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**eMethods.** Multivariate Meta-analysis

**eFigure 1.** Sensitivity Analysis

**eFigure 2.** Exploring Potential Inconsistency at 6 and 12 mo

**eFigure 3.** Univariate Meta-analysis

**eTable 1.** Sensitivity Analysis

**eTable 2.** Reported Associations at 3 mo After TKA

**eTable 3.** Definition and Labels of Factors

**eTable 4.** Grading of Recommendation Assessment, Development and Evaluation

**eTable 5.** Search Strategy

**eTable 6.** Reason for Exclusion of Individual Studies

This supplemental material has been provided by the authors to give readers additional information about their work.
Except where noted, we performed statistical analyses according to the method prespecified in our protocol (Olsen 2020).

We imputed correlation coefficients from estimates of association expressed as odds ratios, risk ratios, and linear model coefficients (including differences) as described in our protocol's supplementary materials. Where it was necessary to impute odds ratios from risk ratios prior to imputing correlation, we assumed a prespecified baseline probability of reduced postsurgical function of 20%. We defined canonical directions for all outcomes and factors and inverted reported directions of association as appropriate to ensure consistent directions of association in meta-analysis.

If studies did not report confidence intervals or sampling variances, we imputed them as appropriate (Higgins 2019). If a study did not report exact statements of uncertainty but provided statements about “statistical significance”, we used a conservative approach in which we imputed “worst case” standard errors. For example, we imputed $P \leq 0.01$ to mean $P = 0.01$ and “not statistically significant” to mean $P = 0.99$. We performed all meta-analyses on the scale of Fisher’s $z$ (hyperbolic arctangent, not Z-score; Borenstein 2009). We used the inverse transform (hyperbolic tangent) to report meta-analytical estimates as correlation coefficients.

We anticipated that factors may be correlated and that there may be important differences in the methods used to quantify associations. We therefore planned to perform multivariate random-effects meta-analysis for each outcome using White’s (2009, 2011) multivariate extension to Riley’s (2008) bivariate random-effects model, as implemented in the MVMETA add-on command for Stata. Unfortunately, it was not possible to fit this model given the sparsity of our data. We therefore used a frequentist version of the Bayesian multivariate model we developed for a meta-analysis of pain after total knee arthroplasty (Rose 2020). We had planned to identify factors likely to be most strongly associated with postoperative function by estimating the probability of superiority of each factor using the pbest option of MVMETA. Because that model could not be used, we assessed using P-scores (cf. p-values; Rücker and Schwarzer 2015), in which larger magnitudes were defined to be superior to those with smaller magnitudes. Unlike the probabilities we had planned to estimate, P-scores are not as heavily influenced by imprecisely estimated factors with small point estimates whose confidence intervals extend far beyond those of more precisely estimated factors with larger point estimates. This is particularly important for multivariate meta-analysis of correlations, in which the superiority of a factor is a function of the magnitude of its coefficient rather than its magnitude and direction, as is the case in multiple treatment comparison via network meta-analysis. P-scores are therefore likely to better identify good factors. Multivariate estimates of correlation are presented as forest plots, which
also show $I^2$ statistics (the percentage of heterogeneity attributable to between-study differences rather than sampling error) and the numbers of studies that provided usable estimates for each factor. We also performed exploratory univariate meta-analyses for each factor and outcome, but which do not account for correlation. We compared estimates from the three approaches to identify possible inconsistency. We report 95% confidence intervals throughout. Statistical analyses were performed using Stata 16 (StataCorp LLC, College Station, Texas, USA).

We had planned to investigate non-reporting bias and small study effects for factor supported by at least 10 results. However, none of the factors met this criterion. Similarly, we had planned to perform subgroup analyses with respect to study design, type of outcome measurement, and intervention if at least five studies could be included in each subgroup. However, this criterion was not satisfied, and no subgroup analyses were performed.

We performed a sensitivity analysis for the primary outcome (function 12 months post-surgery). For each of the six QUIPS risk of bias domains, we excluded studies judged to be at high risk of bias, re-ran the multivariate meta-analysis, and compared the estimated correlations with those obtained when all studies are included. We had planned to do a leave-one-study-out sensitivity analysis to explore the influence of each study on the meta-analysis results. Unfortunately, this was not feasible. However, the effect of particular studies can be inferred by inspecting the univariate meta-analyses.

Fig. 1. Postsurgical function at 6 and 12 months

The following plot shows the multivariate meta-analytical estimates of correlation at each postoperative follow-up time. Estimates for factor studied at only one postoperative time point are omitted.
Predictors studied at only one postoperative time point are omitted.
eFigure 1. Sensitivity Analysis

The following plot shows the results of a sensitivity analysis in which the multivariate meta-analysis model was used to estimate correlations for each factor, omitting all estimates from studies judged to be at high risk of bias for each of the six QUIPS domains. Estimates from the full meta-analysis are also included for comparison (shown as "All Studies").

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eFigure 2. Exploring Potential Inconsistency at 6 and 12 mo

The following forest plots compare estimates between all models (where possible).

Fig. 3. Postsurgical Function (6 months) — Model comparison
Fig. 4. Postsurgical Function (12 months) — Model comparison
eFigure 3. Univariate Meta-analysis

The following forest plots show the results of exploratory univariate meta-analyses of the association between individual factor and the outcomes. Note that these results do not account for any correlation between the prognostic factor.
**Function (6 months)**

Fig. 5. ↑Arthritis Helplessness

| Study      | Correlation with 95% CI | Weight (%) |
|------------|-------------------------|------------|
| Engel 2004 | -0.00 [ -0.26, 0.26]   | 100.00     |

**Overall**

Heterogeneity: $\tau^2 = 0.00$, $I^2 = .\%$, $H^2 = .$

Test of $\theta_1 = \theta_2$: $Q(0) = -0.00$, $p = .$

Test of $\theta = 0$: $z = -0.01$, $p = 0.99$

Associated with worse function
Associated with better function

†Arthritis Helplessness (random-effects REML model)

Fig. 6. ↑Education

| Study      | Correlation with 95% CI | Weight (%) |
|------------|-------------------------|------------|
| Pua 2019   | 0.16 [ 0.05, 0.26]      | 100.00     |

**Overall**

Heterogeneity: $\tau^2 = 0.00$, $I^2 = .\%$, $H^2 = .$

Test of $\theta_1 = \theta_2$: $Q(0) = 0.00$, $p = .$

Test of $\theta = 0$: $z = 2.93$, $p = 0.00$

Associated with worse function
Associated with better function

†Education (random-effects REML model)

Fig. 7. ↑Mental Health

| Study      | Correlation with 95% CI | Weight (%) |
|------------|-------------------------|------------|
| Escobar 2007 | 0.11 [ 0.03, 0.19]        | 42.62      |
| Pua 2019    | 0.19 [ 0.08, 0.31]        | 38.57      |
| Yang 2019   | 0.48 [ 0.20, 0.69]        | 18.81      |

**Overall**

Heterogeneity: $\tau^2 = 0.02$, $I^2 = 80.93\%$, $H^2 = 5.25$

Test of $\theta_1 = \theta_2$: $Q(2) = 6.69$, $p = 0.04$

Test of $\theta = 0$: $z = 2.36$, $p = 0.02$

Associated with worse function
Associated with better function

†Mental Health (random-effects REML model)

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### Fig. 8. ↑Mobility

| Study        | Correlation with 95% CI | Weight (%) |
|--------------|-------------------------|------------|
| Taniguchi 2016 | 0.87 [0.86, 0.88]       | 100.00     |
| **Overall**  | 0.87 [0.86, 0.88]       |            |

Heterogeneity: $\tau^2 = 0.00$, $I^2 = .\%$, $H^2 = .$

Test of $\theta = \theta$: $Q(0) = 0.00$, $p = .$

Test of $\theta = 0$: $z = 96.74$, $p = 0.00$

↑Mobility (random-effects REML model)

### Fig. 9. ↑Preoperative Function

| Study        | Correlation with 95% CI | Weight (%) |
|--------------|-------------------------|------------|
| Escobar 2007 | 0.23 [0.16, 0.30]       | 36.13      |
| Sugawara 2017| 0.35 [0.16, 0.52]       | 28.25      |
| Pua 2019     | 0.54 [0.47, 0.60]       | 35.62      |
| **Overall**  | 0.38 [0.18, 0.56]       |            |

Heterogeneity: $\tau^2 = 0.03$, $I^2 = 92.88\%$, $H^2 = 14.04$

Test of $\theta = \theta$: $Q(2) = 41.45$, $p = 0.00$

Test of $\theta = 0$: $z = 3.52$, $p = 0.00$

↑Preoperative Function (random-effects REML model)

### Fig. 10. ↑Catastrophizing

| Study        | Correlation with 95% CI | Weight (%) |
|--------------|-------------------------|------------|
| Hytkema 2019 | -0.32 [-0.46, -0.16]    | 51.09      |
| Yang 2019    | 0.00 [-0.19, 0.19]      | 48.91      |
| **Overall**  | -0.17 [-0.46, 0.15]     |            |

Heterogeneity: $\tau^2 = 0.05$, $I^2 = 84.93\%$, $H^2 = 6.64$

Test of $\theta = \theta$: $Q(1) = 6.64$, $p = 0.01$

Test of $\theta = 0$: $z = -1.02$, $p = 0.31$

↑Catastrophizing (random-effects REML model)
### Fig. 11. ↑Comorbidity

| Study         | Correlation with 95% CI | Weight (%) |
|---------------|-------------------------|------------|
| Escobar 2007  | -0.10 [-0.18, -0.03]   | 44.58      |
| Bugada 2017   | -0.38 [-0.61, -0.10]   | 3.03       |
| Pua 2019      | -0.06 [-0.13, 0.01]    | 52.39      |
| **Overall**   | -0.09 [-0.14, -0.04]   |            |

Heterogeneity: $\tau^2 = 0.00$, $I^2 = 5.49\%$, $H^2 = 1.06$

Test of $\theta = \theta_0$: $Q(2) = 4.91$, $p = 0.09$

Test of $\theta = 0$: $z = -3.29$, $p = 0.00$

↑Comorbidity (random-effects REML model)

### Fig. 12. ↑Contralateral Knee Pain

| Study         | Correlation with 95% CI | Weight (%) |
|---------------|-------------------------|------------|
| Pua 2019      | -0.12 [-0.17, -0.06]   | 100.00     |
| **Overall**   | -0.12 [-0.17, -0.06]   |            |

Heterogeneity: $\tau^2 = 0.00$, $I^2 = .\%$, $H^2 = .$

Test of $\theta_i = \theta$: $Q(0) = -0.00$, $p = .$

Test of $\theta = 0$: $z = -4.22$, $p = 0.00$

↑Contralateral Knee Pain (random-effects REML model)

### Fig. 13. ↑BMI

| Study         | Correlation with 95% CI | Weight (%) |
|---------------|-------------------------|------------|
| Pua 2019      | -0.05 [-0.09, -0.00]   | 100.00     |
| **Overall**   | -0.05 [-0.09, -0.00]   |            |

Heterogeneity: $\tau^2 = 0.00$, $I^2 = .\%$, $H^2 = .$

Test of $\theta_i = \theta$: $Q(0) = 0.00$, $p = .$

Test of $\theta = 0$: $z = -2.15$, $p = 0.03$

↑BMI (random-effects REML model)
**Fig. 14. Indian Ethnicity**

| Study       | Correlation with 95% CI | Weight (%) |
|-------------|-------------------------|------------|
| Pua 2019    | -0.20 [-0.30, -0.10]   | 100.00     |
| **Overall** | -0.20 [-0.30, -0.10]   |            |

Heterogeneity: $\tau^2 = 0.00$, $I^2 = .$, $H^2 = .$

Test of $\theta_1 = \theta_2$: $Q(0) = 0.00$, $p = .$
Test of $\theta = 0$: $z = -3.92$, $p = 0.00$

Indian Ethnicity (random-effects REML model)

**Fig. 15. ↑Low Back Pain**

| Study       | Correlation with 95% CI | Weight (%) |
|-------------|-------------------------|------------|
| Escobar 2007| -0.10 [-0.18, -0.03]   | 100.00     |
| **Overall** | -0.10 [-0.18, -0.03]   |            |

Heterogeneity: $\tau^2 = 0.00$, $I^2 = .$, $H^2 = .$

Test of $\theta_1 = \theta_2$: $Q(0) = 0.00$, $p = .$
Test of $\theta = 0$: $z = -2.60$, $p = 0.01$

↑Low Back Pain (random-effects REML model)

**Fig. 16. Male Gender**

| Study       | Correlation with 95% CI | Weight (%) |
|-------------|-------------------------|------------|
| Escobar 2007| -0.11 [-0.18, -0.03]   | 48.76      |
| Pua 2019    | 0.02 [-0.05, 0.09]     | 51.24      |
| **Overall** | -0.04 [-0.16, 0.08]    |            |

Heterogeneity: $\tau^2 = 0.01$, $I^2 = 83.20\%$, $H^2 = 5.95$

Test of $\theta_1 = \theta_2$: $Q(1) = 5.95$, $p = 0.01$
Test of $\theta = 0$: $z = -0.66$, $p = 0.51$

Male Gender (random-effects REML model)
### Fig. 17. ↑Knee Extension

| Study     | Correlation with 95% CI | Weight (%) |
|-----------|-------------------------|------------|
| Pua 2019  | -0.01 [ -0.05, 0.03]    | 100.00     |
| **Overall** | -0.01 [ -0.05, 0.03]    |            |

Heterogeneity: $\tau^2 = 0.00$, $I^2 = .%$, $H^2 = .$

Test of $\theta = \theta_0$: $Q(0) = 0.00$, $p = .$

Test of $\theta = 0$: $z = -0.60$, $p = 0.55$

↑Knee Extension (random-effects REML model)

