

Introduction

- This study compared the 5-year results of posterior cruciate ligament (PCL)-sacrificing total knee arthroplasty (TKA) to a post and cam-style posterior stabilized (PS) device, a deep-dish, highly-congruent condylar stabilizing (CS) device, and an ultra-congruent (UC) device (Figure 1).
- Hypothesis:* The clinical and radiographic outcomes would be equivalent between 3 insert designs for posterior cruciate ligament (PCL)-sacrificing TKA implants/devices.

Methods

- Stryker Triathlon CS & Stryker Triathlon PS participants were part of a prospective, randomized trial.
- OMNIlife science APEX Knee UC participants were part of a separate prospective, non-randomized protocol that was otherwise identical.
- The following PROs were used to evaluate clinical outcomes: Knee Society Score, SF-36 v2, Lower Extremity Activity Scale (LEAS)
- Participants were assessed pre-operatively and postoperatively at 6 weeks, 6 months, and annually for 5 years.

Disclosures

The author discloses:

- Research funding: Stryker Orthopedics, Omnilife science,
- Editorial Board (reviewer): Journal of Arthroplasty

Figure 1: Study Devices

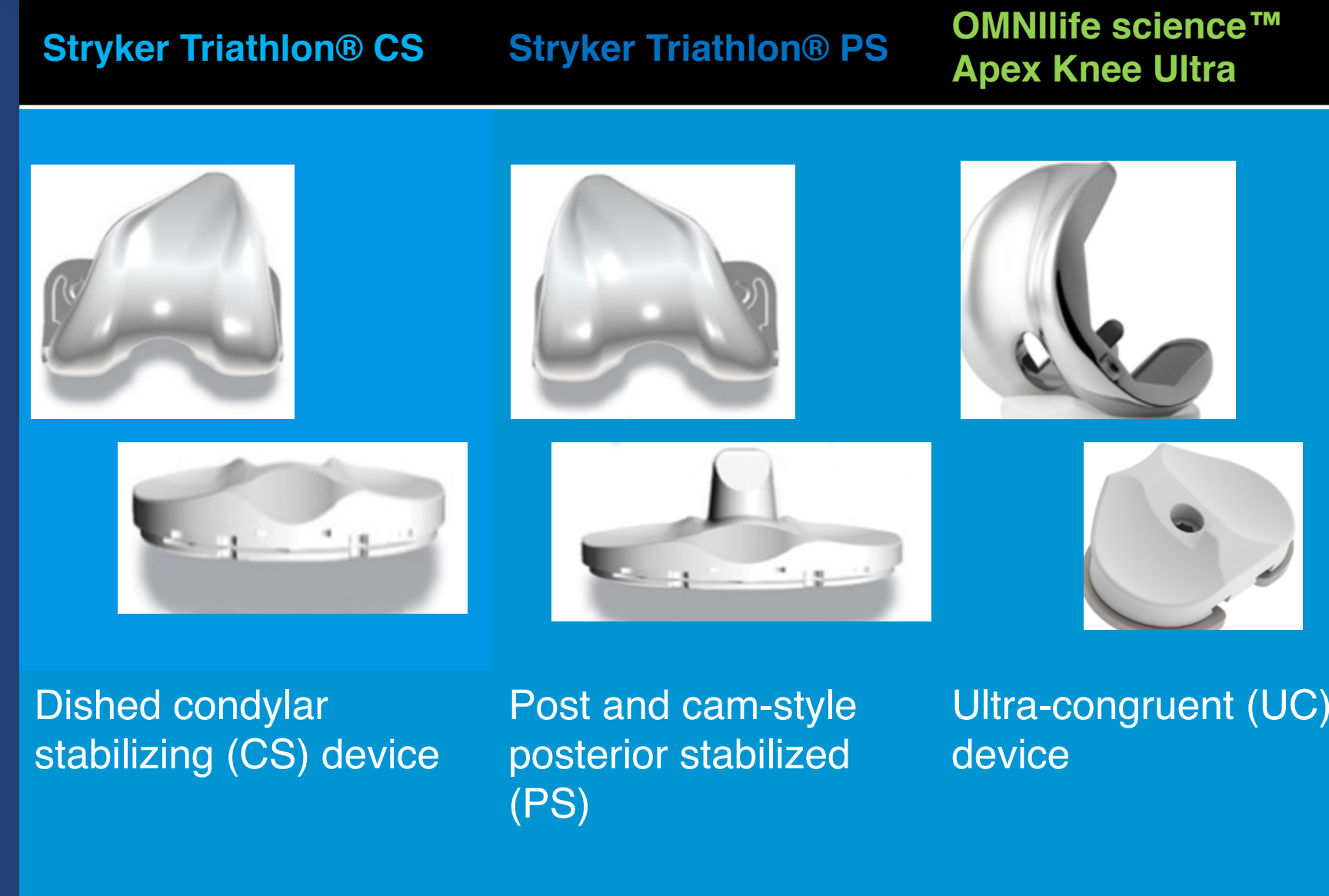


Table 1: Demographic Data

Variable	CS (n=58)	PS (n=58)	UC (n=69)	p-value
Men/Women (n)	21/37	29/29	33/36	NS
Mean age at surgery (years)	61.9	66.0	64.4	NS
men	63.8	65.7	63.5	NS
women	60.9	66.4	65.4	NS
Mean BMI ^a men/women	31.9/33.5	31.5/32.7	32.3/31.7	NS

