OVERVIEW	o The BBS is a widely-used, clinician-rated scale used to assess sitting and standing, static and dynamic balance.
NUMBER OF TEST ITEMS	o The BBS consists of 14 functional balance items that focus on the ability to maintain a position and perform postural adjustments to complete functional movements.[1]
SCORING	o Each item is scored on a 5-point ordinal scale ranging from 0 to 4, with 0 indicating an inability to complete the task entirely and 4 indicating an ability to complete the task criterion.[2] o Items are scored relative to time, level of independence or supervision required. Points are deducted for requiring supervision, assistance and/or taking more than the allotted time to complete the task. The lowest category that applies should be marked. o Supervision is required in the event of excessive sway or safety concerns.
EQUIPMENT	o Stopwatch o Standard height chair (18-20 inches) with armrests o Standard height chair (18-20 inches) without arm rests o Step or stool of average height (7¾ - 9 inch step stool)[.4] o Ruler o Slipper[3] or a shoe
TIME (NEW CLINICIAN)	o Less than 20 minutes
TIME (EXPERIENCED CLINICIAN)	o Less than 20 minutes
COST	o Cost of equipment only

ITEM-BY-ITEM	o **Item 1: Sitting to standing**[1,5,6]
	  • Patient is seated in a free standing, standard height chair (18-20 in) with arm rests
	  • Instructions: *Please stand up, try not to use your hands for support*
	
	  <u>Scoring</u>:
	  4: able to stand without using hands, stabilizes independently
	  3: able to stand independently using hands
	  2: able to stand using hands after several tries
	  1: needs minimal aid to stand or to stabilize
	  0: needs moderate or maximal assist to stand
	
	o **Item 2: Standing unsupported**
	  • Patient is standing quietly with feet shoulder width apart on a solid surface
	  • Examiner has stopwatch in hand
	  • Instructions: *Please stand for 2 minutes without holding on*
	  <u>Scoring</u>:
	  (If a subject is able to stand 2 minutes unsupported, score full points for sitting unsupported. Proceed to item #4)
	  4: able to stand safely for 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 unsupported
	
	o **Item 3: Sitting with back unsupported**
	  • Patient is seated, back unsupported but feet supported on floor or a stool
	  • Examiner has stopwatch in hand
	  • Instructions: *Please sit with arms folded for 2 minutes*
	  <u>Scoring</u>:
	  4: able to sit safely and securely for 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

ITEM-BY-ITEM

o Item 4: Standing to sitting
- Patient is standing quietly in front of a chair with arm rests
- Instructions: *Please sit down*

  Scoring:
  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

o Item 5: Transfers[1,5,6]
- Arrange two chairs at approximately 90 degrees for a pivot transfer. You may use two chairs (one with arm rests and one without) or a bed and a chair with arm rests.
- Ensure that the patient will transfer both directions and that they will be transferring from one surface without arm rests and one surface with arm rests.
- Instructions: *Please transfer from this chair, with arm armrests, to that chair, without arm rests, and back again*

  Scoring:
  4: able to transfer safely with 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 assist
  0: needs two person assistance or supervision for safety

o Item 6: Standing unsupported with eyes closed
- Patient is standing quietly
- Examiner has stopwatch in hand
- Instructions: *Please close your eyes and stand still for 10 seconds*

  Scoring:
  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 safely
  0: needs help to keep from falling

o Item 7: Standing unsupported with feet together
- Patient is standing quietly with feet together
- Examiner has stopwatch in hand
- Instructions: *Place your feet together and stand without holding on*

  Scoring:
  4: able to place feet together independently and stand 1 minute safely
  3: able to place feet together independently and stand 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 15 seconds

o Item 8: Reaching forward with outstretched arm while standing
- Patient is standing quietly with both arms lifted to 90 degrees of shoulder flexion with fingers extended. If the patient has a shoulder impairment limiting the ability to lift arms symmetrically, use only the arm that can be lifted to 90 degrees easily and pain-lessly. Examiner is holding a ruler at the end of the fingertips. If the patient is unable to extend fingers, utilize the metacarpal phalangeal joint instead of the fingertips.
- Instructions: *Lift arm to 90 degrees. Stretch out your fingers and reach forward as far as you can*
- Fingers are not touching the ruler at any point during the test. Both arms are utilized by the patient to avoid trunk rotation during the forward reach. If one arm is utilized, provide verbal cueing to the patient to limit trunk rotation
- Examiner measures how far the patient can reach in the most forward lean position, without trunk rotation or losing balance

