

Implant Summary Report for:

DePuy

Attune Cementless

Comprising PRIMARY knees implanted up to: 01 November 2022
NJR Database extract: 31 December 2022

Produced on: 15 February 2023
Licensed for use until: 15 February 2024

Contents

Recorded Usage in NJR	2
Patient and Procedure Details	3
Revision and Survivorship	4
Patient Reported Outcomes	11
APPENDICES – Component Lists	16

This report has been produced by the National Joint Registry (NJR). It summarises usage and outcomes associated with the Attune Cementless up to the specified dates. This analysis is based on data collected by the NJR and PROMs data collected by NHS Digital for the components listed in the appendices.

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NJR Recorded Usage

Implant Usage

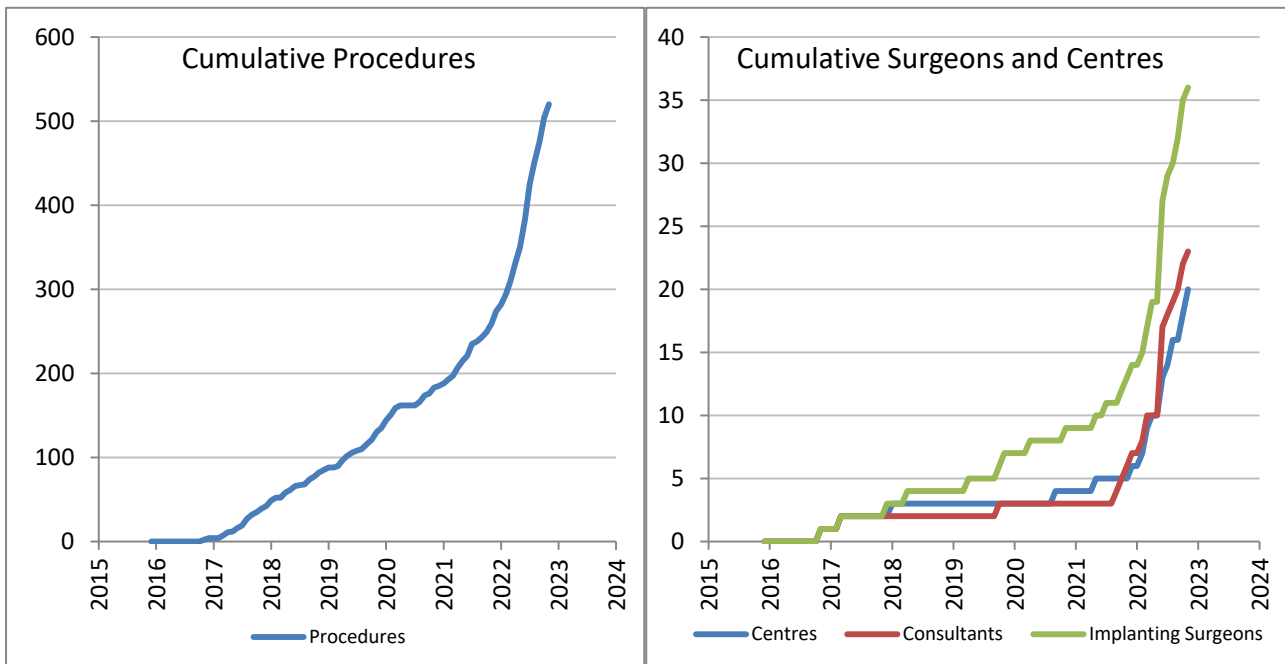
Date of first recorded usage in the NJR: **27 October 2016**

Date of last recorded usage in this dataset: **01 November 2022**

Maximum implantation time: 6.01 years

Mean implantation time: 1.8 years

Totals Recorded in NJR	Cumulative Total
Procedures	524
Patients	470
Centres	20
Consultants	23
Implanting Surgeons	36



Current Outcome	Year of implantation													Total	%
	Pre-2011	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022		
Death	0	0	0	0	0	0	0	1	0	1	1	0	0	3	0.6%
Revised	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
Unrevised	0	0	0	0	0	0	4	44	39	55	43	94	242	521	99.4%
Total	0	0	0	0	0	0	4	45	39	56	44	94	242	524	100%

Patient / Procedure Details

Patient Details

	Attune Cementless	All other Bicondylar knees in NJR
Total Procedures	524	1,356,060
Total Patients	470	1,085,375
Demographics		
Mean age	63.1	70.1
< 50	8.6%	1.9%
50 – 59	27.3%	12.3%
60 – 69	40.8%	32.8%
70 – 79	18.9%	38.5%
≥ 80	4.4%	14.5%
Median BMI	30	30
% BMI information available	58.2%	66.4%
Underweight (BMI < 18.5)	0.0%	0.2%
Normal (18.5 ≤ BMI < 25)	6.9%	10.1%
Overweight (25 ≤ BMI < 30)	33.4%	34.0%
Obese I (30 ≤ BMI < 35)	31.5%	32.4%
Obese II (35 ≤ BMI < 40)	19.0%	16.5%
Obese III (BMI ≥ 40)	9.2%	6.8%
% Male	66.0%	42.8%
ASA Grades		
P1 - Fit and healthy	11.1%	9.8%
P2 - Mild disease not incapacitating	76.3%	72.4%
P3 - Incapacitating systemic disease	12.6%	17.5%
P4 / P5	0.0%	0.3%
Indications		
Osteoarthritis	97.71%	97.43%
Rheumatoid Arthritis	0.95%	1.50%
Other Inflammatory Arthropathy	0.95%	0.71%
Previous Trauma	0.57%	0.60%
Avascular Necrosis	0.38%	0.35%
Other	0.38%	0.33%

Total of indications may exceed total number of implants, since more than one indication can be listed per case.