### Fig. 18. ↑Knee Flexion

| Study     | Correlation with 95% CI | Weight (%) |
|-----------|-------------------------|------------|
| Pua 2019  | -0.04 [ -0.09, 0.00]    | 100.00     |
| **Overall** | -0.04 [ -0.09, 0.00]    |            |

Heterogeneity: $\tau^2 = 0.00$, $I^2 = .%$, $H^2 = .$

Test of $\theta = \theta_0$: $Q(0) = 0.00$, $p = .$

Test of $\theta = 0$: $z = -1.78$, $p = 0.08$

↑Knee Flexion (random-effects REML model)

### Fig. 19. ↑Age

| Study     | Correlation with 95% CI | Weight (%) |
|-----------|-------------------------|------------|
| Escobar 2007 | 0.07 [ -0.01, 0.14]    | 48.70      |
| Pua 2019  | -0.14 [ -0.18, -0.10]  | 51.30      |
| **Overall** | -0.04 [ -0.24, 0.16]    |            |

Heterogeneity: $\tau^2 = 0.02$, $I^2 = 95.32\%$, $H^2 = 21.37$

Test of $\theta = \theta_0$: $Q(1) = 21.37$, $p = 0.00$

Test of $\theta = 0$: $z = -0.38$, $p = 0.70$

↑Age (random-effects REML model)
### Fig. 20. ↑Pain Self-Efficacy

| Study        | Correlation with 95% CI | Weight (%), H₂ = .  |
|--------------|------------------------|---------------------|
| Engel 2004   | 0.27 [ 0.04, 0.48]     | 100.00              |
| **Overall**  | 0.27 [ 0.04, 0.48]     |                     |

Heterogeneity: $\tau^2 = 0.00$, $I^2 = .\%$, $H^2 = .$

Test of $\theta_i = \theta$: $Q(0) = -0.00$, $p = .$

Test of $\theta = 0$: $z = 2.27$, $p = 0.02$

↑Pain Self-Efficacy (random-effects REML model)

### Fig. 21. ↑Preoperative Pain

| Study       | Correlation with 95% CI | Weight (%), H₂ = .  |
|-------------|------------------------|---------------------|
| Pua 2019    | 0.06 [ -0.12, 0.23]    | 100.00              |
| **Overall** | 0.06 [ -0.12, 0.23]    |                     |

Heterogeneity: $\tau^2 = 0.00$, $I^2 = .\%$, $H^2 = .$

Test of $\theta_i = \theta$: $Q(0) = -0.00$, $p = .$

Test of $\theta = 0$: $z = 0.65$, $p = 0.51$

↑Preoperative Pain (random-effects REML model)

### Fig. 22. ↑Social Support

| Study        | Correlation with 95% CI | Weight (%), H₂ = .04% | H₂ = 1.00 |
|--------------|------------------------|-----------------------|-----------|
| Escobar 2007 | 0.12 [ 0.05, 0.20]     | 36.79                 |
| Pua 2019    | 0.07 [ 0.02, 0.13]     | 63.21                 |
| **Overall** | 0.09 [ 0.05, 0.14]     |                       |

Heterogeneity: $\tau^2 = 0.00$, $I^2 = 0.04\%$, $H^2 = 1.00$

Test of $\theta_i = \theta$: $Q(1) = 0.98$, $p = 0.32$

Test of $\theta = 0$: $z = 3.94$, $p = 0.00$

↑Social Support (random-effects REML model)

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### Fig. 23. Walking Aid Use

| Study     | Correlation with 95% CI | Weight (%) |
|-----------|-------------------------|------------|
| Pua 2019  | -0.28 [-0.38, -0.17]    | 63.41      |
| Yang 2019 | -0.50 [-0.68, -0.26]    | 36.59      |
| **Overall** | **-0.37 [-0.56, -0.14]** |           |

Heterogeneity: $I^2 = 0.02$, $I^2 = 63.49\%$, $H^2 = 2.74$

Test of $\theta_0 = 0$: $Q(1) = 2.74$, $p = 0.10$

Test of $\theta = 0$: $z = -3.06$, $p = 0.00$

Walking Aid Use (random-effects REML model)
## Function (12 months)

**Fig. 24. ↑Knee Status**

| Study          | Correlation with 95% CI         | Weight (%) |
|----------------|---------------------------------|------------|
| Berghman 2019  | 0.14 [ -0.01, 0.30]             | 100.00     |
| **Overall**    | 0.14 [ -0.01, 0.30]             |            |

Heterogeneity: \( \tau^2 = 0.00, I^2 = ., H^2 = . \)
Test of \( \theta_i = \theta \): \( Q(0) = 0.00, p = . \)
Test of \( \theta = 0 \): \( z = 1.78, p = 0.07 \)

↑Knee Status (random-effects REML model)

## Mental Health

**Fig. 25. ↑Mental Health**

| Study          | Correlation with 95% CI         | Weight (%) |
|----------------|---------------------------------|------------|
| Sullivan 2011  | 0.00 [ -0.18, 0.18]             | 13.45      |
| Wylde 2012     | 0.16 [ 0.03, 0.28]              | 19.08      |
| Dowsey 2012    | 0.15 [ 0.07, 0.24]              | 24.17      |
| Tilbury 2018   | 0.30 [ 0.16, 0.42]              | 17.53      |
| Lingard 2007   | 0.06 [ -0.02, 0.13]             | 25.76      |
| **Overall**    | 0.13 [ 0.05, 0.22]              |            |

Heterogeneity: \( \tau^2 = 0.01, I^2 = 67.36\%, H^2 = 3.06 \)
Test of \( \theta_i = \theta \): \( Q(4) = 11.65, p = 0.02 \)
Test of \( \theta = 0 \): \( z = 2.96, p = 0.00 \)

↑Mental Health (random-effects REML model)
### Fig. 26. ↑Mobility

| Study        | Correlation with 95% CI | Weight (%) |
|--------------|-------------------------|------------|
| Nankaku 2018 | 0.25 [ 0.09, 0.40]     | 100.00     |
| **Overall**  | 0.25 [ 0.09, 0.40]     |            |

Heterogeneity: \(\tau^2 = 0.00, I^2 = \%\), \(H^2 = \%\).

Test of \(\theta_i = \theta_j\): \(Q(0) = 0.00, p = \%\).

Test of \(\theta = 0\): \(z = 3.07, p = 0.00\)

↑Mobility (random-effects REML model)

### Fig. 27. ↑Outcome Expected

| Study     | Correlation with 95% CI | Weight (%) |
|-----------|-------------------------|------------|
| Tibury 2018 | 0.04 [ -0.12, 0.20]   | 100.00     |
| **Overall** | 0.04 [ -0.12, 0.20]   |            |

Heterogeneity: \(\tau^2 = 0.00, I^2 = \%\), \(H^2 = \%\).

Test of \(\theta_i = \theta_j\): \(Q(0) = 0.00, p = \%\).

Test of \(\theta = 0\): \(z = 0.50, p = 0.61\)

↑Outcome Expected (random-effects REML model)
**Fig. 28. ↑Preoperative Function**

| Study          | Correlation with 95% CI | Weight (%) |
|----------------|-------------------------|------------|
| Sullivan 2011  | 0.00 [-0.18, 0.18]      | 15.50      |
| Wylde 2012     | 0.24 [0.13, 0.36]       | 17.25      |
| Dowsey 2012    | 0.15 [0.07, 0.24]       | 18.02      |
| Tilbury 2018   | 0.15 [-0.00, 0.30]      | 16.31      |
| Nankaku 2018   | -0.28 [-0.42, -0.12]    | 16.13      |
| Berghman 2019  | 0.32 [0.19, 0.44]       | 16.79      |
| **Overall**    | 0.11 [-0.07, 0.27]      |            |

Heterogeneity: $\tau^2 = 0.04$, $I^2 = 89.59\%$, $H^2 = 9.60$

Test of $\theta_1 = \theta_2$: $Q(5) = 38.20$, $p = 0.00$
Test of $\theta = 0$: $z = 1.21$, $p = 0.23$

↑Preoperative Function (random-effects REML model)

**Fig. 29. ↑Catastrophizing**

| Study          | Correlation with 95% CI | Weight (%) |
|----------------|-------------------------|------------|
| Sullivan 2011  | -0.24 [-0.40, -0.08]    | 100.00     |

**Overall**

Heterogeneity: $\tau^2 = 0.00$, $I^2 = \%$, $H^2 = .$

Test of $\theta_1 = \theta_2$: $Q(0) = -0.00$, $p = .$
Test of $\theta = 0$: $z = -2.88$, $p = 0.00$

↑Catastrophizing (random-effects REML model)
### Fig. 30. ↑ Comorbidity

| Study       | Correlation with 95% CI         | Weight (%) |
|-------------|---------------------------------|------------|
| Sullivan 2011 | -0.00 [-0.18, 0.18]             | 18.06      |
| Wylde 2012   | 0.06 [-0.08, 0.19]              | 30.69      |
| Dowsey 2012  | -0.07 [-0.16, 0.02]             | 51.25      |
| **Overall**  | -0.02 [-0.10, 0.07]             |            |

Heterogeneity: $\tau^2 = 0.00$, $I^2 = 26.11\%$, $H^2 = 1.35$

Test of $\theta_i = \theta_j$; $Q(2) = 2.31$, $p = 0.32$

Test of $\theta = 0$; $z = -0.39$, $p = 0.70$

↑ Comorbidity (random-effects REML model)

### Fig. 31. Cruciate Retaining

| Study       | Correlation with 95% CI         | Weight (%) |
|-------------|---------------------------------|------------|
| Dowsey 2012 | 0.09 [-0.00, 0.18]              | 100.00     |
| **Overall** | 0.09 [-0.00, 0.18]              |            |

Heterogeneity: $\tau^2 = 0.00$, $I^2 = .%$, $H^2 = .$

Test of $\theta_i = \theta_j$; $Q(0) = 0.00$, $p = .$

Test of $\theta = 0$; $z = 1.91$, $p = 0.06$

Cruciate Retaining (random-effects REML model)

### Fig. 32. ↑ BMI

| Study       | Correlation with 95% CI         | Weight (%) |
|-------------|---------------------------------|------------|
| Sullivan 2011 | 0.00 [-0.18, 0.18]             | 22.62      |
| Dowsey 2012  | -0.15 [-0.24, -0.07]           | 47.88      |
| Tilbury 2018 | -0.23 [-0.37, -0.09]           | 29.50      |
| **Overall**  | -0.14 [-0.25, -0.04]           |            |

Heterogeneity: $\tau^2 = 0.00$, $I^2 = 46.15\%$, $H^2 = 1.86$

Test of $\theta_i = \theta_j$; $Q(2) = 3.90$, $p = 0.14$

Test of $\theta = 0$; $z = -2.64$, $p = 0.01$

↑ BMI (random-effects REML model)
### Fig. 33. ↑K-L Grade

| Study               | Correlation with 95% CI | Weight (%) |
|---------------------|-------------------------|------------|
| Dowsey 2012         | 0.06 [-0.03, 0.15]      | 45.77      |
| Van de Water 2019   | 0.13 [0.05, 0.21]       | 54.23      |
| **Overall**         | 0.10 [0.03, 0.17]       |            |

Heterogeneity: $\tau^2 = 0.00$, $I^2 = 25.86\%$, $H^2 = 1.35$

Test of $\theta = 0$: $Q(1) = 1.35$, $p = 0.25$

Test of $\theta = 0$: $z = 2.79$, $p = 0.01$

↑K-L Grade (random-effects REML model)

### Fig. 34. ↑Kinesophobia

| Study              | Correlation with 95% CI | Weight (%) |
|--------------------|-------------------------|------------|
| Sullivan 2011      | -0.00 [-0.18, 0.18]     | 100.00     |
| **Overall**        | -0.00 [-0.18, 0.18]     |            |

Heterogeneity: $\tau^2 = 0.00$, $I^2 = .\%$, $H^2 = .$

Test of $\theta = 0$: $Q(0) = 0.00$, $p = .$

Test of $\theta = 0$: $z = -0.01$, $p = 0.99$

↑Kinesophobia (random-effects REML model)

### Fig. 35. Male Gender

| Study              | Correlation with 95% CI | Weight (%) |
|--------------------|-------------------------|------------|
| Sullivan 2011      | 0.00 [-0.18, 0.18]      | 20.57      |
| Wyle 2012          | -0.04 [-0.17, 0.09]     | 29.97      |
| Dowsey 2012        | 0.12 [0.03, 0.20]       | 41.16      |
| Lindberg 2020      | -0.10 [-0.41, 0.23]     | 8.30       |
| **Overall**        | 0.03 [-0.08, 0.13]      |            |

Heterogeneity: $\tau^2 = 0.00$, $I^2 = 44.32\%$, $H^2 = 1.80$

Test of $\theta = 0$: $Q(3) = 5.10$, $p = 0.16$

Test of $\theta = 0$: $z = 0.54$, $p = 0.59$

Male Gender (random-effects REML model)
### Fig. 36. Multicompartment OA

| Study          | Correlation with 95% CI | Weight (%) |
|---------------|------------------------|------------|
| Dowsey 2012   |                        |            |
| **Overall**   | -0.01 [-0.11, 0.08]    | 100.00     |

Heterogeneity: $\tau^2 = 0.00$, $I^2 = .\%$, $H^2 = .$

Test of $\theta = \theta_0$: $Q(0) = 0.00$, $p = .$

Test of $\theta = 0$: $z = -0.32$, $p = 0.75$

Multicompartment OA (random-effects REML model)

