ISAKOS CONGRESS 2025 | MUNICH GERMANY June 8–11

Comparison of Outcomes of Primary TKA with Revision UKA to TKA A propensity matched study.

Myles Coolican FRACS FAOrthA,
Harbeer Ahedi PhD

Faculty Disclosure Information

My disclosures are

I declare that in the past three years I have

• Held shares in	Nil
• Received royalties from	S&N
• Done consulting work for	S&N
• Given paid presentations for	S&N, Medacta
• Receive institutional support from	S&N, Corin, ZB, Arthrex

Hypothesis Our UKA revision to TKA Oxford scores, patient satisfaction & implant survivorship would be about the same as our primary TKA patients

Methods:

- A retrospective analyses of prospectively collected data at Sydney Orthopedic Research Institute.
- We compared patients who underwent revision of UKA to TKA (n=90) with those who had primary TKA (n=93).
- The study sample was matched for age, gender, body mass index (BMI) and date of the surgery.
- Outcomes included re-revision rates, PROMS (Oxford score, patient satisfaction and VR 12).

Follow up: Preop, 1 year and 5 years.

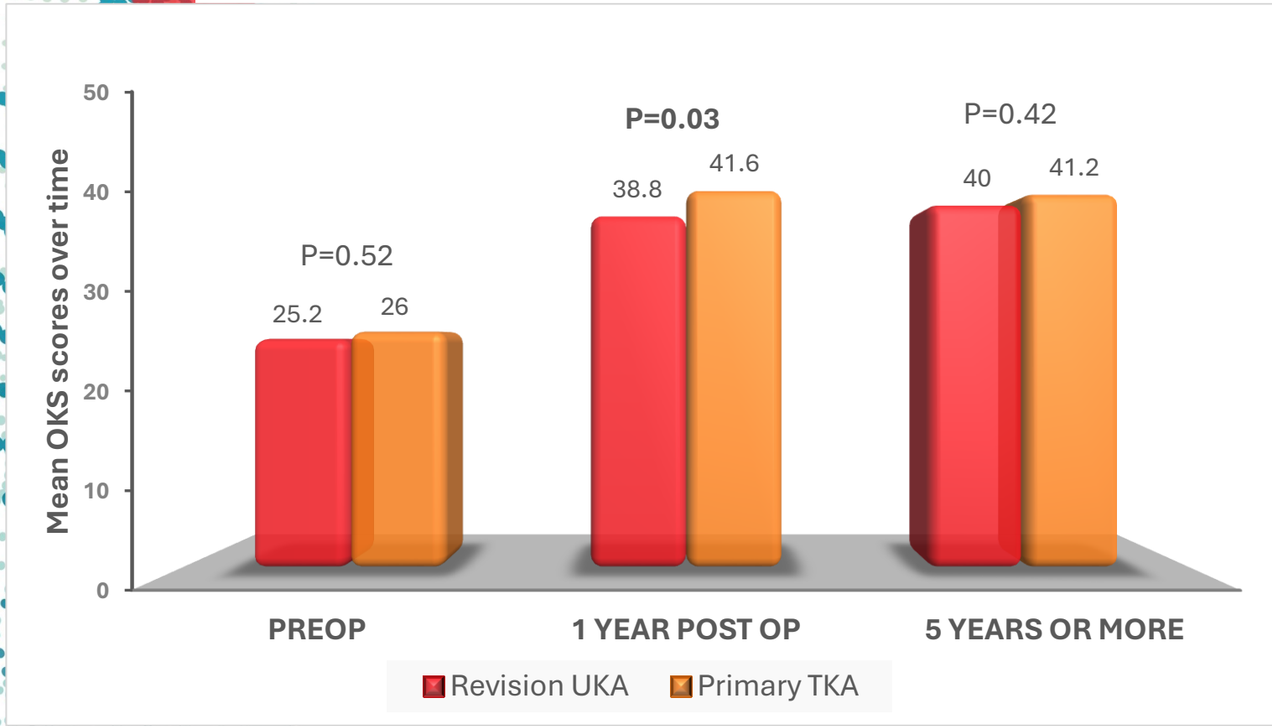
Results: Comparative Groups

Characteristics	UKA revision (n=90) Mean (SD)	Primary TKA (n=93) Mean (SD)	P value
Age (yrs.)	71.0 (7.94)	71.4 (3.87)	0.70
Gender (Females)	52%	56%	0.51
Body Mass Index (BMI) kg/m2	29.7 (5.00)	30.0 (4.65)	0.68
Surgery side (Left/right)	49/41	51/42	-
Preop extension° (healthy knee)	**1.52 (3.96)**	**5.09 (6.07)**	**0.005**
Preop flexion° (healthy knee)	119.5 (11.21)	12.6 (11.7)	0.70
Preop extension° (affected knee)	**5.27 (4.65)**	**10.1 (7.66)**	**0.004**
Preop flexion° (affected knee)	110.7 (13.8)	111.2 (12.7)	0.90

