

## JOURNEY<sup>◇</sup> II BCS exhibits normal-like knee kinematic patterns

### + Plus points

JOURNEY II BCS subjects exhibited similar patterns of femoral rollback and axial rotation to the normal knee in early and late flexion

The dual cam/post mechanism and asymmetric articulate geometries may replicate ACL and PCL function

### Overview

- A retrospective, comparative, single-surgeon analysis of the in vivo kinematics of 50 knees through a full weight-bearing range of motion to determine whether the dual cam/post mechanism is able to replicate the cruciate ligament function:
  - 40 implanted with JOURNEY II BCS (average follow up, 14.3 months; mean age, 69.8 years)
  - 10 normal asymptomatic knees (mean age, 57.4 years)
- All TKA subjects were selected as a result of having a well-functioning TKA, with passive flexion of at least 100°, and Knee Society Score (KSS) ≥90
- Each patient was asked to perform a weight-bearing deep knee bend (full extension to full flexion)
- Kinematics were measured at full extension and at 30° increments to full flexion

### Results

#### Early flexion (0-30°; ACL function)

- JOURNEY II BCS subjects exhibited similar patterns of femoral rollback and axial rotation compared with normal knee subjects

#### Mid flexion (30-60°; ACL/PCL translation)

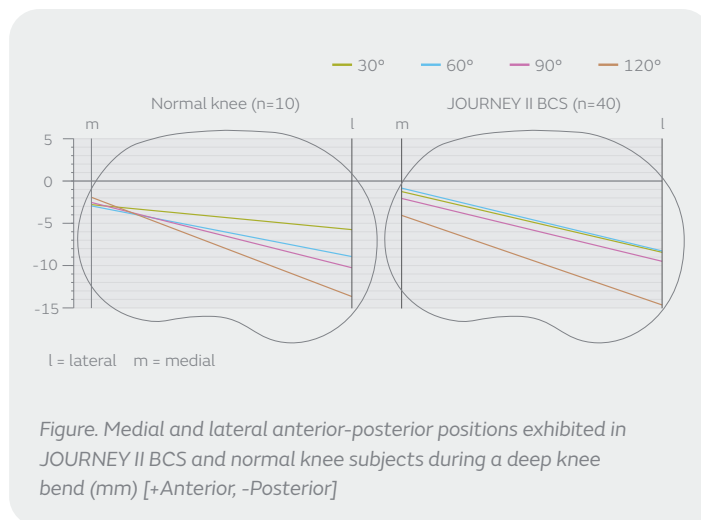
- JOURNEY II BCS subjects experienced minimal anterior-posterior motions and axial rotation, whereas normal knees continued to rollback and externally rotate

#### Deeper flexion (60-90°; PCL dominant)

- JOURNEY II BCS resumed posterior motion

#### Late flexion (90°+)

- After 90° axial rotation increased in a normal-like fashion



### Conclusions

JOURNEY II BCS exhibited normal-like kinematic patterns and moved as designed under in vivo observation. Similarities in early and late kinematic patterns between the two groups suggest the dual cam-post design and asymmetric articular geometries of the JOURNEY II BCS adequately replicate ACL and PCL function.

### Citation

\*Grieco TF, Sharma A, Dessinger GM, Cates HE, Komistek RD. In vivo kinematic comparison of a bicruciate stabilized total knee arthroplasty and the normal knee using fluoroscopy. *J Arthroplasty*. 2018;33:565-571. Available at: [The Journal of Arthroplasty](https://doi.org/10.1016/j.arth.2018.05.011)