Mini Balance Evaluation Systems Test (Mini-BESTest)

Measures dynamic balance, functional mobility and gait.

Phases	ICF	Time	Equipment
Pre-op Post-acute Active living	Activity	10-15 mins	Stopwatch; ~60cm x 60cm (2 X 2 ft) 4" medium-density Tempur® foam; 10° incline ramp (at least 60cm x 60cm (2 x 2 ft); 23cm (9 inch) high box (~2 stacked shoeboxes); firm chair with arms; masking tape; paper form and pen/pencil.

Quality

Validity

Concurrent & convergent: TKA: Moderate-to-high associations with the Functional Gait Assessment (r=0.65-0.78), Berg Balance Scale (r=0.55-0.72), & Activities-specific Balance Confidence (r= 0.40-0.47) at 2-, 12- & 24-wks post-op[1]

Reliability

Interrater: TKA: Excellent ICC = 0.96 (95% CI 0.93-0.98)[1]
Intrarater: TKA: Excellent [ICC = 0.92 (95% CI 0.87-0.96)[1]
Internal Consistency: TKA: Excellent (Cronbach alpha=0.96)[1]

Responsiveness

Internal: TKA: SRM: 2-24wks post-op ranged from 0.40-0.94 (decreasing the further from surgery)

Floor/ceiling effects:

TKA: No significant floor or ceiling effects between 2-24-wks post-op[1]

Feasibility

Free for clinical and research purposes. Moderately time consuming (~15 mins), requires adherence to detailed instructions and several pieces of equipment including purchase of ~$100 Tempur foam.

Instructions

Ask patient to perform 14 balance tasks as per instructions. Each task is scored from 0-2 based on the performance. Patients can be tested with flat heeled shoes or barefoot. If an assistive device is needed for an item, score that item one category lower. If physical assistance is needed to perform an item, score the lowest category (0) for that item. See 'Relevant Links' for detailed instructions.
Scoring: Score performance of each of 14 tasks on a 3-level ordinal scale (0-2) with 0 = severe impairment and 2= no impairment. For items with a right & left assessment, use the lower score to determine the total score.

Interpretation

Direction: Higher scores = better functional ability

SEM: TKA: 1.34 (95% CI 1.11-1.68)[1]

MDC$_{95}$: TKA: 3.71[1]

MCID: TKA: Anchor-based: absolute=2 points, relative=75.4% & Distribution-based: absolute=1 point, relative=4.3%[3]

Cut points/thresholds: No evidence found

PASS: No evidence found

Normative/Reference values: Healthy Canadian Adults: 26.3 (age 50-59), 24.7 (age 60-69), 21.0 (age 70-79), 19.6 (age 80-89)[4]

🌐 🖥 Other

Key messages: Provisionally recommended. Established validity, reliability, responsiveness and interpretability in TKA population. No studies were found assessing measurement properties in THA population. Test is used with OA population but no psychometric/measurement evidence availableRequires less time but the same equipment as the BESTest.

Translations: Available in 15 languages, including French.

🔗 Relevant Links

[Tool, scoring sheet & instructions (BESTest)](#)
[Training (BESTest)](#)
[Summary & Instructions (Shirley Ryan AbilityLab)](#)
[Infographic (Shirley Ryan AbilityLab)](#)
[Video (BESTest)](#)

📖 References

1. Chan AC, Pang MY. Assessing balance function in patients with total knee arthroplasty. Phys Ther. 2015;95(10):1397-407. https://academic.oup.com/ptj/article/95/10/1397/2686464?login=false
2. Chan ACM, Ouyang XH, et al. Recovery of balance function among individuals with total knee arthroplasty: Comparison of responsiveness among four balance tests. Gait Posture. 2018;59:267-71. https://www.sciencedirect.com/science/article/pii/S0966636217309761?via%3Dihub
3. Chan ACM, Pang MYC, et al. Minimal clinically important difference of four commonly used balance assessment tools in individuals after total knee arthroplasty: A prospective cohort study. PM R. 2020;12(3):238-45. PMID: 31359626
4. O'Hoski S, Winship B, et al. Increasing the clinical utility of the BESTest, mini-BESTest, and brief-BESTest: normative values in Canadian adults who are healthy and aged 50 years or older. Phys Ther. 2014;94(3):334-42. https://pubmed.ncbi.nlm.nih.gov/24092900/

TJAOM toolkit