Knee PROM

# **Oxford Knee Score (OKS)**

Measures pain & function in relation to daily activities

#### **Phases**

Pre-op Post-acute Active living



ICF

Body function Activity<sup>1</sup>



Time

5-10 mins<sup>1</sup>



**Administration** 

Print and online versions



## Quality



Validity

TKA: Good evidence for its content and construct validity.<sup>3,4</sup> TKA: Strong correlation with SF-36 physical subscore (r=-0.69 pre-op & -0.66 post-op) & Health Assessment Questionnaire disability index (r=0.60).



Reliability

TKA: Excellent internal consistency ICC=.91-.94 6,7

Test-retest reliability: TKA: Good test-retest reliability <sup>6</sup>; Knee OA: Good test-retest reliability for summary score (ICC=.93), pain (ICC=.91) & functional (ICC=.92) subscores.<sup>8</sup>



Responsiveness

TKA: Large effect size (2.19) from pre-op to 6-mos post-op. TKA: Good sensitivity & responsiveness.



Floor/ceiling effects

TKA/knee OA: No floor effect post-op $^7$ but significant ceiling effect  $\geq$ 1-yr post-op.  $^{6,7,9}$ 



**Feasibility** 

Quick to complete & score, routinely used in joint replacement clinical registries, however, requires free registration to use.



### **Instructions**

Ask patient to respond to questions based on a 4-wk recall period. See 'Relevant Links' for detailed instructions.

Scoring: Score responses from 0 (worse) to 4 (best) for total score 0 to 48. Pain & function subscores can also be calculated. Note: In 2007, a new scoring system of 0 (worst) to 48 (best) was developed; previously it was 12 (best) to 60 (worst)- interpret and report scores accordingly.<sup>2</sup>



## Interpretation

**Direction:** Higher score = better

**SEM:** TKA: 2.2 points (95% CI 1.8-2.9)<sup>7</sup>

MDC<sub>90</sub>: TKA: 4-6.1 points <sup>6, 7, 10</sup>

MCID: TKA: 7 points <sup>10</sup>; Knee OA: 7.1 points <sup>6</sup> & the same at the individual patient level <sup>11</sup> Knee OA: After 4-wks of PT treatment, MCID = 17.5 points for functional component score <sup>12</sup>

Normative/Reference values: Pre- & post-TKR reference values available by age & gender. 13



# Interpretation (contd.)

Cut points/thresholds: TKA: Optimal threshold for success = 32.5 points, range 28.5–36.5 depending on pre-op scores. 4 Knee OA: Based on single Canadian surgeon's caseload, patients with OKS > 32 points were deemed non-surgical. 5

PASS: TKA: PASS values (CI) were similar at 3-mos =27 (26–28), 12-mos =30 (29–31), & 2-yrs=30 (29–31) post-op. In another study, PASS at 6-mos post-op = 28 (95% CI 26.9-30.0) & 12-mos post-op = 32 (30.0-33.6).



#### Other

**Key messages:** Recommended. Quick and easy to administer and score. Acceptable psychometric properties although there is a significant ceiling at ≥1-yr post-op. Commonly used in TKA registries. A license is required (free for clinical purposes) but can be accessed online from Orthopaedic Scores.

Translations: Available in multiple languages. 17



### **Relevant Links**

Summary & instructions (Oxford University)

Licencing (Oxford University)

List of available languages (Oxford University)<sup>17</sup>

Online fillable PDF (Orthopaedicscores.com)

Summary & instructions (Physiopedia)

Summary & instructions (Shirley Ryan AbilityLab)



