

EARLY RESULTS CONFIRM

Clinical and Economic Value of the ATTUNE® Knee System

Comprehensive Evidence Generation



The ATTUNE® Knee System represents the **largest research and development project in the history of DePuy Synthes**, backed by a comprehensive evidence generation program that encompasses clinical and patient reported outcomes as well as health economics studies.



Positive Early Registry Results

The Australian Orthopaedic Association National Joint Replacement Registry (AOANJRR) and National Joint Registry for England, Wales, Northern Ireland and the Isle of Man (NJR) both publish annual reports with outcomes data at set intervals of one, three, five-year and beyond. However, additional implant survivorship data is now available more frequently to manufacturers who subscribe to the AOANJRR Automated Industry Report System (AIRS) and NJR Implant Summary Report services. The below data are from the most recent reports obtained by DePuy Synthes.¹⁻³

AOANJRR

97.9%

ATTUNE CR Knee implant survivorship at four years.¹

This report indicates that the cemented CR ATTUNE Knee cumulative percent revision of 2.1% (95% CI: 1.7, 2.5%) at four years is **performing significantly better** than all other TKA in the AOANJRR (HR 0.69 (0.58, 0.82), p<0.001).¹

98.5%

ATTUNE PS Knee implant survivorship at four years.²

The cemented PS ATTUNE Knee with a cumulative percent revision of 1.5% at four years (95% CI: 1.1, 2.1%) is **performing significantly better** than all other TKA in the AOANJRR (HR 0.54 (0.40, 0.72), p<0.001).²

All other TKA in this report had a four year estimated cumulative percent revision of 3.1% (3.1, 3.2).¹

NJR

98.1%

Implant survivorship at four years.³

The **independent analysis** of 19,818 ATTUNE Knee implantations in the NJR Implant Summary Report, showed that the cumulative revision rate (CRR) for the ATTUNE Knee is 1.9% at four years (98.1% implant survivorship at four years), which is in line with the overall class of total knee replacement of 1.9% CRR at four years.³ The 5 year and 6 year estimated cumulative rate of revision for the ATTUNE Knee is currently based on a sample size of 193 and 42 patients, respectively.³

Value-Based Healthcare: From Hospital to Home

39%

lower odds of patient discharge to a skilled nursing facility for those patients implanted with an ATTUNE Knee, compared to those patients who received a TKA with a Triathlon® Knee, according to the results of a large U.S. hospital administrative database review.⁴

Going home following TKA vs. being discharged to a skilled nursing facility may potentially impact patient satisfaction and reduce health care costs.⁴

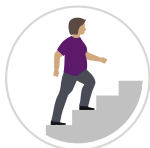


Improvements in Patient Reported Outcomes

One year results from two worldwide studies showed improved patient reported outcomes with the ATTUNE Knee compared to certain other leading knee systems examined in those studies.⁵ Four independent studies demonstrated improved patello-femoral outcomes, including reduced incidence of symptomatic crepitus when compared to the well performing SIGMA® Knee.⁶⁻⁹



Confidence in knee performance⁵



Activities of daily living⁵



Quality of life⁵



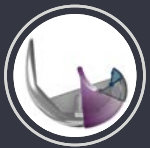
Improved patellofemoral outcomes⁶⁻⁹

Innovative ATTUNE Knee Features Help Address Unmet Needs



60+ patents

in the U.S. granted for key inventions related to the ATTUNE Knee Implants and Instruments.



