Step Test (ST)

Measures lower extremity function, dynamic balance and proprioception.

Phases
Pre-op
Post-acute
Active living

ICF
Body function
Activity

Time
Less than 5 mins

Equipment
Step 7.5cm high[1](some studies use higher steps of 12-23cm), stop watch, masking tape to mark 5cm

Quality

Validity	*Concurrent*: TKA: Good correlation with TUG (r=-0.69) & 10m walk test (r=0.67).[3] THA: Good correlation with TUG for right (r=0.65) & left (r=-0.81) leg[4]
Reliability	*Intrarater (test-retest):* TKA: Excellent (ICC=0.90)[3]; THA for right leg (ICC=0.91) & left leg (ICC=0.85)[4]; Hip OA: Excellent (ICC=0.91)[4] *Interrater*: Hip OA: (ICC=0.94)[5]
Responsiveness	No evidence found
Floor/ceiling effects	No evidence found
Feasibility	Quick & simple with minimal equipment/space required.

Instructions

Count the maximum number of times patient can place flat foot on step & back down in 15 secs. Use same step height across test sessions. Test on both sides. See 'Relevant links' for detailed instructions.

Scoring: Number of times individual can place one foot onto and back down from a step in 15 secs.[2]

Interpretation

Direction: Greater number of repetitions = better performance

SEM: TKA: SEM=0.76 steps (height not specified) 30-mos post-op.[3] THA: SEM_{95}=0.37 (right) & 0.55 (left) steps (7.5cm height) 6-mos post-op.[4]

Hip OA: SEM ranged from 1.06-1.37 steps (15cm height).[5]

MDC_{95}: TKA: 2.11 steps (height not specified) 3-mos post-op[3]; THA: 1.02 steps (right) & 1.52 (left) steps (7.5cm height) 6-mos post-op[4]; Hip OA: 3 steps (7.5cm height)[4]

MCID: No evidence found

Normative/Reference values: Among 456 community-dwelling Australian women 20-80-yrs old, mean right leg step test on 8.5cm step= 20.71(0.48) to 13.73(0.34) repetitions in youngest & oldest groups respectively.[6]

Cut points or thresholds: No evidence found

PASS: No evidence found

Other

Key messages: Provisionally recommended. Relevant to knee/hip TJA and OA with some evidence available for interpreting results for these populations. Clinically feasible.

Virtual administration: ICC between in-person & virtual testing good, noting step height varied as done in participant's home (0.75 R, 0.79 L).[7]

Relevant Links

Virtual administration (Centre for Health, Exercise and Sports Medicine, University of Melbourne)[1]

Video (TJAOM Toolkit Update Team)

References

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Developed by TJAOM Toolkit Development Team 2013; Updated by TJAOM Toolkit Update Team Jan 2024