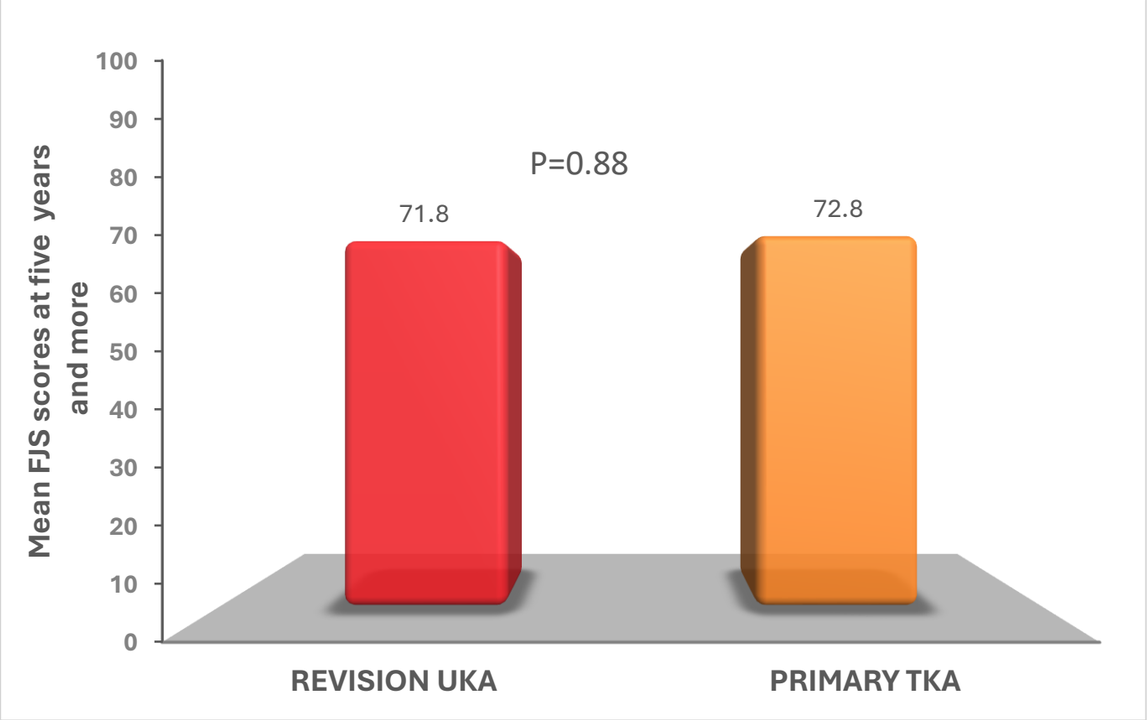
Data presented as means and standard deviations (SD).
Differences in groups was calculated using t-test.

Results: Comparing OKS and FJS Scores

OKS Scores



FJS (5yrs and more)

