

**The following content was supplied by the authors as supporting material and has not been copy-edited or verified by JBJS.**

### **Appendix 1: Search Strategy**

#### **Databases to be searched:**

1. Web of Science
2. Medline
3. Embase
4. Cochrane Central Register of Controlled Trials

#### **Search Strategy:**

1. Hip
2. Femoral neck
3. Proximal femur
4. Proximal femoral
5. 1 or 2 or 3 or 4
6. Fracture
7. 5 AND 6
8. Hip
9. Joint prosthesis
10. Prostheses
11. Implant
12. 9 OR 10 OR 11
13. 8 AND 12
14. Hip arthroplasty
15. Hemiarthroplast\*
16. Hemi-arthroplast\*
17. Bipolar
18. Unipolar
19. 13 OR 14 OR 15 OR 16 OR 17 OR 18
20. Random\*
21. Clinical trial\*
22. 20 OR 21
23. 7 AND 19 AND 22
24. Limit 10 to: Humans, English

Appendix 2 - Overall Risk of Bias Across Studies

Study	Was the allocation sequence adequately generated?	Was the allocation adequately concealed?	Blinding: was knowledge of the allocated interventions adequately prevented?	Was loss to follow-up infrequent?	Are reports of the study free of selective outcome reporting?	Was the study apparently free of other problems that could put it at risk of bias?
Baker	Y	PY	N	Y	Omit	Y
Blomfeldt	Y	PY	N	Y	Omit	Y
Cadossi	Y	PY	N	PN	Omit	Y
Chammout	Y	PY	Y	Y	Omit	Y
Deer	N	N	N	Omit	Omit	Y
HEALTH Investigators	Y	Y	Y	PY	Y	Y
Iorio	N	PN	N	PN	Omit	PN
Keating	PY	Y	PN	N	Omit	Y
Macaulay	Y	PY	N	N	Omit	Y
Mouzopoulos	N	N	PN	PN	Omit	Y
Parker	PY	Y	PN	Y	Omit	Y
Rien	PN	PN	PN	Y	Omit	Y
Sharma	PY	PN	N	Y	Omit	PY
Skinner	N	N	N	PY	Omit	PN
Sonaje	PY	PY	N	Y	Omit	PN
van den Bekerom	Y	Y	N	Y	Omit	Y

**Appendix 3 – Risk of Bias for Studies Reporting Revision Rates**

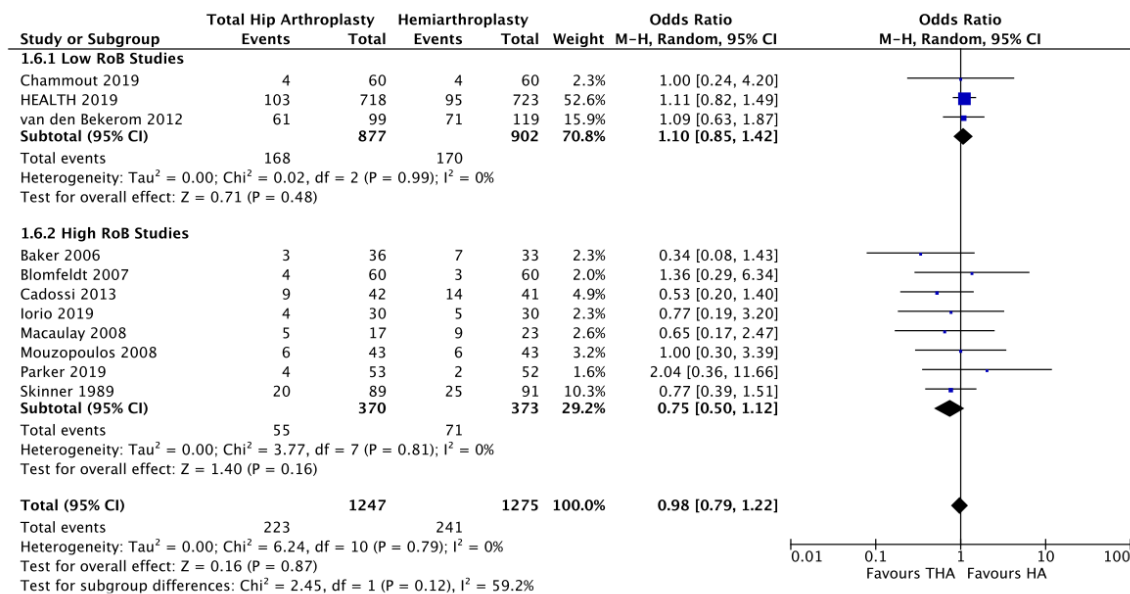
Study	Was the allocation sequence adequately generated?	Was the allocation adequately concealed?	Blinding: was knowledge of the allocated interventions adequately prevented?	Was loss to follow-up infrequent?	Are reports of the study free of selective outcome reporting?	Was the study apparently free of other problems that could put it at risk of bias?
Baker	Y	Y	Y	Y	Omit	Y
Cadossi	Y	Y	Y	N	Omit	Y
Chammout	Y	Y	Y	Y	Omit	Y
Dorr	N	N	Y	Omit	Omit	Y
HEALTH Investigators	Y	Y	Y	Y	Y	Y
Iorio	N	N	Y	N	Omit	N
Keating	Y	Y	Y	N	Omit	Y
Macaulay	Y	Y	Y	N	Omit	Y
Mouzopoulos	N	N	Y	N	Omit	Y
Parker	Y	Y	Y	Y	Omit	Y
Skinner	N	N	Y	Y	Omit	N
Sonaje	Y	Y	Y	Y	Omit	N
van den Bekerom	Y	Y	Y	Y	Omit	Y

