

Supplementary Table 1 Literature searches performed per database. All searches performed on January 24th, 2022.

EconLit/Ebsoc

#	Query	Results
S3	S1 AND S2	17
S2	AB (Cost*ADJ3(Analys* OR Comparison* OR Minimization* OR Measur* OR Benefit* OR Effect* OR efficien* OR Benefit Data OR Utilit*) OR Economic Evaluation* OR Marginal analysis* OR Cost and Benefit* OR Health Care Cost* OR Health Cost* OR Healthcare Cost* OR Medical Care Cost* OR Treatment Cost* OR QALY OR QUALY OR Adjusted Life* OR Healthy Years Equivalent* OR ICER OR Incremental cost effectiveness ratio OR Incremental costeffectiveness ratio OR Incremental costutility ratio OR ICUR ORIncremental Cost Utility Ratio OR Health care econom* OR healthcare econom* OR health care expenditure* OR healthcare expenditure* OR Affordabilit* OR Pricing OR pricer*) OR TI (Cost*ADJ3(Analys* OR Comparison* OR Minimization* OR Measur* OR Benefit* OR Effect* OR efficien* OR Benefit Data OR Utilit*) OR Economic Evaluation* OR Marginal analysis* OR Cost and Benefit* OR Health Care Cost* OR Health Cost* OR Healthcare Cost* OR Medical Care Cost* OR Treatment Cost* OR QALY OR QUALY OR Adjusted Life* OR Healthy Years Equivalent* OR ICER OR Incremental cost effectiveness ratio OR Incremental costeffectiveness ratio OR Incremental costutility ratio OR ICUR ORIncremental Cost Utility Ratio OR Health care econom* OR healthcare econom* OR health care expenditure* OR healthcare expenditure* OR Affordabilit* OR Pricing OR pricer*)	208,248
S1	AB (knee OR total knee* OR Knees OR kneearthroplast* OR tka OR knee joint* ADJ3 (arthroplasty* OR replac* OR reconstructi* OR prsthe* OR implant* OR alloplast* OR plasty OR plasties OR osteoarthritis* OR arthros* OR	92

osteoarthros*) OR gonarthros*) OR TI (knee OR total knee* OR Knees OR kneearthroplast* OR tka OR knee joint*
 ADJ3 (arthroplasty* OR replac* OR reconstructi* OR prsthe* OR implant* OR alloplast* OR plasty OR plasties OR
 osteoarthritis* OR arthros* OR osteoarthros*) OR gonarthros*)

MH - Mapped Heading, keyword

TI - words in title

AB - words in Abstract

ADJx - adjacency searching, words near to each other, x places apart

CINAHL search

#	Query	Results
S11	S4 AND S10	1,726
S10	S5 OR S6 OR S7 OR S8 OR S9	167,368
S9	TI (Cost*ADJ3 Analys* OR Comparison* OR Minimization* OR Measur* OR Benefit* OR Effect* OR efficien* OR Benefit Data OR Utilit*) OR Economic Evaluation* OR Marginal Analys* O)R Costs and Benefit* OR Benefits and Cost* OR Health Care Cost* OR Health Cost* OR Healthcare cost* OR Medical	69,567

Care Cost* OR Treatment Cost* OR QALY OR QUALY OR Adjusted Life* OR Healthy Years Equivalent*(OR ICER OR Incremental cost effectiveness ratio OR Incremental costeffectiveness ratio OR Incremental costutility Ratio OR ICUR OR Increment Cost Utility Ratio OR Health care econom* OR healthcare econom* OR health care expenditure* OR Healthcare expenditure* OR health expenditure* OR affordability* OR Pricing OR Price*) OR AB (Cost*ADJ3 Analys* OR Comparison* OR Minimization* OR Measur* OR Benefit* OR Effect* OR efficien* OR Benefit Data OR Utilit*) OR Economic Evaluation* OR Marginal Analys* O)R Costs and Benefit* OR Benefits and Cost* OR Health Care Cost* OR Health Cost* OR Healthcare cost* OR Medical Care Cost* OR Treatment Cost* OR QALY OR QUALY OR Adjusted Life* OR Healthy Years Equivalent*(OR ICER OR Incremental cost effectiveness ratio OR Incremental costeffectiveness ratio OR Incremental costutility Ratio OR ICUR OR Increment Cost Utility Ratio OR Health care econom* OR healthcare econom* OR health care expenditure* OR Healthcare expenditure* OR health expenditure* OR affordability* OR Pricing OR Price*)

S8	(MH "Quality-Adjusted Life Years")	5,071
S7	(MH "Health Care Costs+")	62,229
S6	(MH "Cost Benefit Analysis")	35.256
S5	(MH "Costs and Cost Analysis+")	124,774
S4	S1 OR S2 OR S3	70,853
S3	TI (knee OR total knee* OR knees OR kneearthroplast* OR tka OR knee joint* ADJ3 (arthroplasty* OR replac* OR reconstructi* OR prosthe* OR implant* OR alloplast* OR plasty OR plasties OR osteoarthritis	67,335

