http://dx.doi.org/10.2106/JBJS.RVW.17.00032

Appendix

Table E1: Search Strategy, MEDLINE/PubMed

1. "Hallux" [Mesh]
2. "Hallux Rigidus" [Mesh]
3. "Hallux Limitus" [Mesh]
4. Hallux Rigidus
5. Hallux Limitus
6. First metatarsophalangeal joint
7. Metatarsophalangeal
8. 1 or 2 or 3 or 4 or 5 or 6 or 7
9. "Osteoarthritis" [Mesh]
10. Osteoarthritis
11. Arthrosis
12. 9 or 10 or 11
13. "Arthroplasty Replacement" [Mesh]
14. Total joint prosthesis
15. Total joint replacement
16. Total joint arthroplasty
17. Joint implant
18. 13 or 14 or 15 or 16 or 17
19. "Arthrodesis" [Mesh]
20. Arthrodesis
21. Joint fusion
22. 19 or 20 or 21
23. 8 and 12 and 18

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Table E2: Data-Extraction Form

Study Characteristics												
Author (*yr*)	Study Design	Level of Evidence	Indication	Operation	Type of Prosthesis	Type of Arthrodesis	Number of Patients (M/F)	Number of Feet (L/R)	Age (*yr*)	Duration of Follow-up (*mo*)	Complications	Revisions	Specific Information

Primary Outcomes				
Author (Intervention)	AOFAS-HMI*	VAS Pain	FFI Score	SF-36
	Preoperative:	Preoperative:	Preoperative:	Preoperative:
	Postoperative:	Postoperative:	Postoperative:	Postoperative:
	Δ:	Δ:	Δ:	Δ:
	Preoperative:	Preoperative:	Preoperative:	Preoperative:
	Postoperative:	Postoperative:	Postoperative:	Postoperative:
	Δ:	Δ:	Δ:	Δ:

*Expressed as the mean, standard deviation, and range.

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Table E3: Risk-of-Bias Tool for Cohort Studies and Case Series, Adapted from Rangel et al.[20]

	Criterion 1	Criterion 2	Criterion 3	Criterion 4	Criterion 5	Criterion 6	Criterion 7	Criterion 8
External validity (2 yes = low risk, <2 yes = high risk)	Number of participating centers described? (Yes/No)	Number of participating surgeons described? (Yes/No)	—	—	—	—	—	—
Selection bias (≥4 yes = low risk, <4 yes = high risk; for comparative studies, ≥6 yes = low risk, <6 yes = high risk)	Was the patient population from which cases were selected adequately described? (Yes/No)	Diagnostic criteria used to identify cases clearly described? (Yes/No)	Inclusion and/or inclusion criteria clearly described? (Yes/No)	Numbers and reasons for non-attenders given? (Yes/No)	Age mean and range given for the participants? (Yes/No)	Outcome variables presented with appropriate statistical ranges (standard deviation, standard error of mean)? (Yes/No)	Patient demographics between both groups comparable?* (Yes/No)	Authors describe how patients were chosen into treatment group?† (Yes/No)
Performance bias (≥2 yes = low risk, <2 yes = high risk; for comparative studies, ≥3 yes = low risk, <3 yes = high risk)	Is the surgical technique adequately described? (Yes/No)	Is there any mention of an attempt to standardize operative technique? (Yes/No)	Is there any mention of an attempt to standardize perioperative care? (Yes/No)	Were patients in each group treated along similar timelines? (Yes/No/Unclear)†	—	—	—	—
Detection bias (2 yes = low risk, <2 yes = high risk)	Standardized assessment tools for assessing primary outcomes were used? (Yes/No)	Outcome assessors were blinded for type of intervention (if possible) or other persons than the treating surgeons? (Yes/No)	—	—	—	—	—	—
Attrition bias (≥2 yes = low risk, <2 yes = high risk; for retrospective studies, 1 yes = low risk, 0 yes = high risk)	Are drop-out rates/numbers of non-included participants stated? (Yes/No)	Missing data adequately addressed? (Yes/No/Not applicable)‡	Analysis by intention to treat? (Yes/No/ Not applicable)‡	—	—	—	—	—
Reporting bias (1 yes = low risk, 0 yes = high risk)	All outcomes and comparisons described in Methods section reported and discussed (Yes/No)	—	—	—	—	—	—	—

*Only applicable for comparative studies. †Only applicable for comparative studies. ‡Not applicable for retrospective studies.

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Figure E1: Overview of Total Joint Implants and Arthrodesis Constructs

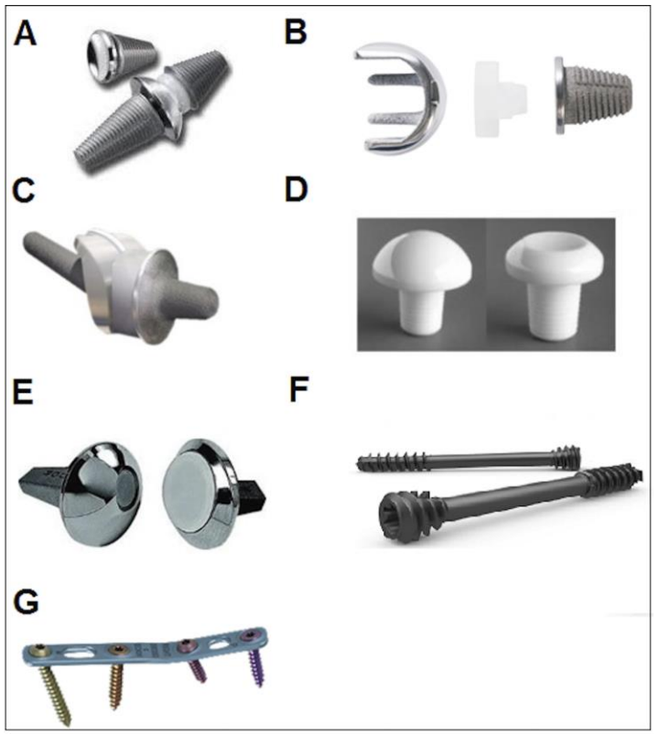

Fig. E1

Overview of total joint implants and arthrodesis constructs. A = TOEFIT-PLUS (Smith & Nephew), B = METIS (Integra Life Sciences), C = Roto-Glide (Implants International), D = MOJE ceramic press-fit (Moje Keramik-Implantate), E = Bio-Action (MicroAire Surgical Instruments), F = Fixos 2 compression screws (Stryker), G = HALLU-Lock MTP arthrodesis system (Integra Life Sciences).