**Appendix 4 – Risk of Bias for Studies Reporting Functional Outcomes**

Study	Was the allocation sequence adequately generated?	Was the allocation adequately concealed?	Blinding: was knowledge of the allocated interventions adequately prevented?	Was loss to follow-up infrequent?	Are reports of the study free of selective outcome reporting?	Was the study apparently free of other problems that could put it at risk of bias?
Blomfeldt	Y	Y	Y	Y	Omit	Y
Chammout	Y	Y	Y	Y	Omit	Y
HEALTH Investigators	Y	Y	Y	Y	Y	Y
Keating	Y	Y	N	N	Omit	Y
Macaulay	Y	Y	N	N	Omit	Y
Mouzopoulos	N	N	N	N	Omit	Y
Sonaje	Y	Y	N	Y	Omit	N

**Appendix 5 – Risk of Bias for Studies Reporting Health-Related Quality of Life**

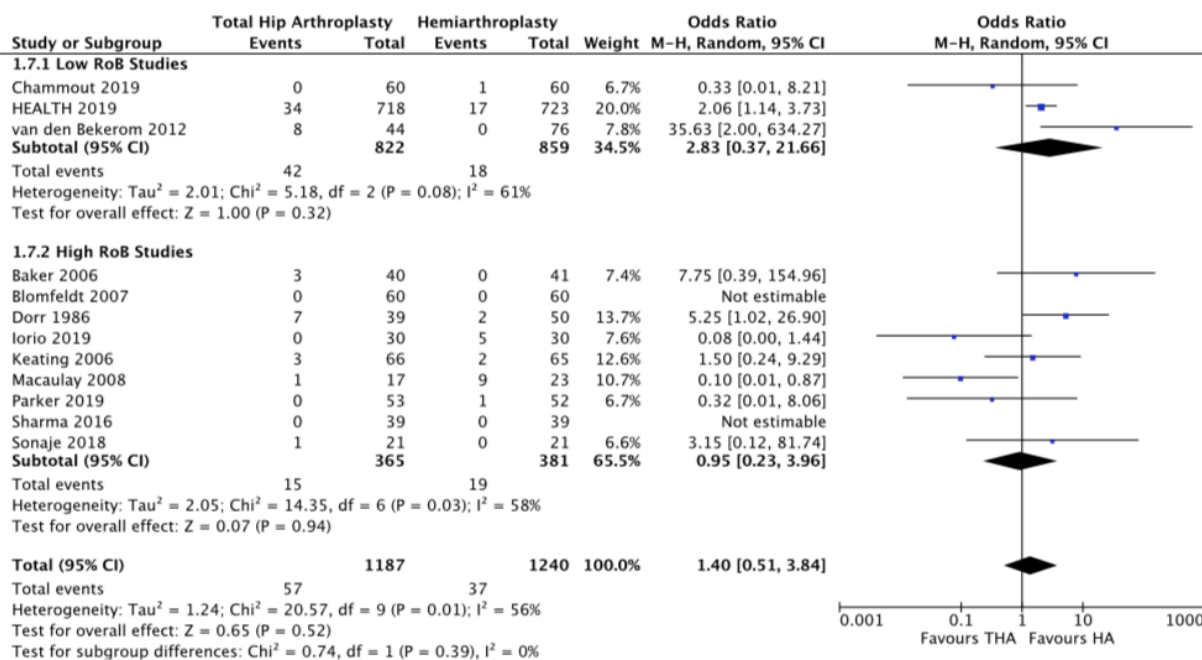
Study	Was the allocation sequence adequately generated?	Was the allocation adequately concealed?	Blinding: was knowledge of the allocated interventions adequately prevented?	Was loss to follow-up infrequent?	Are reports of the study free of selective outcome reporting?	Was the study apparently free of other problems that could put it at risk of bias?
Blomfeldt	Y	Y	Y	Y	Omit	Y
Chammout	Y	Y	Y	Y	Omit	Y
HEALTH Investigators	Y	Y	Y	Y	Y	Y
Keating	Y	Y	N	N	Omit	Y
Macaulay	Y	Y	N	N	Omit	Y
Mouzopoulos	N	N	N	N	Omit	Y