Revision and Survivorship

Reasons for Revision

Reasons for revision of primary procedures in which the implant was used.

Reason for Revision	Revised †	Expected Revisions *	p value
Infection	0	1.93	0.276
Progressive Arthritis Remaining	0	0.31	1
Aseptic Loosening Femur	0	0.13	1
Aseptic Loosening Tibia	0	0.39	1
Aseptic Loosening Patella	0	0.09	1
Unexplained Pain	0	0.27	1
Stiffness	0	0.42	1
Malalignment	0	0.28	1
Instability	0	0.70	1
Dislocation / Subluxation	0	0.08	1
Periprosthetic Fracture	0	0.09	1
Wear of Polyethylene Component	0	0.04	1
Lysis - Tibia	0	0.09	1
Lysis - Femur	0	0.05	1
Component Dissociation	0	0.02	1
Implant Fracture	0	0.01	1
Other / Not recorded	0	0.22	1
Total Revised	0	4.24	0.026

† multiple reasons may be listed for one revision procedure

* Based on All NJR Bicondylar knees, adjusted for agegroup, gender, indications and implantation year

- Significantly better, $p < 0.001$
- Significantly better, $p < 0.05$
- Significantly worse $p < 0.05$
- Significantly worse $p < 0.001$

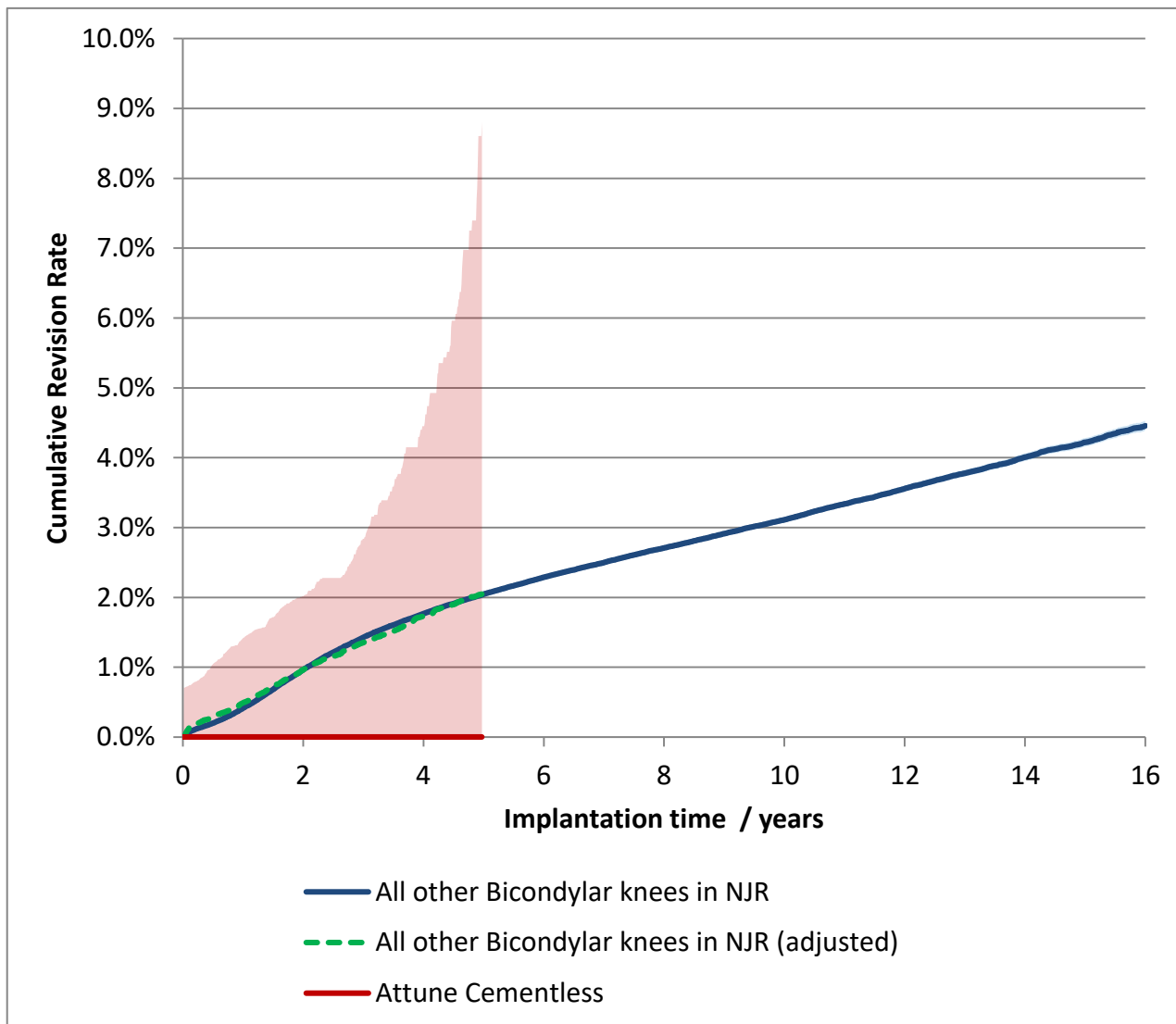


Components Revised	Number of procedures	Attune Cementless	All other Bicondylar knees in NJR
Femoral and/or Tibial Revision	0	0.0%	68.4%
Isolated bearing exchange	0	0.0%	14.5%
Patella revision / resurfacing only	0	0.0%	16.1%
No component revision recorded	0	0.0%	1.0%

Revision and Survivorship

Cumulative Revision Rate

Endpoint: All reasons for revision



Cox Proportional Hazards model for revision risk ratio of Attune Cementless / All other Bicondylar knees in NJR, with endpoint as any revision.

