

Early Outcomes Utilizing a First-Generation Customized Patient-Specific TKA Implant

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INTRODUCTION

We conducted a retrospective review of patient outcomes post-TKA surgery for patients implanted with a first generation customized TKA implant.

METHODS

- Medical records were reviewed for 89 patients (106 knees) (Table 1), who had received a first generation customized TKA, at one of 4 centers.
- Range-of-motion (ROM), operative metrics, length-of-stay (LOS) and 90-day manipulation rates were retrieved.
- Additionally, a subset of 24 patients from a single site was assessed using the 2011 Knee Society Scoring (KSS) system.

Table 1: Patient demographics of the study population

Knees / Patients (N)	106 / 89
Patient Gender (Male/Female)	36 / 53
Mean Age at Surgery (years)	68 [42 - 87]
Mean Body Mass Index (BMI)	32 [21 - 51]

RESULTS

- Mean pre-op ROM was regained at an average of 4 months post-op (113°).
- Zero cases required blood transfusions.
- After 20 cases, skin-to-skin time decreased by 22 minutes.

- LOS decreased by 15 hours after the first 20 cases.
- One poly-swap revision (0.9%) for instability, resolved post-op.
- Four (3.8%) manipulations under anesthesia (Table 2).
- Zero patients reported dissatisfaction in 4/5 KSS categories, 7 months post-op (Figure 1).
- All patients reported a “normal” feeling knee some or all of the time, 7 months post-op (Figure 2).

Table 2: Summary of adverse events post-op

	N	%
Transfusions	0	0
Revisions	1	0.9
Manipulations (MJA)	4	3.8

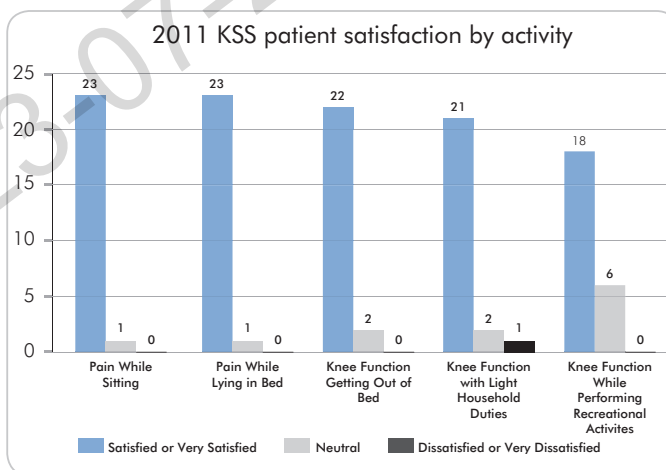


Figure 1: New KSS by activity.

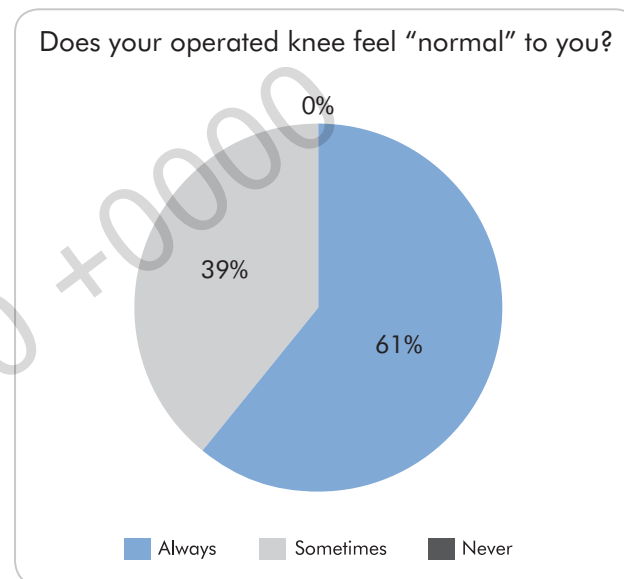


Figure 2: Does TKA feel normal?

DISCUSSION

On average, patients recovered their preoperative ROM within 4 months postoperatively. LOS and surgery times dropped as surgeons gained experience with the system. For this first generation customized TKA, manipulation rates were comparable or lower to published studies with off-the-shelf implants.¹ Transfusion rates were significantly lower. Given the early follow-up (7 months post-op), high satisfaction scores and rapid return of mobility, outcomes are encouraging for this new technology.

1. Rubinstein RA et al.; The incidence and results of manipulation after total knee arthroplasty; The Knee. 2010;17(1):29-32