OR arthros* OR osteoarthros*) OR gonarthros*) OR AB (knee OR total knee* OR knees OR kneearthroplast* OR tka OR knee joint* ADJ3 (arthroplasty* OR replac* OR reconstructi* OR prosthe* OR implant* OR alloplast* OR plasty OR plasties OR osteoarthrit* OR arthros* OR osteoarthros*) OR gonarthros*)

S2	(MH "Osteoarthritis, Knee")	12,552
S1	(MH "Arthroplasty, Replacement, Knee+")	17,421

MH - Mapped Heading, keyword

TI - words in title

AB - words in Abstract

ADJx - adjacency searching, words near to each other, x places apart

EMBASE search

#	Query	Results
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S15	S12 AND S14	5,058
S14	S3 OR S4 OR S6 OR S7 OR S8 OR S9 OR S10 OR S13	619,476
S13	((((Cost* NEAR/3 (analys* OR Comparison* OR minimization* OR measur* OR benefit* OR effect* OR efficien* OR 'benefit data' OR Utilit*)):ab,ti) OR 'economic evaluation*':ab,ti OR 'marginal analys*':ab,ti OR costs:ab,ti OR 'medical care cost':ab,ti OR 'treatment cost*':ab,ti OR qaly:ab,ti OR qualy:ab,ti OR 'adjusted life*':ab,ti OR 'healthy years equivalent*':ab,ti OR icer:ab,ti OR 'incremental cost effectiveness ratio':ab,ti OR 'incremental costeffectiveness ratio':ab,ti OR 'incremental costutility ratio':ab,ti OR 'health care expenditure*':ab,ti OR 'healthcare expenditure*':ab,ti OR 'health expenditure*':ab,ti OR affordability*:ab,ti OR pricing:ab,ti OR price*:ab,ti	
S12	S1 OR S2 OR S11	213,879
S11	Knee:ab,ti OR knees:ab,ti OR kneearthroplast*:ab,ti OR tka:ab,ti OR (('knee joint*' NEAR/3 (arthroplasty* OR replac* OR reconstructi* OR prosth* OR implant* OR alloplast* OR plasty OR plasties OR osteoarthritis* OR arthros* OR osteoarthritis*)):ab,ti) OR gonarthros*:ab,ti	207,891
S10	'incremental cost effectiveness ratio' / exp	193
S9	'quality adjusted life year' / exp	28,649
S8	'program cost effectiveness' / exp	792
S7	'cost utility analysis' / exp	10,291
S6	'cost of illness' / exp	19,719
S5	'health care cost' / exp	303,490
S4	'cost effectiveness analysis' / exp	158,506

S3	'cost benefit analysis' /exp	86,638
S2	'knee replacement' /exp	34,689
S1	'knee arthroplasty' /exp	48,801

/exp - EMtree keywords with explosion

:ab,ti - words in title or abstract

NEAR/x - words near to each other, x places apart

Cochrane Search

#	Query	Results
S1	((Cost* ADJ3 (Analys* OR Comparison* OR Minimization* OR Measur* OR Benefit* OR Effect* OR efficien* OR Benefit Data OR Utilit*) OR Economic Evaluation* OR Marginal Analys* OR Costs and Benefit* OR Benefits and Cost* OR Health Care Cost* OR Health Cost* OR Healthcare Cost* OR Medical Care Cost* OR Treatment Cost* OR QALY OR QUALY OR Adjusted Life* OR Healthy Years Equivalent* OR ICER OR Incremental cost effectiveness ratio OR Incremental costeffectiveness ratio OR Incremental Costutility Ratio OR ICUR OR Incremental Cost Utility Ratio OR health care econom* OR healthcare econom* OR health care expenditure* OR healthcare expenditure* OR health expenditure* OR Affordabilit* OR Pricing OR price*)):ti,ab,kw (Word variations have been searched)	87,913
S2	(knee OR total knee* OR knees OR kneearthroplast* OR tka or knee joint* ADJ3 (arthroplast* OR replac* OR	31,541

	reconstructi* OR prosth* OR implant* OR alloplast* OR plasty OR plasties OR osteoarthritis* OR arthros* OR osteoarthritis*) OR gonarthros*):ti,ab,kw (Word variations have been searched)	
S3	S1 AND S2	1,818

