






Berg Balance Scale (BBS)

Measures static & dynamic balance.

<p>Phases</p> <p>Pre-op Post-acute Active living</p>	<p> ICF</p> <p>Activity</p>	<p> Time</p> <p>15-20 mins to administer & score</p>	<p> Equipment</p> <p>Stopwatch; standard height chair (18-20 in.) with arm rests; standard height chair (18-20 in.) without arm rests; step or stool (7 ¼ - 9 in.); ruler; slipper or shoe</p>
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Quality

	<p>Validity</p>	<p><i>Concurrent:</i> TKA/THA: Moderate correlation with force-plate measurement ($r=0.46-51$);¹ TKA: Strong correlation with BESTest at 2-wks ($r=0.78$) & moderate at 12-wks post-op ($r=0.68$)²</p>
	<p>Reliability</p>	<p><i>Intrarater relative:</i> TKA: 0.97 (95% CI 0.94-0.98)²; Varied population: 0.98 (95% CI 0.97-0.99)³ <i>Interrater:</i> TKA: 0.98 (95% CI 0.97-0.99)²; Varied population: 0.97 (95% CI 0.96-0.98)³</p>
	<p>Responsiveness</p>	<p><i>Internal:</i> TKA: For 2-24-wks post-op, responsiveness decreases further from surgery, SRM=0.19-0.7.⁴ <i>External:</i> TKA: For 2-24-wks post-op, $R^2 < 0.01-0.06$.⁴ The BBS was the only measure that didn't show significant difference between experimental (5.1+/-2.6-yr post-THA) & control group (healthy age & sex matched).⁵</p>
	<p>Floor/ceiling effects</p>	<p>TKA: Low sensitivity for predicting true fallers & significant ceiling effects⁶; Negative skewness 2-24-wks post-TKA (increasing with longer duration post-surgery) -1.77 to -2.85 suggestive of ceiling effect⁴; 52% & 58% attain max. score 12 & 24-wks post-TKA respectively.²</p>
	<p>Feasibility</p>	<p>Easy to administer and score; however significant time to administer.</p>

Instructions

Instruct patient to perform 14 balance tasks (standardized instructions). Assistive devices should NOT be used. Each task is scored from 0-4. See 'Relevant Links' for detailed instructions.

Scoring: All 14 items are scored on 5-point ordinal scale of 0-4. Points deducted for requiring supervision, assistance &/or taking more than the allotted time. The lowest category that applies should be recorded. Sum items for total score (0-56).

Interpretation

Direction: Higher score = better balance

SEM: TKA: 0.72 (95% CI 0.60, 0.91)^{2,6}

MDC₉₅: TKA: 2.0²; General elderly population: 2.8-6.6 for baseline score >20³

MCID: Anchor-based: absolute=5 points, relative=8%⁶; Distribution-based: absolute=2 points; relative: 3.2%⁶

Cut points/ thresholds: Elderly: A score of 45 indicates a greater risk of falling.^{7,8} Community dwelling older adults: Below 36 points, fall risk is close to 100%⁹ & ≤50 points falls risk is 59% in next 6 months.¹⁰ A history of falls & BBS ≥49/56 indicates ability to walk without an aid & ≥43/56 ability to walk without a four-wheeled walker.¹¹



Interpretation (contd.)

PASS: No evidence found

Normative/ Reference Values: Normative values available for US-based community-dwelling sample aged 60-yrs & older by biological sex.¹²



Other

Key messages: Provisionally recommended. Appropriate for advanced knee/hip OA. Not recommended for TKA^{2,4,6}, especially beyond 2-wks post-TKA due to its ceiling effect/poor discriminative ability (i.e., low sensitivity & specificity to detect changes in balance).⁶ Limited evidence for THA. BESTest or MiniBESTest are more responsive & do not have the ceiling effect of BBS after 2-wks post-surgery.^{4,6} The reduced version BBS (7 items) is equally responsive to full BBS in THA & TKA.¹³

Translations: Translated & validated in 9 plus languages.¹⁴ Translated but not validated in 12 other countries.¹⁴



Relevant Links

- [Summary & instructions \(Shirley Ryan AbilitiesLab\)](#)
- [Infographic \(Shirley Ryan AbilitiesLab\)](#)
- [Guide for item-by-item scoring \(Academy of Neurologic Physical Therapy\)](#)
- [Print summary & tool \(Brandeis University\)](#)
- [Online tool & calculator \(MDApp\)](#)
- [Online tool & calculator \(neurotoolkit\)](#)
- [Video \(American Academy of Orthotists and Prosthetists\)](#)



References

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