Appendix.
Mini-BESTest: Balance Evaluation Systems Test. © 2005–2013 Oregon Health & Science University. All rights reserved.

ANTICIPATORY   SUBSCORE: /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 subscore and total score, use the side [left or right] with the lowest numerical score [ie, the worse side].

REACTIVE POSTURAL CONTROL   SUBSCORE: /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.

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Appendix.
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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
(2) Normal: Recovers independently with 1 step (crossover or lateral OK).
(1) Moderate: Several steps to recover equilibrium.
(0) Severe: Falls, or cannot step.

Right
(2) Normal: Recovers independently with 1 step (crossover or lateral OK).
(1) Moderate: Several steps to recover equilibrium.
(0) Severe: Falls, or cannot step.

Use the side with the lowest score to calculate subscore and total score.

SENSORY ORIENTATION   SUBSCORE: /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   SUBSCORE: /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.

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Appendix.
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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 inches high) 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 to 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.

Appendix.
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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 nonmoving 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 nonmoving 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 the subject 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 the shoulders and hips are in back of the 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 the 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 nonmoving target 4–12 feet away.
8. Stance (Feet Together): Eyes Closed, Firm 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 Gait 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 shoe boxes taped together works well to create this apparatus.
14. Timed Up & Go With Dual Task	*Use the TUG time to determine the effects of dual tasking. The subject should walk a 3–meter distance. 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 90 and 100. 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.

On the Mini-BESTest: Scoring and the Reporting of Total Scores

The Mini-BESTest[1] was published in 2010 to introduce a shorter version of the Balance Evaluation Systems Test (BESTest). The Mini-BESTest has gained in popularity both as a clinical tool and as a research outcome measure of dynamic balance control. The test is freely downloadable and can be found at the BESTest website (www.BESTest.us) (Appendix). It has come to our attention both through our own studies and through published manuscripts that there is a discrepancy in how people are scoring and reporting total scores. Part of this problem originates from the fact that the scoring instructions are inconsistent between the published version[1] and that which is posted online. For example, a literature search of the past year and half resulted in 9 articles, most of which present the total Mini-BESTest score to be out of a maximum of 32 points.[2–10] This is incorrect. The Mini-BESTest has 14 items, scored from 0–2, so the maximum score is 28.

Two items (single-limb stance and lateral compensatory stepping) are being inappropriately counted into the total score because only the worst score between the sides should be counted in the total. Table I from the original article[1] states, "Only the worst performance in items 'stand on one leg' and 'lateral stepping' have to be taken into account for the score. Moreover, the performance in Cognitive Get Up and Go must be compared with that in the baseline item." Another common inconsistency is in determining a normal performance (score 2) versus an impaired performance (score 1) on the Cognitive Dual Task Get Up and Go. In the original paper, the authors stated, "Score dual task as affecting walking if speed slows >10% from TUG and/or new signs of imbalance."[1(p331)] These discrepancies are an important point if we are aiming to streamline outcome measures across studies and report important cutoff scores and minimally important change in the tests we use. Below is a summary of clarification for the common errors in scoring, as well as the corrected version of the Mini-BESTest.

Clarifications on Scoring and Total Scoring:

- The Mini-BESTest should be scored out of 28 points to include 14 items that are scored from 0 to 2.

- For **Item 3** (single-leg stance) and **Item 6** (compensatory lateral stepping), when compiling total score, use only the worse score.

- For **Item 14**, if a person's gait slows greater than 10% between the TUG with and without a dual task, the score should be decreased by a point.

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