

## JOURNEY<sup>®</sup> II total knee arthroplasty (TKA) demonstrates high midterm survivorship rates and significant improvements in patient outcomes in data presented at EKS 2019

### Key results

- JOURNEY II BCS demonstrates a high survivorship rate, with few major revisions (<1%)<sup>1,2</sup>
- Lower revision rate with JOURNEY II BCS than registry controls in younger patients (≤55 years)<sup>3</sup>
- No increase in revision rate with JOURNEY II BCS in patients with high BMI (≥40 kg/m<sup>2</sup>)<sup>4</sup>
- Significant improvements in objective and subjective knee scores<sup>2,5</sup>

The EKS Arthroplasty Congress brings together leading experts on knee arthroplasty to discuss the latest advances in knee surgery, taking into consideration both patient outcomes and cost effectiveness. JOURNEY II TKA featured strongly in the programme, including the presentation of results from the longest available survivorship study on JOURNEY II BCS.<sup>1,3,4</sup>

### Data presented at EKS 2019:

#### Midterm survivorship

New results from a retrospective, multicentre, international study of 2,059 TKAs, show that **JOURNEY II BCS has a high survivorship rate at 5 years**, comparable to a registry control of all cemented, posterior stabilised (PS) TKAs reported in the Australian Orthopaedic Association National Joint Replacement Registry (AOANJRR) 2017 (96.4 vs 95.9%; Figure 1).<sup>1,6</sup> These results are supported by a second study presented at EKS. This prospective, multicentre US study of 209 JOURNEY II BCS TKAs also reported a high 5-year survivorship rate of 97% (Figure 1).<sup>2</sup>

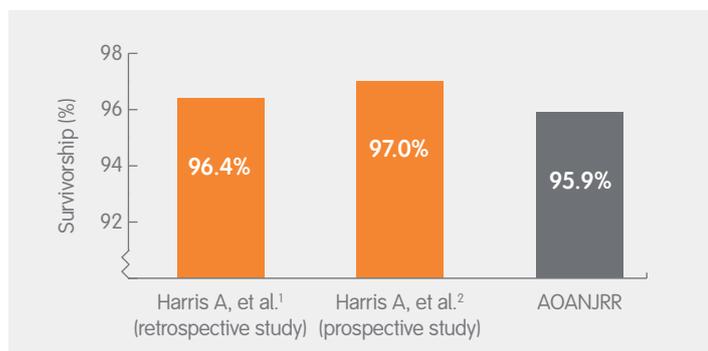


Figure 1. Estimated survivorship rate at 5 years (%)<sup>1,2</sup>

Revision TKA is a technically challenging procedure associated with a high risk of complications,<sup>7</sup> and poses significant economic costs to the healthcare industry.<sup>8</sup> In the US, the mean estimated cost for revision TKA is \$75,000.<sup>8</sup> In both Harris A, et al. studies presented at the meeting, **less than 1% of patients receiving a JOURNEY II TKA required a major revision**, (all-component

revisions, femoral and/or tibial component exchange).<sup>1,2</sup> This accounted for less than 30% of all reported revisions, which is lower than reported in the registry control (42%).<sup>1</sup>

#### Age-related revision risk

It is well recognised that younger patients (50-55 years old) are a challenging demographic for TKA and are at a significantly greater risk of revision than older patients.<sup>9</sup> The retrospective study presented by Harris A, et al., reported results according to patient age.<sup>3</sup> Of the 2,059 JOURNEY II TKAs reported in this study,<sup>1</sup> 254 were performed in patients aged ≤55 years.<sup>3</sup> Comparing these patients to an age-matched registry control, **lower revision rates suggest JOURNEY II BCS may offer an implant benefit** in this challenging demographic (Figure 2).