**Appendix 6 - Forest plot of mortality**

RoB: Risk of Bias, CI: Confidence Interval, THA: Total Hip Arthroplasty, HA: Hemiarthroplasty

**Appendix 7 – Risk of Bias for Studies Reporting Mortality**

Study	Was the allocation sequence adequately generated?	Was the allocation adequately concealed?	Blinding: was knowledge of the allocated interventions adequately prevented?	Was loss to follow-up infrequent?	Are reports of the study free of selective outcome reporting?	Was the study apparently free of other problems that could put it at risk of bias?
Baker	Y	Y	Y	Y	Omit	Y
Blomfeldt	Y	Y	Y	Y	Omit	Y
Cadossi	Y	Y	Y	N	Omit	Y
Chammout	Y	Y	Y	Y	Omit	Y
HEALTH Investigators	Y	Y	Y	Y	Y	Y
Iorio	N	N	Y	N	Omit	N
Macaulay	Y	Y	Y	N	Omit	Y
Mouzopoulos	N	N	Y	N	Omit	Y
Parker	Y	Y	Y	Y	Omit	Y
Skinner	N	N	Y	Y	Omit	N
van den Bekerom	Y	Y	Y	Y	Omit	Y

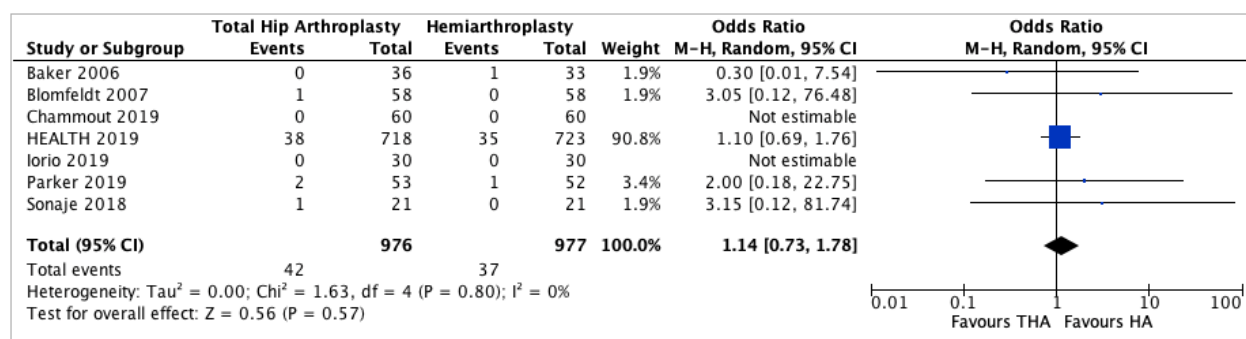
**Appendix 8 – Forest plot of dislocation**

RoB: Risk of Bias; CI: Confidence Interval; THA: Total Hip Arthroplasty; HA: Hemiarthroplasty