Ti,ab,kw - words in title, abstract or keyword

Ovid MEDLINE Search

#	Query	Results
S11	S4 AND S10	2,142
S10	S5 OR S6 OR S7 OR S8 OR S9	328,110
S9	((((((Cost* adj3 (Analys* or Comparison* or Minimization* or Measur* or Benefit* or Effect* or efficien* or Benefit Data or Utilit*)) or Economic Evaluation* or Marginal Analys* or Costs) and Benefit*) or Benefits) and Cost*) or Health Care Cost* or Health Cost* or Healthcare Cost* or Medical Care Cost* or Treatment Cost* or QALY or QUALY or Adjusted Life* or Healthy Years Equivalent* or ICER or Incremental cost effectiveness ratio or Incremental costeffectiveness ratio or Incremental Costutility Ratio or ICUR or Incremental Cost Utility Ratio or health care econom* or healthcare econom* or health care expenditure* or healthcare expenditure* or health expenditure* or Affordabilit* or Pricing or price*).ab. or ((((((Cost* adj3 (Analys* or Comparison* or Minimization* or Measur* or Benefit* or Effect* or efficien* or Benefit Data or Utilit*)) or Economic Evaluation* or Marginal Analys* or Costs) and Benefit*) or Benefits) and Cost*) or	207,927

	Health Care Cost* or Health Cost* or Healthcare Cost* or Medical Care Cost* or Treatment Cost* or QALY or QUALY or Adjusted Life* or Healthy Years Equivalent* or ICER or Incremental cost effectiveness ratio or Incremental costeffectiveness ratio or Incremental Costutility Ratio or ICUR or Incremental Cost Utility Ratio or health care econom* or healthcare econom* or health care expenditure* or healthcare expenditure* or health expenditure* or Affordabilit* or Pricing or price*).ti	
S8	Exp quality-adjusted life years/	13,128
S7	Exp Health Care Costs/	41,112
S6	Exp Cost-Benefit Analysis/	84,106
S5	Exp "Costs and Cost Analysis" /	49,455
S4	S1 OR S2 OR S3	79,952
S3	((((knee or total knee* or knees or kneearthroplast* or tka or knee joint*) adj3 (arthroplast* or replac* or reconstructi* or prosthe* or implant* or alloplast* or plasty or plasties or osteoarthritis* or arthros* or osteoarthros*)) or gonarthros*).ab. or (((knee or total knee* or knees or kneearthroplast* or tka or knee joint*) adj3 (arthroplast* or replac* or reconstructi* or prosthe* or implant* or alloplast* or plasty or plasties or osteoarthritis* or arthros* or osteoarthros*)) or gonarthros*).ti.	67,238
S2	Exp Arthroplasty, Replacement, Knee/	25,779
S1	Exp Osteoarthritis, Knee/	21,500

Exp – Subject Heading with explosion

Ti – words in titles

Ab – words in abstract

Web of Science search

#	Query	Results
S3	S1 AND S2	5,693
S2	TOPIC: (Cost*NEAR/3 (Analys* OR Comparison* OR Minimization* OR Measur* OR Benefit* OR Effect* OR efficien* OR Benefit Data OR Utilit*) OR Economic Evaluation* OR Marginal Analys* OR Costs and Benefit* OR Benefits and Cost* OR Health Care Cost* OR Health Cost* OR Healthcare Cost* OR Medical Care Cost* OR Treatment Cost* OR QALY OR QUALY OR Adjusted Life* OR Healthy Years Equivalent* OR ICER OR Incremental cost effectiveness ratio OR Incremental costeffectiveness ratio OR Incremental Costutility Ratio OR ICUR OR Incremental Cost Utility Ratio OR health care econom* OR healthcare econom* OR health care expenditure* OR healthcare expenditure* OR health expenditure* OR Affordabilit* OR Pricing OR price*) Indexes=SCI-EXPANDED, SSCI, A&HCI, CPCI-S, CPCI-SSH, ESCI Timespan=All years	1,038,038
S1	TOPIC: (knee OR knees OR kneearthroplast* OR tka or knee joint* NEAR/3 (arthroplast* OR replac* OR reconstructi* OR prosthe* OR implant* OR alloplast* OR plasty OR plasties OR osteoarthritis* OR arthros* OR osteoarthros*) OR gonarthros*)	178,191

Indexes=SCI-EXPANDED, SSCI, A&HCI, CPCI-S, CPCI-SSH, ESCI Timespan=All years

TOPIC: words in title, abstract or keyword; NEAR/X - words near to each other, x places apar

Supplementary Table 2 Overview of patient demographic per study and study traits

Ref.	Country of study	Study design	Studied TKA types	Type of economic analysis	Amount of patients	Age of patients	Amount of female patients	BMI	Length of hospital stay
Attard et al. 2019	UK	RCT	PSI TKA vs. CI TKA vs. Single use inserts for TKA	Financial study	56	A: 70.6 ± 40 C: 70.1 ± 35 P: 71.1 ± 39	A: 48 C: 56.50 P: 38.89	A: 30.3 ± 21.92 C: 30.8 ± 15.2 P: 30.6 ± 17.52	PSI: 4.56 ± 7 CI: 5 ± 11
Barrack et al. 2012	USA	Retrospective	PSI TKA vs. CI TKA	Financial study	200	A: NA C: 65.6 P: 64.8	A: NA C: 57 P: 60	NA	PSI: NA CI: NA

