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Mako Total Hip key clinical studies

	Title	Journal	Year	Author(s)	Institution(s)	Conclusion
Accuracy	Accuracy of component positioning in 1980 total hip arthroplasties: a comparative analysis by surgical technique and mode of guidance	The Journal of Arthroplasty	2018	Domb B, Redmond J, Louis S, Alden K, Daley R, LaReau J, Petrakos A, Gui C, Suarez-Ahedo C	American Hip Institute	Robotic-guided surgery was more accurate to plan than other techniques and modes of guidance in placing the acetabular component within the Lewinnek and Callanan safe zones.
Accuracy	Variance in predicted cup size by 2-dimensional vs 3-dimensional computerized tomography-based templating in primary total hip arthroplasty	Arthroplasty Today	2017	Osmani F, Thakkar S, Ramme A, Elbuluk A, Wojack P, Vigdorchik J	NYU Langone Medical Center, Hospital for Joint Disease	CT-guided planning more accurately predicted hip implant cup size when compared to the significant overpredictions of digital and acetate templating. CT-guided templating may also lead to better outcomes due to bone stock preservation from a smaller and more accurate cup size predicted than that of digital and acetate predictions.
Accuracy	Precision of acetabular cup placement in robotic integrated total hip arthroplasty	Hip International	2015	Elson L, Dounchis J, Illgen R, Marchand R, Padgett D, Bragdon C, Malchua H	Massachusetts General Hospital; Creekside Medical Center; South County Hospital; Hospital for Special Surgery	Intraoperative robotic assistance allowed for precision of preparation and position of the acetabular cup to plan during total hip arthroplasty.
Accuracy	Accuracy of cup positioning and achieving desired hip length and offset following robotic THA	Presented at CAOS	2014	Jerabek S, Carroll K, Marratt J, Mayman D, Padgett D	Hospital for Special Surgery	Robotic THA provided excellent accuracy and precision with regard to planned cup position, hip length and offset.
Accuracy	Comparison of robotic-assisted and conventional acetabular cup placement in THA: a matched-pair control study	Clinical Orthopaedics and Related Research	2013	Domb B, Bitar Y, Sadik A, Stake C, Botser I	American Hip Institute	Use of robotic system allowed for improvement in placement of the cup in both Lewinnek and Callanan safe zones.
Accuracy	Haptically guided robotic technology in total hip arthroplasty: A cadaveric investigation	Sage Publications	2013	Nawabi D, Conditt M, Ranawat A, Dunbar N, Jones J, Banks S, Padgett D	Hospital for Special Surgery	In a cadaveric study, the robotic-assisted system was significantly more accurate to plan than manual implantation in reproducing COR and cup orientation.

Mako Total Hip key clinical studies (continued)

	Title	Journal	Year	Author(s)	Institution(s)	Conclusion
Bone preservation	Robotic-arm assisted total hip arthroplasty results in smaller acetabular cup size in relation to the femoral head size: a matched-pair controlled study	Hip International	2017	Suarez-Ahedo C, Gui C, Martin T, Chandrasekaran S, Lodhia P, Domb B	American Hip Institute	Using acetabular cup size relative to femoral head size as an approximate surrogate measure of acetabular bone resection, these results may suggest greater preservation of bone stock using RTHA compared to CTHA.
Outcomes	Robotic-assisted total hip arthroplasty: clinical outcomes and complication rate	Int J Med Robot	2018	Perets I, Walsh J, Close M, Mu B, Yuen L, Domb B	American Hip Institute	"Mako Total Hip reported the highest Forgotten Joint Score (FJS) for THA in literature, no leg length discrepancies, and no dislocations."
Outcomes	Conventional vs robotic-arm assisted total hip arthroplasty (THA) surgical time, transfusion rates, length of stay, complications and learning curve	Journal of Arthritis	2018	Heng Y, Gunaratne R, Ironside C, Taheri A	Joondalup Health Campus, Australia; Curtin University, Australia	The observed reduction in LOS, comparable surgical times and potential for fewer complications may outweigh the increased initial cost associated with the robotic system.
Outcomes	Robotic-assisted total hip arthroplasty: outcomes at minimum two year follow up	Surgical Technology International	2017	Illgen R, Bukowski B, Abiola R, Anderson P, Chughtai M, Khlopas A, Mont M	University of Wisconsin; Cleveland Clinic	RA-THA improved acetabular component accuracy and reduced dislocation rates compared with mTHA.
Outcomes	Improved functional outcomes with robotic compared with manual total hip arthroplasty	Surgical Technology International	2016	Bukowski B, Anderson P, Khlopas A, Chughtai M, Mont M, Illgen R	University of Wisconsin; Cleveland Clinic	The rTHA cohort demonstrated significantly higher mean postoperative UCLA scores, higher mean postoperative mHHS scores, and a greater percentage of patients with mHHS of 90 to 100 points compared with mTHA at a minimum one-year follow-up.

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