

## 10 metre Walk Test (10mWT)

Measures gait speed & functional mobility

### Phases

Pre-op  
Acute  
Post-acute  
Active living



### ICF

Body function  
Activity



### Time

~ 5 mins to  
administer & score



### Equipment

Walkway of 10m with additional 2m at both ends, marked with tape, for acceleration & deceleration (14 m total); 2 chairs, stopwatch/timer, usual walking aid.



## Quality



### Validity

**Criterion:** No evidence found comparing to instrumented/accelerometry-determined walking speed for knee/hip OA & TKA/THA.

**Construct:** TKA: Poor correlation with Global Rating of Change Function, Global Rating of Change Pain & WOMAC at 6-wks & 12-wks post-op ( $r=-0.16$  to  $0.22$ ).<sup>1</sup>

Bilateral TKA: Moderate correlation with Fall Efficacy Scale-International ( $r=0.62$ ) & Berg Balance Scale at 6-mos ( $r=-0.74$ ).<sup>2</sup>

**Concurrent:** No evidence found comparing to 4m test for TKA/THA & knee/hip OA.

TKA: Poor correlation with WOMAC ( $r=0.21$  to  $0.27$ ) & poor-moderate correlation with 30sCST ( $r=-0.34$  to  $-0.57$ ) at initial, 6-wks & 12-wks post-op.<sup>1</sup>

THA: No evidence found

Healthy older adults: Poor concurrent validity with 4mWT thus 4mWT & 10mWT should not be used interchangeably.<sup>3</sup>



### Reliability

**Intrarater/test-retest:** Knee/Hip OA; Good ( $ICC=0.88$ ) for fast-paced 10mWT.<sup>4</sup>

**Test-retest:** Excellent for fast-paced 10mWT (TKA:  $ICC=0.82-0.95^{1,5}$ ; THA:  $ICC=0.96^5$ ).



### Responsiveness

TKA: Small ES up to 6-wks post-op (0.48), moderate at 6-12 wks (0.74) & moderate at 12-wks (0.71).<sup>1</sup>

Pooling test distances 3.8-10m, self-paced walking speed increased from 0.96 m/s pre-op to 1.16 m/s 6-12-mos post-op with plateau or slight decline after 12-mos.<sup>6</sup>

THA: Over varied test distances, meta-analysis found small to large ES in self-paced walking speed from pre-op to 6-wks post-op ( $SMD=0.32$ ) & pre- to 12-mos post-op ( $SMD=1.28$ ).<sup>7</sup>



### Floor/Ceiling Effects

No evidence found



### Feasibility

Quick & simple with minimal equipment/space required



## Instructions

Instruct patient to walk at normal pace & record time within the 10m test zone. Can also test at fast pace. Walking aids permitted. See 'Relevant Links' for detailed instructions.

**Scoring:** Record time to walk 10m, to 1/100th sec, at either self-selected or fast paced. Report values as secs or convert to m/sec.



## Interpretation

**Direction:** Less time = better performance (i.e. faster walking speed [m/sec])

**SEM:** TKA: Fast-paced 10mWT=1.05 secs (6-wks post-op).<sup>1</sup>

Knee/Hip OA: 0.04-0.12m/sec for both self- & fast-paced walking over 4m & 10m.<sup>3</sup>

**MDC<sub>95</sub>:** TKA/THA: 0.13m/s (rehab)<sup>8</sup>; Bilateral TKA=1.63 secs (6-mos)<sup>2</sup>

**MDC<sub>90</sub>:** TKA: Fast-paced 10mWT=2.43 sec (6-wks) & 1.32 sec (12-wks)<sup>1</sup>

Knee/hip OA or post TJA: Fast-paced 10mWT 0.28m/sec<sup>4</sup>

**MCID:** TKA/THA rehab: 0.10-0.18 m/sec<sup>8</sup>; TKA/ THA Inpatient acute setting: SRD=12.7 secs (TKA) & 9.7 secs (THA) for fast-paced test, with walking aids, 3-4 days post-op<sup>5</sup>

**Cut points/Thresholds:** THA: < 1.0 m/s 6-wks pre-op = risk of delayed short-term functional recovery (> 3 days to walk independently during average 4 day length of stay)<sup>9</sup>

**PASS:** No evidence found

**Normative values:** See Bohannon et al<sup>10</sup>

**Reference values:** TKA: Pre-op: 14.88 ± 9.32 secs; 6-wks post-op: 10.45 ± 2.95 secs; 12-wks post-op: 8.30 ± 1.96 secs<sup>1</sup>; Older adults +/- cognitive impairment: Average= 0.93m/s; faster speed associated with decreased risk of falling for every 10 cm/s increase<sup>11</sup>



## Other

**Key messages:** Recommended. Clinically feasible with acceptable validity, reliability & responsiveness. Do not use 10mWT & 4mWT interchangeably. In TKA, 10mWT has good ability to differentiate between walking speed for patients with & without gait aid; self-paced option may have better ability to detect change over time than fast-paced.



## Relevant Links

[Summary \(Physiopedia\)](#)

[Summary \(Shirley Ryan AbilitiesLab\)](#)

[Summary \(APTA\)](#)

[Summary & instructions \(Queensland Government\)](#)

No video found



## References

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