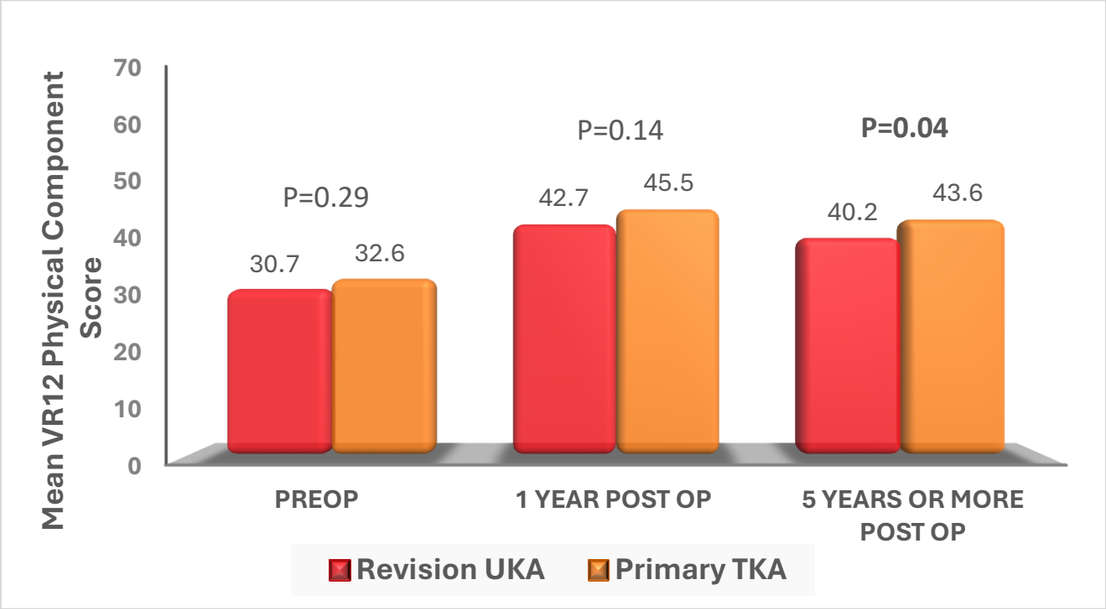


There was statistical difference in the OKS score at one year, but overtime OKS score for both groups was similar.

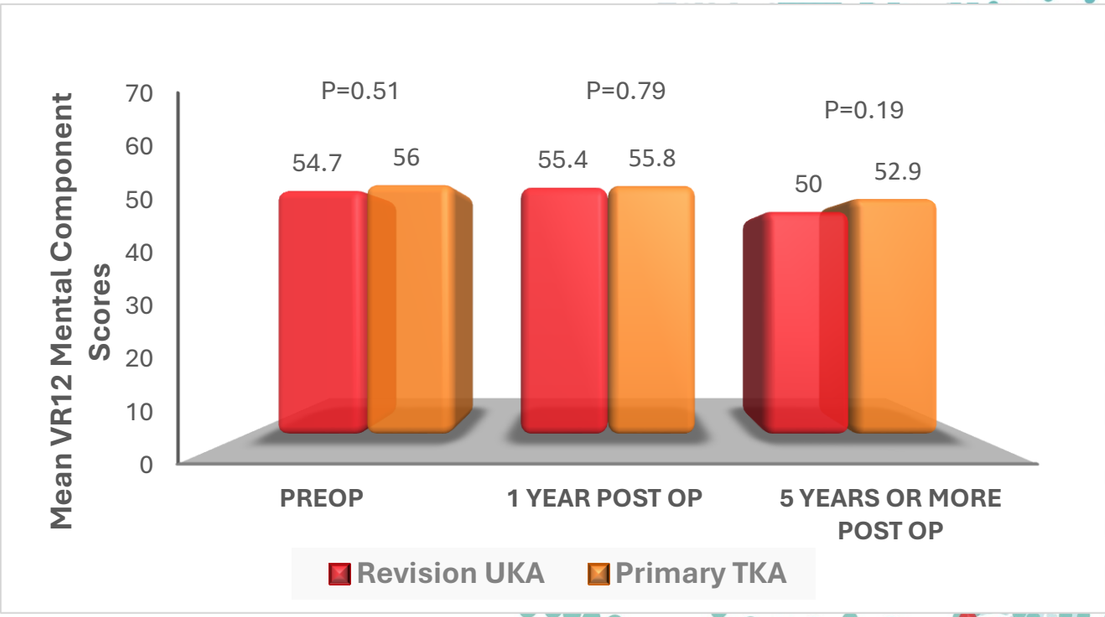
Primary TKAs and revision UKAs had comparable FJS score at five years