Cotter et al. 2020	USA	Retrospective	CI TKA vs. other TKA	Financial study	132	A: NA C: NA P: NA	A: NA C: 55 P: NA	NA	PSI: NA CI: 1.6 ± 0.7
Dakin et al. 2011	UK	Retrospective RCT analysis	CI TKA	Cost- effectiveness analysis	2352	A: 71 ± 8.0 C: NA P: NA	A: 55 C: 55 P: NA	A: 30 ± 5.5 C: 30 ± 5.5 P: NA	PSI: NA CI: NA
Dakin et al. 2020	UK	Retrospective	CI TKA vs. Total hip arthroplasty	Cost- effectiveness analysis	NA	NA	NA	NA	PSI: NA CI: NA
DeHaan et al. 2014	USA	Retrospective	PSI TKA vs. CI	Financial study	258	A: 62.8 ± 10.3 C: 62.2 ± 9.6 P: 62.8 ± 10.9	A: 63.70 C: 37.80 P: 68.20	A: 32.2 ± 6.6 C 33.1 ± 6.6 P: 31.9	PSI: NA CI: NA

									± 6.6
Elmallah et al. 2016	USA	Prospective	CI TKA vs. Total hip arthroplasty	Cost- effectiveness analysis	844	A: 65 C: 65 P: NA	A: 57.70 C: 57.70 P: NA	A: 30.6 C: 30.6 P: NA	PSI: NA CI: NA
Goldberg et al. 2019	USA	Retrospective	CI TKA vs. other TKA	Financial decision model	NA	NA	NA	NA	PSI: NA CI: NA
Jenkins et al. 2013	UK	Prospective	CI TKA vs. Total hip arthroplasty	Cost- effectiveness analysis	323	A: 69.9 C: 69.9 P: NA	A: 59.40 C: 59.40 P: NA	NA	PSI: NA CI: NA
Konopka et al. 2018	USA	Retrospective	CI TKA vs. Total hip arthroplasty	Cost- effectiveness analysis	5398	A: 66.9 ± 9.5 C: 66.9 ± 9.5 P: NA	A: 61.20 C: 61.20 P: NA	A: 30.1± 6.1 C: 30.1 ± 6.1	PSI: NA CI: NA

								P:	
								NA	
Krummenauer et al. 2009	Germany	Prospective	CI TKA	Cost-effectiveness analysis	65	A: 66 C: 66 P: NA	A: 60 C: 60 P: NA	NA	PSI: NA CI: NA
Lionberger et al. 2014	USA	RCT	PSI TKA vs. CI TKA	Financial study	60	NA	NA	NA	PSI: NA CI: NA
Losina et al. 2009	USA	Retrospective population analysis	CI TKA	Cost-effectiveness analysis	NA	A: 74 C: NA P: NA	A: NA C: NA P: NA	NA	PSI: NA CI: NA
Moerenhout et al. 2021	Switzerland	Case controle, retrospective chart	PSI TKA vs. CI TKA	Financial study	100	A: NA C: 71.1 ± 9.2 P: 70.2 ± 9.5	A: NA C: 59 P: 55	A: NA C: 28.6 ± 3.3	PSI: NA CI: NA
Mont et al. 2012	USA	Prospective controlled	CI TKA vs. other TKA	Financial study	405	A: NA C: NA	A: NA C: NA	NA	PSI: NA CI: NA

		trial				P: NA	P: NA		
Navarro-Espirages et al. 2008	Spain	Prospective cohort	CI TKA vs. Total hip arthroplasty	Cost-effectiveness analysis	40	A: 71.7 ± 7.76 C: 71.7 ± 7.76 P: NA	A: 77.5 C: 77.5 P: NA	NA	PSI: NA CI: NA
Nunley et al. 2012	USA	Retrospective	PSI TKA vs. CI TKA	Financial study	114	A: NA C: 64.9 P: 64.6	A: 60 C: 60 P: 60	A: NA C: 33 P: 32	PSI: NA CI: NA
Peersman et al. 2014	Belgium	Retrospective	CI TKA vs. other TKA	Cost-effectiveness analysis	NA	NA	NA	NA	PSI: NA CI: NA
Räsänen et al. 2007	Finland	Prospective	CI TKA vs. Total hip arthroplasty	Cost-effectiveness analysis	103	A: 69 ± 11 C: 69 ± 11 P: NA	A: 75 C: 75 P: NA	NA	PSI: NA CI: NA
Rorabeck et al. 1996	Canada	Retrospective	CI TKA	Financial study	57	A: 71 C: 71	A: 66 C: 66	NA	PSI: NA CI: NA