### Fig. 37. ↑Age

| Study          | Correlation with 95% CI | Weight (%) |
|---------------|------------------------|------------|
| Sullivan 2011 |                        |            |
| Wylde 2012    | -0.03 [-0.16, 0.11]    | 20.85      |
| Dowsey 2012   | -0.15 [-0.24, -0.07]   | 24.50      |
| Nankaku 2018  | 0.22 [0.05, 0.37]      | 17.79      |
| Lindberg 2020 | 0.00 [-0.14, 0.14]     | 20.07      |
| **Overall**   | -0.00 [-0.12, 0.11]    |            |

Heterogeneity: $\tau^2 = 0.01$, $I^2 = 72.99\%$, $H^2 = 3.70$

Test of $\theta = \theta_0$: $Q(4) = 15.62$, $p = 0.00$

Test of $\theta = 0$: $z = -0.07$, $p = 0.95$

↑Age (random-effects REML model)

### Fig. 38. ↑Pain Self-Efficacy

| Study          | Correlation with 95% CI | Weight (%) |
|---------------|------------------------|------------|
| Wylde 2012    |                        |            |
| **Overall**   | 0.15 [0.03, 0.28]      | 100.00     |

Heterogeneity: $\tau^2 = 0.00$, $I^2 = .\%$, $H^2 = .$

Test of $\theta = \theta_0$: $Q(0) = 0.00$, $p = .$

Test of $\theta = 0$: $z = 2.35$, $p = 0.02$

↑Pain Self-Efficacy (random-effects REML model)
### Fig. 39. Patella Resurfaced

| Study             | Correlation with 95% CI | Weight (%) |
|-------------------|-------------------------|------------|
| Dowsey 2012       |                         |            |
| Overall           | 0.04 [-0.05, 0.13]      | 100.00     |

Heterogeneity: $\tau^2 = 0.00, I^2 = .\%$, $H^2 = .$

Test of $\theta = 0$: $z = 0.80, p = 0.42$

Patella Resurfaced (random-effects REML model)

### Fig. 40. ↑Preoperative Pain

| Study             | Correlation with 95% CI | Weight (%) |
|-------------------|-------------------------|------------|
| Sullivan 2011     | -0.00 [-0.18, 0.18]     | 18.29      |
| Dowsey 2012       | 0.04 [-0.05, 0.13]      | 28.92      |
| Van de Water 2019 | 0.11 [0.03, 0.19]       | 29.99      |
| Lindberg 2020     | -0.16 [-0.29, -0.02]    | 22.80      |
| Overall           | 0.01 [-0.10, 0.12]      |            |

Heterogeneity: $\tau^2 = 0.01, I^2 = 74.16\%, H^2 = 3.87$

Test of $\theta = 0$: $Q(3) = 10.61, p = 0.01$

↑Preoperative Pain (random-effects REML model)

### Fig. 41. ↑Surgery Duration

| Study             | Correlation with 95% CI | Weight (%) |
|-------------------|-------------------------|------------|
| Sullivan 2011     | 0.00 [-0.18, 0.18]      | 100.00     |
| Overall           | 0.00 [-0.18, 0.18]      |            |

Heterogeneity: $\tau^2 = 0.00, I^2 = .\%$, $H^2 = .$

Test of $\theta = 0$: $Q(0) = 0.00, p = .$

↑Surgery Duration (random-effects REML model)
### Fig. 42. ↑Symptomatic Joints

| Study     | Correlation with 95% CI | Weight (%) |
|-----------|-------------------------|------------|
| Wylde 2012 | -0.20 [-0.31, -0.07]    | 100.00     |
| **Overall** | -0.20 [-0.31, -0.07]    |            |

Heterogeneity: τ² = 0.00, I² = .%, H² = .

Test of θ = θ₀: Q(0) = 0.00, p = .

Test of θ = 0: z = -3.10, p = 0.00

Associated with worse function

Associated with better function

↑Symptomatic Joints (random-effects REML model)
**eTable 1. Sensitivity Analysis**

The following table shows estimates of correlations for each of the sensitivity analyses. Estimates for the main analysis (i.e., no studies omitted) are also shown for comparison.

| domain_str          | concept                  | cc      | cc_lb    | cc_ub    |
|---------------------|--------------------------|---------|----------|----------|
| All Studies         | ↑Knee Status             | .1438768| -.0758673| .3503173 |
| All Studies         | ↑Mental Health           | .1220621| -.0145701| .2542162 |
| All Studies         | ↑Mobility                | .2544658| .0522105 | .4366684 |
| All Studies         | ↑Outcome Expected        | .0416651| -.2145815| .2925428 |
| All Studies         | ↑Preoperative Function   | .1380555| .0164913 | .2555974 |
| All Studies         | ↑Catastrophizing         | -.2446435| -.4701152| .0107985 |
| All Studies         | ↑Comorbidity             | -.0239961| -.1224817| .0749586 |
| All Studies         | Cruciate Retaining       | .0875719| -.0344355| .2070066 |
| All Studies         | ↑BMI                     | -.1489251| -.2449921| -.0499614 |
| All Studies         | ↑K-L Grade               | .1004358| .0114511 | .1878413 |
| All Studies         | ↑Kinesophobia            | -.0012078| -.2332215| .2309341 |
| All Studies         | Male Gender              | .0535947| -.0433123| .1494959 |
| All Studies         | Multicompartment OA      | -.0148018| -.1373228| .1081642 |
| All Studies         | ↑Age                     | -.046835 | -.1330566| .0400981 |
| All Studies         | ↑Pain Self-Efficacy      | .1537482| -.0133514| .3124918 |
| All Studies         | Patella Resurfaced       | .0371242| -.085861 | .1589939 |
| All Studies         | ↑Preoperative Pain       | .0398254| -.042381 | .1214909 |
| All Studies         | ↑Surgery Duration        | .0012099| -.230934 | .2332215 |
| All Studies         | ↑Symptomatic Joints      | -.1970977| -.3492267| -.0348474 |
| Study Participation | ↑Knee Status             | .1438074| -.0972522| .3690755 |
| Study Participation | ↑Mental Health           | .1259386| -.0829971| .3242769 |
| Study Participation | ↑Mobility                | .2544397| -.0698999| .5301681 |
| Study Participation | ↑Outcome Expected        | .0416674| -.2804281| .3553225 |
| Study Participation | ↑Preoperative Function   | .125238 | .0183123 | .2294473 |
| Study Participation | ↑Comorbidity             | -.0664894| -.1990565| .0685877 |
| Study Participation | Cruciate Retaining       | .0875113| -.0469377| .2189611|

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| Study Participation | ↑BMI       | -0.1736704 | -0.2875198 | -0.0548615 |
|---------------------|-----------|------------|------------|------------|
| Study Participation | ↑K-L Grade| 0.1003758  | -0.005034  | 0.2036943  |
| Study Participation | Male Gender| 0.1036663  | -0.0266921 | 0.2306734  |
| Study Participation | Multicompartment OA | -0.0148631 | -0.149485  | 0.120419   |
| Study Participation | ↑Age      | -0.0589676 | -0.1708215 | 0.0545022  |
| Study Participation | Patella Resurfaced | 0.037063     | -0.0981895 | 0.1710886  |
| Study Participation | ↑Preoperative Pain | 0.0434701     | -0.0582769 | 0.144436   |
| Study Attrition     | ↑Knee Status | 0.1439137     | -0.1031806 | 0.3742375  |
| Study Attrition     | ↑Mental Health | 0.153948     | -0.0984798 | 0.3877874  |
| Study Attrition     | ↑Preoperative Function | 0.2131116 | 0.0054118  | 0.4031501  |
| Study Attrition     | ↑Comorbidity | -0.0276633   | -0.2746447 | 0.2226636  |
| Study Attrition     | Cruciate Retaining | 0.0875735     | -0.0501764 | 0.22205    |
| Study Attrition     | ↑BMI       | -0.152584  | -0.2818696 | -0.017899  |
| Study Attrition     | ↑K-L Grade | 0.1004379  | -0.0091389 | 0.2076262  |
| Study Attrition     | Male Gender| 0.0615559  | -0.0590784 | 0.1804243  |
| Study Attrition     | Multicompartment OA | -0.0147903   | -0.1526335 | 0.1235935  |
| Study Attrition     | ↑Age      | -0.0909527 | -0.2027268 | 0.021506   |
| Study Attrition     | ↑Pain Self-Efficacy | 0.1537942     | -0.0251349 | 0.3230892  |
| Study Attrition     | Patella Resurfaced | 0.0371306     | -0.1013832 | 0.1742187  |
| Study Attrition     | ↑Preoperative Pain | 0.0435376     | -0.0625176 | 0.148609   |
| Study Attrition     | ↑Symptomatic Joints | -0.1971193    | -0.3597354 | -0.0228384 |
| Prognostic Factor Measurement | ↑Knee Status | 0.1438768     | -0.0758673 | 0.3503173  |
| Prognostic Factor Measurement | ↑Mental Health | 0.1220621     | -0.0145701 | 0.2542162  |
| Prognostic Factor Measurement | ↑Mobility | 0.2544658  | 0.0522105  | 0.436684   |
| Prognostic Factor Measurement | ↑Outcome Expected | 0.0416651     | -0.2145815 | 0.2925428  |
| Prognostic Factor Measurement | ↑Preoperative Function | 0.1380555     | 0.0164913  | 0.2555974  |
| Prognostic Factor Measurement | ↑Catastrophizing | -0.2446435   | -0.4701152 | 0.0107985  |
| Prognostic Factor Measurement | ↑Comorbidity | -0.0239961   | -0.1224817 | 0.0749586  |
| Prognostic Factor Measurement | Measurement | Coefficient 1 | Coefficient 2 | Coefficient 3 |
|------------------------------|-------------|---------------|---------------|---------------|
| Prognostic Factor Measurement | Cruciate Retaining | .0875719 | -.0344355 | .2070066 |
| Prognostic Factor Measurement | ↑BMI | -.1489251 | -.2449921 | -.0499614 |
| Prognostic Factor Measurement | ↑K-L Grade | .1004358 | .0114511 | .1878413 |
| Prognostic Factor Measurement | ↑Kinesophobia | -.0012078 | -.2332215 | .2309341 |
| Prognostic Factor Measurement | Male Gender | .0535947 | -.0433122 | .1494959 |
| Prognostic Factor Measurement | Multicompartment OA | -.0148018 | -.1373228 | .1081642 |
| Prognostic Factor Measurement | ↑Age | -.046835 | -.1330566 | .0400981 |
| Prognostic Factor Measurement | ↑Pain Self-Efficacy | .1537482 | -.0133514 | .3124918 |
| Prognostic Factor Measurement | Patella Resurfaced | .0371242 | -.085861 | .1589939 |
| Prognostic Factor Measurement | ↑Preoperative Pain | .0398254 | -.042381 | .1214909 |
| Prognostic Factor Measurement | ↑Surgery Duration | .0012099 | -.230934 | .2332215 |
| Prognostic Factor Measurement | ↑Symptomatic Joints | -.1970977 | -.3492267 | -.0348474 |
| Outcome Measurement | ↑Knee Status | .1438768 | -.0758673 | .3503173 |
| Outcome Measurement | ↑Mental Health | .1220621 | -.0145701 | .2542162 |
| Outcome Measurement | ↑Mobility | .2544658 | .0522105 | .4366684 |
| Outcome Measurement | ↑Outcome Expected | .0416651 | -.2145815 | .2925428 |
| Outcome Measurement | ↑Preoperative Function | .1380555 | .0164913 | .2555974 |
| Outcome Measurement | ↑Catastrophizing | -.2446435 | -.4701152 | .0107985 |
| Outcome Measurement | ↑Comorbidity | -.0239961 | -.1224817 | .0749586 |
| Outcome Measurement | Cruciate Retaining | .0875719 | -.0344355 | .2070066 |
| Outcome Measurement | ↑BMI | -.1489251 | -.2449921 | -.0499614 |
| Outcome Measurement | ↑K-L Grade | .1004358 | .0114511 | .1878413 |
| Outcome Measurement | ↑Kinesophobia | -.0012078 | -.2332215 | .2309341 |
| Outcome Measurement | Male Gender | -0.0535947 | -0.0433122 | 0.1494959 |
|---------------------|-------------|-------------|-------------|-----------|
| Outcome Measurement | Multicompartment OA | -0.0148018 | -0.1373228 | 0.1081642 |
| Outcome Measurement | ↑Age | -0.046835 | -0.1330566 | 0.0400981 |
| Outcome Measurement | ↑Pain Self-Efficacy | 0.1537482 | -0.0133514 | 0.3124918 |
| Outcome Measurement | Patella Resurfaced | 0.0371242 | -0.085861 | 0.1589939 |
| Outcome Measurement | ↑Preoperative Pain | 0.0398254 | -0.042381 | 0.1214909 |
| Outcome Measurement | ↑Surgery Duration | 0.0012099 | -0.230934 | 0.2332215 |
| Outcome Measurement | ↑Symptomatic Joints | -0.1970977 | -0.3492267 | -0.0348474 |
| Study Confounding | ↑Knee Status | 0.1438906 | -0.081434 | 0.3552223 |
| Study Confounding | ↑Mental Health | 0.1220604 | -0.0195056 | 0.2588282 |
| Study Confounding | ↑Outcome Expected | 0.0416636 | -0.1608326 | 0.240794 |
| Study Confounding | ↑Preoperative Function | 0.1863531 | 0.053854 | 0.315535 |
| Study Confounding | ↑Catastrophizing | -0.2446464 | -0.4773555 | 0.0201301 |
| Study Confounding | ↑Comorbidity | -0.0239955 | -0.198238 | 0.153332 |
| Study Confounding | Cruciate Retaining | 0.0875715 | -0.0368199 | 0.2092905 |
| Study Confounding | ↑BMI | -0.1489248 | -0.2477128 | -0.0470718 |
| Study Confounding | ↑K-L Grade | 0.1004353 | 0.0082223 | 0.1909545 |
| Study Confounding | ↑Kinesophobia | -0.0012089 | -0.2344216 | 0.2321355 |
| Study Confounding | Male Gender | 0.0535913 | -0.0462903 | 0.152412 |
| Study Confounding | Multicompartment OA | -0.0148024 | -0.1396434 | 0.1105018 |
| Study Confounding | ↑Age | -0.0808168 | -0.173188 | 0.0129638 |
| Study Confounding | ↑Pain Self-Efficacy | 0.1537472 | -0.0151047 | 0.3140733 |
| Study Confounding | Patella Resurfaced | 0.0371236 | -0.0882123 | 0.1613024 |
| Study Confounding | ↑Preoperative Pain | .0398227 | -.0458679 | .1249315 |
| Study Confounding | ↑Surgery Duration | .0012087 | -.2321355 | .2344216 |
| Study Confounding | ↑Symptomatic Joints | -.1970987 | -.3507967 | -.0330603 |
| Statistical Analysis & Reporting | ↑Knee Status | .1438709 | -.0878438 | .3608505 |
| Statistical Analysis & Reporting | ↑Mental Health | .1305 | -.0422659 | .2955705 |
| Statistical Analysis & Reporting | ↑Outcome Expected | .041638 | -.2604262 | .3363232 |
| Statistical Analysis & Reporting | ↑Preoperative Function | .2046128 | .0356259 | .3622169 |
| Statistical Analysis & Reporting | ↑Comorbidity | -.0277205 | -.141957 | .0872761 |
| Statistical Analysis & Reporting | Cruciate Retaining | .0875583 | -.0432345 | .2154257 |
| Statistical Analysis & Reporting | ↑BMI | -.1736245 | -.2836936 | -.0590136 |
| Statistical Analysis & Reporting | ↑K-L Grade | .1004227 | -.0002653 | .1991194 |
| Statistical Analysis & Reporting | Male Gender | .0615529 | -.0510875 | .172659 |
| Statistical Analysis & Reporting | Multicompartment OA | -.0148157 | -.1458837 | .1167897 |
| Statistical Analysis & Reporting | ↑Age | -.0909736 | -.1945621 | .0146535 |
| Statistical Analysis & Reporting | ↑Pain Self-Efficacy | .1537341 | -.0198638 | .3183579 |
| Statistical Analysis & Reporting | Patella Resurfaced | .0371104 | -.0945377 | .1675086 |
| Statistical Analysis & Reporting | ↑Preoperative Pain | .0435219 | -.0533316 | .1395834 |
| Statistical Analysis & Reporting | ↑Symptomatic Joints | -.1971116 | -.3550482 | -.0282085 |
### eTable 2. Reported Associations at 3 mo After TKA

