

# Accuracy of component positioning in 1980 total hip arthroplasties: a comparative analysis by surgical technique and mode of guidance

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## Purpose

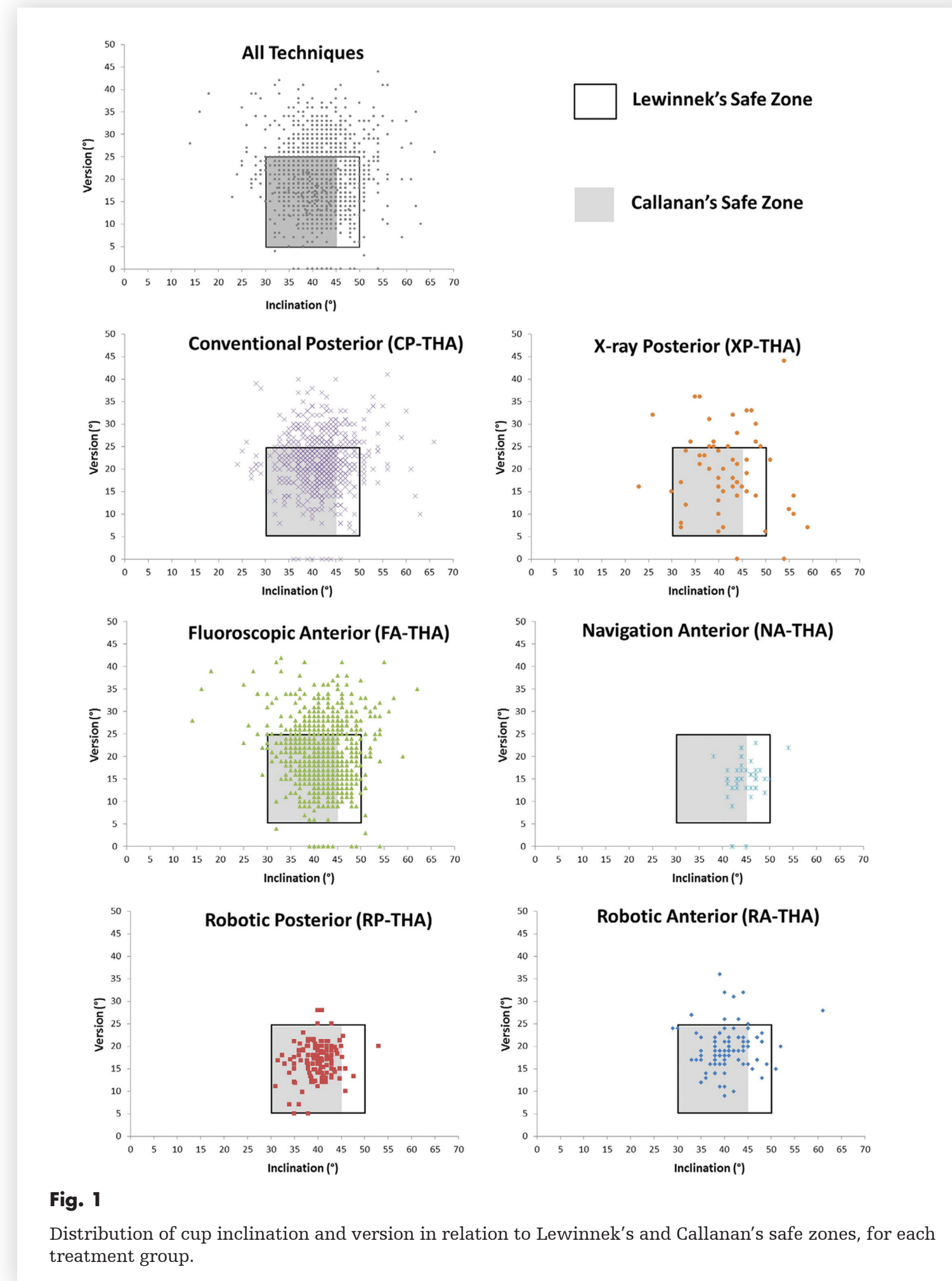
The purpose of this multi-surgeon study was to assess and compare the accuracy of acetabular component placement, leg length discrepancy (LLD), and global offset based on a pre-operative scan difference (GOD) between six different surgical techniques and modes of guidance in total hip arthroplasty (THA).

## Methods

A total of 1980 THAs met inclusion criteria. Robotic- and navigation-guided techniques were more accurate to plan than other techniques in placing the acetabular cup into Lewinnek's safe zone ( $p < 0.005$  and  $p < 0.05$ , respectively).

