30 second Chair Stand Test (30sCST)

Measures lower limb function, dynamic balance & strength[2]

Phases

Preop[1]
Post-acute
Active living

ICF

Body function
Activity

Time

~2 minutes to complete and score

Equipment

Straight back chair, 43-46 cm seat height /no arm rests
Stopwatch/timer
Note: Same chair needs to be used for re-testing

Quality

Validity	*Construct:* TKA: Moderate correlation with stair climb test (r=0.59).[3] Community-dwelling older adults: Strong correlations with gait speed (r=0.52), endurance (r=0.56) and dynamic balance (r= -0.50).[4] *Convergent:* Awaiting TKA/THA: moderately high correlations with fast-paced 50-ft timed walk (r_s= -0.64 (95% CI-0.75, -0.49) & WOMAC function subscale (r_s=-0.62 (95% CI -0.74, -0.47)).[5]
Reliability	*Test-retest:* Knee OA: Baseline ICC=0.92 & 6-month follow-up ICC=0.94[1]; Advanced hip/knee OA: ICC = 0.95[3] *Interrater:* Awaiting THA/TKA: ICC ranged from 0.93-0.98[6]; Hip OA: ICC=0.81[7]
Responsiveness	Awaiting TKA/THA: SRM: 0.84[5] Hip OA: After a 9-wk physiotherapy program, scores improved from 10.1 to 10.9.[7] More responsive than TUG or 40m self-paced walk test after a 9-wk physiotherapy program.[7] Knee OA: Acceptable responsiveness after a 4-wk physiotherapy program, AUC = 0.87 (95% CI 0.78–0.96).[8]
Floor/ceiling effects	Knee OA: No floor effects noted as only 1.1-10.8% of participants could not complete test.[1]
Feasibility	Minimum equipment & spaced required, quick to perform & can be administered virtually.

Instructions

Instruct patients to sit in the middle of chair with arms crossed at chest & feet flat on floor, shoulder width apart. On “Go,” ask them rise to a full standing position, then sit back down again, repeatedly for 30 seconds. See 'Relevant Links' for detailed instructions.

Scoring: Can record 1 or best of 2 trials & note chair height & adaptations such as using hands on legs or a walking aid[2] Repetitions that use arms to push off or use incomplete stands (not fulling standing and/or not sitting to touch the chair) do not count.

Interpretation

Direction: Higher number of repetitions = better function

SEM: Advanced hip & knee OA awaiting TJA: 0.7 reps[6]; Knee OA: 0.97 reps at baseline and 1.20 reps at 6-mo follow-up[1]; Hip OA: 1.3 reps[7]

MDC_{ind}: Knee OA: 2.27 reps at baseline, 2.79 reps at 6-mos follow-up [1]

MDC_{group} : Knee OA: 0.25 reps at baseline, 0.36 reps at 6-mos follow-up[1]

MDC_{90}: Awaiting TKA/THA: 1.64 reps[6]

MCII & MCID (anchor-based): Hip OA: ranged from 2.0-2.6 reps, associated with a major improvement [3, 7]

Normative values/ Reference values: Online calculator with population norms available at: https://exrx.net/Calculators/SeniorChairStand

Interpretation (contd.)

Criterion-referenced fitness standards for the 30sCST for maintaining physical independence in older adults are available. [9]

Cut points/thresholds: No evidence found.

PASS: Hip OA: > 11 stands after 9-wk physiotherapy program & > 12 stands at 1-yr follow-up.[10]

Other

Key messages: Recommended. A recommended core measure by Osteoarthritis Research Society International (OARSI).[2] Psychometric properties are also available for the 5 and 10 time STS tests.[3,11]

Virtual administration: Older adults with chronic lower limb musculoskeletal disorders: Virtual assessment of 30sCST had good test-retest reliability (ICC=0.77) with SEM of 1.74 & $MDC_{95}$of 4.81.of 4.81.[12] Good agreement (ICC = 0.82) between virtual and in-person administration.[12]

Older adults (mean age 73-yrs), excellent agreement (ICC = 0.94, 95% CI 0.88-0.97) with in-person test.[13]

Relevant Links

Summary (Shirley Ryan AbilitiesLab)[9]
Summary & instructions (OARSI)
Instructions & scoring sheet (CDC)
Virtual Administration (Centre for Health, Exercise and Sports Medicine, The University of Melbourne)
Video (MacICU Rehab)

References

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