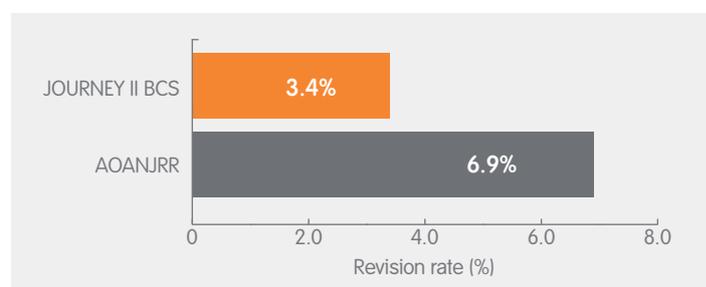


Figure 2. Revision rate of patients ≤55 years old at 5 years post-TKA<sup>3</sup>

#### BMI related revision risk

It is reported that TKA in morbidly obese patients (BMI ≥40kg/m<sup>2</sup>) is associated with an increased risk of complications and revision.<sup>10</sup> Outcomes for obese patients following TKA with JOURNEY II BCS were reported for the first time at EKS.

## Evidence in focus (continued)

In the retrospective study presented by Harris A, et al.,<sup>1</sup> BMI data were available for 1,644 patients (2,003 TKAs), of which 13.4% had a BMI  $\geq 40\text{kg/m}^2$ .<sup>4</sup> Obese patients who had undergone TKA with JOURNEY<sup>®</sup> II experienced no difference in risk of revision when compared to patients with BMI  $<40\text{kg/m}^2$ . The authors concluded that **device risk is not elevated with JOURNEY II BCS in obese patients**.

### Patient outcomes

Patients undergoing TKA often experience residual symptoms with more than half reporting some degree of limitation to their functional activities<sup>11</sup> and up to one in five patients feeling unsatisfied with their procedure.<sup>12</sup> Strategies to improve patient outcomes following TKA were another important topic at EKS 2019.

Building on results reported at 2 years, Harris A, et al. presented patient outcome data associated with JOURNEY II BCS at 5 years.<sup>2</sup>

**Improvements in Knee Society Scores** (KSS [objective knee score, patient satisfaction and functional activities]) **observed at 2 years post-TKA were maintained at 5 years, with respective scores of 96, 35 and 82** (Table 1).

Knee Society Score	Score at 5 years post-TKA
Objective knee score (0-100)	96
Patient satisfaction (0-40)	35
Functional activities (0-100)	82

Table 1. Knee Society Scores at 5 years post-JOURNEY II TKA<sup>2</sup>

The impact of JOURNEY II TKA on patient outcomes were also reported in another study at EKS 2019. Heir S, et al. reported **improvements in patient outcomes** (EuroQol-5 Dimensions [EQ-5D], KSS and Visual Analogue Scale [VAS] pain while walking) as early as 3 months post JOURNEY II BCS TKA. All outcomes continued improving over 12 months with **significant improvements observed at 2 years** compared to preoperative scores ( $p < 0.01$ ; Figure 3).<sup>5</sup>

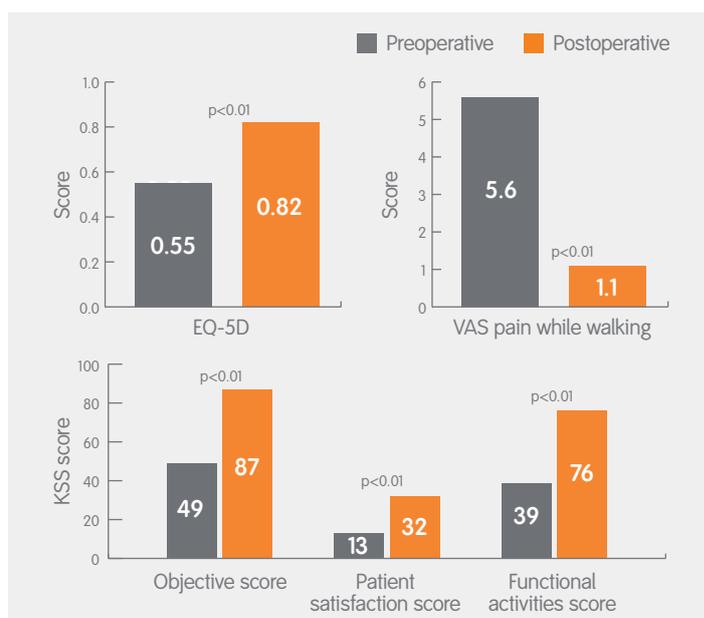


Figure 3. Patient outcomes at 2 years post-JOURNEY II BCS<sup>5</sup>

### Conclusion

New evidence presented at EKS 2019, shows JOURNEY II BCS demonstrates a survivorship rate greater than 96%, comparable to that reported in the registry control.<sup>1,2</sup> Current evidence suggests that JOURNEY II BCS may offer a favourable option for younger, more active patients who require a longer surviving implant<sup>3</sup> and for those with a high BMI,<sup>4</sup> who are at increased risk of revision with a standard PS TKA.