**Appendix 9 – Risk of Bias for Studies Reporting Dislocation Rates**

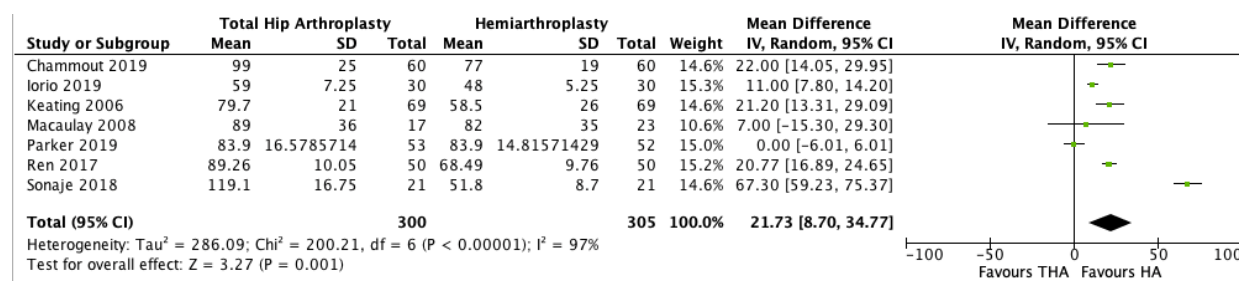
Study	Was the allocation sequence adequately generated?	Was the allocation adequately concealed?	Blinding: was knowledge of the allocated interventions adequately prevented?	Was loss to follow-up infrequent?	Are reports of the study free of selective outcome reporting?	Was the study apparently free of other problems that could put it at risk of bias?
Baker	Y	Y	Y	Y	Omit	Y
Blomfeldt	Y	Y	Y	Y	Omit	Y
Chammout	Y	Y	Y	Y	Omit	Y
Dorr	N	N	Y	Omit	Omit	Y
HEALTH Investigators	Y	Y	Y	Y	Y	Y
Iorio	N	N	Y	N	Omit	N
Keating	Y	Y	Y	N	Omit	Y
Macaulay	Y	Y	Y	N	Omit	Y
Parker	Y	Y	Y	Y	Omit	Y
Sharma	Y	N	Y	Y	Omit	Y
Sonaje	Y	Y	Y	Y	Omit	N
van den Bekerom	Y	Y	Y	Y	Omit	Y

**Appendix 10 – Forest plot of Periprosthetic Fracture**

CI: Confidence Interval; THA: Total Hip Arthroplasty; HA: Hemiarthroplasty

## Appendix 11 - Risk of Bias for Studies Reporting Periprosthetic Fracture

Study	Was the allocation sequence adequately generated?	Was the allocation adequately concealed?	Blinding: was knowledge of the allocated interventions adequately prevented?	Was loss to follow-up infrequent?	Are reports of the study free of selective outcome reporting?	Was the study apparently free of other problems that could put it at risk of bias?
Baker	Y	Y	Y	Y	Omit	Y
Blomfeldt	Y	Y	Y	Y	Omit	Y
Chammout	Y	Y	Y	Y	Omit	Y
HEALTH Investigators	Y	Y	Y	Y	Y	Y
Iorio	N	N	Y	N	Omit	N
Parker	Y	Y	Y	Y	Omit	Y
Sonaje	Y	Y	Y	Y	Omit	N



## Appendix 12 – Forest plot of operative time

CI: Confidence Interval; THA: Total Hip Arthroplasty; HA: Hemiarthroplasty

**Appendix 13** – Risk of Bias for Studies Reporting Operative Time

Study	Was the allocation sequence adequately generated?	Was the allocation adequately concealed?	Blinding: was knowledge of the allocated interventions adequately prevented?	Was loss to follow-up infrequent?	Are reports of the study free of selective outcome reporting?	Was the study apparently free of other problems that could put it at risk of bias?
Blomfeldt	Y	Y	N	Y	Omit	Y
Chammout	Y	Y	Y	Y	Omit	Y
Iorio	N	N	N	N	Omit	N
Keating	Y	Y	N	N	Omit	Y
Macaulay	Y	Y	N	N	Omit	Y
Parker	Y	Y	N	Y	Omit	Y
Ren	N	N	N	N	Omit	Y
Sonaje	Y	Y	N	Y	Omit	N