

1. **Appendix D: Corrected Covered Area of Meta-analyses addressed THA**
 - a. **Overlap THA:**
 - b. 55 primary studies (including double counting)- 36 (number of index publications)/ 5 (number of systematic reviews) X 36 (number of index publications) -36 (number of index publications) = $19/144=0.132$
 - c. **Index publications:**
2. B.C. Najarian, J.E. Kilgore, D.C. Markel, Evaluation of component positioning in primary total hip arthroplasty using an imageless navigation device compared with traditional methods, *J. Arthroplast.* 24 (1) (2009).
3. BargarW, Bauer A, BornerM(1998) Primary and revision total hip replacement using the ROBODOC system. *Clin Orthop Relat Res* 354:82–91.
<https://doi.org/10.1097/00003086-199809000-00011>
4. Bukowski B, Anderson P, Khlopas A, Chughtai M, Mont M, Illgen R (2016) Improved functional outcomes with robotic compared with manual total hip arthroplasty. *Surg Technol Int* 29:303–308
5. D. Mainard, Navigated and nonnavigated total hip arthroplasty: results of two consecutive series using a cementless straight hip stem, *Orthopedics* 31 (10 Suppl. 1) (2008).
6. Domb BG, El Bitar YF, Sadik AY, et al. Comparison of robotic-assisted and conventional acetabular cup placement in THA: a matched-pair controlled study. *Clin Orthop Relat Res* 2014;472:329–36.
7. Domb BG, Redmond JM, Louis SS, et al. Accuracy of component positioning in 1980 total hip arthroplasties: a comparative analysis by surgical technique and mode of guidance. *J Arthroplasty* 2015;30:2208–18.

8. E. Sendtner, et al., Accuracy of acetabular cup placement in computer-assisted, minimally-invasive THR in a lateral decubitus position, *International Orthopaedics* 35 (6) (2011) 809e815.
9. F. Lin, et al., Limitations of imageless computer-assisted navigation for total hip arthroplasty, *Journal of Arthroplasty* 26 (4) (2011) 596e605.
10. H.M. Gurgel, A.T. Croci, H.A. Cabrita, J.R. Vicente, M.C. Leonhardt, J.C. Rodrigues, Acetabular component positioning in total hip arthroplasty with and without a computer-assisted system_ a prospective, randomized and controlled study, *J. Arthroplast.* 29 (2014) 167e171. [
11. Haaker RGA, Tiedjen K, Otersbach A, et al. Comparison of conventional versus computer-navigated acetabular component insertion. *J Arthroplasty* 2007;22:151.
12. Hananouchi T, Sugano N, Nishii T, Nakamura N, Miki H, Kakimoto A, Yamamura M, Yoshikawa H (2007) Effect of robotic milling on periprosthetic bone remodeling. *J Orthop Res* 25(8): 1062–1069. <https://doi.org/10.1002/jor.20376>
13. Honl M, Dierk O, Gauck C, Carrero V, Lampe F, Dries S, Quante M, Schwieger K, Hille E, Morlock M (2003) Comparison of robotic-assisted and manual implantation of a primary total hip replacement: A prospective study. *J Bone Joint Surg Am* 85-A(8): 1470–1478. <https://doi.org/10.2106/00004623-200308000-00007>
14. Kalteis T, Handel M, Bathis H, Perlick L, Tingart M, Grifka J. Imageless navigation for insertion of the acetabular component in total hip arthroplasty: is it as accurate as CT-based navigation? *J Bone Joint Surg (Br)* 2006a; 88: 163-7.
15. Kalteis T, Handel M, Herold T, Perlick L, Baethis H, Grifka J. Greater accuracy in positioning of the acetabular cup by using an image-free navigation system. *Eur J Radiol.* 2005;29(5):272–6. doi: <https://doi.org/10.1007/s00264-005-0671-5>.

16. Lass R, Kubista B, Olischar B, Frantal S, Windhager R, Giurea A. Total hip arthroplasty using imageless computer-assisted hip navigation: A prospective randomized study. *J Arthroplasty*. 2014;29(4):786-791. <https://doi.org/10.1016/j.arth.2013.08.020>
17. Lazovic D, Kaib N. Results with navigated bicontact total hip arthroplasty. *Orthopaedics* 2005;28:1227. 36. Murphy SB, Ecker TM, Tannast M. THA performed using conventional and navigated tissue-preserving techniques. *Clin Orthop Rel Res* 2006;453:160.
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19. Lim S, Ko K, Park C, Moon Y, Park Y (2015) Robot-assisted primary cementless total hip arthroplasty with a short femoral stem: A prospective randomized short-term outcome study. *Comput Aided Surg* 20(1):41–46. <https://doi.org/10.3109/10929088.2015.1076044>
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21. M. Honl, et al., Comparison of robotic-assisted and manual implantation of a primary total hip replacement. A prospective study, *Journal of Bone and Joint Surgery American* Volume 85-A (8) (2003) 1470e1478
22. N. Confalonieri, et al., Leg length discrepancy, dislocation rate, and offset in total hip replacement using a short modular stem: navigation vs conventional freehand, *Orthopedics* 31 (10 Suppl. 1) (2008).
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29. Sendtner E, Schuster T, Worner M, Kalteis T, Grifka J, Renkawitz T. Accuracy of acetabular cup placement in computer-assisted, minimally-invasive THR in a lateral decubitus position. *Int Orthop.* 2011;35(6):809-815. <https://doi.org/10.1007/s00264-010-1042-4>
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