

**Title of Article:** Satisfactory Results at 8 years Average Follow-up After ADVANCE® Medial-Pivot Total Knee Arthroplasty\*

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**Citation:** Knee, Manuscript Accepted: 14 Oct. 2013; Available Online: 23 Oct. 2013

**Product(s):** ADVANCE® Medial-Pivot TKR

\*- This is an unedited accepted manuscript. During the production process, errors might be found which can affect the manuscript's content.

## Publication Highlights

- This study represents one of the longest mean follow-up periods for the ADVANCE® Medial-Pivot TKA.
- The authors observed significant improvements in Knee Society Scores, range of motion, knee extension, and varus-valgus deformity in this 8-year retrospective study.
- Kaplan-Meier survivorship was 98.3% at the 8-year follow-up and there were no implant-related failures.
- “We confirmed that the features of ADVANCE® MP TKA, such as kinematics in knee motion and less polyethylene wear, may have contributed to our good clinical results, and thus play a key role in long-term implant survival.”
- The authors postulate that the reasons for these results compared to other reports may be due to individual differences in the tibial slope and differences in measurement methods.

## Publication Summary

### Methods

- Retrospective clinical study of **76 consecutive patients (85 knees)**
  - **Mean age: 70.2 ± 8.1 years (range, 51–88)**
  - Male/ Female ratio: 5/71
  - **Mean BMI: 26.5 ± 4.6 kg/m<sup>2</sup> (range, 17.8–36.2)**
  - Primary Diagnoses:
    - Osteoarthritis (OA) in 60 knees (70.6%), rheumatoid arthritis in 22 knees (25.9%), osteonecrosis in 2 knees (2.4%), and osteoarthritis after a high tibial osteotomy in one knee (1.2%)
- Intraoperative Outcomes
  - **PCL sacrificed in all knees**
  - Total operating time: 111.5 ± 16.5 min (range, 79–164)
  - Average blood loss: 273.9 ± 122.3 mL (range, 91–572)
- **Mean follow-up: 93.1 ± 14.3 months (range, 72–132)**
  - 4 patients (5 knees) were lost to follow-up (5.9%)

### Results

- Knee extension, range of motion (ROM), and varus-valgus deformity improved significantly
- At final follow-up, excellent Knee Society Scores (KSS) were observed and all functional scores improved postoperatively. Table 1 contains a summary of all clinical and functional results.
- **Kaplan-Meier survivorship was 98.3% (95% CI, 96.6-99.9) at 8 years (revision surgery as the end-point)**
  - One revision (1.2%, 1/85) at 2-years for implant loosening and suspected late deep infection (no infection recurrence reported after a two-stage revision arthroplasty)
  - All other knees achieved solid fixation and did not display any evidence of osteolysis

**Table 1. Clinical and functional outcome results. All outcomes, except knee flexion (\*) had statistically significant improvements (p<0.05)**

Outcome	Pre-op	Post-op
Knee Society Score	36.2 (range, 0-65)	92.1 (range, 65-100)
Knee Society Functional Score	31.4 (range, 0-75)	73.4 (range, 45-100)
Knee Flexion (deg.)*	106.2 (range, 20-140)	110.3 (range, 80-130)
Knee Extension (deg.)	-12.5 (range,-40-0)	-1.1 (range,-15-0)
ROM (deg.)	94.2 (range, 20-140)	110.6 (range, 60-130)
Varus-valgus deformity (deg.)	10.7 (range, -9-31)	1.4 (range, -4-5)

#### *Complications*

- **No intraoperative complications**
- 9 postoperative complications occurred and resolved during the study follow-up:
  - 1 knee revision (previously mentioned loosening and suspected late infection), 2 insufficient wound closures, 3 hypoxemias, 2 knees with deep vein thrombosis, and 1 knee with superficial vein thrombophlebitis

#### *Study Limitations*

- This is a mid-term study with a retrospective design.
- Additional follow-up with a larger patient size is needed to determine the long-term effects.

#### **Overall Conclusion**

- **“Patients undergoing ADVANCE® Medial-Pivot TKA achieved excellent clinical and radiographic results without any implant-related failures at mid-term follow-up.”**