Adjustment	Hazard Ratio (95% CI)	p-value
Unadjusted.	Insufficient data	
Adjusted for age, gender, year cohort and indications.	Insufficient data	

Revision and Survivorship

Cumulative Revision Rate

Endpoint: All revisions

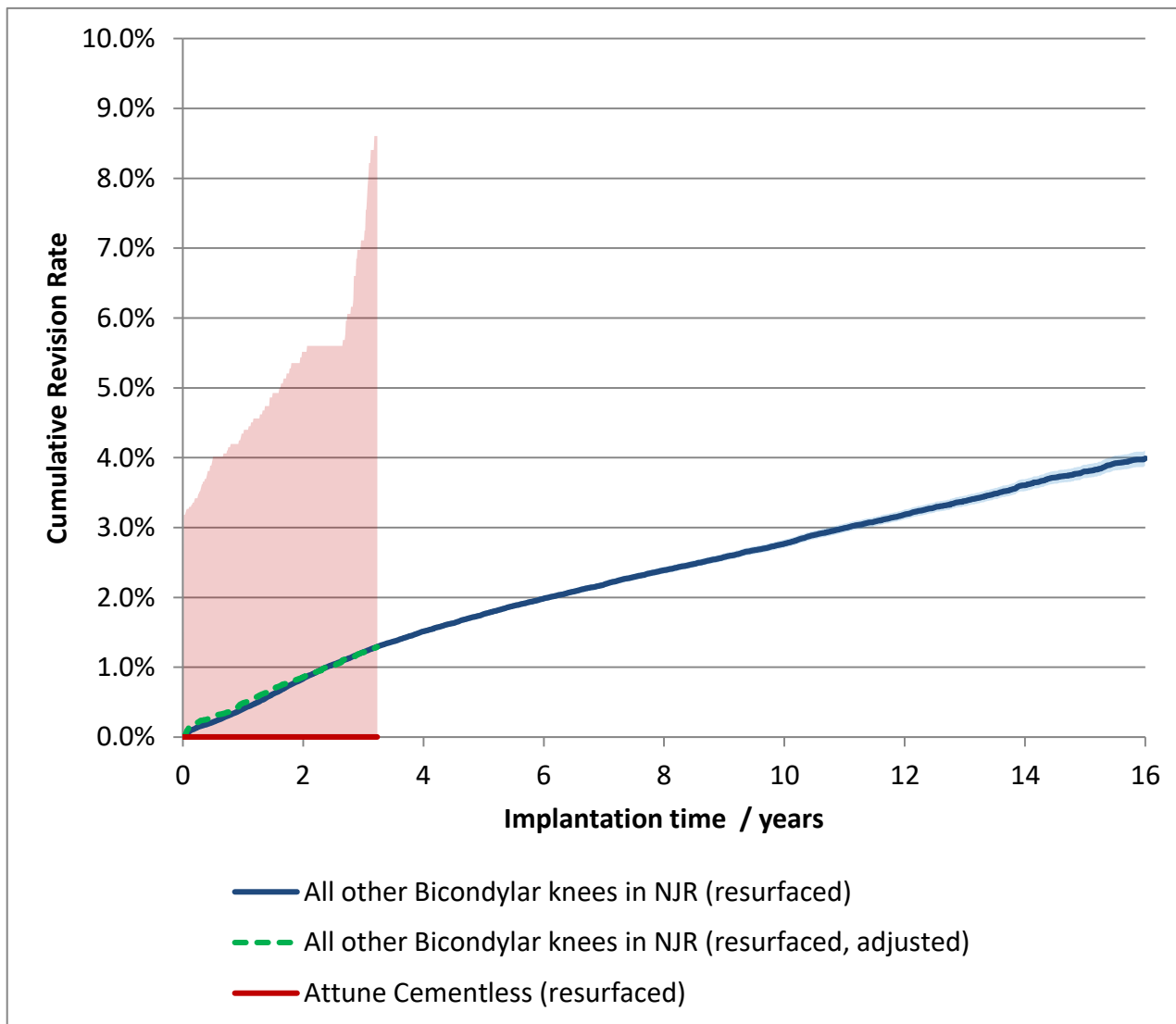
Period /years	At Risk	Attune Cementless	All other Bicondylar knees in NJR
0	524	-	-
1	258	0.0% (0.0% - 1.4%)	0.4% (0.4% - 0.4%)
2	181	0.0% (0.0% - 2.0%)	1.0% (0.9% - 1.0%)
3	128	0.0% (0.0% - 2.8%)	1.4% (1.4% - 1.4%)
4	81	0.0% (0.0% - 4.5%)	1.8% (1.7% - 1.8%)
5		(-)	2.0% (2.0% - 2.1%)
6		(-)	2.3% (2.3% - 2.3%)
7		(-)	2.5% (2.5% - 2.5%)
8		(-)	2.7% (2.7% - 2.7%)
9		(-)	2.9% (2.9% - 2.9%)
10		(-)	3.1% (3.1% - 3.1%)
11		(-)	3.3% (3.3% - 3.4%)
12		(-)	3.6% (3.5% - 3.6%)
13		(-)	3.8% (3.7% - 3.8%)
14		(-)	4.0% (4.0% - 4.1%)
15		(-)	4.2% (4.2% - 4.3%)

Cumulative revision rate with 95% confidence intervals
 Rate is only reported for times where more than 40 remain at risk

Revision and Survivorship

Cumulative Revision Rate

Patella: Resurfaced



Cox Proportional Hazards model for revision risk ratio of Attune Cementless (resurfaced) / All other Bicondylar knees in NJR (resurfaced), with endpoint as any revision.