Schilling et al. 2016	Australia	Retrospective	CI TKA	Cost- effectiveness analysis	488	P: NA A: 71 ± 8.5 C: 71 ± 8.5 P: NA	P: A: 66% C: 66% P: NA	A: 31.8± 5.8 C: 31.8± 5.8 P: NA	PSI: NA CI: NA
Siegel et al. 2015	USA	Retrospective	CI TKA vs. other TKA	Financial study	618	A: NA C: NA P: NA	A: NA C: NA P: NA	NA	PSI: NA CI: NA
Slover et al. 2006	USA	Theoretical cohort	CI TKA vs. other TKA	Cost- effectiveness analysis	NA	A: 78 C: NA P: NA	A: NA C: NA P: NA	NA	PSI: NA CI: NA
Slover et al. 2012	USA	Retrospective	PSI TKA vs. CI TKA	Financial decision model	NA	NA	NA	NA	PSI: NA CI: NA
Stan et al. 2015	Romania	Retrospective	CI TKA vs. other TKA	Cost- effectiveness	90	A: 65.4 C: 65.3	A: 70 C: NA	A: 24.7	PSI: NA CI: NA

				analysis		P: NA	P: NA	C: 24.7	
								P: NA	
Teeter et al. 2019	Canada	RCT	PSI TKA vs. CI TKA	Financial study	50	A: NA C: 69.4 ± 8.4 P: 69.0 ± 8.4	A: NA C: 72 P: 48	A: NA P 30.7 ± 5.5 P 30.3 ± 4.7	PSI: NA CI: NA
Thienpont et al. 2015	Belgium	Retrospective	PSI TKA vs. CI TKA	Financial study	81	A: NA C: 68.7 ± 11 P: 64.5 ± 10	A: NA C: 80 P: 73	A: NA C: 30.8 ± 7.8 P: 29.5 ± 5.4	PSI: 6.3 ± 1.8 CI: 6.5 ± 1.4

Thomas et al. 2020	USA	Retrospective	PSI TKA vs. CI TKA	Financial study	6716	A: 66 C: NA P: NA	A: NA C: 62.24 P: 61.49	NA	PSI: NA CI: NA
Tibesku et al. 2012	Germany	Retrospective	PSI TKA vs. CI TKA	Financial study	NA	NA	NA	NA	PSI: NA CI: NA
Waimann et al. 2014	USA	Prospective	CI TKA	Cost-effectiveness analysis	212	A: 65.1 ± 8.9 C: 65.1 ± 8.9 P: NA	A: 66 C: 66 P: NA	A: 33 ± 7 C: 33 ± 7 P: NA	PSI: NA CI: NA
Watters et al. 2009	USA	Retrospective	PSI TKA vs. CI TKA	Financial study	36	A: NA C: NA P: NA	A: NA C: NA P: NA	NA	PSI: NA CI: NA
Xie et al. 2009	Singapore	non-randomized prospective observational cohort	CI TKA vs. other TKA	Cost-effectiveness analysis	533	A: 65 C: 67 P: NA	A: 77.5 C: 80.4 P: NA	A: 27.7 C: 27.9 ± 4.3 P:	PSI: NA CI: 7.7 ± 3.8

NA

A - all patients

C - patients with CI TKA

P - patients with PSI TKA

Supplementary Table 3 Study traits and risk of bias

Study traits

Ref.	Country	Study design	Level of Evidence
Attard et al. 2019	UK	RCT	2
Barrack et al. 2012	USA	Retrospective	3
Cotter et al. 2020	USA	Retrospective	3
Dakin et al. 2011	UK	Retrospective RCT analysis	3
Dakin et al. 2020	UK	Retrospective	3
DeHaan et al. 2014	USA	Retrospective	3
Elmallah et al. 2016	USA	Prospective	3
Goldberg et al. 2019	USA	Retrospective	3
Jenkins et al. 2013	UK	Prospective	3
Konopka et al. 2018	USA	Retrospective	3
Krummenauer et al. 2009	Germany	Prospective	3
Lionberger et al. 2014	USA	RCT	2
Losina et al. 2009	USA	Retrospective population analysis	3
Moerenhout et al. 2021	Switzerland	Case control, retrospective chart	4
Mont et al. 2012	USA	Prospective controlled trial	3

Navarro-Espirages et al. 2008	Spain	Prospective cohort	3
Nunley et al. 2012	USA	Retrospective	3
Peersman et al. 2014	Belgium	Retrospective	3
Räsänen et al. 2007	Finland	Prospective	3
Rorabeck et al. 1996	Canada	Retrospective	3
Schilling et al. 2016	Australia	Retrospective	3
Siegel et al. 2015	USA	Retrospective	3
Slover et al. 2006	USA	Theoretical cohort	3
Slover et al. 2012	USA	Retrospective	3
Stan et al. 2015	Romania	Retrospective	3
Teeter et al. 2019	Canada	RCT	2
Thienpont et al. 2015	Belgium	Retrospective	3
Thomas et al. 2020	USA	Retrospective	3
Tibesku et al. 2012	Germany	Retrospective	3
Waimann et al. 2014	USA	Prospective	3
Watters et al. 2009	USA	Retrospective	3
Xie et al. 2009	Singapore	Non-randomized prospective observational cohort	3

Risk of bias summary of the randomized controlled trials

		Risk of bias domains					
		D1	D2	D3	D4	D5	Overall
Study	Attard et al. 2019						
	Lionberger et al. 2014						
	Teeter et al. 2019						

Domains:
D1: Bias arising from the randomization process.
D2: Bias due to deviations from intended intervention.
D3: Bias due to missing outcome data.
D4: Bias in measurement of the outcome.
D5: Bias in selection of the reported result.