^a Body mass index: kg/M²

Figure 2: Knee Society Score - Function

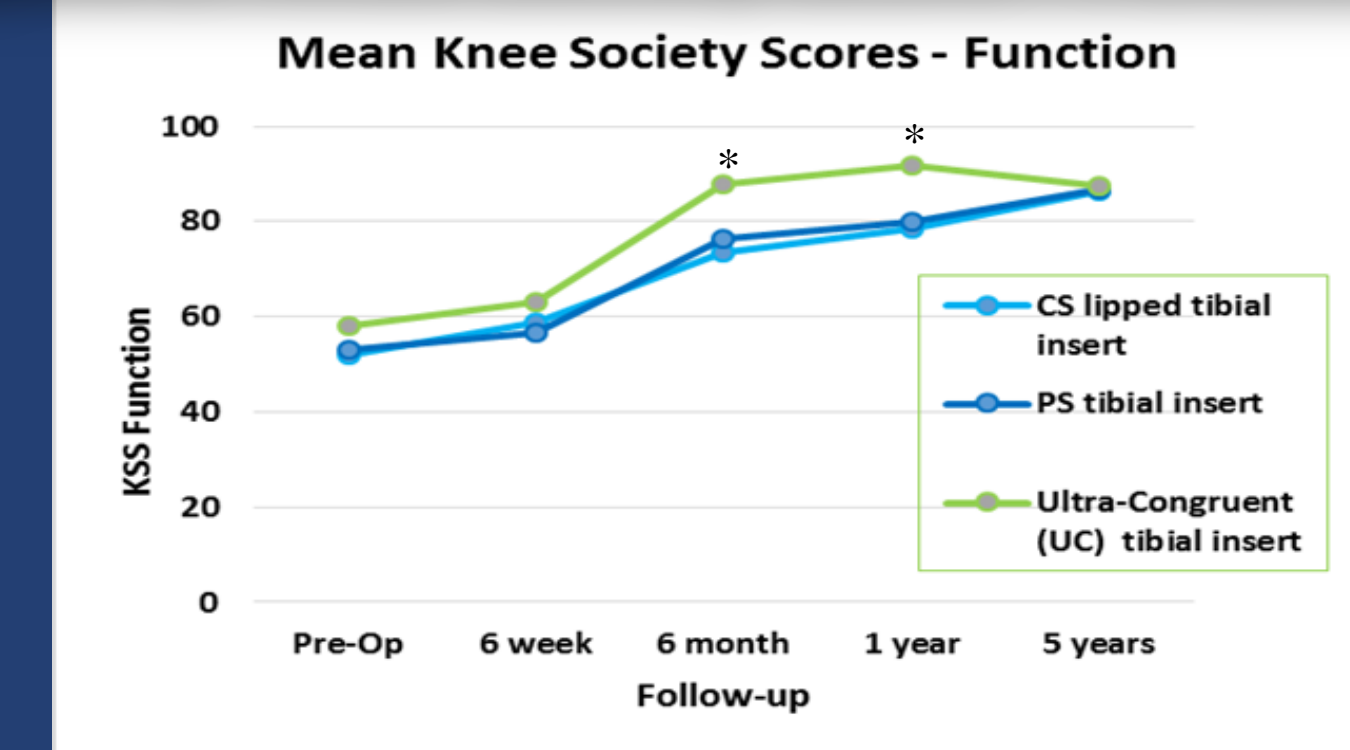


Figure 3: Knee Society Score - Pain / Motion

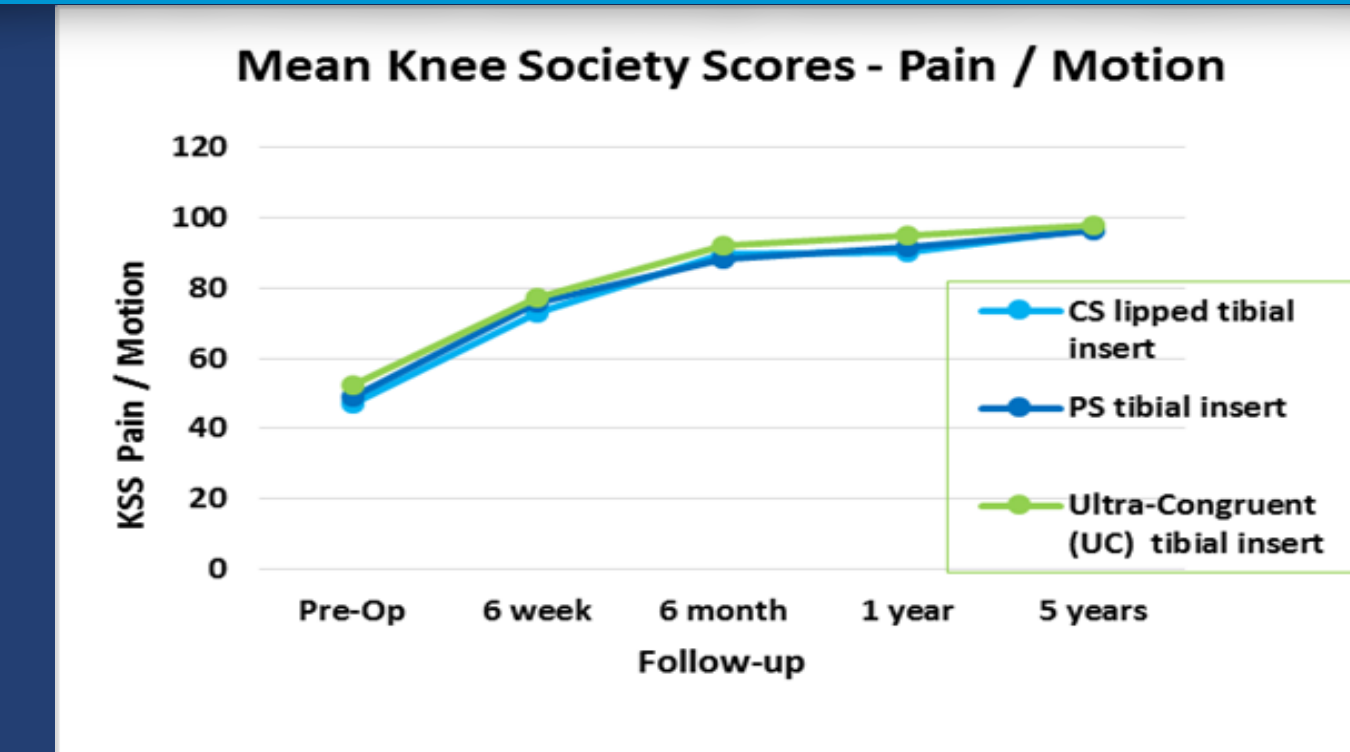
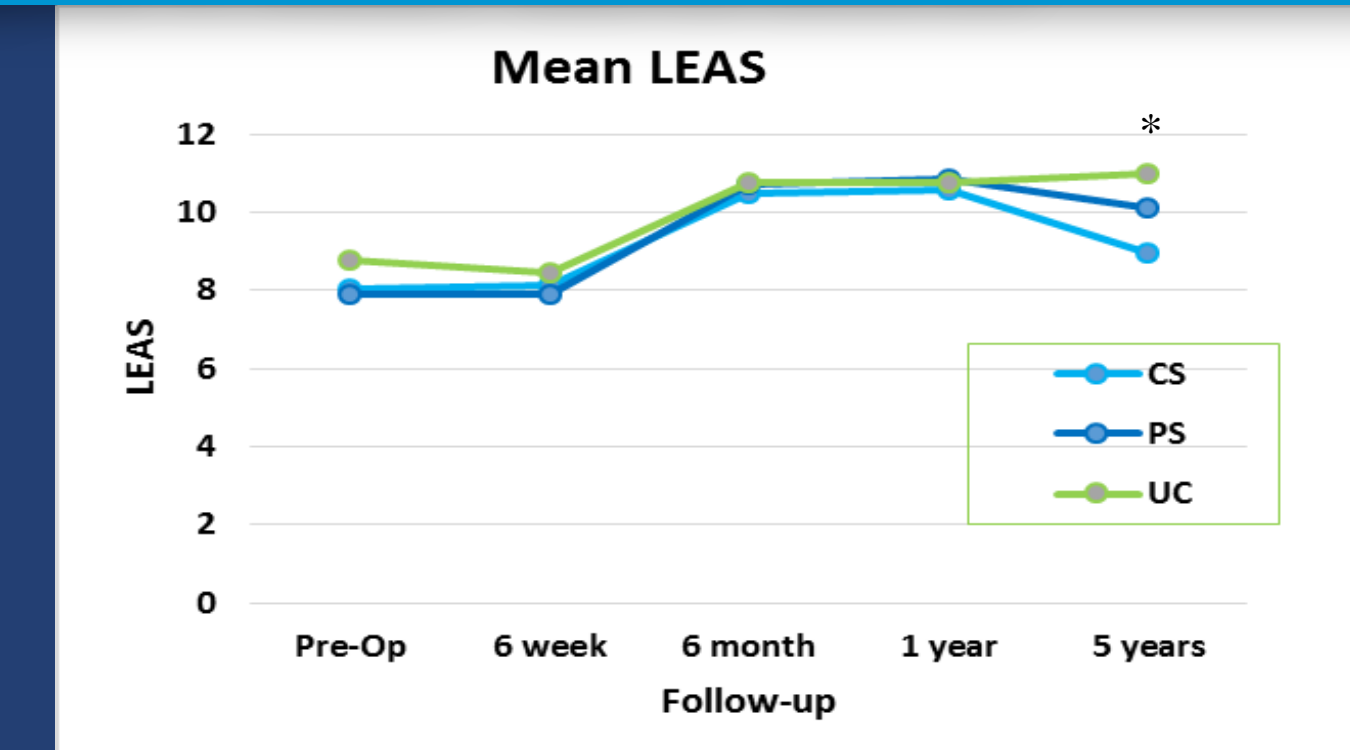


Figure 4: Mean LEAS Scores



Results

- The mean values of the age at surgery, BMI, and gender were compared between the implant groups and no significant differences were found between the three groups. (Table 1)
- The mean follow-up period was 64 months (range 60-66 months)
- Two CS/PS participants had traumatic events requiring surgery (one patella fracture 6 months postoperatively and one traumatic loosening of the tibial baseplate after an automobile accident 1 year postoperatively). Of the 69 UC participants, one participant underwent reoperation for a loosened polyethylene insert locking bolt, requiring surgical intervention 3 years postoperatively.
- The Knee Society Score for function were higher for UC group than PS and CS groups at 6M (*p = .04) and 1Y (*p = .03) (Figure 2).
- There was no difference in Knee Society Scores for pain and motion scores between the implant groups at any time point (Figure 3).
- LEAS was higher in UC group at than CS group at 5Y (*p < .05) (Figure 4).

Conclusion

- The clinical and radiographic outcomes achieved with these devices are equivalent overall
- Patients with the UC device exhibited significantly higher KSS Function scores at 6 months & 1 year, but not at 5 years
- The LEAS assessment found only one statistically significant result for UC vs. CS at 5 years
- There are no obvious significant differences in clinical outcomes between the three groups at 5 years