Results: Comparing VR 12 Physical and Mental Component scores

VR12 Physical Component



VR12 Mental Component

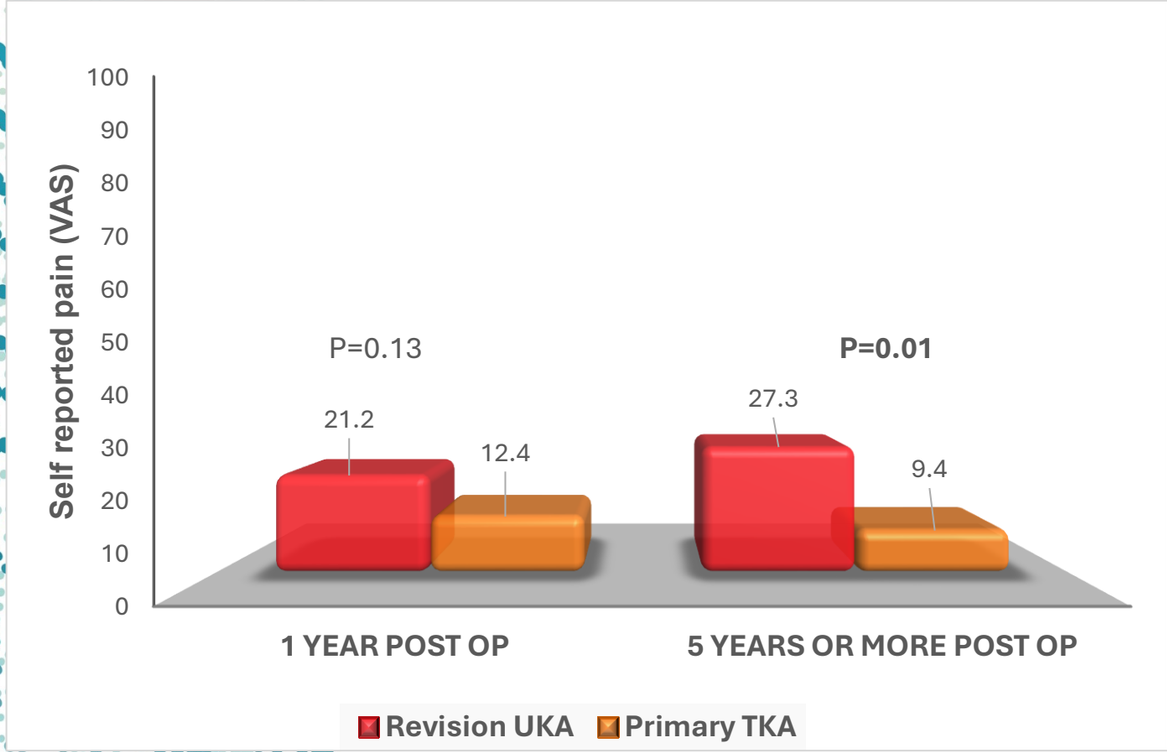


At five years and over, Primary TKAs reported slightly better physical health compared to revision UKA.

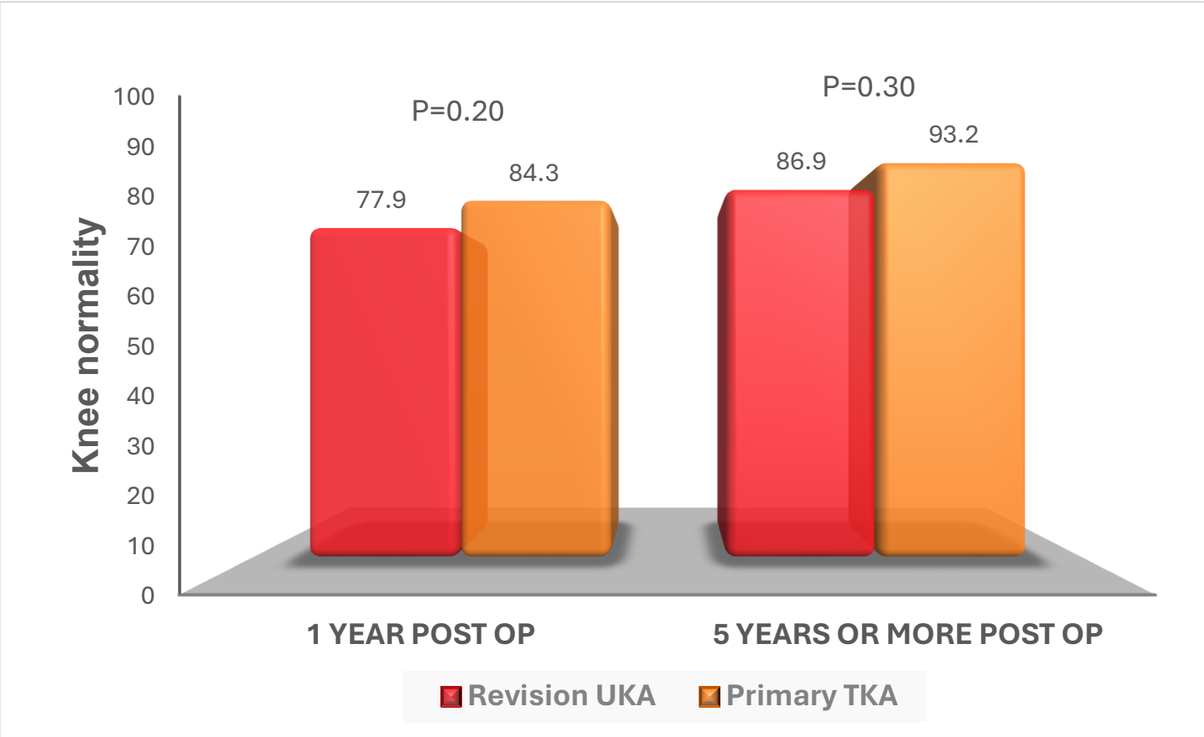
There were no significant differences in mental health between the two groups