Judgement
 Some concerns
 Low

Risk of bias summary of the non-randomised studies

		Risk of bias domains							
		D1	D2	D3	D4	D5	D6	D7	Overall
Study	Barrack et al. 2012	+	+	-	+	+	-	+	-
	Cotter et al. 2020	+	+	+	+	+	-	+	-
	DeHaan et al. 2014	+	+	+	+	+	-	+	-
	Moerenhout et al. 2021	+	-	+	+	+	-	+	-
	Mont et al. 2012	+	+	+	+	+	-	+	-
	Nunley et al. 2012	+	-	+	+	+	-	+	-
	Siegel et al. 2015	+	+	+	+	+	+	+	+
	Stan et al. 2015	+	+	+	+	+	X	+	X
	Thienpont et al. 2015	+	-	+	+	+	-	+	-
	Thomas et al. 2020	+	+	+	+	+	-	+	-
	Tibesku et al. 2012	+	?	+	+	+	?	+	-
	Watter et al. 2009	+	?	+	+	+	?	+	-
	Xie et al. 2009	+	+	+	+	+	-	+	-

Domains:
D1: Bias due to confounding.
D2: Bias due to selection of participants.
D3: Bias in classification of interventions.
D4: Bias due to deviations from intended interventions.
D5: Bias due to missing data.
D6: Bias in measurement of outcomes.
D7: Bias in selection of the reported result.

Judgement
 Serious
 Moderate
 Low
 No information

Supplementary Table 4 CHEC list per study

Ref.	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Tota l
Attard et al. 2019	1	1	1	1	1	0	1	1	1	1	1	0	0	0	0	1	1	1	0	13
Barrack et al. 2012	1	1	1	0	1	0	1	1	1	1	0	0	0	0	0	1	1	1	0	11
Cotter et al. 2020	1	1	1	0	1	1	1	1	1	1	1	1	0	0	0	1	1	1	0	14
Dakin et al. 2011	1	1	1	1	1	1	1	1	1	1	1	1	0	1	0	1	1	1	1	17
Dakin et al. 2020	1	1	1	0	1	1	1	1	1	1	1	1	0	1	1	1	1	1	0	16
DeHaan et al. 2014	1	1	1	0	1	0	1	1	1	1	1	0	0	0	0	1	0	1	0	11
Elmallah et al. 2016	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	1	1	1	0	16
Goldberg et al. 2019	0	1	1	0	1	0	1	1	1	1	1	0	0	1	1	1	1	1	0	13

Jenkins et al. 2013	1	1	1	1	1	1	1	1	0	1	1	1	0	0	0	1	1	0	1	14
Konopka et al. 2018	1	1	1	0	1	0	1	0	0	1	1	1	1	0	1	1	1	0	1	13
Krummenaue r et al. 2009	1	1	1	1	1	1	1	1	1	1	1	1	0	0	1	1	1	1	0	16
Lionberger et al. 2014	1	1	1	1	1	0	1	1	0	1	0	1	0	1	0	1	1	1	0	13
Losina et al. 2009	1	1	1	0	1	1	1	1	1	1	1	1	0	1	1	1	1	1	0	16
Moerenhout et al. 2021	1	1	1	1	1	0	1	1	1	1	1	0	0	0	0	1	1	1	0	13
Mont et al. 2012	1	1	1	1	1	0	1	1	1	1	1	0	0	0	0	1	0	1	0	12
Navarro- Espirages et al. 2008	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	0	0	16
Nunley et al. 2012	N A	N A	N A	N A	N A	N A	N A	N A	N A	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Peersman et	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	17

al. 2014																				
Räsänen et al.	1	1	1	1	1	0	1	1	1	1	1	1	0	0	0	1	1	1	0	14
2007																				
Rorabeck et al.	N	N	N	N	N	N	N	N	N	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1996	A	A	A	A	A	A	A	A	A											
Schilling et al.	1	1	1	0	1	0	1	1	1	1	1	1	0	0	1	1	1	1	1	15
2016																				
Siegel et al.	1	1	1	0	1	0	1	1	1	1	1	0	0	0	0	1	1	0	0	11
2015																				
Slover et al.	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	0	17
2006																				
Slover et al.	1	1	1	0	1	1	1	1	1	1	1	0	1	1	1	1	1	1	0	16
2012																				
Stan et al.	1	1	1	0	1	0	1	1	1	1	1	1	0	0	0	1	0	1	0	12
2015																				
Teeter et al.	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	1	0	1	0	13
2019																				
Thienpont et al.	1	1	1	0	1	0	1	1	1	1	1	0	0	0	0	1	1	1	0	12
2015																				
Thomas et al.	1	1	1	0	1	0	1	1	1	1	1	1	0	1	1	1	1	1	0	15