#### References

- 1. Shirley Ryan AbilityLab. Oxford Knee Score. July 3 2014. Accessed August 9, 2022. https://www.sralab.org/rehabilitation-measures/oxford-knee-score
- 2. Physiopedia contributors. Oxford Knee Score. Accessed November 9 2023. https://www.physio-pedia.com/Oxford\_Knee\_Score
- 3. Harris K, Dawson J, et al. Systematic review of measurement properties of patient-reported outcome measures used in patients undergoing hip and knee arthroplasty. Patient Relat Outcome Meas. 2016; 7:101-8. <a href="https://www.dovepress.com/systematic-review-of-measurement-properties-of-patient-reported-outcom-peer-reviewed-fulltext-article-PROM">https://www.dovepress.com/systematic-review-of-measurement-properties-of-patient-reported-outcom-peer-reviewed-fulltext-article-PROM</a>
- 4. Harris, K, Dawson, J, et al. Can pain and function be distinguished in the Oxford Knee Score in a meaningful way? An exploratory and confirmatory factor analysis. Qual Life Res. 2013;22(9):2561-8. PMID: 23526094
- 5. Dawson J, Fitzpatrick R, et al. Questionnaire on the perceptions of patients about total knee replacement. J Bone Joint Surg Br. 1998;80(1):63-9. PMID: 9460955
- 6. McHugh M, Droy E, et al. Measures of adult knee function. Arthritis Care Res. 2020;72(S10):219-49. PMID: 33091264
- 7. Impellizzeri FM, Mannion AF, et al. Comparison of the reliability, responsiveness, and construct validity of 4 different questionnaires for evaluating outcomes after total knee arthroplasty. J Arthroplasty. 2011;26(6):861-9. PMID: 21074964
- 8. Harris K, Dawson J, et al. Extending the use of PROMs in the NHS--using the Oxford Knee Score in patients undergoing non-operative management for knee osteoarthritis: a validation study. BMJ Open. 2013;3(8):e003365. https://bmjopen.bmj.com/content/3/8/e003365.long
- 9. Jenny J-Y, Diesinger Y. The Oxford Knee Score: compared performance before and after knee replacement. Orthop Traumatol Surg Res. 2012;98(4):409-12. PMID: 22609177
- 10. Beard DJ, Harris K, et al. Meaningful changes for the Oxford Hip and Knee Scores after joint replacement surgery. J Clin Epidemiol. 2015;68(1):73-9. https://www.jclinepi.com/article/S0895-4356(14)00341-2/fulltext
- 11. Sabah SA, Alvand A, et al. Minimal important changes and differences were estimated for Oxford Hip and Knee Scores following primary and revision arthroplasty. J Clin Epidemiol. 2022;143:159-68. PMID: 34920113
- 12. Mostafaee N, Pirayeh N, et al. Responsiveness and minimal clinically important changes of common patient-reported and performance-based outcome measures of physical function in patients with knee osteoarthritis. Physiother Theory Pract. 2023;Oct 18:1-9 Online ahead of print. PMID: 37850474
- 13. Hamilton DF, Giesinger JM, et al. Making the Oxford Hip and Knee scores meaningful at the patient level through normative scoring and registry data. Bone Joint Res. 2015;4(8):137-44. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4561372/
- 14. Hamilton DF, Loth FL, et al. Treatment success following joint arthroplasty: Defining thresholds for the Oxford Hip and Knee Scores. J Arthroplasty. 2018;33(8):2392-7. PMID: 29691169
- 15. Neufeld ME, Masri BA. Can the Oxford Knee and Hip Score identify patients who do not require total knee or hip arthroplasty? Bone Joint J. 2019;101-B(6Supple B):23-30. PMID: 31146569
- 16. Conner-Spady BL, Marshall DA, et al. Patient acceptable symptom state (PASS): thresholds for the EQ-5D-5L and Oxford hip and knee scores for patients with total hip and knee replacement. Qual Life Res. 2023;32(2):519-30. PMID: 36367656
- 17. Oxford University Innovation. The Oxford Knee Score (OHS). April 2021. Accessed November 13 2023. <a href="https://innovation.ox.ac.uk/wp-content/uploads/2014/09/OKS\_language-list\_Feb2022.pdf">https://innovation.ox.ac.uk/wp-content/uploads/2014/09/OKS\_language-list\_Feb2022.pdf</a>