| Author, reference, year | Prognostic factor                                      | Outcome          | Published estimate                                                                 |
|-------------------------|--------------------------------------------------------|------------------|-------------------------------------------------------------------------------------|
| Lingard et al, 2007     | Distress/ physical function (SF-36 MH)                 | Womac function   | LSM 3·5; p=0·14.                                                                    |
| Berghmans et al, 2019   | Mental health (SF-12 mental health)                     | WOMAC function   | B 0.27, CI95% 0.22 to 0.66, SE 0.11, p=0.00                                          |
| Berghmans et al, 2019   | Preoperative function (WOMAC)                          | WOMAC function   | B 0.44, SE 0.11, CI 95% 0.22 to 0.66, p=0.00                                         |
| Lindner et al, 2018     | Preoperative function (WOMAC)                          | WOMAC function   | β 0·45, SE B, β0.45, t 3·65; p=0·001                                                |
### eTable 3. Definition and Labels of Factors*

| Predictor Name                  | Definition                                      |
|--------------------------------|-------------------------------------------------|
| ↑Age                           | Older age                                       |
| Male Gender                    | Male (rather than female) gender                |
| ↑Preoperative Pain             | More (worse) pain                              |
| ↑Comorbidity                   | More comorbidities                             |
| ↑BMI                           | Higher (worse) body mass index                  |
| ↑Catastrophizing               | More (worse) catastrophizing                   |
| ↑Social Support                | Better social support                          |
| ↑Low Back Pain                 | More (worse) low back pain                     |
| ↑Mental Health                 | Better (improved) mental health                 |
| ↑Contralateral Knee Pain       | More (worse) contralateral knee pain            |
| ↑Education                     | Higher educational attainment                   |
| Indian Ethnicity               | Indian (rather than Chinese) Ethnicity          |
| ↑Knee Extension                | Greater (better) knee extension                 |
| ↑Preoperative Function         | Better preoperative physical function          |
| ↑Preoperative knee status      | Better knee status                              |
| ↑Mobility                      | Better mobility                                |
| ↑Pain Self-Efficacy            | More (better) pain self-efficacy                |
| ↑Symptomatic Joints            | More symptomatic joints                        |
| ↑Kinesophobia                  | More (worse) kinesophobia                      |
| ↑Surgery Duration              | Longer surgery duration                        |
| Multicompartment OA            | Multicompartment OA                            |
| ↑K-L Grade                     | Higher (worse) Kellgren-Lawrence grade          |
| Patella Resurfaced             | Patella Resurfaced surgery                      |
| ↑Outcome Expectation           | Better outcome expected                        |
| Walking aid use                | Walking aid use                                |
| ↑Arthritis Helplessness        | More (worse) arthritis helplessnes              |
| Cruciate retaining surgery     | Cruciate retaining surgery                      |
| ↓Energy                        | Less energy                                     |
| ↑Drowsiness                    | More drowsiness                                |
| ↑Bloating                      | More bloating                                  |
| ↑Worrying                      | More worrying                                  |
| ↑Problems sexuality            | More problems sexuality                        |
| ↑Sleep dysfunction             | Worse sleep dysfunction (PSQI)                 |
| ↑Day time sleepiness           | More daytime sleepiness                         |
| ↑Sleep quality                 | Better sleep quality                           |
| ↓Sedentary behaviour           | Less sedentary behaviour                       |

*Labels for factors: direction of association is indicated by arrows, with ↑ symbol indicating "higher value of"; e.g., “↑Age” should be interpreted as “older age”).

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### eTable 4. Grading of Recommendation Assessment, Development and Evaluation

#### Age

| № of studies (Reference number) | Study design | Risk of bias | Inconsistency | Indirectness | Imprecision | Other considerations | Certainty of evidence with explanations for downgrading of evidence |
|---------------------------------|--------------|--------------|---------------|--------------|-------------|----------------------|-------------------------------------------------------------------|
| 5 (23, 25, 26, 29, 39)          | observational studies | serious\(^a\) | serious\(^b\) | not serious | not serious | none | ☓☐☐☐ MODERATE \(^a\)Two studies with high risk of bias at two or more domains. \(^b\)Statistical heterogeneity and inconsistency in direction of effect. |

#### Male gender

| № of studies (Reference number) | Study design | Risk of bias | Inconsistency | Indirectness | Imprecision | Other considerations | Certainty of evidence with explanations for downgrading of evidence |
|---------------------------------|--------------|--------------|---------------|--------------|-------------|----------------------|-------------------------------------------------------------------|
| 4 (23, 25, 26, 29, 39)          | observational studies | serious\(^c\) | not serious | not serious | not serious | none | ☓☐☐☐ MODERATE \(^c\)Two studies with high risk of bias at one or more domains. |

#### Preoperative pain

| № of studies (Reference number) | Study design | Risk of bias | Inconsistency | Indirectness | Imprecision | Other considerations | Certainty of evidence with explanations for downgrading of evidence |
|---------------------------------|--------------|--------------|---------------|--------------|-------------|----------------------|-------------------------------------------------------------------|
| 3 (23, 26, 28, 39)              | observational studies | not serious | serious | not serious | not serious | none | ☓☐☐☐ MODERATE Statistical heterogeneity and inconsistency in direction of effect. |

#### Comorbidity

| № of studies (Reference number) | Study design | Risk of bias | Inconsistency | Indirectness | Imprecision | Other considerations | Certainty of evidence with explanations for downgrading of evidence |
|---------------------------------|--------------|--------------|---------------|--------------|-------------|----------------------|-------------------------------------------------------------------|
| 3 (23, 26, 29)                  | observational studies | serious\(^d\) | not serious | not serious | not serious | none | ☓☐☐☐ MODERATE \(^d\)Two studies with high risk of bias at one or more domains. |

#### Higher BMI

| № of studies (Reference number) | Study design | Risk of bias | Inconsistency | Indirectness | Imprecision | Other considerations | Certainty of evidence with explanations for downgrading of evidence |
|---------------------------------|--------------|--------------|---------------|--------------|-------------|----------------------|-------------------------------------------------------------------|
| 3 (23, 26, 27)                  | observational studies | serious\(^e\) | not serious | not serious | not serious | none | ☓☐☐☐ MODERATE \(^e\)Two studies with high risk of bias at one or more domains. |

#### Catastrophizing
| № of studies (Reference number) | Certainty assessment at twelve months follow-up | Certainty of evidence with explanations for downgrading of evidence |
|----------------------------------|-----------------------------------------------|---------------------------------------------------------------|
|                                  | Study design | Risk of bias | Inconsistency | Indirectness | Imprecision | Other considerations |
| 1 (27)                           | observational studies | serious<sup>f</sup> | not serious | not serious | very serious<sup>g</sup> | none | ☐ ☐ ☐ ☐ VERY LOW  
<sup>f</sup>One study with three domains rated with high risk of bias.  
<sup>g</sup>One study and small sample size (n=120) |
| Mental health                   | observational studies | serious<sup>b</sup> | not serious | not serious | not serious | none | ☐ ☐ ☐ MODERATE  
<sup>b</sup>High risk of bias on several domain from several studies. |
| Preoperative function           | observational studies | serious<sup>i</sup> | serious<sup>j</sup> | not serious | not serious | none | ☐ ☐ ☐ LOW  
<sup>i</sup>Two studies with high risk of bias at two or more domains.  
<sup>j</sup>Statistical heterogeneity and inconsistency in direction of effect. |
| 1 (25)                           | observational studies | serious<sup>k</sup> | not serious | not serious | very serious<sup>l</sup> | none | ☐ ☐ ☐ ☐ VERY LOW  
<sup>k</sup>One study with three domains rated with high risk of bias.  
<sup>l</sup>One study with small sample size (n=115) and wide confidence interval |
| Pain self-efficacy              | serious<sup>m</sup> | not serious | not serious | not serious | very serious<sup>n</sup> | none | ☐ ☐ ☐ ☐ VERY LOW  
<sup>m</sup>High risk of bias at one domain.  
<sup>n</sup>One study and small sample size. |
| Symptomatic joints              | not serious | not serious | not serious | not serious | very serious<sup>a</sup> | none | ☐ ☐ ☐ LOW  
<sup>a</sup>Estimate based on one study (n=220). |

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| № of studies (Reference number) | Certainty assessment at twelve months follow-up | Certainty of evidence with explanations for downgrading of evidence |
|--------------------------------|-----------------------------------------------|------------------------------------------------------------------|
|                                | Study design | Risk of bias | Inconsistency | Indirectness | Imprecision | Other considerations |
| 1 (26)                         | observational studies | serious<sup>p</sup> | not serious | not serious | very serious<sup>p</sup> | none | ☐☐☐☐ VERY LOW  
<sup>p</sup>One study with three domains rated with high risk of bias.  
<sup>p</sup>Estimate based on one study with small sample size (n=120). |
| **Surgery duration**           |                |              |              |              |              |                                                                 |
| 1 (26)                         | observational studies | serious<sup>r</sup> | not serious | not serious | very serious<sup>s</sup> | none | ☐☐☐☐ VERY LOW  
<sup>r</sup>One study with three domains rated with high risk of bias.  
<sup>s</sup>Estimate based on one study with small sample size (n=120). |
| **Multicompartment osteoarthritis** |                |              |              |              |              |                                                                 |
| 1 (23)                         | observational studies | not serious | not serious | not serious | serious<sup>t</sup> | none | ☒☒☒☒ MODERATE  
<sup>t</sup>Estimated based on one study (n=473) |
| **K-L grade**                  |                |              |              |              |              |                                                                 |
| 2 (23,28)                      | observational studies | not serious | not serious | not serious | not serious | none | ☐☐☐☐ HIGH |
| **Patella resurfaced**         |                |              |              |              |              |                                                                 |
| 1 (23)                         | observational studies | not serious | not serious | not serious | serious<sup>u</sup> | none | ☒☒☒☒ MODERATE  
<sup>u</sup>Estimated based on one study (n=473) |
| **Outcome expected**           |                |              |              |              |              |                                                                 |
| 1 (27)                         | observational studies | not serious | not serious | not serious | very serious<sup>v</sup> | none | ☐☐☐☐ LOW  
<sup>v</sup>Estimated based on one study (n=146) |
| **Cruciate retaining**         |                |              |              |              |              |                                                                 |
| 1 (23)                         | observational studies | not serious | not serious | not serious | serious<sup>w</sup> | none | ☒☒☒☒ MODERATE  
<sup>w</sup>Estimate based on one study (n=473) |
| **Knee status**                |                |              |              |              |              |                                                                 |