  Scoring:
  4: can reach forward confidently 25 cm (10 in)
  3: can reach forward 12 cm safely (5 in)
  2: can reach forward 5 cm safely (2 in)
  1: reaches forward but needs supervision
  0: loses balance while trying/requires external support

ITEM-BY-ITEM

○ **Item 9: Pick up object from the floor from a standing position**
- Patient is standing quietly
- A slipper or shoe is placed in front of the patient, close to the patient's feet.
  - ▪ The patient should be able to bend and easily reach the slipper. This is not a test for forward reach or limits of stability.
  - ▪ Do not substitute with any object that is shorter or taller than a slipper toe box or shoe as this will make the subject bend lower or not as far as intended for this criteria.
- Instructions: *Pick up the shoe/slipper which is placed in front of your feet*
- Examiner pays attention to how close the patient is able to get to the object
- Examiner also ensures that the patient is not using the back of the legs against a bed or chair during the reach

  Scoring:
  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 2-5 cm (1-2 in) 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 losing balance or falling

○ **Item 10: Turning to look behind over left and right shoulders**
- Patient is standing quietly
- Examiner is standing in front of the patient to accurately assess rotation and weight shift
- Instructions: *Turn to look directly behind you over toward the left shoulder. Repeat to the right*
- Examiner may pick an object to look at directly behind the subject to encourage a better twist turn
- Examiner assess the amount of trunk rotation and weight shift

  Scoring:
  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 losing balance or falling

○ **Item 11: Turn 360 degrees**
- Patient is standing quietly
- Examiner has stopwatch in hand
- Instructions: *Turn completely around in a full circle. Pause. Then turn a full circle in the other direction*
- Examiner times the time it takes to complete each full turn

  Scoring:
  4: able to turn 360 degrees safely in 4 seconds or less
  3: able to turn 360 degrees safely one side only in 4 seconds or less
  2: able to turn 360 degrees safely but slowly
  1: needs close supervision or verbal cueing
  0: needs assistance while turning

○ **Item 12: Placing alternate foot on step or stool while standing unsupported**
- Patient is standing quietly
- Examiner places a 7¾ - 9 inch step stool in front of the patient, or the patient is able to stand in front of a flight of steps[3]
- Examiner stands close by to provide assistance if needed
- Examiner has stopwatch in hand
- Instructions: *Place each foot alternately on the step/stool. Continue until each foot has touched the step/stool four times*
- Examiner times how long it takes to complete task

  Scoring:
  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
  0: loses balance while stepping or standing

ITEM-BY-ITEM	o **Item 13: Standing unsupported one foot in front**
	• Patient is standing quietly
	• Examiner has stopwatch in hand
	• Instructions: *(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*
	Scoring:
	4: able to place foot tandem independently and hold 30 seconds
	3: able to place foot ahead of other independently and hold 30 seconds
	▪ Foot must completely pass the other foot[7]
	▪ Step width should be no wider than shoulders
	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
	o **Item 14: Standing on one leg**
	• Patient is standing quietly
	• Examiner has stopwatch in hand
	• Instructions: *Stand on one leg as long as you can without holding on with your hands. Do not let your lifted leg touch your standing leg.*
	Scoring:
	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 ≥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
ADDITIONAL RECOMMENDATIONS	o To track change, it is recommended that this measure is administered a minimum of two times (admission and discharge), and when feasible, between these periods, under the same test conditions for the patient.
	o Recommend review of this standardized procedure and, on an annual basis, establish consistency within and among raters using the tool.