Adjustment	Hazard Ratio (95% CI)	p-value
Unadjusted.	Insufficient data	
Adjusted for age, gender, year cohort and indications.	Insufficient data	

Revision and Survivorship

Cumulative Revision Rate

Patella: Resurfaced

Period /years	At Risk	Attune Cementless (resurfaced)	All other Bicondylar knees in NJR (resurfaced)
0	116	-	-
1	83	0.0% (0.0% - 4.3%)	0.4% (0.4% - 0.4%)
2	65	0.0% (0.0% - 5.5%)	0.8% (0.8% - 0.9%)
3	50	0.0% (0.0% - 7.1%)	1.2% (1.2% - 1.2%)
4		(-)	1.5% (1.5% - 1.5%)
5		(-)	1.8% (1.7% - 1.8%)
6		(-)	2.0% (1.9% - 2.0%)
7		(-)	2.2% (2.1% - 2.2%)
8		(-)	2.4% (2.3% - 2.4%)
9		(-)	2.6% (2.5% - 2.6%)
10		(-)	2.8% (2.7% - 2.8%)
11		(-)	3.0% (2.9% - 3.1%)
12		(-)	3.2% (3.1% - 3.3%)
13		(-)	3.4% (3.3% - 3.5%)
14		(-)	3.6% (3.5% - 3.7%)
15		(-)	3.8% (3.7% - 3.9%)

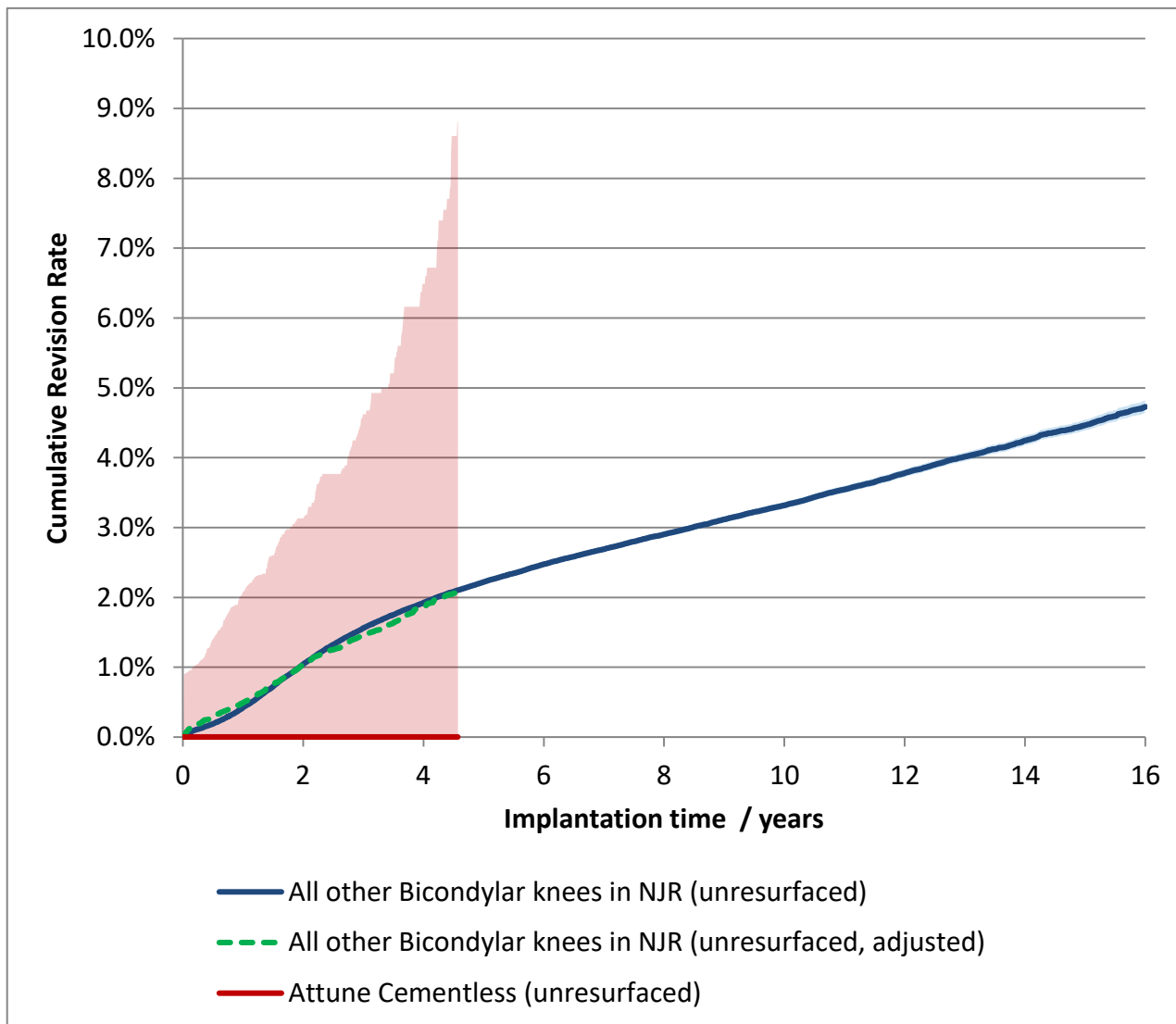
Cumulative revision rate with 95% confidence intervals

Rate is only reported for times where more than 40 remain at risk

Revision and Survivorship

Cumulative Revision Rate

Patella: Unresurfaced



Cox Proportional Hazards model for revision risk ratio of Attune Cementless (unresurfaced) / All other Bicondylar knees in NJR (unresurfaced), with endpoint as any revision.

