

# The Accuracy of Digital Templating in Primary Total Hip Arthroplasty

Last Updated Tuesday, 09 October 2007

The purpose of this study was to assess the ability of digital templating software to accurately predict implant size requirements for primary total hip arthroplasty.

## Methods:

- 135\* consecutive primary total hip arthroplasties were templated preoperatively using the TraumaCad™ templating software (Orthocrat Ltd, Israel).
- Hips were templated using magnification-calibrated radiographs. For each hip, an AP pelvis, AP and false profile projection were used for the preoperative assessment.
- All acetabuli implanted were either Trilogy Trabecular Metal (Zimmer), Trident PSL (Stryker), or Pinnacle (DePuy) implants.
- Femoral stems were either Alloclassic or ML-Taper (Zimmer), Accolade or Exeter (Stryker), or Corail (DePuy).
- All hips were implanted by a single surgeon using either a MIS posterior or modified MIS Watson-Jones approach.
- Postoperatively, the predicted implant size was compared to the actual components selected at the time of surgery.

## Conclusions:

- Surgeon's ability to anticipate intraoperative needs is critical to success.
- Digital X-Ray imaging has necessitated a change in the way preoperative templating is performed.
- Digital preoperative templating for hip arthroplasty enables this need.
- The TraumaCad™ application proved highly accurate and reliable, predicting exact component size in >70% of cases, within 1 size in >95% of cases, and within 2 sizes in 100% of cases.
- Intraoperative restoration of leg-lengths was highly reproducible and accurate, achieving a postoperative difference less than 5 mm in 89% of cases.
- This accuracy transcended the multiple implant designs employed.
- It is likely that this technology (using magnification-calibrated images) enables more precise prediction of intraoperative needs when compared to the traditional film-based techniques (that relied upon estimations of magnification).
- To our knowledge, this is the largest series of digitally-templated hip arthroplasties reported.

For more details visit the poster - [http://www.orthocrat.com/PDF/Kantor\\_poster.pdf](http://www.orthocrat.com/PDF/Kantor_poster.pdf)