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**eTable 4. Grading of Recommendation Assessment, Development and Evaluation**

| № of studies (Reference) | Certainty assessment | six months follow-up | Certainty of evidence with explanations for downgrading of evidence |
|--------------------------|----------------------|----------------------|-------------------------------------------------------------------|
|                          | Study design | Risk of bias | Inconsistency | Indirectness | Imprecision | Other considerations |
| Age                      | 2 (31, 32)    | observational | serious\(^a\) | serious\(^b\) | not serious | not serious | none | ☺☺☺☺ LOW  
\(^a\)One study with high risk of bias at two domains  
\(^b\)Clinical and statistical heterogeneity. |
| Male gender              | 2 (31, 32)    | observational | not serious | not serious | not serious | not serious | none | ☺☺☺☺♥♥ HIGH  |
| Preoperative pain        | 1 (32)        | observational | not serious | not serious | not serious | serious\(^c\) | none | ☺☺☺☺ MODERATE  
\(^c\)Estimate based on one study (n= 4026) |
| Comorbidity              | 3 (30,31,32)  | observational | serious\(^d\) | not serious | not serious | not serious | none | ☺☺☺☺ MODERATE  
\(^d\)Two studies with high risk of bias at one or more domains |
| BMI                      | 1 (32)        | observational | not serious | not serious | not serious | serious\(^e\) | none | ☺☺☺☺ MODERATE  
\(^e\)Estimate based on one study (n= 4026) |
| Catastrophizing          | 2 (36,42)     | observational | serious\(^f\) | not serious | not serious | very serious\(^g\) | none | ☺☺☺☺☺ VERY LOW  
\(^f\)One study with high risk of bias at one domain.  
\(^g\)Estimate with imprecise estimated, based on one single study (n=131) |
| Social support           | 3 (24,29,30)  | observational | not serious | not serious | very serious\(^h\) | none | ☺☺☺☺☺ MODERATE  
\(^h\)One study with high risk of bias at one domain. |

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| № of studies (Reference) | Certainty assessment six months follow-up | Certainty of evidence with explanations for downgrading of evidence |
|---------------------------|------------------------------------------|---------------------------------------------------------------|
|                           | Study design | Risk of bias | Inconsistency | Indirectness | Imprecision | Other considerations |
|                           |             |             |             |             |             |                      |
| 2 (31,32)                 | observational studies | not serious | not serious | not serious | not serious | none | ⬤⬤⬤⬤ HIGH |
| **Low back pain**         |             |             |             |             |             |                      |
| 1 (31)                    | observational studies | serious\(^b\) | not serious | not serious | serious\(^i\) | none | ⬤⬤◯◯ LOW |
\(^b\)One study rated with high risk of bias at two domains. \(^i\)Estimate based on one large study (n=640)
|                           |             |             |             |             |             |                      |
| 2 (31, 32, 42)            | observational | not serious | not serious | not serious | not serious | none | ⬤⬤⬤⬤ HIGH |
| **Mental health**         |             |             |             |             |             |                      |
|                           |             |             |             |             |             |                      |
| 2 (31, 32, 42)            | observational | not serious | not serious | not serious | not serious | none | ⬤⬤⬤⬤ HIGH |
| **Contralateral knee pain**|             |             |             |             |             |                      |
| 1 (32)                    | observational | not serious | not serious | not serious | serious\(^j\) | none | ⬤⬤⬤◯ MODERATE |
\(^j\)Estimate based on one study (n=4026)
|                           |             |             |             |             |             |                      |
| 1 (32)                    | observational | not serious | not serious | not serious | serious\(^k\) | none | ⬤⬤⬤◯ MODERATE |
\(^k\)Estimate based on one study (n=4026)
| **Education**             |             |             |             |             |             |                      |
| 1 (32)                    | observational | not serious | not serious | not serious | serious\(^l\) | none | ⬤⬤⬤◯ MODERATE |
\(^l\)Estimate based on one study (n=4026)
|                           |             |             |             |             |             |                      |
| 1 (32)                    | observational | not serious | not serious | not serious | serious\(^m\) | none | ⬤⬤⬤◯ MODERATE |
\(^m\)Estimate based on one study (n=4026)
| **Indian ethnicity**      |             |             |             |             |             |                      |
| 1 (32)                    | observational | not serious | not serious | not serious | serious\(^n\) | none | ⬤⬤⬤◯ MODERATE |
\(^n\)Estimate based on one study (n= 4026)
|                           |             |             |             |             |             |                      |
| 1 (32)                    | observational | not serious | not serious | not serious | serious\(^o\) | none | ⬤⬤⬤◯ MODERATE |
\(^o\)Two studies rated with high risk of bias at two or more domains
| **Knee extension**        |             |             |             |             |             |                      |
| 1 (32)                    | observational | not serious | not serious | not serious | serious\(^p\) | none | ⬤⬤⬤◯ MODERATE |
\(^p\)Two studies rated with high risk of bias at two or more domains
|                           |             |             |             |             |             |                      |
| 3 (31-33)                 | observational | serious\(^q\) | not serious | not serious | not serious | none | ⬤⬤⬤◯ MODERATE |
\(^q\)Two studies rated with high risk of bias at two or more domains
| **Mobility**              |             |             |             |             |             |                      |
| № of studies (Reference) | Certainty assessment | six months follow-up | Certainty of evidence with explanations for downgrading of evidence |
|--------------------------|----------------------|----------------------|---------------------------------------------------------------|
|                          | Study design         | Risk of bias         | Inconsistency         | Indirectness | Imprecision | Other considerations |
| 1 (34)                   | observational        | not serious          | not serious          | not serious  | very serious<sup>a</sup> | none                 | ☒☺☺☺ LOW <br> <sup>a</sup>Estimate based on one study (n=81) |
|                          |                      |                      |                      |              |             |                     |                  |
| Pain self-efficacy       | observational        | serious<sup>b</sup>  | not serious          | not serious  | very serious<sup>c</sup> | none                 | ☒☺☺☺ VERY LOW <br> <sup>b</sup>High risk on bias on four domains. <br> <sup>c</sup>One study (n=54), statistical imprecise. |
| Walking aid use          | observational        | not serious          | not serious          | not serious  | serious     | none                 | ☒☺☺☺ HIGH |
| Arthritis Helplessness   | observational        | serious<sup>s</sup>  | not serious          | not serious  | very serious<sup>t</sup> | none                 | ☒☺☺☺ VERY LOW <br> <sup>s</sup>One study and high risk of bias for several domains. <br> <sup>t</sup>Estimate based on one study (n=54) |
| Knee flexion             | observational        | not serious          | not serious          | not serious  | serious<sup>u</sup>  | none                 | ☒☺☺☺ MODERATE <br> <sup>u</sup>Estimate based on one study (n= 4026) |

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**cTable 5. Search Strategy**

**Ovid MEDLINE(R) ALL** 1946 to October 04, 2021

Search date: 05.10.2021

Result of search: 6577

**Search Strategy:**

| #  | Searches                                                                 | Results |
|----|-------------------------------------------------------------------------|---------|
| 1  | Arthroplasty, Replacement, Knee/                                        | 27391   |
| 2  | (tkr or tjkr or tka or tjka).tw,kf.                                     | 15451   |
| 3  | (knee* adj3 (arthroplast* or replacement*)).tw,kf.                      | 36674   |
| 4  | (total adj2 knee*).tw,kf.                                               | 29088   |
| 5  | (knee* adj2 protheses*).tw,kf.                                          | 3084    |
| 6  | or/1-5                                                                  | 43063   |
| 7  | risk/ or risk factors/ or logistic models/ or protective factors/ or risk assessment/ | 1292658 |
| 8  | prognosis/ or (prognos* or risk* or predict*).tw,kf.                   | 4462045 |
| 9  | (preoperative factor* or pre operative factor* or protective factor*).tw,kf. | 24813   |
| 10 | or/7-9                                                                  | 4839127 |
| 11 | and/6,10                                                                | 11731   |
| 12 | (pain adj3 (post* or ongoing or on going or long* or persist* or prolong* or after or follow*)).tw,kw. | 102501  |
| 13 | pain, postoperative/                                                    | 43031   |
| 14 | (Pain/ or chronic pain/ or musculoskeletal pain/) and (post* or ongoing or on going or long* or persist* or prolonged or after or follow*).tw,kf. | 68062   |
| 15 | cohort studies/ or follow-up studies/ or longitudinal studies/ or prospective studies/ or retrospective studies/ | 2219694 |
| 16 | pain.tw,kf.                                                             | 685484  |
| 17 | and/15-16                                                               | 125324  |
| 18 | or/12-14,17                                                             | 257072  |
| 19 | and/11,18                                                               | 1629    |
| 20 | (function* or stiffness or contracture*).tw,kf.                        | 4074115 |
| 21 | (muscle adj3 (strength* or weakness or fatigue or tonus)).tw,kf.        | 52213   |
| 22 | Contracture/                                                             | 8294    |
| 23 | "Recovery of Function"/                                                | 56792   |
| 24 | "Range of Motion, Articular"/                                           | 55499   |
| 25 | locomotion/ or walking/ or gait/ or walking speed/ or stair climbing/   | 83838   |
| 26 | "Activities of Daily Living"/ or (adl or (daily adj3 activit*)).tw,kf.  | 109732  |
| 27 | Movement/                                                               | 76933   |
| 28 | muscle fatigue/ or muscle tonus/ or physical exertion/ or postural balance/ or Muscle Strength/ | 116716  |

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|   | Description                                                                 | Count  |
|---|-----------------------------------------------------------------------------|--------|
| 29| (sitting or lying or standing or posture or rising or neeling or bend* or walk* or gait or stair* or extension* or stability or contracture* or movement* or motion* or locomotion* or mobility or twisting or pivoting or straighten* or swelling or grinding or clicking or squatting or running or jumping).tw,kf. | 2041300 |
| 30| treatment outcome/ or treatment failure/ or outcome*.tw,kf.                 | 2666783 |
| 31| patient reported outcome measures/                                        | 9627   |
| 32| ("Knee injury and Osteoarthritis Outcome Score" or womac or koos or "American Knee Society Score" or AKSS or Kellgren Lawrence).tw,kf. | 9722   |
| 33| or/20-32                                                                   | 7873792 |
| 34| cohort studies/ or follow-up studies/ or longitudinal studies/ or prospective studies/ or retrospective studies/ | 2219694 |
| 35| Postoperative Period/                                                      | 54421  |
| 36| (post* or after or follow* or cohort* or prospectiv* or longitudinal).tw,kf. | 9493302 |
| 37| or/34-36                                                                   | 10040161 |
| 38| and/11,33,37                                                               | 6598   |
| 39| or/19,38                                                                   | 6890   |
| 40| limit 39 to yr="2000 -Current"                                              | 6577   |
### Search Strategy:

| #  | Searches                                                                 | Results  |
|----|-------------------------------------------------------------------------|----------|
| 1  | knee replacement/ or total knee arthroplasty/                           | 18303    |
| 2  | (tkr or tjkr or tka or tjka).tw,kw.                                    | 18755    |
| 3  | (knee adj3 (arthroplast* or replacement*)).tw,kw.                       | 45317    |
| 4  | (total adj2 knee*).tw,kw.                                              | 35030    |
| 5  | (knee* adj2 prosthesis*).tw,kw.                                        | 4009     |
| 6  | or/1-5                                                                  | 52283    |
| 7  | risk factor/ or risk/ or protection/ or risk assessment/                | 2124295  |
| 8  | prognosis/ or (prognos* or risk* or predict*).tw,kw.                   | 6181483  |
| 9  | "prediction and forecasting"/ or prediction/                           | 448064   |
| 10 | (preoperative factor* or pre operative factor* or protective factor*).tw,kw. | 33029    |
| 11 | or/7-10                                                                 | 6686278  |
| 12 | and/6,11                                                                | 14777    |
| 13 | (pain adj3 (post* or ongoing or on going or long* or persist* or prolong* or after or follow*)).tw,kw. | 153914   |
| 14 | postoperative pain/                                                    |          |
| 15 | (pain/ or chronic pain/ or musculoskeletal pain/) and (post* or ongoing or on going or long* or persist* or prolonged or after or follow*).tw,kw. | 75694    |
| 16 | cohort analysis/ or follow up/ or longitudinal study/ or prospective study/ or retrospective study/ | 242372   |
| 17 | pain.tw,kw.                                                            | 3602464  |
| 18 | and/16-17                                                              | 1050089  |
| 19 | or/13-15,18                                                            | 237320   |
| 20 | and/12,19                                                              | 516581   |
| 21 | knee function/ or muscle function/ or muscle rigidity/ or muscle contraction/ or muscle strength/ or muscle fatigue/ or muscle function/ or muscle stretching/ or muscle weakness/ | 245358   |
| 22 | contracture/ or flexion contracture/ or joint contracture/ or muscle contracture/ |          |
| 23 | convalescence/                                                          | 22050    |
| 24 | locomotion/ or climbing/ or stair climbing/ or jumping/ or walking/ or gait/ or walking speed/ | 57391    |
| 25 | daily life activity/ or (daily life activity or activities of daily living or adl).tw,kw. | 219096   |
| 26 | exp musculoskeletal function/ or Movement/                             | 106658   |
| 27 | joint swelling/ or grinding/                                            | 1219923  |

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| #  | Query                                                                 | Limiters/Expanders         | Results  |
|----|----------------------------------------------------------------------|----------------------------|----------|
| 28 | (function* or stiffness or contracture*).tw,kw.                    |                            | 5229428  |
| 29 | (muscle adj3 (strength* or weakness or fatigue or tonus)).tw,kw.   |                            | 76148    |
| 30 | (sitting or lying or standing or balance or posture or rising or neeling or bend* or walk* or gait or stair* or extension* or stability or contracture* or movement* or motion* or locomotion* or mobility or twisting or pivoting or straighten* or swelling or grinding or clicking or squating or running or jumping).tw,kw. |                            | 2586868  |
| 31 | treatment outcome/ or treatment failure/ or patient-reported outcome/ or clinical outcome/ or outcome*.tw,kw. |                            | 3599641  |
| 32 | "knee injury and osteoarthritis outcome score"/ or "Western Ontario and McMaster Universities Osteoarthritis Index"/ or ("Knee injury and Osteoarthritis Outcome Score" or womac or koos or "American Knee Society Score" or AKSS or Kellgren Lawrence).tw,kw. |                            | 17894    |
| 33 | or/21-32                                                             |                            | 10631159 |
| 34 | cohort analysis/ or follow up/ or longitudinal study/ or prospective study/ or retrospective study.mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword heading word, floating subheading word, candidate term word] |                            | 3636540  |
| 35 | postoperative period/                                                |                            | 234631   |
| 36 | (post* or after or follow* or cohort* or prospectiv* or longitudinal).tw,kw. |                            | 13477914 |
| 37 | or/34-36                                                             |                            | 14175462 |
| 38 | and/12,33,37                                                         |                            | 8304     |
| 39 | or/20,38                                                             |                            | 8832     |
| 40 | limit 39 to yr="2000-Current"                                       |                            | 8546     |
| 41 | limit 40 to conference abstract                                      |                            | 2086     |
| 42 | 40 not 41                                                            |                            | 6456     |