Adjustment	Hazard Ratio (95% CI)	p-value
Unadjusted.	Insufficient data	
Adjusted for age, gender, year cohort and indications.	Insufficient data	

Revision and Survivorship

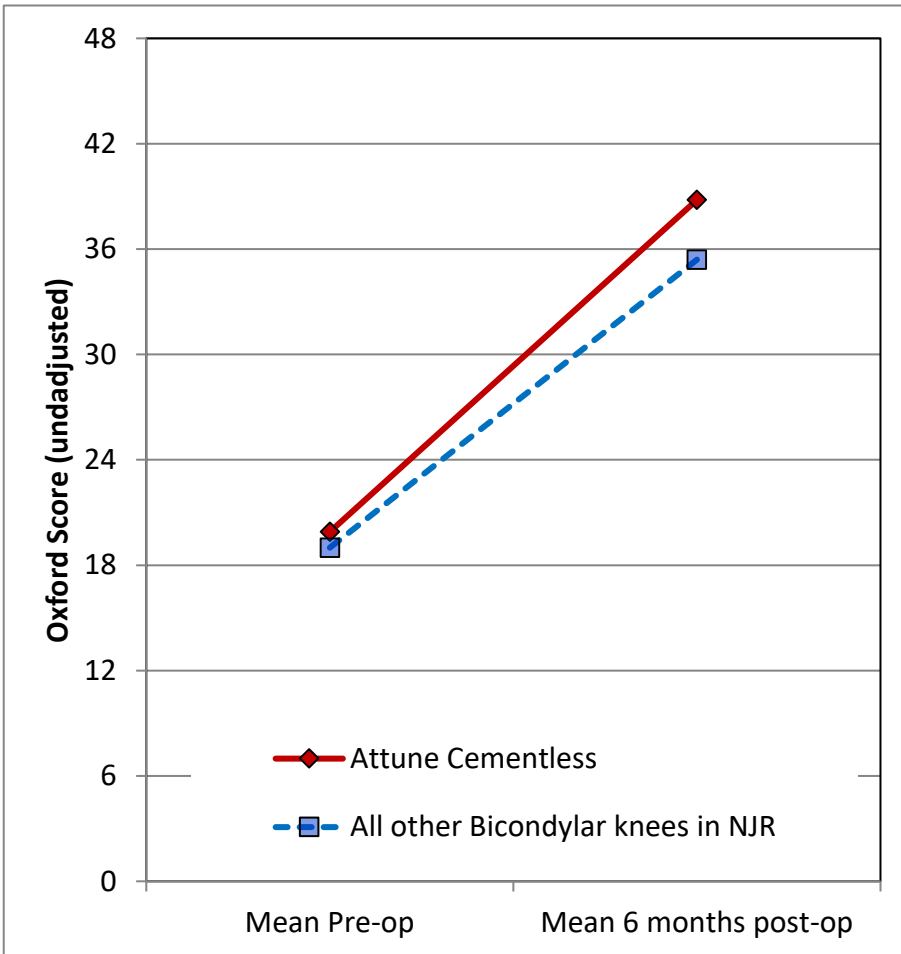
Cumulative Revision Rate

Patella: Unresurfaced

Period /years	At Risk	Attune Cementless (unresurfaced)	All other Bicondylar knees in NJR (unresurfaced)
0	408	-	-
1	175	0.0% (0.0% - 2.1%)	0.4% (0.4% - 0.4%)
2	116	0.0% (0.0% - 3.1%)	1.0% (1.0% - 1.1%)
3	78	0.0% (0.0% - 4.6%)	1.6% (1.5% - 1.6%)
4	55	0.0% (0.0% - 6.5%)	1.9% (1.9% - 2.0%)
5		(-)	2.2% (2.2% - 2.3%)
6		(-)	2.5% (2.4% - 2.5%)
7		(-)	2.7% (2.7% - 2.7%)
8		(-)	2.9% (2.9% - 2.9%)
9		(-)	3.1% (3.1% - 3.2%)
10		(-)	3.3% (3.3% - 3.4%)
11		(-)	3.5% (3.5% - 3.6%)
12		(-)	3.8% (3.7% - 3.8%)
13		(-)	4.0% (4.0% - 4.1%)
14		(-)	4.2% (4.2% - 4.3%)
15		(-)	4.5% (4.4% - 4.5%)

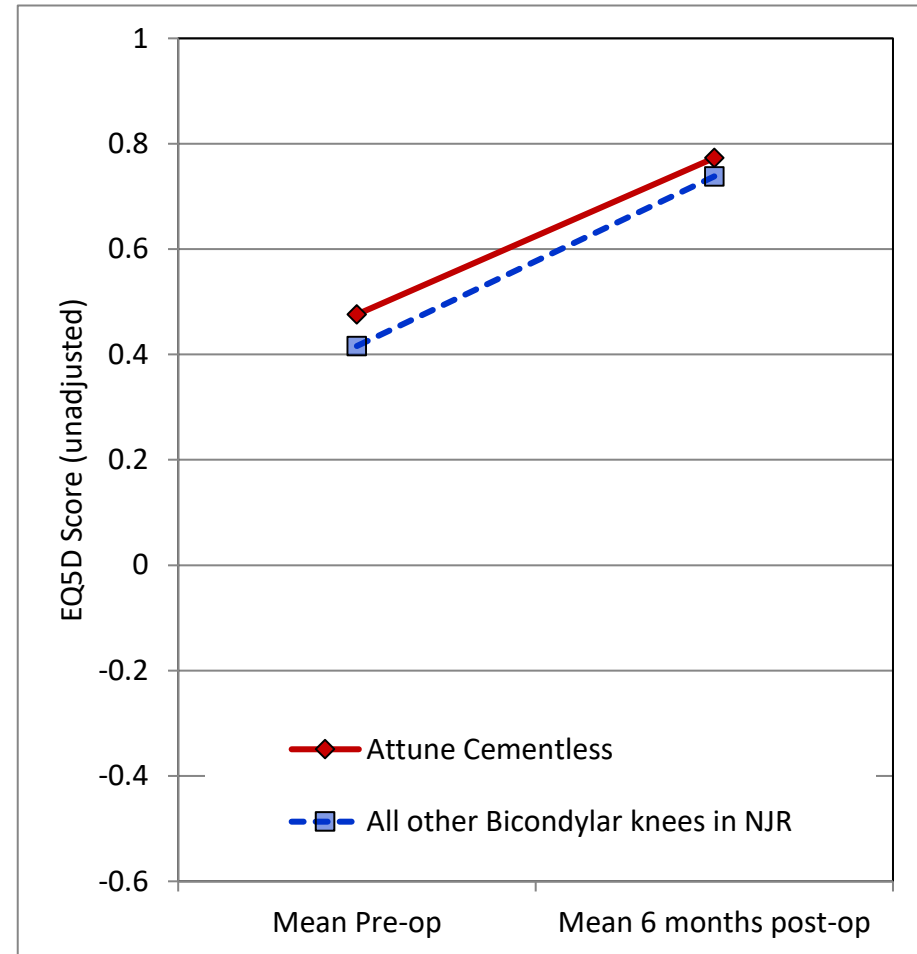
Cumulative revision rate with 95% confidence intervals
 Rate is only reported for times where more than 40 remain at risk