ATTUNE GRADIUS™ Curve

Geometry of the curve is designed to address the unnatural sliding of the femur on the tibia, to provide smooth motion and stability during everyday activities.¹⁰



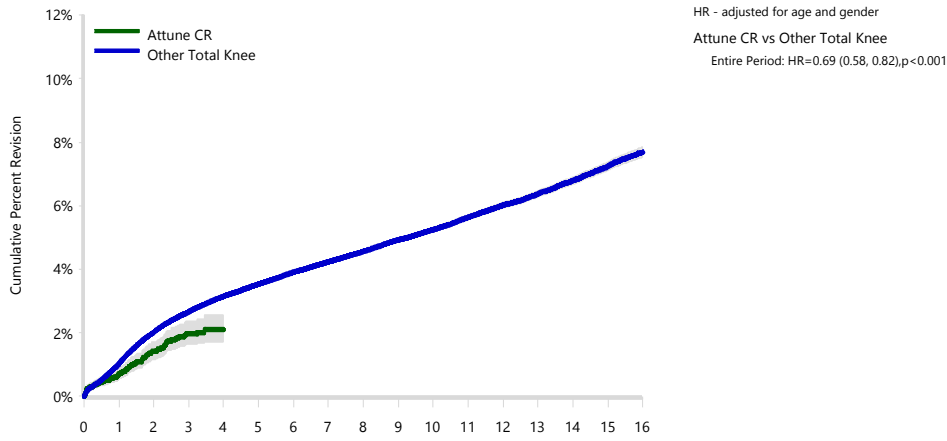
GLIDERIGHT™ Articulation

Four independent studies demonstrated improved patello-femoral outcomes, including reduced incidence of symptomatic crepitus while maintaining optimal patella motion.⁶⁻⁹

References

- 1 Australian Orthopaedic Association National Joint Replacement Registry (AOANJRR), Automated Industry Report System (AIRS), ID No.334 for DePuy Synthes, ATTUNE CR/ATTUNE Total Knee, (Procedures from 1 September 1999 – 17 August 2018), Accessed 20 August 2018, AOA, Adelaide: 1-13.

Figure 1: Cumulative Percent Revision of Primary Total Knee Replacement by Model (All Diagnoses)



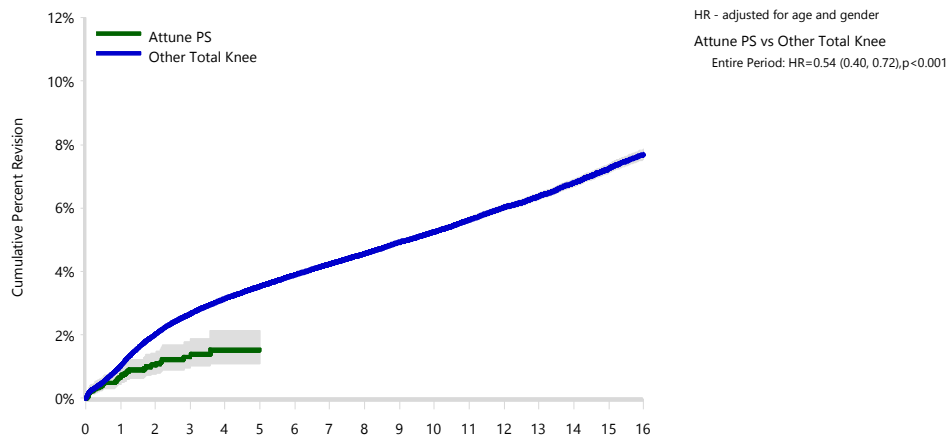
Number at Risk	0 Yr	1 Yr	2 Yrs	3 Yrs	4 Yrs	5 Yrs	6 Yrs	7 Yrs
Attune CR	10453	7664	4604	2258	333	24	0	0
Other Total Knee	620648	564608	503234	445420	391133	339272	290891	245575

Table 11: Yearly Cumulative Percent Revision of Primary Total Knee Replacement by Model (All Diagnoses)

CPR	1 Yr	2 Yrs	3 Yrs	4 Yrs	5 Yrs
Attune CR	0.7 (0.6, 0.9)	1.4 (1.2, 1.7)	2.0 (1.6, 2.4)	2.1 (1.7, 2.5)	
Other Total Knee	1.0 (1.0, 1.1)	2.0 (2.0, 2.1)	2.7 (2.6, 2.7)	3.1 (3.1, 3.2)	3.5 (3.5, 3.6)

- 2 Australian Orthopaedic Association National Joint Replacement Registry (AOANJRR), Automated Industry Report System (AIRS), ID No.335 for DePuy Synthes, ATTUNE PS/ATTUNE Total Knee, (Procedures from 1 September 1999 – 17 August 2018), Accessed 20 August 2018, AOA, Adelaide: 1-13.

