have your arms down at your sides. I will start timing when you close your eyes."

Time in seconds: _____

- (2) Normal: Stands independently 30 s and aligns with gravity.
- (1) Moderate: Stands independently <30 s OR aligns with surface.
- (0) Severe: Unable.

DYNAMIC GAIT

SUB SCORE: _____ /10

10. CHANGE IN GAIT SPEED

Instruction: "Begin walking at your normal speed, when I tell you 'fast', walk as fast as you can. When I say 'slow', walk very slowly."

- (2) Normal: Significantly changes walking speed without imbalance.
- (1) Moderate: Unable to change walking speed or signs of imbalance.
- (0) Severe: Unable to achieve significant change in walking speed AND signs of imbalance.

11. WALK WITH HEAD TURNS – HORIZONTAL

Instruction: "Begin walking at your normal speed, when I say "right", turn your head and look to the right. When I say "left" turn your head and look to the left. Try to keep yourself walking in a straight line."

- (2) Normal: performs head turns with no change in gait speed and good balance.
- (1) Moderate: performs head turns with reduction in gait speed.
- (0) Severe: performs head turns with imbalance.

12. WALK WITH PIVOT TURNS

Instruction: "Begin walking at your normal speed. When I tell you to 'turn and stop', turn as quickly as you can, face the opposite direction, and stop. After the turn, your feet should be close together."

- (2) Normal: Turns with feet close FAST (≤ 3 steps) with good balance.
- (1) Moderate: Turns with feet close SLOW (≥ 4 steps) with good balance.
- (0) Severe: Cannot turn with feet close at any speed without imbalance.

13. STEP OVER OBSTACLES

Instruction: "Begin walking at your normal speed. When you get to the box, step over it, not around it and keep walking."

- (2) Normal: Able to step over box with minimal change of gait speed and with good balance.
- (1) Moderate: Steps over box but touches box OR displays cautious behavior by slowing gait.
- (0) Severe: Unable to step over box OR steps around box.

14. TIMED UP & GO WITH DUAL TASK [3 METER WALK]

Instruction TUG: "When I say 'Go', stand up from chair, walk at your normal speed across the tape on the floor, turn around, and come back to sit in the chair."

Instruction TUG with Dual Task: "Count backwards by threes starting at _____. When I say 'Go', stand up from chair, walk at your normal speed across the tape on the floor, turn around, and come back to sit in the chair. Continue counting backwards the entire time."

TUG: _____ seconds; Dual Task TUG: _____ seconds

- (2) Normal: No noticeable change in sitting, standing or walking while backward counting when compared to TUG without Dual Task.
- (1) Moderate: Dual Task affects either counting OR walking (>10%) when compared to the TUG without Dual Task.
- (0) Severe: Stops counting while walking OR stops walking while counting.

When scoring item 14, if subject's gait speed slows more than 10% between the TUG without and with a Dual Task the score should be decreased by a point.

TOTAL SCORE: _____ /28

Mini-BESTest Instructions

Subject Conditions: Subject should be tested with flat-heeled shoes OR shoes and socks off.

Equipment: Temper® foam (also called T-foam™ 4 inches thick, medium density T41 firmness rating), chair without arm rests or wheels, incline ramp, stopwatch, a box (9" height) and a 3 meter distance measured out and marked on the floor with tape [from chair].

Scoring: The test has a maximum score of 28 points from 14 items that are each scored from 0-2.

"0" indicates the lowest level of function and "2" the highest level of function.

If a subject must use an assistive device for an item, score that item one category lower.

If a subject requires physical assistance to perform an item, score "0" for that item.

For **Item 3** (stand on one leg) and **Item 6** (compensatory stepping-lateral) only include the score for one side (the worse score).

For **Item 3** (stand on one leg) select the best time of the 2 trials [from a given side] for the score.

For **Item 14** (timed up & go with dual task) if a person's gait slows greater than 10% between the TUG without and with a dual task then the score should be decreased by a point.

