

# Patient-Specific Glenoid Guides Provide Accuracy and Reproducibility in Total Shoulder Arthroplasty

M.O. Gauci, P. Boileau, M. Baba J. Chaoui and G. Walch

Abstract and full article can be found at: <https://online.boneandjoint.org.uk/doi/full/10.1302/0301-620X.98B8.37257>

## MANUSCRIPT ABSTRACT

### Background

Patient-specific glenoid guides (PSGs) claim an improvement in accuracy and reproducibility of the positioning of components in total shoulder arthroplasty (TSA). The results have not yet been confirmed in a prospective clinical trial. Our aim was to assess whether the use of PSGs in patients with osteoarthritis of the shoulder would allow accurate and reliable implantation of the glenoid component.

### Patients

A total of 17 patients (three men and 14 women) with a mean age of 71 years (53 to 81) awaiting TSA were enrolled in the study. Pre- and post-operative version and inclination of the glenoid were measured on CT scans, using 3D planning automatic software. During surgery, a congruent 3D-printed PSG was applied onto the glenoid surface, thus determining the entry point and orientation of the central guide wire used for reaming the glenoid and the introduction of the component. Manual segmentation was performed on post-operative CT scans to compare the planned and the actual position of the entry point (mm) and orientation of the component (°).

### Results

The mean error in the accuracy of the entry point was -0.1 mm (standard deviation (sd) 1.4) in the horizontal plane, and 0.8 mm (sd 1.3) in the vertical plane. The mean error in the orientation of the glenoid component was 3.4° (sd 5.1°) for version and 1.8° (sd 5.3°) for inclination.

### Conclusion

Pre-operative planning with automatic software and the use of PSGs provides accurate and reproducible positioning and orientation of the glenoid component in anatomical TSA.

## KEY TAKEAWAYS

Technologies like BLUEPRINT™ 3D Planning + PSI allow for accurate and reliable glenoid component positioning during TSA.

### Why is this important?

- Proper positioning of the glenoid component in TSA is critical to avoid early loosening.
- Using 3D anatomic visualization, virtual implantation and patient specific guides, technologies like BLUEPRINT allow surgeons to translate their pre-operative plan to the OR and potentially improve the longevity of TSA.

Proper surgical procedures and techniques are the responsibility of the medical professional. This material is furnished for information purposes only. Each surgeon must evaluate the appropriateness of the material based on his or her personal medical training and experience. Prior to use of any Tornier implant system, the surgeon should refer to the product package insert for complete warnings, precautions, indications, contraindications, and adverse effects. Package inserts are also available by contacting Wright. Contact information can be found in this document and the package insert.

™ and ® denote Trademarks and Registered Trademarks of Wright Medical Group N.V. or its affiliates. ©2018 Wright Medical Group N.V. or its affiliates. All Rights Reserved. AP-010689A 05-Nov-2018



10801 Nesbitt Avenue South  
Bloomington, MN 55437  
888 867 6437  
952 426 7600  
[www.wright.com](http://www.wright.com)

161 Rue Lavoisier  
38330 Montbonnot Saint Martin  
France  
+33 (0)4 76 61 35 00