Figure 1: Cumulative Percent Revision of Primary Total Knee Replacement by Model (All Diagnoses)



Number at Risk	0 Yr	1 Yr	2 Yrs	3 Yrs	4 Yrs	5 Yrs	6 Yrs	7 Yrs
Attune PS	4687	3501	2195	1238	347	62	0	0
Other Total Knee	626414	568771	505643	446440	391119	339234	290891	245575

Table 11: Yearly Cumulative Percent Revision of Primary Total Knee Replacement by Model (All Diagnoses)

CPR	1 Yr	2 Yrs	3 Yrs	4 Yrs	5 Yrs
Attune PS	0.7 (0.5, 0.9)	1.0 (0.8, 1.4)	1.3 (1.0, 1.8)	1.5 (1.1, 2.1)	1.5 (1.1, 2.1)
Other Total Knee	1.0 (1.0, 1.0)	2.0 (2.0, 2.1)	2.7 (2.6, 2.7)	3.1 (3.1, 3.2)	3.5 (3.5, 3.6)

- 3 National Joint Registry for England, Wales, Northern Ireland and the Isle of Man. Implant Summary Report for DePuy ATTUNE CR and ATTUNE PS. NJR Database extract 30 July, 2018, pages 1-15. Licensed for use until December 11, 2018. Available at www.ATTUNEvidence.com (US) and www.provingthepromise.com (EMEA).
- 4 Etter K, Lerner J, deMoor C, Yoo A, Kalsekar I. Comparative Analysis of Hospital Length of Stay and Discharge Status of Two Contemporary Primary Total Knee Systems. *Journal of Knee Surgery*. 2017; 19(3): 1-33. Premier Perspective™ Database analysis including 38 hospitals, representing 1,178 primary, unilateral TKAs with the ATTUNE Knee and 5,707 primary, unilateral TKAs with Triathlon™.
- 5 Hamilton WG, Brenkel I, Clatworthy M, Dwyer K, Himden S, Lesko J, Kantor S. Early Patient Reported Outcomes With New Primary vs. Contemporary Total Knee Arthroplasty; A Comparison of Two, Worldwide, Multi-Center Prospective Studies. 2017; American Academy of Orthopaedic Surgeons Annual Meeting, Poster Number 106, San Diego, CA.
- 6 Indelli PF, Pipino G, Johnson P, Graceffa A, Marucci M. Posterior-stabilized total knee arthroplasty: a matched pair analysis of a classic and its evolutionary design. *Arthroplasty Today* 206;2(4):193-198, 2016.
- 7 Martin JR, Jennings JM, Watters TS, Levy DL, McNabb DC, Dennis DA. Femoral Implant Design Modification Decreases the Incidence of Patellar Crepitus in Total Knee Arthroplasty. *The Journal of Arthroplasty*. 2017; 32(4): 1310-3.
- 8 Ranawat CS, White PB, West S, Ranawat AS. Clinical and Radiographic Results of Attune and PFC Sigma Knee Designs at 2-Year Follow-Up: A Prospective Matched-Pair Analysis. *J Arthroplasty* 2017;32:431-6.
- 9 Toomey SE, Daccach JA, Shah JC, Himden SE, Lesko JP, Hamilton WG. Comparative Incidence of Patellofemoral Complications Between 2 Total Knee Arthroplasty Systems in a Multicenter, Prospective Clinical Study. *Journal of Arthroplasty*; 2017: 1-6.
- 10 Clary, C W., Fitzpatrick, C.K., Maletsky, L.P., & Rullkoetter, P. J. (2012) Improving Dynamic Mid-stance Stability: An Experimental and Finite Element Study. Orthopaedic Research Society, 58th Annual Meeting, Poster Number 1044, San Francisco, CA.

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