CINAHL (Ebsco):
Search date: 05.10.2021
Result of search: 2412
|   | Search query                                                                 | Search modes  | Count  |
|---|------------------------------------------------------------------------------|---------------|--------|
| S5 | TX (knee* N2 prosth*)                                                        | Boolean/Phrase | 874    |
| S6 | S1 OR S2 OR S3 OR S4 OR S5                                                   | Boolean/Phrase | 23,578 |
| S7 | (MH "Risk Factors")                                                         | Boolean/Phrase | 190,050|
| S8 | (MH "Risk Assessment")                                                       | Boolean/Phrase | 120,213|
| S9 | MH "Prognosis")                                                              | Boolean/Phrase | 88,876 |
| S10| TX prognos* or risk* or predict* or preoperative factor* or protective factor*| Boolean/Phrase | 1,141,387|
| S11| S7 OR S8 OR S9 OR S10                                                         | Boolean/Phrase | 1910,505|
| S12| S6 AND S11                                                                   | Boolean/Phrase | 6,153  |
| S13| ( TX pain N2 (TX (post* or ongoing or "on going" or long* or persist* or prolong* or after or follow*) ) OR (MH "Postoperative Pain") OR TX pain AND (MH "Prospective Studies+")) | Boolean/Phrase | 80,496 |
| S14| (MH "Pain+") OR (MH "Knee Pain+") OR (MH "Muscle Pain") AND TX post* or ongoing or "on going" or long* or persist* or prolong* or after or follow* | Boolean/Phrase | 1,903,304|
| S15| S13 OR S14                                                                   | Boolean/Phrase | 1,903,304|
| S16| S12 AND S15                                                                  | Boolean/Phrase | 4,814  |
| S17| (MH "Movement") OR (MH "Hopping") OR (MH "Jumping") OR (MH "Kneeling+") OR (MH "Extension+") OR (MH "Locomotion") OR (MH "Walking+") OR (MH "Gait+") OR (MH "Step") OR (MH "Range of Motion") OR (MH "Rising") OR (MH "Sitting") OR (MH "Squatting") OR (MH "Stair Climbing") OR (MH "Standing+") OR (MH "Stretching") | Boolean/Phrase | 92,949 |
| S18| (MH "Muscle Fatigue") OR (MH "Muscle Strength+") OR (MH "Muscle Tonus")     | Boolean/Phrase | 30,937 |
| S19| TX (function* or stiffness or contracture*)                                  | Boolean/Phrase | 500,860|
| S20 | TX (muscle N3 (strength* or weakness or fatigue or tonus)) | Search modes - Boolean/Phrase | 21,279 |
| S21 | (MH "Contracture+") | Search modes - Boolean/Phrase | 2,204 |
| S22 | (MH "Activities of Daily Living+") | Search modes - Boolean/Phrase | 75,269 |
| S23 | TX (activities or daily living or adl) | Search modes - Boolean/Phrase | 46,034 |
| S24 | (MH "Treatment Outcomes+") OR (MH "Fatal Outcome") OR (MH "Treatment Failure") | Search modes - Boolean/Phrase | 402,301 |
| S25 | TX outcome* | Search modes - Boolean/Phrase | 721,791 |
| S26 | TX "Knee injury and Osteoarthritis Outcome Score" or womac or koos or "American Knee Society Score" or AKSS or Kellgren Lawrence | Search modes - Boolean/Phrase | 11,338 |
| S27 | S17 OR S18 OR S19 OR S20 OR S21 OR S22 OR S23 OR S24 OR S25 OR S26 | Search modes - Boolean/Phrase | 1,470,810 |
| S28 | (MH "Postoperative Period") OR (MH "Prospective Studies+") | Search modes - Boolean/Phrase | 491,778 |
| S29 | TX (post* or after or follow* or cohort* or prospectiv* or longitudinal) | Search modes - Boolean/Phrase | 1,845,119 |
| S30 | S28 OR S29 | Search modes - Boolean/Phrase | 1,966,707 |
| S31 | S12 AND S27 AND S30 | Search modes - Boolean/Phrase | 3,363 |
| S32 | S16 OR S31 Limiters - Published Date: 20000101-20211031 | Search modes - Boolean/Phrase | 5,059 |
| #  | Description                                                                 | Documents |
|----|-----------------------------------------------------------------------------|-----------|
| 1  | MeSH descriptor: [Arthroplasty, Replacement, Knee] explode all trees        | 2721      |
| 2  | (tkr or tjkr or tka or tjka):ti,ab,kw                                      | 3715      |
| 3  | (knee near/3 (arthroplast* or replacement*)):ti,ab,kw                      | 8696      |
| 4  | (total near/2 knee*):ti,ab,kw                                             | 7164      |
| 5  | (knee near/2 prosthese*):ti,ab,kw                                         | 1284      |
| 6  | #1 or #2 or #3 or #4 or #5                                                  | 9242      |
| 7  | MeSH descriptor: [Risk] explode all trees                                   | 38325     |
| 8  | MeSH descriptor: [Prognosis] this term only                                 | 14053     |
| 9  | (prognos* or risk* or predict*):ti,ab,kw                                  | 354478    |
| 10 | ((preoperative or "pre operative" or protective) near/2 factor*):ti,ab,kw  | 1482      |
| 11 | #7 or #8 or #9 or #10                                                       | 356939    |
| 12 | #6 and #11                                                                  | 1585      |
| 13 | (pain near/3 (post* or ongoing or "on going" or long* or persist* or prolong* or after or follow*)):ti,ab,kw | 56869 |
| 14 | MeSH descriptor: [Pain, Postoperative] explode all trees                   | 16393     |
| 15 | MeSH descriptor: [Pain] this term only                                      | 11960     |
| 16 | MeSH descriptor: [Chronic Pain] this term only                             | 2790      |
| 17 | MeSH descriptor: [Musculoskeletal Pain] this term only                      | 531       |
| 18 | #14 or #15 or #16 or #17                                                    | 31200     |
| 19 | (post* or ongoing or on going or long* or persist* or prolonged or after or follow*):ti,ab,kw | 1143252 |
| 20 | #18 and #19                                                                 | 26936     |
| 21 | MeSH descriptor: [Cohort Studies] explode all trees                        | 154431    |
| 22 | (pain):ti,ab,kw                                                            | 195141    |
| 23 | #21 and #22                                                                 | 21911     |
| 24 | #13 or #20 or #23                                                           | 75837     |
| 25 | #12 and #24                                                                 | 420       |
| 26 | (function* or stiffness or contracture*):ti,ab,kw                          | 286360    |
| 27 | (muscle near/3 (strength* or weakness or fatigue or tonus)):ti,ab,kw       | 21991     |
| 28 | MeSH descriptor: [Contracture] this term only                              | 188       |
| 29 | MeSH descriptor: [Recovery of Function] this term only                     | 5518      |
| 30 | MeSH descriptor: [Range of Motion, Articular] this term only                | 5055      |
| 31 | MeSH descriptor: [Locomotion] explode all trees                            | 8647      |
| 32 | MeSH descriptor: [Walking] explode all trees                               | 5891      |
| 33 | MeSH descriptor: [Activities of Daily Living] this term only               | 5124      |
| 34 | ("activities of daily living" or adl):ti,ab,kw                            | 3712      |
| 35 | MeSH descriptor: [Movement] this term only                                  | 2471      |
| 36 | MeSH descriptor: [Muscle Fatigue] this term only                           | 1022      |
| 37 | MeSH descriptor: [Muscle Tonus] this term only                             | 292       |
| 38 | MeSH descriptor: [Physical Exertion] explode all trees                     | 3931      |
| 39 | MeSH descriptor: [Postural Balance] this term only                         | 2960      |
#40 MeSH descriptor: [Muscle Strength] this term only

#41 (sitting or lying or standing or balance or posture or rising or neeling or bend* or walk* or gait or stair* or extension* or stability or contracture* or movement* or motion* or locomotion* or mobility or twisting or pivoting or straighten* or swelling or grinding or clicking or squatting or running or jumping):ti,ab,kw

#42 MeSH descriptor: [Treatment Outcome] this term only

#43 MeSH descriptor: [Treatment Failure] this term only

#44 (outcome):ti,ab,kw

#45 MeSH descriptor: [Patient Reported Outcome Measures] this term only

#46 ("Knee injury and Osteoarthritis Outcome Score" or womac or koos or "American Knee Society Score" or AKSS or "Kellgren Lawrence"):ti,ab,kw

#47 #26 or #27 or #29 or #30 or #31 or #32 or #33 or #34 or #35 or #36 or #37 or #38 or #39 or #40 or #41 or #42 or #43 or #44 or #45 or #46

#48 MeSH descriptor: [Cohort Studies] explode all trees

#49 MeSH descriptor: [Postoperative Period] explode all trees

#50 (post* or after or follow* or cohort* or prospectiv* or longitudinal):ti,ab,kw

#51 #48 or #49 or #50

#52 #47 and #51

#53 #12 and #52

#54 #25 or #53 with Cochrane Library publication date Between Jan 2000 and Oct 2021

PRDro (Physiotherapy Evidence Database):

Search date: 05.10.2021
Result of search: Søk 1: 120 Søk 2: 13

Søk 1: Abstract & Title: total knee* replacement*, Body Part: lower leg or knee, Published since:2000
Søk 2: Abstract & Title:, knee* prosthesis*, Body Part: lower leg or knee, Published since: 2000
### eTable 6. Reason for Exclusion of Individual Studies