2020																				
Tibesku et al.	1	1	1	0	1	0	1	1	1	1	1	0	1	0	1	1	1	1	0	14
2012																				
Waimann et al. 2014	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	0	17
Watters et al. 2009	1	1	1	0	1	0	1	1	1	1	1	1	0	0	0	1	1	1	0	13
Xie et al. 2009	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	0	1	0	16

Supplementary Table 5_All reported costs results

All reported costs are given in articles according to index years. Adjusted costs are costs from these index years adjusted for inflation to 2018 USD.

OR times and associated cost, adjusted for inflation

Ref.	Index Year	OR time CI (min)	OR time PSI (min)	OR associated costs	OR associated costs CI TKA (ADJ)	OR associated costs PSI TKA (ADJ)
Attard et al. 2019	2006 UK Pound	63.10 ± 38.02	58.10 ± 23.04	NA	NA	NA
Barrack et al. 2012	2011 USD	NA	11 min savings	18.30 per minute	NA	226.54 savings
Cotter et al. 2020	2017 USD	141.3 + 22.1	NA	NA	NA	NA
DeHaan et al. 2014	2013 USD	107.2 ± 29.5	86.8 ± 16.9	First 30 minutes \$139 per minute, after that \$64 per minute	9883.40	8467.02
Lionberger et al. 2014	2009 USD	NA	141.67 ± 15.66	NA	NA	NA
Moerenhout et al.	2018 CHF	NA	148.2 ± 16.2	NA	NA	NA

2021						
Nunley et al. 2012	2010 USD	137.2 ± 33.6	125.1 ± 22.7	NA	NA	NA
Thienpont et al. 2015	2009 Euro	87 ± 10	89 ± 11	NA	NA	19.85 more than CI TKA
Thomas et al. 2020	2017 USD	NA	NA		NA	NA
Tibesku et al. 2012	2012 Euro	100	70	\$888 per hour	\$2182.32	\$1527.62
Watters et al. 2009	2009 USD	90 - Total OR cost \$2223.90	77 - Total OR cost \$2122.89		2583.88	2466.52

NA - not applicable
ADJ - adjusted for inflation

Tray sterilization and imaging costs, adjusted for inflation

Article + year	Index Year	Tray sterilization n costs CI	Tray sterilization n costs PSI	Tray sterilization n costs CI (ADJ)	Tray sterilization n costs PSI (ADJ)	Imagin g costs CI	Imagin g costs PSI	Imagin g costs CI (ADJ)	Imagin g costs PSI (ADJ)	Productio n costs PSI	Productio n costs PSI (ADJ)
Attard et	2006	424.12	327.73	641.24	495.5	NA	150	NA	226.79	250	377.98

al. 2019	UK						(CT)				
	Poun d										
Barrack et al. 2012	2011	NA	30.96	NA	34.65	NA	525	NA	590.62	950	1068.74
	USD		savings		savings						
Cotter et al. 2020	2017	1500	NA	1533.82	NA	142.73	NA	209.33	NA	NA	NA
	USD					± 55.13		±80.85			
DeHaan et al. 2014	2013	NA	240	NA	260.35	NA	430- 1360	NA	466.46	500	542.39
	USD		savings						- 1475.30		
Goldberg et al. 2019	2018	480	NA	480	NA	NA	NA	NA	NA	NA	NA
	USD										
Lionberger et al. 2014	2009	NA	NA	NA	NA	NA	12000	NA	13942.4	NA	NA
	USD										
Moerenho ut et al. 2021	2018	NA	380 ± 47	NA	323.41 ± 40	NA	NA	NA	NA	NA	NA
	CHF										
Rorabeck	1993	NA	NA	NA	NA	702.87	NA	901.48	NA	NA	NA

et al. 1996	CAD											
Siegel et al. 2015	2011 USD	375 per 5 trays	NA	421.87 per 5 trays	NA	NA	NA	NA	NA	NA	NA	NA
Slover et al. 2012	2007 USD	NA	NA	NA	NA	NA	1000	NA	1193.5	1000	1193.5	
Teeter et al. 2019	2018 CAD	NA	NA	NA	NA	NA	NA	NA	NA	1787.38	1431.59	
Thienpont et al. 2015	2009 Euro	10 TRAYS	5 TRAYS	NA	NA	NA	441.5	NA	649.26	NA	NA	NA
Tibesku et al. 2012	2012 Euro	240	80	353.89	117.96	198	280	291.96	412.87	700	1032.17	
Waimann et al. 2014	2007 USD	NA	NA	NA	NA	44 ± 40	NA	52.51 ± 47.74	NA	NA	NA	NA
Watters et al. 2009	2009 USD	349.08 for 6 trays	58.18 for 1 tray	405.58 for 6 trays	67.6 for 1 tray	NA	NA	NA	NA	925	1074.73	
Xie et al. 2009	2008 USD	NA	NA	NA	NA	51 ± 32	NA	59.71 ± 37.46	NA	NA	NA	NA