Results: Comparing VAS and Knee Normality

VAS



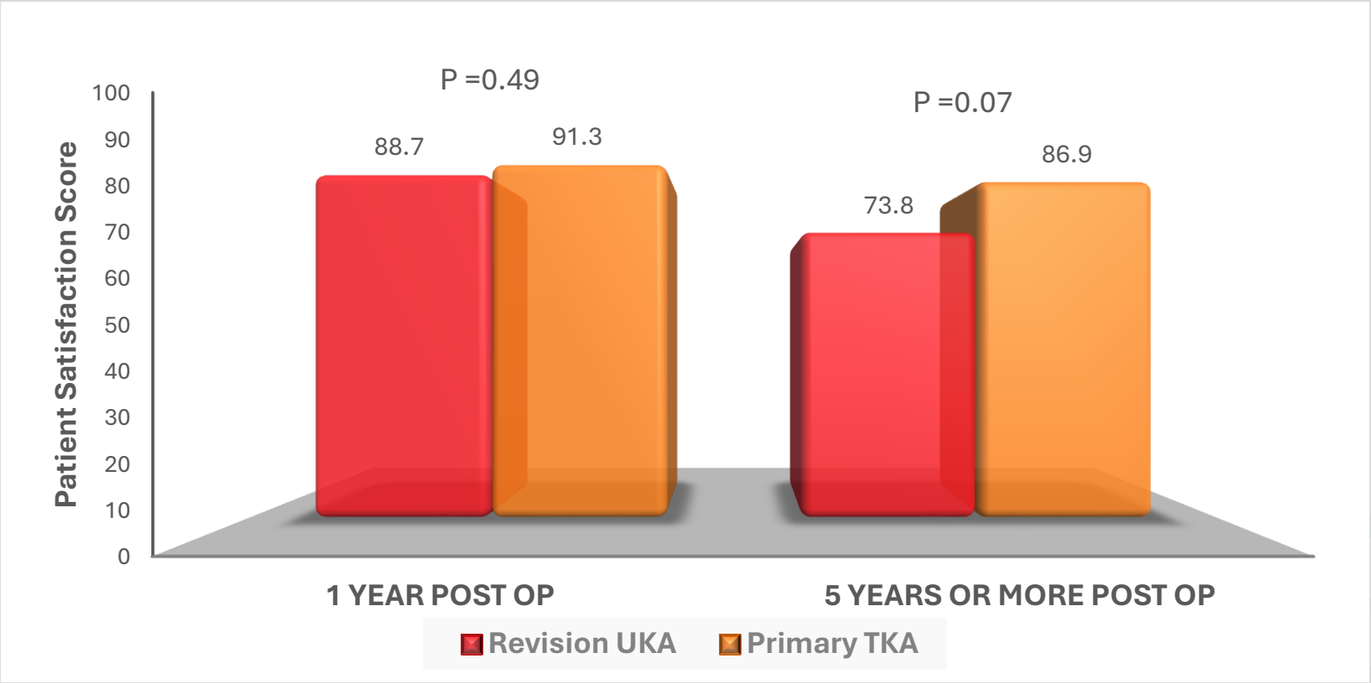
Knee normality



Self reported pain at five years was slightly higher for revision UKAs.