| Authors and year | Reason for exclusion* |
|------------------|-----------------------|
| (Abane et al., 2015) | 1. No regression performed |
| (Abdel et al., 2014) | 1. No regression performed |
| (Aderinto et al., 2005) | 5. Not separate analysis for OA |
| (Adie et al., 2012) | 1. No regression performed |
| (Ahmed et al., 2009) | 1. No regression performed |
| (Alentorn-Geli et al., 2013) | 1. No regression performed |
| (Alomran, 2015) | 1. No regression performed |
| (Amusat et al., 2014) | 7. Insufficient information about the sample** |
| (Andrawis et al., 2015) | 5. Not separate analysis for TKA |
| (Arden et al., 2017) | 3. Inadequate study design |
| (Arendt-Nielsen et al., 2018) | 4. Predictor not evaluated |
| (Arendt-Nielsen et al., 2018) | 2. Duplicate publication |
| (Aso et al., 2021) | 5. Not separate analysis for TKA |
| (Attal et al., 2014) | 4. Outcome not evaluated |
| (Ayers et al., 2005) | 5. Not separate analysis for OA |
| (Ayers et al., 2013) | 5. Not separate analysis for OA |
| (Bade et al., 2012) | 5. Not separate analysis intervention & control |
| (Bade et al., 2014) | 5. Not separate analysis intervention & control |
| (Barrack et al., 2014) | 3. Inadequate study design |
| (Barroso et al., 2020) | 3. Inadequate aim |
| (Bascuas et al., 2013) | 1. No regression performed for the outcome |
| (Bauer et al., 2010) | 6. Insufficient follow-up time |
| (Behrend et al., 2019) | 3. Inadequate study design |
| (Belford et al., 2020) | 7. Insufficient data about the sample** |
| (Berghmans et al., 2015) | 2. Conference abstract |
| (Bergschmidt et al., 2008) | 1. No regression performed |
| (Bethge et al., 2010) | 1. No regression performed |
| (Bian et al., 2021) | 3. Inadequate aim |
| (Bierke and Petersen, 2017) | 1. No regression performed |
| (Bin and Nam, 2007) | 1. No regression performed |
| (Bistolfi et al., 2017) | 1. No regression performed |
| (Blackburn et al., 2012) | 1. No regression performed |
| (Boerger et al., 2005) | 1. No regression performed |
| (Bossmann et al., 2017) | 4. Outcome not evaluated |
| (Bove et al., 2022) | 5. Not separate measure of function |
| (Braaksma et al., 2020) | 6. Insufficient follow-up time |
| (Brander et al., 2003) | 5. Not separate reporting for the OA population |
| (Brock et al., 2017) | 5. Not separate reporting for the OA population |
| (Brockenbrough, 2007) | 7. Insufficient data about the sample** |
| (Browne, 2013) | 2. Commentary |
| (Brummett et al., 2011) | 2. Conference abstract |
| (Brummett et al., 2013) | 2. Conference abstract |
| (Brummett et al., 2015) | 5. Not separate reporting for TKA population |
| (Bumberger et al., 2021) | 3. Inadequate study design |
| (Buvanendran et al., 2011) | 2. Conference abstract |
| (Buvanendran et al., 2012) | 2. Conference abstract |
| (Caracciolo and Giaquinto, 2005) | 3. Inadequate aim |
| (Carvalho Junior et al., 2017) | 1. No regression performed |
| (Chalidis et al., 2010) | 1. No regression performed for the outcome |
| (Chang et al., 2010) | 5. Not separate analysis for TKA |
| Reference                                      | Issue                                                                 |
|-----------------------------------------------|----------------------------------------------------------------------|
| (Chen et al., 2021)                          | 3. Inadequate aim                                                    |
| (Cheng et al., 2010)                         | 3. Inadequate study design                                           |
| (Cheuy et al., 2019)                         | 1. No regression performed for the outcome                           |
| (Chouteau et al., 2009)                      | 3. Ineligible study design                                           |
| (Chowdhry et al., 2014)                      | 3. Ineligible study design                                           |
| (Christensen et al., 2019)                   | 7. Insufficient data**                                               |
| (Christensen et al., 2021)                   | 3. Inadequate aim                                                    |
| (Clement et al., 2013a)                      | 4. Outcome not evaluated                                             |
| (Clement et al., 2013b)                      | 5. Not separate data for function                                    |
| (Clement et al., 2011)                       | 1. No regression performed for the outcome                           |
| (Clement et al., 2013c)                      | 5. Not separate data for function                                    |
| (Collins et al., 2017)                       | 5. Not separate analysis intervention & control                      |
| (Collins et al., 2016)                       | 2. Conference abstract                                              |
| (Cooper et al., 2017)                        | 5. Not separate analysis intervention & control                      |
| (Clement et al., 2013b)                      | 5. Not separate data for function                                    |
| (Clement et al., 2011)                       | 1. No regression performed for the outcome                           |
| (Clement et al., 2013c)                      | 5. Not separate data for function                                    |
| (Collins et al., 2017)                       | 5. Not separate analysis intervention & control                      |
| (Collins et al., 2016)                       | 2. Conference abstract                                              |
| (Cornelius et al., 2017)                     | 2. Conference abstract                                              |
| (Cornelius et al., 2015)                     | 2. Conference abstract                                              |
| (Cremeans-Smith et al., 2012)                | 2. Conference abstract                                              |
| (Cremeans-Smith et al., 2015a)               | 4. Outcome not evaluated                                             |
| (Cremeans-Smith et al., 2013)                | 2. Conference abstract                                              |
| (Cremeans-Smith et al., 2015b)               | 4. Outcome not evaluated                                             |
| (Cremeans-Smith et al., 2018)                | 2. Conference abstract                                              |
| (Cremeans-Smith et al., 2016)                | 4. Outcome not evaluated                                             |
| (Dailiana et al., 2015)                      | 2. Duplicate                                                        |
| (Dalury et al., 2009)                        | 1. No regression performed for the outcome                           |
| (Dave et al., 2017)                          | 3. Insufficient aim                                                  |
| (Davis et al., 2009)                         | 2. Conference abstract                                              |
| (Davis et al., 2017)                         | 2. Conference abstract                                              |
| (Dere et al., 2014)                          | 1. No regression performed for the outcome                           |
| (Desmeules et al., 2013)                     | 5. Not separate analysis for OA                                      |
| (Dierick et al., 2004)                       | 1. No regression performed for the outcome                           |
| (Djadoun et al., 2014)                       | 2. Conference abstract                                              |
| (Dossett et al., 2012)                       | 1. No regression performed for the outcome                           |
| (Dowsey et al., 2009)                        | 5. Not separate analysis for OA                                      |
| (Dowsey et al., 2014)                        | 5. Not separate analysis for OA                                      |
| (Dowsey et al., 2015)                        | 5. Not separate analysis for OA                                      |
| (Dowsey et al., 2016)                        | 5. Not separate analysis for OA                                      |
| (Doury-Panchot et al., 2015)                 | 3. Ineligible study design                                           |
| (Duivenvoorden et al., 2013)                 | 5. Not separate analysis for OA                                      |
| (Dumenci et al., 2019)                       | 5. Not separate analysis for OA                                      |
| (Dursteler et al., 2021)                     | 1. No adequate regression performed                                 |
| (Dutka et al., 2011)                         | 5. Not separate analysis for OA                                      |
| (Dutton et al., 2008)                        | 1. No regression performed for the outcome                           |
| (Edwards et al., 2009)                       | 4. Outcome not evaluated                                             |
| (Ellis et al., 2012)                         | 1. No regression performed for the outcome                           |
| (Fallar et al., 2003)                        | 2. Letter to editor                                                  |
| (Farahini et al., 2012)                      | 5. Not separate analysis for OA                                      |
| (Farin et al., 2006)                         | 5. Not separate analysis for TKA                                      |
| (Fernandez-Fairen et al., 2013)              | 1. No regression performed for the outcome                           |
| (Ferreira et al., 2021)                      | 1. No adequate regression performed                                 |
| (Ferrer et al., 2020)                        | 3. Inadequate aim                                                    |
| (Filardo et al., 2017)                       | 5. Not separate data for function, used a total score                |
| (Filbay and Judge, 2017)                     | 2. Conference                                                        |
| (Filbay et al., 2018)                        | 5. Not separate reporting of function                                |
| Reference | Warning |
|-----------|---------|
| Fitzpatrick et al., 2017 | 2. Conference |
| Fitzsimmons et al., 2018 | 4. Outcome not evaluated |
| Fitzsimmons et al., 2018 | 2. Duplicate publication |
| Fleeton et al., 2016 | 5. Allocation groups were pooled |
| Foran et al., 2004 | 6. Insufficient follow-up time |
| Forsythe et al., 2008 | 1. No regression performed |
| Franklin et al., 2008 | 5. Not separate analysis for OA |
| Franklin et al., 2013 | 2. Conference |
| Furu et al., 2016 | 5. Not separate analysis for OA |
| Gandhi et al., 2009a | 5. Not separate analysis for TKA |
| Gandhi et al., 2010a | 5. Not separate analysis for TKA |
| Gandhi et al., 2010b | 2. Duplicate publication |
| Gandhi et al., 2010c | 5. Not separate analysis for TKA |
| Gandhi et al., 2009b | 5. Not separate analysis for TKA |
| Gandhi et al., 2009c | 5. Not separate analysis for TKA |
| Gandhi et al., 2009d | 5. Not separate analysis for TKA |
| Gates et al., 2016 | 2. Conference |
| Gates et al., 2017 | 4. Outcome not evaluated |
| Gatha et al., 2004 | 6. Insufficient follow-up time |
| Getachew et al., 2021 | 3. Inadequate aim |
| Giesinger et al., 2016 | 2. Conference |
| Giordano et al., 2020 | 1. No adequate regression performed |
| Giordano et al., 2021 | 3. Inadequate aim |
| Gonzalez Saenz de Tejada et al., 2014 | 5. Not separate analysis for TKA |
| Graves et al., 2014 | 1. No regression performed |
| Gray et al., 2017 | 5. Used the total score of WOMAC |
| Greco et al., 2017 | 2. Conference abstract |
| Greenidge et al., 2009 | 2. Conference abstract |
| Grosu et al., 2013 | 2. Conference abstract |
| Group et al., 2009 | 1. No regression performed |
| Guimaraes-Pereira et al., 2016 | 5. Not separate analysis for TKA |
| Gothesen et al., 2014 | 5. Not separate results for OA |
| Ha and Ha, 2006 | 7. Insufficient information about age |
| Halket et al., 2010 | 5. Not separate analysis for TKA |
| Hamilton et al., 2015 | 1. No regression performed |
| Hamilton et al., 2017 | 2. Conference abstract |
| Hamilton et al., 2021 | 5. Not separate measure of function |
| Hanratty et al., 2011 | 1. No regression performed |
| Hanusch et al., 2014 | 7. Insufficient information follow-up time** |
| Harden et al., 2003 | 4. Outcome not evaluated |
| Hasegawa et al., 2021 | 3. Inadequate aim |
| Hashimoto et al., 2019 | 1. No regression performed |
| Hemert et al., 2011 | 1. No regression performed |
| Hinarejos et al., 2016 | 1. No regression performed |
| Hirshmann et al., 2010 | 1. No regression performed |
| Hirshmann et al., 2013 | 1. No regression performed |
| Hitt et al., 2015 | 1. No regression performed |
| Hodges et al., 2018 | 5. Outcome not evaluated |
| Hodges et al., 2018 | 2. Duplicate publication |
| Hommel et al., 2017 | 1. No regression performed. |
| Hofstede et al., 2018 | 3. Inadequate study design |
| Hofstede et al., 2018 | 2. Duplicate publication |
| Hooper et al., 2012 | 1. No regression performed |
| Reference                        | Issues                                                                 |
|---------------------------------|----------------------------------------------------------------------|
| (Hylkema et al., 2019)          | 2. Duplicate                                                          |
| (Hourlier and Fennema, 2014)    | 1. No regression performed                                           |
| (Hovik et al., 2016)            | 1. No regression performed                                           |
| (Hughes et al., 2018)           | 2. Conference abstract                                               |
| (Haanstra et al., 2015)         | 3. Inadequate aim                                                    |
| (Ingleshwar et al., 2013)       | 2. Conference abstract                                               |
| (Jacobs et al., 2016a)          | 2. Conference abstract                                               |
| (Jacobs et al., 2016b)          | 2. Conference abstract                                               |
| (Jain et al., 2017)             | 7. Insufficient information**                                        |
| (Jamsen et al., 2015)           | 2. Conference abstract                                               |
| (Jarvenpaa et al., 2010a)       | 1. No regression performed                                           |
| (Jarvenpaa et al., 2010b)       | 2. Duplicate                                                          |
| (Jeffries et al., 2012)         | 3. Study design                                                       |
| (Jiang et al., 2017)            | 5. Not separate analysis for OA                                       |
| (Jolles et al., 2012)           | 5. Insufficient aim                                                   |
| (Jonbergen et al., 2011)        | 1. No regression performed                                           |
| (Jones et al., 2012a)           | 6. Insufficient follow-up time                                       |
| (Jones et al., 2003)            | 5. Not separate analysis for OA                                       |
| (Jones et al., 2012b)           | 2. Conference abstract                                               |
| (Judge et al., 2012)            | 7. Insufficient age of participant (<18 years)                        |
| (Judge et al., 2010)            | 2. Conference abstract                                               |
| (Julie et al., 2013)            | 2. Conference abstract                                               |
| (Kahlenberg et al., 2018)       | 1. No regression performed                                           |
| (Kang et al., 2010)             | 3. Inadequate study design                                           |
| (Katakam et al., 2021)          | 3. Inadequate study design                                           |
| (Katz et al., 2011)             | 2. Conference abstract                                               |
| (Keeney et al., 2017)           | 3. Inadequate aim                                                    |
| (Kelly et al., 2006)            | 3. Inadequate aim                                                    |
| (Kennedy et al., 2008)          | 3. Inadequate aim                                                    |
| (Khanna, 2016)                  | 2. Conference abstract                                               |
| (Kilicarslan et al., 2011)      | 1. No regression performed                                           |
| (Kim et al., 2015)              | 5. Not separate analysis for TKA                                      |
| (Kim et al., 2009)              | 1. No regression performed                                           |
| (Ko et al., 2010)               | 2. Conference abstract                                               |
| (Kornilov et al., 2018)         | 3. Inadequate aim                                                    |
| (Kurien et al., 2018)           | 3. Inadequate aim                                                    |
| (Kurien et al., 2018)           | 2. Duplicate publication                                             |
| (Lam et al., 2003)              | 1. No regression performed                                           |
| (Lamb and Frost, 2003)          | 1. No regression performed                                           |
| (Lampe et al., 2016)            | 5. Pooled data intervention & control                                |
| (Lange et al., 2016)            | 2. Conference abstract                                               |
| (Larsen et al., 2021)           | 5. Pooled data intervention & control                                |
| (Laskow et al., 2021)           | 5. Not separate analysis for OA                                      |
| (Lebleu et al., 2019)           | 5. Not separate analysis for TKA                                      |
| (Ledin et al., 2012)            | 1. No regression performed                                           |
| (Lee et al., 2015)              | 5. Not separate analysis for TKA                                      |
| (Leung et al., 2017)            | 2. Conference abstract                                               |
| (Leung et al., 2019)            | 5. Not separate analysis for TKA                                      |
| (Li et al., 2013)               | 2. Conference abstract                                               |
| (Liebs et al., 2011)            | 5. Not separate analysis for TKA                                      |
| (Lindberg et al., 2016)         | 1. No regression performed                                           |
| (Lindner et al., 2018)          | 2. Duplicate                                                          |
| (Lingard et al., 2004)          | 1. Unknown if regression is performed**                              |
| Reference                     | 1. No regression performed | 2. Conference abstract | 3. Inadequate aim | 4. Inadequate study design | 5. Pooled data, more knees than patients | 6. Insufficient follow-up time | 5. Not separate analysis for TKA | 5. Not separate results for OA population | 5. Not separate results for primary TKA | 1. No regression performed |
|-----------------------------|---------------------------|------------------------|-------------------|--------------------------|----------------------------------------|-------------------------------|-----------------------------------|---------------------------------------|-----------------------------------|-----------------------------------|
| (Liu et al., 2020)          |                           |                        |                   |                          |                                        |                               |                                   |                                        |                                   |                                   |
| (Lizaur-Utrilla et al., 2012) |                           |                        |                   |                          |                                        |                               |                                   |                                        |                                   |                                   |
| (Lungu et al., 2014)        |                           |                        |                   |                          |                                        |                               |                                   |                                        |                                   |                                   |
| (Lustig et al., 2012)       |                           |                        |                   |                          |                                        |                               |                                   |                                        |                                   |                                   |
| (Lützner et al., 2014)      |                           |                        |                   |                          |                                        |                               |                                   |                                        |                                   |                                   |
| (Macaulay et al., 2010)     |                           |                        |                   |                          |                                        |                               |                                   |                                        |                                   |                                   |
| (Maculé et al., 2005)       |                           |                        |                   |                          |                                        |                               |                                   |                                        |                                   |                                   |
| (Maffulli et al., 2011)     |                           |                        |                   |                          |                                        |                               |                                   |                                        |                                   |                                   |
| (Magaldi et al., 2019)      |                           |                        |                   |                          |                                        |                               |                                   |                                        |                                   |                                   |
| (Mahomed et al., 2002)      |                           |                        |                   |                          |                                        |                               |                                   |                                        |                                   |                                   |
| (Mahoney et al., 2012)      |                           |                        |                   |                          |                                        |                               |                                   |                                        |                                   |                                   |