PROMs Analysis



Patient Reported Outcomes

Comprising PROMs data up to and including: 31/12/2020



Patient Reported Outcomes

PROMs Analysis

Comprising PROMs data up to and including: 31/12/2020

Oxford Knee Score (0 - 48)	Attune Cementless	All other Bicondylar knees in NJR	All Knees in NJR
Paired Records	56	364,754	382,034
PreOp score	19.9 (18.1 - 21.7)	19.0 (19.0 - 19.1)	19.1 (19.1 - 19.1)
6 month score	38.8 (36.6 - 40.9)	35.4 (35.4 - 35.4)	35.5 (35.5 - 35.5)
6 month score (adjusted)	38.4 (36.2 - 40.7)	35.4 (35.4 - 35.5)	35.5 (35.5 - 35.5)
Health gain	18.9 (16.3 - 21.5)	16.4 (16.3 - 16.4)	16.4 (16.4 - 16.4)
Health gain (adjusted)	19.3 (17.1 - 21.6)	16.3 (16.3 - 16.4)	16.4 (16.4 - 16.4)
p value (adjusted health gain)	0.003		
Score Improved	92.9%	93.9%	93.9%

EQ-5D Index (-0.59 - 1.00)	Attune Cementless	All other Bicondylar knees in NJR	All Knees in NJR
Paired Records	56	338,352	354,535
PreOp score	0.476 (0.400 - 0.553)	0.416 (0.415 - 0.417)	0.417 (0.416 - 0.418)
6 month score	0.773 (0.708 - 0.838)	0.738 (0.737 - 0.739)	0.739 (0.738 - 0.740)
6 month score (adjusted)	0.768 (0.705 - 0.831)	0.738 (0.737 - 0.739)	0.739 (0.738 - 0.740)
Health gain	0.297 (0.203 - 0.391)	0.322 (0.321 - 0.323)	0.322 (0.321 - 0.323)
Health gain (adjusted)	0.351 (0.288 - 0.414)	0.321 (0.320 - 0.322)	0.322 (0.321 - 0.322)
p value (adjusted health gain)	0.19		
Score Improved	78.6%	81.3%	81.4%

EQ-VAS (0 - 100)	Attune Cementless	All other Bicondylar knees in NJR	All Knees in NJR
Paired Records	55	324,301	340,143
PreOp score	71.3 (66.7 - 76.0)	68.0 (67.9 - 68.0)	68.0 (67.9 - 68.1)
6 month score	76.3 (71.2 - 81.3)	74.1 (74.0 - 74.1)	74.1 (74.1 - 74.2)
6 month score (adjusted)	75.0 (70.6 - 79.5)	74.1 (74.1 - 74.2)	74.1 (74.1 - 74.2)
Health gain	4.9 (0.0 - 9.8)	6.1 (6.0 - 6.2)	6.2 (6.1 - 6.2)
Health gain (adjusted)	7.0 (2.6 - 11.5)	6.1 (6.1 - 6.2)	6.2 (6.1 - 6.2)
p value (adjusted health gain)	0.42		
Score Improved	61.8%	56.3%	56.4%

Adjusted scores correspond to the NHS Digital version 3 casemix-adjustment model. This includes patient variables from PROMs, HES, and IMD data.