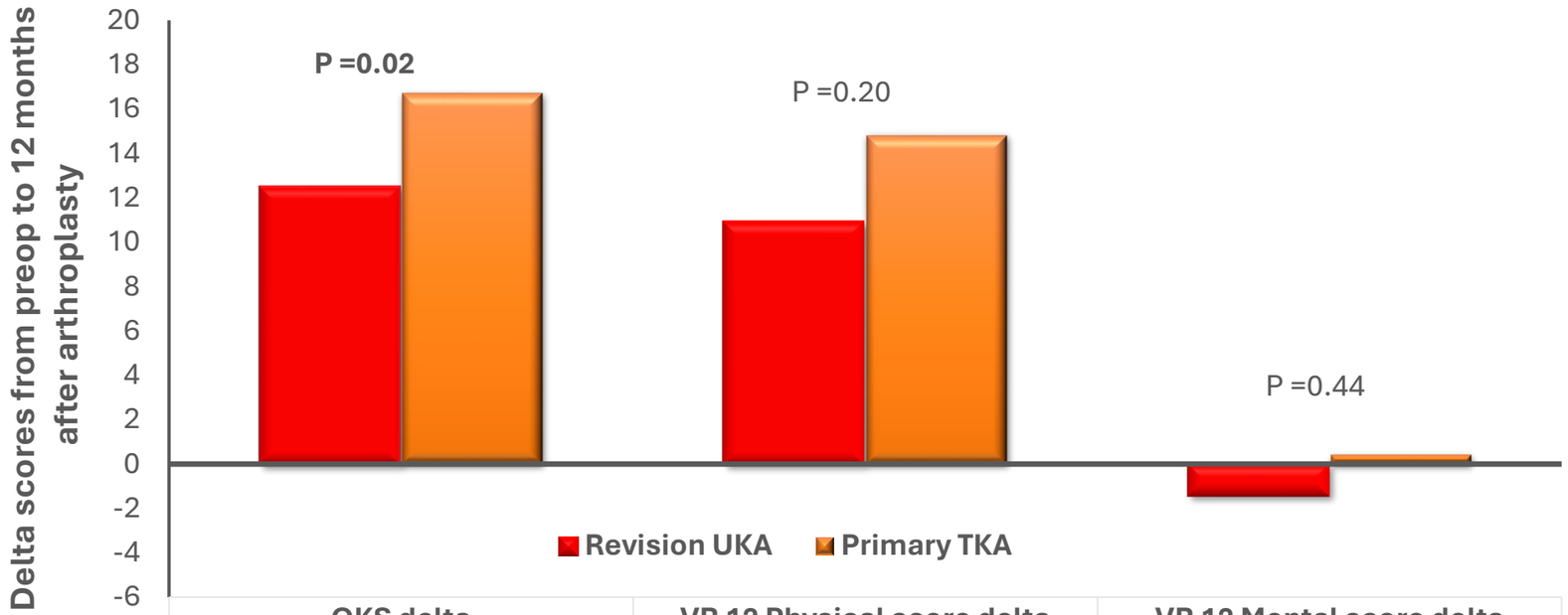
Both groups reported a similar sense of normalcy with their operated knee.

Results: Comparing Patient Satisfaction scores



Patient satisfaction scores were similar for both groups

Results: Comparing PROMS improvement preop to 1 year follow up (delta scores)



	OKS delta	VR 12 Physical score delta	VR 12 Mental score delta
Revision UKA	12.5	10.9	-1.41
Primary TKA	16.7	14.8	0.41

At one-year, Primary TKA patients reported higher improvement in OKS score (delta) than UKA revisions. These differences were not found over long term follow up.

Delta scores for VR 12 Physical were similar for both groups.

Patients with revision UKA reported decline in their mental health.