NA - not applicable
ADJ - adjusted for inflation

Total cost per QALY for CI TKA and PSI TKA, adjusted for inflation

Ref.	INDEX Year	Cost per QALY CI	Cost per QALY PSI	QALY CI (ADJ)	QALY PSI (ADJ)
Dakin et al. 2011	2007 UK Pound	<11000	NA	19400.59	NA
Dakin et al. 2020	2014 UK Pound	>20000	NA	30996.01	NA
Jenkins et al. 2013	2010 UK Pound	2101	NA	3492.1	NA
Krummenauer et al. 2009	2006 Euro	3064 (1613-5291)	NA	4874.18 (2565.94- 8416.87)	NA
Navarro-Espirages et al. 2008	2005 Euro	1275.84	NA	2293.4	NA
Räsänen et al. 2007	2002 Euro	13995	NA	20674.39	NA
Slover et al. 2012	2007 USD	2900	4700	3461.15	5609.45
Stan et al. 2015	2011 Leu	1975 (720-2160)	NA	1376.02 (501.64- 1504.92)	NA

NA - not applicable

ADJ - adjusted for inflation

QALY gain per year and ICER, adjusted for inflation

Ref.	Index year	Health-related quality of life utility scores		ICER	ICER (ADJ)	QALY gain per year
Elmallah et al. 2016	2016 USD	SF-6D		43107/QALY	44916.99/QALY	0.768 / 1 yrs
Konopka et al. 2018	2011 USD	EQ-5D		NA		0.17/1yrs 2.93 ± 1.75-5.59 /
Krummenauer et al. 2009	2006 Euro	EQ-5D	NA			0.25 yrs
Losina et al. 2009	2006 USD	SF-36		18300/QALY	22427.89/QALY	7.957 yrs / QALY
Peersman et al. 2014	2014 Euro	Markov		14733/QALY	20090.25/QALY	NA 0.359 ± 0.744 / 1
Räsänen et al. 2007	2002 Euro	15D HRQoL	NA			yrs 0.77 (CI: 0.70-0.83)
Schilling et al. 2016	2007 AUD	SF-12	NA			/ 7 yrs 2.6 (CI 1.4-6.14) /
Stan et al. 2015	2011 Ieu	EQ-5D	NA			1yrs
Xie et al. 2009	2008 USD	SF-36		65245/QALY	76384.09/QALY	NA

NA - not applicable

ADJ - adjusted for inflation

Total cost for CI TKA and PSI TKA, adjusted for inflation

Ref.	Index YEAR	Total cost CI (PP)	Total cost PSI (PP)	Total cost CI in USD (PP)(ADJ)	Total cost PSI in USD (PP)(ADJ)
Cotter et al. 2020	2017 USD	15586.20 ± 3255.06	NA	15937.64±3328.45	NA
Dakin et al. 2011	2007 UK Pound	7458 ± 4058	NA	13153.6 ± 7157.05	NA
Elmallah et al. 2016	2016 USD	17667	NA	18408.81	NA
Goldberg et al. 2019	2018 USD	1391 (IQR: 1128-1687)	NA	1391 (IQR: 1128-1687)	NA
Jenkins et al. 2013	2010 UK Pound	7313	NA	12155.02	NA
Lionberger et al. 2014	2009 USD	NA	10881	NA	12642.27
Mont et al. 2012	2007 USD	NA	NA	NA	NA
Navarro-Espirages et al. 2008	2005 Euro	6865.52 (6426.60- 7309,43)	NA	12341.22 (3784.73-4304.64)	NA
Rorabeck et al. 1996	1993 CAD	4391.14	NA	5631.95	NA
Schilling et al. 2016	2007 AUD	21530	NA	18947.02	NA
Slover et al. 2006	2005 USD	13300	NA	16793.23	NA
Teeter et al. 2019	2018 CAD	11657.75 ± 6800.54	16670.8 ± 13463.19	9337.17 ± 5446.83	13352.33 ± 10783.22
Thomas et al. 2020	2017 USD	16018 (15826-	14910 (14735-	16379.17 (16182.84-	15246.19 (15067.24-

		16212) =	15087) =	16577.55) = ±5834.79	15427.18) =±5320.84
		±5706.129	±5203.516		
Tibesku et al. 2012	2012 Euro	5546	5605	8177.77	8264.76
Waimann et al. 2014	2007 USD	24435	NA	29163.16	NA
Watters et al. 2009	2009 USD	2572.98	3106.07	2989.46	3608.84
Xie et al. 2009	2008 USD	8513 ± 8370-	NA	9966.4 ± 9798.99-10138.50	NA
		8660)			

NA - not applicable

ADJ - adjusted for inflation