Six Minute Walk Test (6MWT)

Measures submaximal aerobic capacity & ability to walk over longer distances[1]

Phases
Pre-op
Post-acute
Active living

ICF
Activity

Time
~10 mins to complete and score

Equipment
30 metre premeasured walking zone, cones or brightly coloured tape to mark boundaries, stopwatch or timer, chairs for rest at each end, patient's usual walking aid.[1]

Quality

Validity
Construct: TKA: Good correlation (r=0.71) with maximum VO_2[1]
Concurrent: TKA: Excellent correlation (r=0.97) with 30-min walk test 1-yr post-op.[2]
THA: Change in 6MWT (pre-op to 1-yr post-op) was moderately correlated with change in SF-36 physical component summary score (r=0.58) & WOMAC function subscale (r=0.54).[3]

Reliability
TKA, THA & advanced hip/knee OA: ICC=0.94-0.97.[1,4,6]

Responsiveness
TKA: Between 2 & 4-mos post-op, ES (Cohen's D) was large (0.82).[7] THA: One-yr post-op, absolute mean change in 6MWT was 21% compared to a 74% improvement in WOMAC function.[3]

Floor/ceiling effects
Not established[4,9,10] possible ceiling effects for people with normal or high exercise capacities.[1]

Feasibility
Simple but requires a 30m unobstructed walkway and 10 mins to complete & score.

Instructions

Instruct the patient to walk as far as possible in 6 mins at a self-selected pace with rests as needed. See 'Relevant Links' for detailed instructions.

Scoring: Total distance walked in 6 mins (to the nearest metre)

Interpretation

Direction: Greater distance walked = better performance
SEM: Pre-THA/TKA: SEM_{95}=26.29m[4]; TKA/THA: SEM_{95}=7.19m (THA) & 13.0m (TKA) 6-wks post-op[6]
MDC_{90}: TKA/THA: 61.34m[4]; Awaiting TKA: MDC_{95}=79m.[11]
MCID: TKA: 12-mos post-op=74.36m.[12] From pre-op to 6-mos post-TKA, "slight" & "more" improvement associated with MCIDs of 26m & 55m respectively.[8]
Normative/Reference values: TKA/THA: Mean values within 1-mo pre-op ranged from 323-412 m; mean post-op values ranged from 396m (12-mos post-TKA)[12] & 408m (~7-wks post-TKA/THA).[4] Healthy subjects: Mean 6MWT for 1000 people aged 3-101 yrs=647m (SD 127m).[13] Functional performance increased through childhood & adolescence, plateaued during adulthood, & declined in older adulthood.[13]

Interpretation (contd.)

Cut points/thresholds: TKA: Pre-op 6MWT >328m predicts better distance 12-mos post-op.[14] Individuals walking <314m pre-op had poorest performance 6-mos post-op.[15]

PASS: No evidence found

Other

Key messages: Provisionally recommended. Good validity, reliability and responsiveness and an OARSI-recommended measure. Feasibility more challenging with required walkway space. Instructions available in multiple languages.

Relevant Links

Summary & instructions (Physiopedia)

Summary (Shirley Ryan AbilitiesLab)

Summary & instructions (OARSI)

Guidelines & summary (American Thoracic Society)

Video (SCIREproject.com)

6MWT calculator to assist with interpretation

References

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