40 metre Fast-paced Walk Test (40mFPWT)

Measures gait speed, functional mobility or balance at fast pace.

Phases

Pre-op
Post-acute
Active living

ICF

Body function
Activity

Time

<10 mins

Equipment

Walkway of 10m with 2m of turning space at each end. Stop watch/timer, 2 cones, tape & usual walking aid. Tape marks the walking zone & 2 cones ~ 2 m from each end of the 10m walkway mark the place to turn.

Quality

Validity	*Construct validity:* Pre-TKA: Weak correlation with KOOS-PS (r=0.25) & moderate correlation with quadriceps strength (r=0.64).[1]
Reliability	*Interrater:* Hip OA: Good (ICC=0.95)[2,3] *Test–retest:* TKA/THA: Excellent (0.91)[4,5]; Hip OA: Excellent (ICC=0.94)[2]; Community-dwelling adults with knee OA: moderate (ICC=0.85).[6]
Responsiveness	SRM: TKA/THA: 0.79 1-6-wks post-op[5]; Knee/Hip OA: No evidence found.
Floor/ceiling effects	No evidence found.
Feasibility	Easy with minimal equipment/space required.

Instructions

Instruct patient to walk as quickly, but as safely as possible, without running, along 10m walkway, past the taped line, & then turn around cone & return. Repeat again for total distance of 40m (3 turns). Start & stop timer each time patient crosses the line so only the 10m zone is captured. See 'Relevant Links' for detailed instructions.

Scoring: Record time taken to walk 40m; convert into m/sec.

Interpretation

Direction: Less time = better performance

SEM: Pre-TKA: 0.1m/sec[1]; Pre-TKA/THA: 1.73 secs (2 x 20m)[5]; Knee/Hip OA: 0.06 -0.07m/sec inter- & intra-raters.[4]

MDC_{90}: Pre-TKA/THA: 4.04 secs[5]; Knee/Hip OA: 0.19 m/sec[4] ; smallest detectable change 0.22 m/sec (hip OA).[2]

MCII: Hip OA: 0.2-0.3 m/sec.[3]

Cut points/thresholds: TKA/THA: No evidence found. Knee OA: Self-paced walking speed over 20m of <1.2 m/s discriminated patients with & without mortality risk.[7] Decline of ≥0.1m/sec over 1-yr increased risk of needing TKA by 104% & increased walking speed decreased risk of TKA by 55%.[8]

PASS: No evidence found.

Normative/Reference values: TKA/THA: No evidence found specific to 40mWT but reference values available for other distances/walking test. [9,10]

Other

Key messages: Recommended (included in GLA:D assessment and OARSI Core set).[11] Although it can be performed as self-paced, OARSI recommends fast-paced tests based on available measurement-property evidence & because they may be better indicators of the range of ability across the spectrum of OA.[12] Similar values for reliability (ICC=0.95) and SEM (1.0 m/sec) are reported for hip OA with the self-paced test.[3] When deciding between options of walk tests "healthcare providers should stick with the testing protocol (best suited as per the space availability) and use it over time to ensure the walk test's reliability and ability to interpret change."[13]

Relevant Links

Instructions, scoring sheet, normal values (OARSI)
Summary & instructions (OARSI)
Video (OARSI)

References

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