1. SIT TO STAND	Note the initiation of the movement, and the use of the subject's hands on the seat of the chair, the thighs, or the thrusting of the arms forward.
2. RISE TO TOES	Allow the subject two attempts. Score the best attempt. (If you suspect that subject is using less than full height, ask the subject to rise up while holding the examiners' hands.) Make sure the subject looks at a non-moving target 4-12 feet away.
3. STAND ON ONE LEG	Allow the subject two attempts and record the times. Record the number of seconds the subject can hold up to a maximum of 20 seconds. Stop timing when the subject moves hands off of hips or puts a foot down. Make sure the subject looks at a non-moving target 4-12 feet ahead. Repeat on other side.
4. COMPENSATORY STEPPING CORRECTION-FORWARD	Stand in front of the subject with one hand on each shoulder and ask the subject to lean forward (Make sure there is room for them to step forward). Require the subject to lean until the subject's shoulders and hips are in front of toes. After you feel the subject's body weight in your hands, very suddenly release your support. The test must elicit a step. NOTE: Be prepared to catch subject.
5. COMPENSATORY STEPPING CORRECTION - BACKWARD	Stand behind the subject with one hand on each scapula and ask the subject to lean backward (Make sure there is room for the subject to step backward.) Require the subject to lean until their shoulders and hips are in back of their heels. After you feel the subject's body weight in your hands, very suddenly release your support. Test must elicit a step. NOTE: Be prepared to catch subject.
6. COMPENSATORY STEPPING CORRECTION- LATERAL	Stand to the side of the subject, place one hand on the side of the subject's pelvis, and have the subject lean their whole body into your hands. Require the subject to lean until the midline of the pelvis is over the right (or left) foot and then suddenly release your hold. NOTE: Be prepared to catch subject.
7. STANCE (FEET TOGETHER); EYES OPEN, FIRM SURFACE	Record the time the subject was able to stand with feet together up to a maximum of 30 seconds. Make sure subject looks at a non-moving target 4-12 feet away.
8. STANCE (FEET TOGETHER); EYES CLOSED, FOAM SURFACE	Use medium density Temper® foam, 4 inches thick. Assist subject in stepping onto foam. Record the time the subject was able to stand in each condition to a maximum of 30 seconds. Have the subject step off of the foam between trials. Flip the foam over between each trial to ensure the foam has retained its shape.
9. INCLINE EYES CLOSED	Aid the subject onto the ramp. Once the subject closes eyes, begin timing and record time. Note if there is excessive sway.
10. CHANGE IN SPEED	Allow the subject to take 3-5 steps at normal speed, and then say "fast". After 3-5 fast steps, say "slow". Allow 3-5 slow steps before the subject stops walking.
11. WALK WITH HEAD TURNS-HORIZONTAL	Allow the subject to reach normal speed, and give the commands "right, left" every 3-5 steps. Score if you see a problem in either direction. If subject has severe cervical restrictions allow combined head and trunk movements.
12. WALK WITH PIVOT TURNS	Demonstrate a pivot turn. Once the subject is walking at normal speed, say "turn and stop." Count the number of steps from "turn" until the subject is stable. Imbalance may be indicated by wide stance, extra stepping or trunk motion.
13. STEP OVER OBSTACLES	Place the box (9 inches or 23 cm height) 10 feet away from where the subject will begin walking. Two shoeboxes taped together works well to create this apparatus.
14. TIMED UP & GO WITH DUAL TASK	<i>Use the TUG time to determine the effects of dual tasking. The subject should walk a 3 meter distance.</i> TUG: Have the subject sitting with the subject's back against the chair. The subject will be timed from the moment you say "Go" until the subject returns to sitting. Stop timing when the subject's buttocks hit the chair bottom and the subject's back is against the chair. The chair should be firm without arms. TUG With Dual Task: While sitting determine how fast and accurately the subject can count backwards by threes starting from a number between 100-90. Then, ask the subject to count from a different number and after a few numbers say "Go". Time the subject from the moment you say "Go" until the subject returns to the sitting position. Score dual task as affecting counting or walking if speed slows (>10%) from TUG and or new signs of imbalance.