| (Malviya et al., 2009)      |                           |                        |                   |                          |                                        |                               |                                   |                                        |                                   |                                   |
| (Martinez et al., 2007)     |                           |                        |                   |                          |                                        |                               |                                   |                                        |                                   |                                   |
| (Mat et al., 2016)          |                           |                        |                   |                          |                                        |                               |                                   |                                        |                                   |                                   |
| (Maus et al., 2017)         |                           |                        |                   |                          |                                        |                               |                                   |                                        |                                   |                                   |
| (Maxwell et al., 2013)      |                           |                        |                   |                          |                                        |                               |                                   |                                        |                                   |                                   |
| (Meessen et al., 2018)      |                           |                        |                   |                          |                                        |                               |                                   |                                        |                                   |                                   |
| (Mehta and Lotke, 2007)     |                           |                        |                   |                          |                                        |                               |                                   |                                        |                                   |                                   |
| (Mehta et al., 2014)        |                           |                        |                   |                          |                                        |                               |                                   |                                        |                                   |                                   |
| (Mehta et al., 2015)        |                           |                        |                   |                          |                                        |                               |                                   |                                        |                                   |                                   |
| (Meijerink et al., 2009)    |                           |                        |                   |                          |                                        |                               |                                   |                                        |                                   |                                   |
| (Mercurio et al., 2020)     |                           |                        |                   |                          |                                        |                               |                                   |                                        |                                   |                                   |
| (Metsna et al., 2014)       |                           |                        |                   |                          |                                        |                               |                                   |                                        |                                   |                                   |
| (Miozzari et al., 2013)     |                           |                        |                   |                          |                                        |                               |                                   |                                        |                                   |                                   |
| (Mittal et al., 2012)       |                           |                        |                   |                          |                                        |                               |                                   |                                        |                                   |                                   |
| (Mizner et al., 2005)       |                           |                        |                   |                          |                                        |                               |                                   |                                        |                                   |                                   |
| (Moghtadaei et al., 2020)   |                           |                        |                   |                          |                                        |                               |                                   |                                        |                                   |                                   |
| (Molt and Toksvig-Larsen, 2014) |                       |                        |                   |                          |                                        |                               |                                   |                                        |                                   |                                   |
| (Morze et al., 2013)        |                           |                        |                   |                          |                                        |                               |                                   |                                        |                                   |                                   |
| (Motwani et al., 2013)      |                           |                        |                   |                          |                                        |                               |                                   |                                        |                                   |                                   |
| (Nandi et al., 2016)        |                           |                        |                   |                          |                                        |                               |                                   |                                        |                                   |                                   |
| (Nankaku et al., 2018)      |                           |                        |                   |                          |                                        |                               |                                   |                                        |                                   |                                   |
| (Navarro Collado et al., 2000) |                       |                        |                   |                          |                                        |                               |                                   |                                        |                                   |                                   |
| (Naylor et al., 2008)       |                           |                        |                   |                          |                                        |                               |                                   |                                        |                                   |                                   |
| (Neogi et al., 2010)        |                           |                        |                   |                          |                                        |                               |                                   |                                        |                                   |                                   |
| (Neuburger et al., 2013)    |                           |                        |                   |                          |                                        |                               |                                   |                                        |                                   |                                   |
| (Neuprez et al., 2018)      |                           |                        |                   |                          |                                        |                               |                                   |                                        |                                   |                                   |
| (Neuprez et al., 2018)      |                           |                        |                   |                          |                                        |                               |                                   |                                        |                                   |                                   |
| (Nielsen et al., 2018)      |                           |                        |                   |                          |                                        |                               |                                   |                                        |                                   |                                   |
| (Nielsen et al., 2018)      |                           |                        |                   |                          |                                        |                               |                                   |                                        |                                   |                                   |
| (Niki et al., 2015)         |                           |                        |                   |                          |                                        |                               |                                   |                                        |                                   |                                   |
| (Noiseux et al., 2014)      |                           |                        |                   |                          |                                        |                               |                                   |                                        |                                   |                                   |
| (Nuñez et al., 2011)        |                           |                        |                   |                          |                                        |                               |                                   |                                        |                                   |                                   |
| (Nwankwo et al., 2021)      |                           |                        |                   |                          |                                        |                               |                                   |                                        |                                   |                                   |
| (Page et al., 2012)         |                           |                        |                   |                          |                                        |                               |                                   |                                        |                                   |                                   |
| (Page et al., 2014)         |                           |                        |                   |                          |                                        |                               |                                   |                                        |                                   |                                   |
| (Page et al., 2015)         |                           |                        |                   |                          |                                        |                               |                                   |                                        |                                   |                                   |
| (Pan et al., 2019)          |                           |                        |                   |                          |                                        |                               |                                   |                                        |                                   |                                   |
| Reference | Issue |
|-----------|-------|
| (Papakostidou et al., 2012) | 7. Insufficient data on analysis** |
| (Parsley et al., 2010) | 1. No regression performed |
| (Paxton et al., 2016) | 6. Insufficient follow-up time |
| (Pereira et al., 2016) | 5. Not separate results for TKA |
| (Perruccio et al., 2010a) | 5. Not separate results for TKA |
| (Perruccio et al., 2010b) | 2. Duplicate publication |
| (Perruccio et al., 2011a) | 1. No regression performed |
| (Perruccio et al., 2011b) | 2. Conference abstract |
| (Perruccio et al., 2019) | 4. Outcome not evaluated |
| (Petersen et al., 2015) | 3. Inadequate aim |
| (Petersen et al., 2017) | 3. Inadequate aim |
| (Petersen, 2018 #897) | 2. Duplicate publication |
| (Petersen et al., 2020) | 3. Inadequate aim |
| (Perruccio et al., 2010b) | 1. No regression performed |
| (Pinto et al., 2013) | 5. Not separate results for TKA |
| (Pinto et al., 2014) | 2. Conference abstract |
| (Polkowski et al., 2013) | 6. Insufficient follow-up time |
| (Pont et al., 2011) | 1. No regression performed |
| (Pua et al., 2012) | 2. Conference abstract |
| (Pua et al., 2017) | 4. Prognostic factor not evaluated |
| (Pua et al., 2013) | 4. Prognostic factor not evaluated |
| (Pua et al., 2015) | 1. No regression performed |
| (Yong-Hao et al., 2016) | 2. Same sample as in a later included study |
| (Quintana et al., 2006) | 5. Not separate results for TKA |
| (Radmer et al., 2006) | 5. Not separate results for OA |
| (Rajamaki et al., 2015) | 5. Not separate results for OA |
| (Rakel et al., 2013) | 2. Conference abstract |
| (Ramaesh et al., 2014) | 5. Not separate results for OA |
| (Razmjou et al., 2015) | 6. Insufficient follow-up time |
| (Reid et al., 2014) | 3. Inadequate aim |
| (Richards et al., 2016) | 2. Conference abstract |
| (Riddle et al., 2009) | 2. Conference abstract |
| (Riddle et al., 2015) | 1. No regression performed |
| (Riddle, 2018) | 5. Not separate results for TKA |
| (Riddle et al., 2020) | 5. Pooled results from RCT |
| (Rice et al., 2018) | 5. Not separate results for OA |
| (Rosen et al., 2013) | 3. Inadequate aim |
| (Russell et al., 2014) | 1. No regression performed |
| (Sakellariou et al., 2016) | 2. Conference abstract |
| (Salazar et al., 2013) | 2. Conference abstract |
| (Sanchez-Santos et al., 2014) | 2. Conference abstract |
| (Sanchez-Santos et al., 2018) | 5. Not separate results for OA |
| (Schaumburger et al., 2012) | 1. No regression performed |
| (Schwartz et al., 2012) | 4. Prognostic factor not evaluated |
| (Scott et al., 2010) | 4. Outcome not evaluated |
| (Scott et al., 2012) | 4. Outcome not evaluated |
| (Seol et al., 2016) | 3. Inadequate study design |
| (Sharma et al., 2021) | 7. Insufficient data on population** |
| (Shim et al., 2018) | 7. Age < 18 years |
| (Singh et al., 2015) | 3. Inadequate study design |
| (Siviero et al., 2020) | 5. Not separate results for TKA |
| (Slevin et al., 2017) | 1. No regression performed |
| (Smith et al., 2006) | 6. Insufficient follow-up time |
| Reference                                      | Reason(s)                                                                 |
|-----------------------------------------------|---------------------------------------------------------------------------|
| Smith et al., 2014                           | 5. Not separate results for TKA                                           |
| Smith et al., 2012                           | 1. No regression performed                                                |
| Smith et al., 2019                           | 6. Insufficient follow-up time                                             |
| Smith et al., 2019                           | 6. Insufficient follow-up time/duplicate                                    |
| Soni et al., 2014                            | 2. Conference abstract                                                    |
| Soni et al., 2016                            | 2. Conference abstract                                                    |
| Stickles et al., 2001                        | 1. No regression performed                                                |
| Stone et al., 2017                           | 3. Inadequate study design                                               |
| Stratford et al., 2010                       | 6. Insufficient follow-up time                                             |
| Street et al., 2018                          | 3. Inadequate study design                                               |
| Sveikata et al., 2017                        | 1. No regression performed                                                |
| Tabutin et al., 2005                         | 1. No regression performed                                                |
| Tan et al., 2014                             | 5. Pooled results, more knees than patients                                |
| Tchetina et al., 2020                        | 1. No regression performed                                                |
| Thomazeau et al., 2016                       | 5. Not separate results for TKA                                           |
| Tilbury et al., 2016                         | 6. Insufficient data                                                      |
| Tilbury et al., 2018                         | 2. Duplicate publication                                                 |
| Toguchi et al., 2020                         | 3. Inadequate study design                                               |
| Tolk et al., 2021                            | 1. No regression reported on outcome                                      |
| Trace, 2006                                  | 3. Inadequate study design                                               |
| Twiggs et al., 2019                          | 3. Inadequate aim                                                         |
| Utrillas-Compaired et al., 2014              | 5. Not separate results for OA                                            |
| Vaegter et al., 2017                         | 1. No regression reported                                                |
| van den Akker-Scheek et al., 2007            | 5. Not separate results for TKA                                           |
| Van Hamersveld et al., 2018                  | 4. Inadequate outcome                                                    |
| Van Hamersveld et al., 2018                  | 4. Inadequate outcome                                                    |
| Van Hamersveld et al., 2018                  | 2. Duplicate                                                             |
| van Loon et al., 2021                        | 6. Insufficient follow-up time                                             |
| Van Onsem et al., 2018                       | 4. Inadequate outcome                                                    |
| Vekama et al., 2015                          | 5. Not separate analysis for TKA                                          |
| Vela et al., 2017                            | 2. Conference abstract                                                   |
| Vila et al., 2020                            | 5. Not separate analysis for TKA                                          |
| Vina et al., 2014                            | 2. Conference abstract                                                   |
| Vina et al., 2016                            | 6. Insufficient follow-up time                                             |
| Vogel et al., 2019                           | 7. Insufficient data about eligibility                                    |
| Wada et al., 2016                            | 1. No regression reported                                                |
| Walker et al., 2015                          | 2. Conference abstract                                                   |
| Wenjun et al., 2017                          | 3. Wrong aim                                                             |
| Widmer et al., 2013                          | 5. Not separate analysis for TKA                                          |
| Williams et al., 2013                        | 5. Not separate analysis for TKA                                          |
| Winters et al., 2014                         | 3. Inadequate study design                                               |
| Wohlrab et al., 2005                         | 1. No regression reported                                                |
| Wollmerstedt et al., 2006                    | 5. Not separate analysis for TKA                                          |
| Woo et al., 2006                             | 6. Data from article was unavailable                                      |
| Wood et al., 2021                            | 5. Not separate analysis for TKA                                          |
| Wright et al., 2017                          | 5. Not separate analysis for TKA                                          |
| Wylde et al., 2013                           | 1. No regression performed for the outcome                               |
| Wylde et al., 2015                           | 5. Pooled results intervention & control                                  |
| Wylde et al., 2017                           | 2. Same sample as in prior included study                                 |
| Xu et al., 2020                              | 5. Not separate measure of function                                       |
| Yakovbov et al., 2018                        | 4. Inadequate outcome                                                    |
| Yap et al., 2021                             | 5. Not separate measure of function                                       |
| Yau et al., 2005                             | 5. Not separate results for OA                                            |
| (Young et al., 2017)  | 3. Inadequate aim |
|----------------------|-------------------|
| (Young-Shand et al., 2020) | 3. Inadequate aim |
| (Zeni and Snyder-Mackler, 2010) | 5. Pooled results intervention & control |

Abbreviations: OA; osteoarthritis, RA; rheumatoid arthritis, TKA; total knee arthroplasty. THA; total hip arthroplasty

*Reason for exclusion correspond with the PRISMA flow diagram

**Author did not respond to e-mail or gave insufficient information about the study

| No of studies | Reason for exclusion                  |
|---------------|--------------------------------------|
| 90            | 1. No regression performed            |
| 80            | 2. Conference abstract, duplicate publication or letter to editor |
| 54            | 3. Inadequate study design or aim     |
| 21            | 4. Predictor or outcome not evaluated |
| 94            | 5. TKA/OA/pooled results/total score  |
| 20            | 6. Insufficient follow-up time        |
| 12            | 7. Insufficient data or age>18 years  |

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