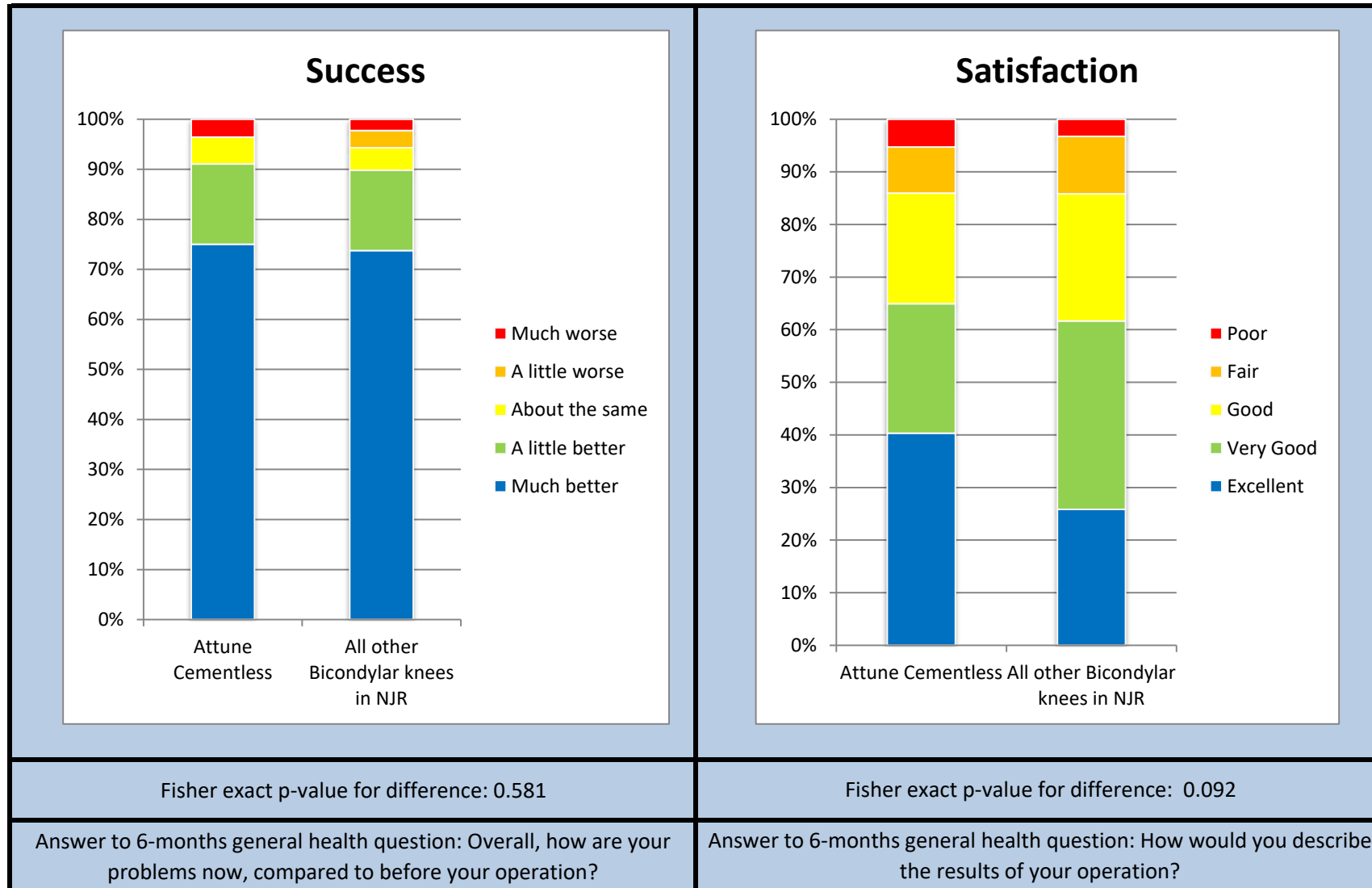
Figures in parentheses represent the 95% confidence interval for the mean

Summary Report for:

Attune Cementless

Responses are not case mix adjusted

Patient Reported Outcomes



Fisher exact p-value for difference: 0.581

Fisher exact p-value for difference: 0.092

Answer to 6-months general health question: Overall, how are your problems now, compared to before your operation?

Answer to 6-months general health question: How would you describe the results of your operation?

Patient Reported Outcomes

Success

Response	Attune Cementless	All other Bicondylar knees in NJR
Much better	42	276378
A little better	9	60101
About the same	3	16875
A little worse	0	12856
Much worse	2	8456

Answer to 6-months general health question:

"Overall, how are your problems now, compared to before your operation?"

Satisfaction

Response	Attune Cementless	All other Bicondylar knees in NJR
Excellent	23	96672
Very Good	14	133779
Good	12	90407
Fair	5	40902
Poor	3	12114

Answer to 6-months general health question:

"How would you describe the results of your operation?"

Disclaimer

Disclaimer

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Appendix A: Component List

Catalogue Number	Description	Number Implanted
Femoral		
150401103	ATTUNE CR FEM LT SZ 3 POR	2
150401104	ATTUNE CR FEM LT SZ 4 POR	13
150401105	ATTUNE CR FEM LT SZ 5 POR	19
150401106	ATTUNE CR FEM LT SZ 6 POR	37
150401107	ATTUNE CR FEM LT SZ 7 POR	50
150401108	ATTUNE CR FEM LT SZ 8 POR	59
150401109	ATTUNE CR FEM LT SZ 9 POR	7
150401110	ATTUNE CR FEM LT SZ 10 POR	4
150401123	ATTUNE CR FEM LT SZ 3N POR	1
150401124	ATTUNE CR FEM LT SZ 4N POR	6
150401125	ATTUNE CR FEM LT SZ 5N POR	4
150401126	ATTUNE CR FEM LT SZ 6N POR	21
150401203	ATTUNE CR FEM RT SZ 3 POR	1
150401204	ATTUNE CR FEM RT SZ 4 POR	6
150401205	ATTUNE CR FEM RT SZ 5 POR	31
150401206	ATTUNE CR FEM RT SZ 6 POR	40
150401207	ATTUNE CR FEM RT SZ 7 POR	66
150401208	ATTUNE CR FEM RT SZ 8 POR	55
150401209	ATTUNE CR FEM RT SZ 9 POR	10
150401210	ATTUNE CR FEM RT SZ 10 POR	2
150401224	ATTUNE CR FEM RT SZ 4N POR	4
150401225	ATTUNE CR FEM RT SZ 5N POR	15
150401226	ATTUNE CR FEM RT SZ 6N POR	24
150411104	ATTUNE PS FEM LT SZ 4 POR	1
150411106	ATTUNE PS FEM LT SZ 6 POR	3
150411107	ATTUNE PS FEM LT SZ 7 POR	6
150411108	ATTUNE PS FEM LT SZ 8 POR	2
150411109	ATTUNE PS FEM LT SZ 9 POR	1
150411110	ATTUNE PS FEM LT SZ 10 POR	1
150411125	ATTUNE PS FEM LT SZ 5N POR	1
150411203	ATTUNE PS FEM RT SZ 3 POR	1
150411204	ATTUNE PS FEM RT SZ 4 POR	1
150411205	ATTUNE PS FEM RT SZ 5 POR	3
150411206	ATTUNE PS FEM RT SZ 6 POR	4
150411207	ATTUNE PS FEM RT SZ 7 POR	8
150411208	ATTUNE PS FEM RT SZ 8 POR	8
150411209	ATTUNE PS FEM RT SZ 9 POR	3
150411225	ATTUNE PS FEM RT SZ 5N POR	1
150411226	ATTUNE PS FEM RT SZ 6N POR	3
Tibial Tray		
150611003	ATTUNE RP TIB BASE SZ 3 POR	21
150611004	ATTUNE RP TIB BASE SZ 4 POR	51
150611005	ATTUNE RP TIB BASE SZ 5 POR	84
150611006	ATTUNE RP TIB BASE SZ 6 POR	89