Tinetti Assessment Tool: Description

Population:	Adult population, elderly patients
Description:	The Tinetti Assessment Tool is a simple, easily administered test that measures a patient's gait and balance. The test is scored on the patient's ability to perform specific tasks.
Mode of Administration:	The Tinetti Assessment Tool is a task performance exam.
Time to Complete:	10 to 15 minutes
Time to Score:	Time to score is included in time to complete
Scoring:	Scoring of the Tinetti Assessment Tool is done on a three point ordinal scale with a range of 0 to 2. A score of 0 represents the most impairment, while a 2 would represent independence of the patient. The individual scores are then combined to form three measures; an overall gait assessment score, an overall balance assessment score, and a gait and balance score.
Interpretation:	The maximum score for the gait component is 12 points. The maximum score for the balance component is 16 points. The maximum total score is 28 points. In general, patients who score below 19 are at a high risk for falls. Patients who score in the range of 19-24 indicate that the patient has a risk for falls.
Reliability:	Interrater reliability was measured in a study of 15 patients by having a physician and a nurse test the patients at the same time. Agreement was found on over 85% of the items and the items that differed never did so by more than 10%. These results indicate that the Tinetti Assessment Tool has good interrater reliability.
Validity:	Not reported
References:	<p>Lewis C. Balance, Gait Test Proves Simple Yet useful. <i>P.T. Bulletin</i> 1993; 2/10:9 & 40.</p> <p>Tinetti ME. Performance-Oriented Assessment of Mobility Problems in Elderly Patients. <i>JAGS</i> 1986; 34:119-126.</p>

Tinetti Assessment Tool: Balance

Patient's Name: _____

Date: _____

Location: _____

Rater: _____

Initial Instructions: Subject is seated in a hard, armless chair. The following maneuvers are tested.

Task	Description of Balance	Possible	Score
1. Sitting Balance	Leans or slides in chair Steady, safe	= 0 = 1	
2. Arises	Unable without help Able, uses arms to help Able without using arms	= 0 = 1 = 2	
3. Attempts to arise	Unable without help Able, requires > 1 attempt Able to rise, 1 attempt	= 0 = 1 = 2	
4. Immediate standing balance (first 5 seconds)	Unsteady (swaggers, moves feet, trunk sway) Steady but uses walker or other support Steady without walker or other support	= 0 = 1 = 2	
5. Standing Balance	Unsteady Steady but wide stance (medial heels > 4 inches apart) and uses cane or other support Narrow stance without support	= 0 = 1 = 2	
6. Nudged (subject at max position with feet as close together as possible, examiner pushes lightly on subject's sternum with palm of hand 3 times.)	Begins to fall Staggers, grabs, catches self Steady	= 0 = 1 = 2	
7. Eyes closed (at maximum position #6)	Unsteady Steady	= 0 = 1	
8. Turning 360 degrees	Discontinuous steps Continuous steps Unsteady (grabs, swaggers) Steady	= 0 = 1 = 0 = 1	
9. Sitting Down	Unsafe (misjudged distance, falls into chair) Uses arms or not a smooth motion Safe, smooth motion	= 0 = 1 = 2	
		Balance Score:	

Tinetti Assessment Tool: Gait

Patient's Name: _____

Date: _____

Location: _____

Rater: _____

Initial Instructions: Subject stands with examiner, walks down hallway or across the room, first at "usual" pace, then back at "rapid, but safe" pace (using usual walking aids).

Task	Description of Gait	Possible	Score
10. Initiation of gait (immediately after told to "go")	Any hesitancy or multiple attempts to start No hesitancy	= 0 = 1	
11. Step length and height	a. Right swing foot does not pass left stance foot with step b. Right foot passes left stance foot c. Right foot does not clear floor completely with step d. Right foot completely clears floor e. Left swing foot does not pass right stance foot with step f. Left foot passes right stance foot g. Left foot does not clear floor completely with step h. Left foot completely clears floor	= 0 = 1 = 0 = 1 = 0 = 1 = 0 = 1	
12. Step Symmetry	Right and left step length not equal (estimate) Right and left step appear equal	= 0 = 1	
13. Step Continuity	Stopping or discontinuity between steps Steps appear continuous	= 0 = 1	
14. Path (estimated in relation to floor tiles, 12-inch diameter; observe excursion of 1 foot over about 10 feet of the course).	Marked deviation Mild/moderate deviation or uses walking aid Straight without walking aid	= 0 = 1 = 2	
15. Trunk	Marked sway or uses walking aid No sway but flexion of knees or back, or spreads arms out while walking No sway, no flexion, no use of arms, and no use of walking aid	= 0 = 1 = 2	
16. Walking Stance	Heels apart Heels almost touching while walking	= 0 = 1	
Gait Score:			
Balance + Gait Score:			