Whilst survivorship data are important to analyse device longevity and performance, they fail to account for improvements in function that can lead to improved patient satisfaction. JOURNEY II BCS demonstrates significant improvements in both objective and patient reported scores up to 2 years post-TKA,<sup>2,5</sup> which remain constant up to 5 years post TKA.<sup>2</sup> **With significant improvements in patient satisfaction, as well as high survivorship,**<sup>2,5</sup> these new results suggest that JOURNEY II BCS may offer an improved overall experience compared to standard PS TKA.

### References

- Harris A, O'Grady C, Sensiba PR, et al. Second-generation guided motion total knee arthroplasty (TKA): Results from the international multicenter study of 2,059 primary TKAs with up to 6 years follow-up. Abstract number SP5 presented at: European Knee Society; May 2-3, 2019; Valencia, Spain.
- Harris A, Luo TD, Lang JE, et al. Guided motion total knee arthroplasty system: five-year outcomes of the prospective multicentre US study. Abstract number P34 presented at: European Knee Society; May 2-3, 2019; Valencia, Spain.
- Harris A, O'Grady C, Sensiba PR, et al. Guided motion total knee arthroplasty (TKA) system in younger patients has a lower revision rate than registry controls: results from the international multicenter study with up to 6 years follow-up. Abstract number P35 presented at: European Knee Society; May 2-3, 2019; Valencia, Spain.
- Harris A, O'Grady C, Sensiba PR, et al. Guided motion total knee arthroplasty (TKA) in patients with BMI of 40kg/m<sup>2</sup> or more: results from the international multicenter study of 2,059 primary TKAs with up to 6 years follow-up. Abstract number P36 presented at: European Knee Society; May 2-3, 2019; Valencia, Spain.
- Heir S, Catani F, van Hellemond G, et al. Clinical and functional outcomes of a second-generation guided motion total knee arthroplasty system: two-year results of a prospective multicentre study. Abstract number P37 presented at: European Knee Society; May 2-3, 2019; Valencia, Spain.
- Harris AI, Christen B, Malcorps JJ, et al. Mid-term performance of a guided motion bicruciate stabilized total knee system; results from the international study of over 2,000 consecutive primary total knee arthroplasties. *J Arthroplasty*. 2019 Feb 14. [Epub ahead of print]
- Hamilton DF, Howie CR, Burnett R, Simpson AH, Patton JT. Dealing with the predicted increase in demand for revision total knee arthroplasty; challenges, risks and opportunities. *Bone Joint J*. 2015;97-b:723-728.
- Delanois RE, Mistry JB, Gwam CU, Mohamed NS, Choksi US, Mont MA. Current epidemiology of revision total knee arthroplasty in the United States. *J Arthroplasty*. 2017;32:2663-2668.
- Bayliss LE, Culliford D, Monk AP, et al. The effect of patient age at intervention on risk of implant revision after total replacement of the hip or knee: a population-based cohort study. *Lancet*. 2017;389:1424-1430.
- Boyce L, Prasad A, Barrett M, Dawson-Bowling S, Millington S, Hanna SA, Achan P. The outcomes of total knee arthroplasty in morbidly obese patients: a systematic review of the literature. *Arch Orthop Trauma Surg*. 2019;139:553-560.
- Noble PC, Gordon MJ, Weiss JM, et al. Does total knee replacement restore normal knee function? *Clin Orthop Relat Res*. 2005;431:157-165.
- Scott CEH, Howie CR, MacDonald D, Biant LC. Predicting dissatisfaction following total knee replacement. *J Bone Joint Surg Am*. 2010;92-B:1253-1258.