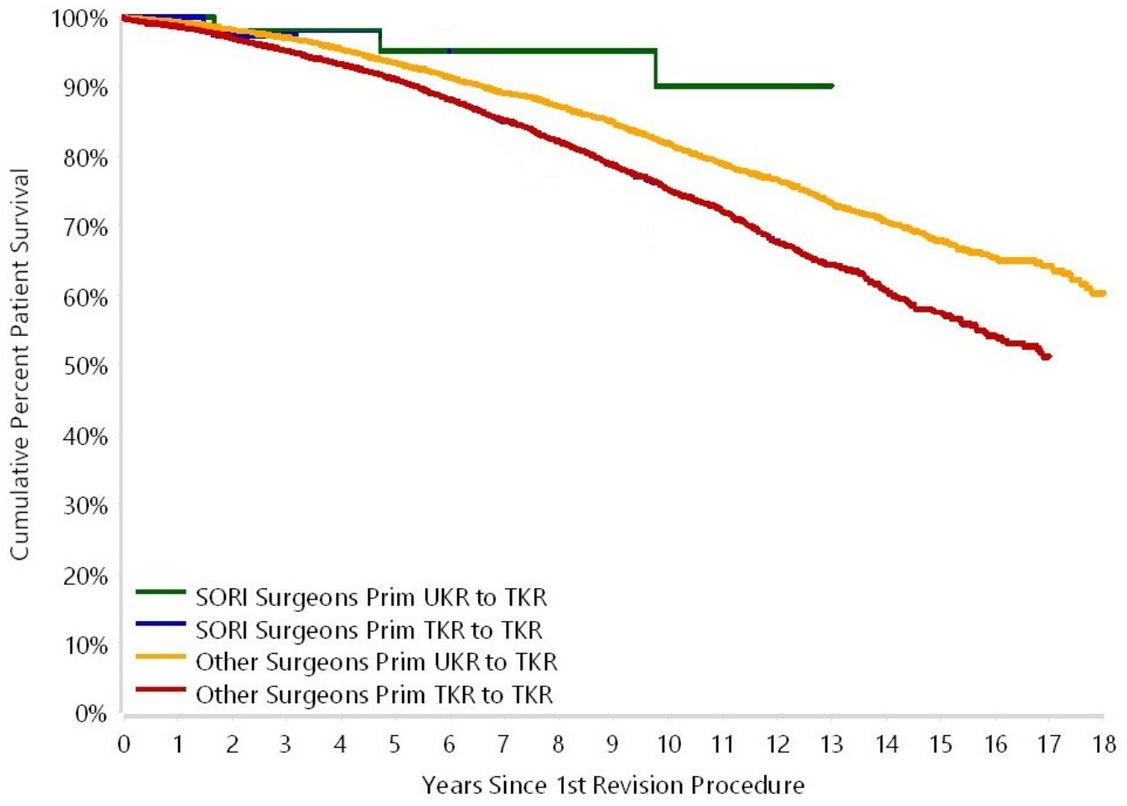
Results: Comparison with AOA NJRR Survivorship

Sydney Orthopedic Research Institute (SORI) data (n=343)

- 3 years survival = 99.38%
- 5 years survival = 96.16 %
- 10 years survival = 93.44%
- 15 years survival = 90.12%

AOA Registry including SORI data

Cumulative Percent Survival of Patients with Surgeon Type of Primary (all diagnosis)



Conclusions

- The past 15 years has seen a gradual reduction in the proportion of UKA performed relative to TKA-especially in countries with a national registry.

- Whilst registries play a role in this change, prior studies suggest that failure of a UKA will be followed by a less satisfied patient after revision to a TKA with a higher chance of re-revision. Our data runs contrary to this suggestion.

- We've shown that the outcomes and re-revision rates of TKAs performed following a prior UKA are better than previously reported and similar to those seen with primary TKA.

References

- Crawford DA, Berend KR, Thienpont E. Unicompartmental Knee Arthroplasty: US and Global Perspectives. The Orthopedic clinics of North America. 2020;51(2):147-59.

- Zambianchi F, Digennaro V, Giorgini A, Grandi G, Fiacchi F, Mugnai R, et al. Surgeon's experience influences UKA survivorship: a comparative study between all-poly and metal back designs. Knee Surg Sports Traumatol Arthrosc. 2015;23(7):2074-80.

- Di Martino A, Bordini B, Barile F, Ancarani C, Digennaro V, Faldini C. Unicompartmental knee arthroplasty has higher revisions than total knee arthroplasty at long term follow-up: a registry study on 6453 prostheses. Knee Surg Sports Traumatol Arthrosc. 2021;29(10):3323-9.

- Wilson HA, Middleton R, Abram SGF, Smith S, Alvand A, Jackson WF, et al. Patient relevant outcomes of unicompartmental versus total knee replacement: systematic review and meta-analysis. Bmj. 2019;364:l352.

- Lombardi AV, Kolich MT, Berend KR, Morris MJ, Crawford DA, Adams JB. Revision of Unicompartmental Knee Arthroplasty to Total Knee Arthroplasty: Is It as Good as a Primary Result? J Arthroplasty. 2018;33(7, Supplement):S105-S8.