COMMON QUESTIONS AND VARIATIONS

1. **"If my patient cannot stand, should I still complete the BBS?"**

   a. If you anticipate that the patient is going to be able to stand and complete transfers, you should complete the BBS at examination to document change over time. If the patient cannot complete any elements of the BBS, they will have a score of 0 which will be their starting score. The recommendation would be that all patients have a baseline Berg Balance score.[8] However, for patients who do not have goals to improve static and dynamic balance, the BBS should not be administered and the clinician should provide rationale.

   b. The BBS only includes one item that assesses sitting balance. Therefore, if a patient has a primary goal to improve sitting balance, the BBS should be administered in addition to a sitting balance measure (i.e. Function in Sitting Test, Trunk Impairment Scale, etc.).

2. **"Can I provide touching assistance, or hold the gait belt, during the balance components of the BBS?"**

   a. If a patient requires touching assistance for an item, the lowest associated score for that item should be utilized or the specified score for that item (i.e. Item 1 sitting to standing: a score of 1 is if needs minimal aid to stand or stabilize, or 0 if needs moderate or maximal assist to stand). If you are unsure of the capabilities of the patient, you may elect to hold a gait belt, but consider completing a second trial without touching assistance by the therapist for a true measure of patient performance.

3. **"Can the patient use an assistive device for any elements of the BBS?"**

   a. Assistive devices should not be used by a patient when performing the BBS. If the patient normally utilizes an assistive device to perform a respective task, the administrator should encourage the patient to attempt the task without it. If the patient cannot perform the item without an assistive device they will be scored a 0.

   b. If an assistive device is utilized during the test, the score should be excluded from data analysis of balance outcomes of a group of patients.

4. **"Can a hospital bed or mat table serve as one of the seating surfaces during the BBS?"**

   a. Yes, however attempts should be made to preserve the standard height of 18-20 inches. If unable, the variation in height of the surface should be indicated and standardized within the practice/facility.

5. **"What if the patient can't attain the start position?"** (i.e. Item 7)

   ▪ The patient should be instructed: "*Place your feet together and stand without holding on.*" In some individuals, other bony or soft tissue restrictions may limit their ability to stand with the feet together. Instruct the patient to place the heels and toes as close together as possible.

6. **"What if I don't have a shoe/slipper available? Can I use a box of tissues instead of a slipper or a shoe? Can I use a pen on the floor instead of a slipper?"** (i.e. Item 9)

   a. Do not substitute with any object that is shorter or taller than a slipper toe box or shoe as this will make the subject bend lower or not as far as the item intended.

7. **"What arm should the patient use to reach forward?"** (i.e. Item 8)

   a. Where possible, both arms should be used; however, in instances where it is difficult to lift one arm (i.e. hemiparesis, shoulder ROM limitation), the intact arm can be used provided that the patient is not utilizing trunk rotation to achieve further reach.[1,5,6]

8. **"How do I assess trunk rotation and weight shift in a patient with post-operative spinal precautions?"** (i.e. Item 10)

   a. If the patient is unable to rotate the trunk due to post-surgical considerations, the patient would score a 0 for this item.

9. **"How high does the step/stool need to be?"** (i.e. Item 12)

   a. The International Residential Code[4] states that the recommended maximum height of a riser is 7¾ inches.

   b. Steffen et al.[3] documented the use of a 9-inch step stool.

   c. A step/stool that is at least 7¾ inches, no greater than 9 inches in height is recommended.

10. **"Does it matter which leg the patient stands on (SLS) or which is in front/back (tandem)?"** (i.e. Item 13 & 14)

    a. The BBS allows the patient to self-select the limb that they would stand on for both of these items

    b. In instances where a patient has unilateral impairment, it is recommended that the patient be tested on the involved limb (SLS) by standing on the involved limb and taking the forward step with the uninvolved limb (tandem).[9]

11. **"What if the patient loses their balance trying to get into or hold full tandem? Do I automatically score a 0 for that item?"** (i.e. Item 13)

    a. The test instructions indicate that a demonstration should be given to the patient showing them the option for tandem stance, and also the foot-ahead stance required to achieve a score of 3. Thus, if a patient attempts tandem and cannot achieve this, the tester can cue the patient to try the alternate position with demonstration.

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Per 2018 discussion, measure reprinted with permission from author Katherine Berg.

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