Appendix A: Component List

Catalogue Number	Description	Number Implanted
150611007	ATTUNE RP TIB BASE SZ 7 POR	115
150611008	ATTUNE RP TIB BASE SZ 8 POR	121
150611009	ATTUNE RP TIB BASE SZ 9 POR	35
150611010	ATTUNE RP TIB BASE SZ 10 POR	4
150660008	ATTUNERevisionTibialBaseRotatingPlatformSize8Cemented	1
150680004	ATTUNE RP POCKET BASE SZ4 CEM	1
150680009	ATTUNE RP POCKET BASE SZ9 CEM	2
Meniscal		
151620505	Attune CR FB Insert Size 5 5mm	1
151630305	Attune CR RP Insert Size 3 5mm	4
151630405	Attune CR RP Insert Size 4 5mm	12
151630406	Attune CR RP Insert Size 4 6mm	9
151630407	Attune CR RP Insert Size 4 7mm	4
151630408	Attune CR RP Insert Size 4 8mm	4
151630505	Attune CR RP Insert Size 5 5mm	25
151630506	Attune CR RP Insert Size 5 6mm	23
151630507	Attune CR RP Insert Size 5 7mm	11
151630508	Attune CR RP Insert Size 5 8mm	9
151630605	Attune CR RP Insert Size 6 5mm	38
151630606	Attune CR RP Insert Size 6 6mm	41
151630607	Attune CR RP Insert Size 6 7mm	27
151630608	Attune CR RP Insert Size 6 8mm	15
151630610	Attune CR RP Insert Size 6 10mm	1
151630705	Attune CR RP Insert Size 7 5mm	46
151630706	Attune CR RP Insert Size 7 6mm	25
151630707	Attune CR RP Insert Size 7 7mm	26
151630708	Attune CR RP Insert Size 7 8mm	15
151630710	Attune CR RP Insert Size 7 10mm	3
151630712	Attune CR RP Insert Size 7 12mm	1
151630805	Attune CR RP Insert Size 8 5mm	36
151630806	Attune CR RP Insert Size 8 6mm	36
151630807	Attune CR RP Insert Size 8 7mm	25
151630808	Attune CR RP Insert Size 8 8mm	11
151630810	Attune CR RP Insert Size 8 10mm	4
151630814	Attune CR RP Insert Size 8 14mm	2
151630905	Attune CR RP Insert Size 9 5mm	5
151630906	Attune CR RP Insert Size 9 6mm	7
151630907	Attune CR RP Insert Size 9 7mm	2
151630908	Attune CR RP Insert Size 9 8mm	1
151630910	Attune CR RP Insert Size 9 10mm	2
151631005	Attune CR RP Insert Size 10 5mm	4
151631006	Attune CR RP Insert Size 10 6mm	1
151631010	Attune CR RP Insert Size 10 10mm	1
151650305	Attune PS RP Insert Size 3 5mm	1
151650406	Attune PS RP Insert Size 4 6mm	1

Appendix A: Component List

Catalogue Number	Description	Number Implanted
151650408	Attune PS RP Insert Size 4 8mm	1
151650505	Attune PS RP Insert Size 5 5mm	1
151650507	Attune PS RP Insert Size 5 7mm	2
151650508	Attune PS RP Insert Size 5 8mm	1
151650512	Attune PS RP Insert Size 5 12mm	1
151650605	Attune PS RP Insert Size 6 5mm	4
151650606	Attune PS RP Insert Size 6 6mm	4
151650607	Attune PS RP Insert Size 6 7mm	2
151650705	Attune PS RP Insert Size 7 5mm	3
151650706	Attune PS RP Insert Size 7 6mm	7
151650707	Attune PS RP Insert Size 7 7mm	4
151650805	Attune PS RP Insert Size 8 5mm	3
151650806	Attune PS RP Insert Size 8 6mm	1
151650807	Attune PS RP Insert Size 8 7mm	4
151650808	Attune PS RP Insert Size 8 8mm	2
151650906	Attune PS RP Insert Size 9 6mm	1
151650907	Attune PS RP Insert Size 9 7mm	3
151651005	Attune PS RP Insert Size 10 5mm	1
Patella		
151810032	Attune Medialized Anatomic Patella 32mm	1
151810035	Attune Medialized Anatomic Patella 35mm	15
151810038	Attune Medialized Anatomic Patella 38mm	29
151810041	Attune Medialized Anatomic Patella 41mm	2
151820032	Attune Medialized Dome Patella 32mm	2
151820035	Attune Medialized Dome Patella 35mm	23
151820038	Attune Medialized Dome Patella 38mm	28
151820041	Attune Medialized Dome Patella 41mm	16