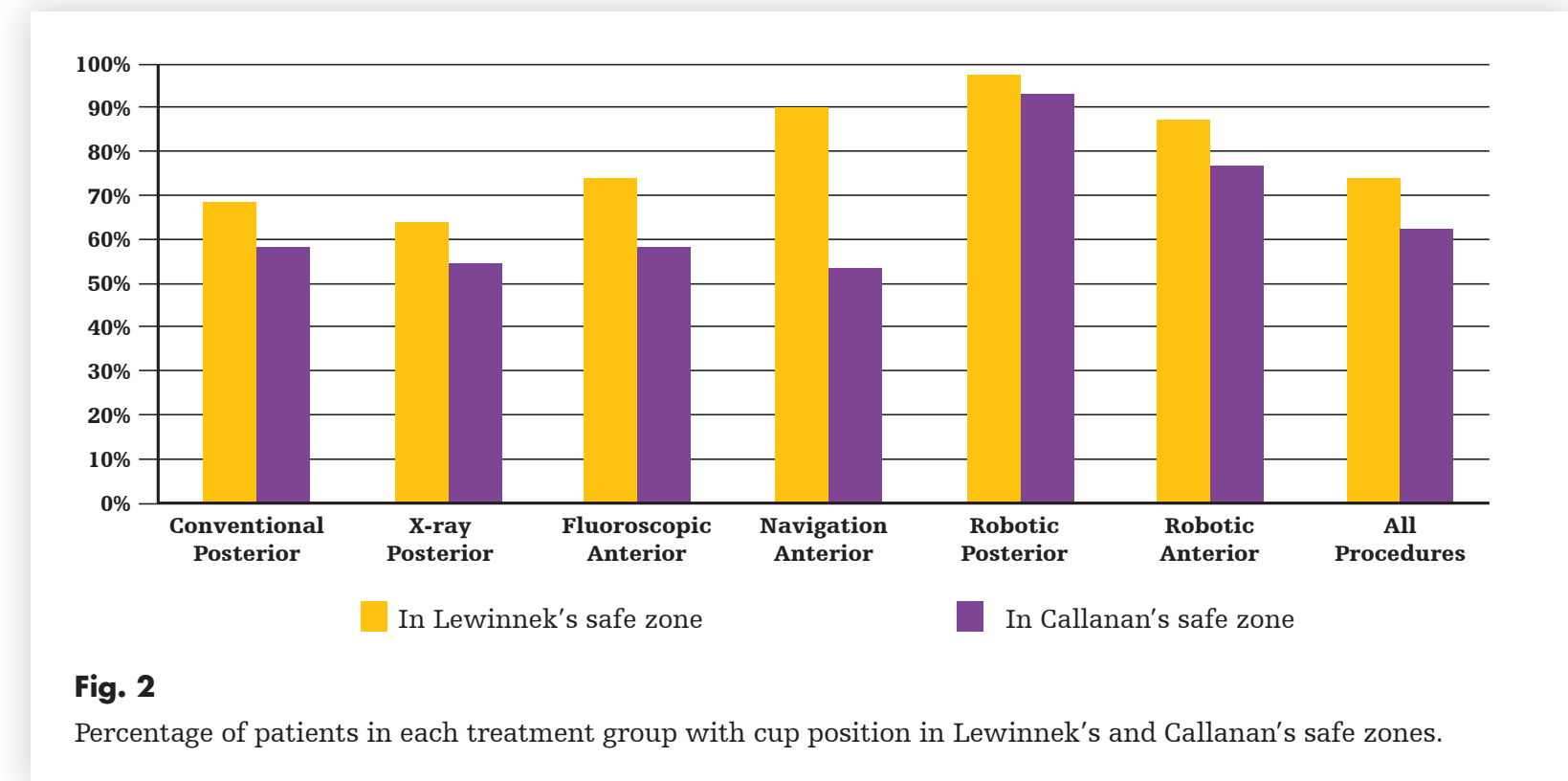
## Conclusion

Robotic-guided surgery was more accurate to plan than other techniques in placing the acetabular component within Callanan's safe zone ( $p < 0.005$ ). No statistically significant differences were found between groups in the frequency of patients with excessive LLD. Clinically significant differences between groups were not found in the frequency of patients with excessive GOD.



**Fig. 1**

Distribution of cup inclination and version in relation to Lewinnek's and Callanan's safe zones, for each treatment group.



**Fig. 2**

Percentage of patients in each treatment group with cup position in Lewinnek's and Callanan's safe zones.

**Reference:**  
 Domb B, Redmond J, Louis S, Alden K, Daley R, LaReau J, et al. Accuracy of component positioning in 1980 total hip arthroplasties: a comparative analysis by surgical technique and mode of guidance. The Journal of Arthroplasty. 30(2015)2208-2218.  
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