

Genesis II Oxinium CR (cementless)/Genesis II Total Knee Investigation

Note: This analysis compares the Genesis II Oxinium CR (cless)/Genesis II femoral/tibial combination with all other total knee prostheses.

This combination has been identified as having a significantly higher rate of revision. For a detailed explanation of the process used by the Registry that results in identification of prostheses that have a higher than anticipated rate of revision please refer to the Prostheses with Higher than Anticipated Rates of Revision chapter of the most recent AOANJRR Annual Report, <https://aoanjrr.sahmri.com/annual-reports-2026>.

Note: Procedures using prostheses with no recorded use in 2025 are excluded from the comparator.

TABLE 1

Revision Rate of Primary Total Knee Replacement

The revision rate of the Genesis II Oxinium CR (cless)/Genesis II total knee combination is compared to all other total knee prostheses.

Table 1: Revision Rates of Primary Total Knee Replacement

Component	N Revised	N Total	Obs. Years	Revisions/100 Obs. Yrs (95% CI)
Genesis II Oxinium CR (cless)/Genesis II	48	110	1084	4.43 (3.27, 5.87)
Other Total Knee	27236	791320	5144838	0.53 (0.52, 0.54)
TOTAL	27284	791430	5145922	0.53 (0.52, 0.54)

Note: Prostheses no longer used in 2025 are excluded from the comparator.

TABLE 2

Yearly Cumulative Percent Revision of Primary Total Knee Replacement

The yearly cumulative percent revision of the Genesis II Oxinium CR (cless)/Genesis II total knee combination is compared to all other total knee prostheses.

Table 2: Yearly Cumulative Percent Revision (95% CI) of Primary Total Knee Replacement

CPR	1 Yr	2 Yrs	3 Yrs	4 Yrs	5 Yrs	6 Yrs
Genesis II Oxinium CR (cless)/Genesis II	11.8 (7.0, 19.5)	30.4 (22.7, 40.0)	38.9 (30.4, 48.7)	38.9 (30.4, 48.7)	39.8 (31.3, 49.7)	40.8 (32.2, 50.7)
Other Total Knee	1.0 (1.0, 1.0)	1.8 (1.8, 1.8)	2.4 (2.3, 2.4)	2.8 (2.7, 2.8)	3.1 (3.0, 3.1)	3.4 (3.4, 3.4)

CPR	7 Yrs	8 Yrs	9 Yrs	10 Yrs	11 Yrs	12 Yrs
Genesis II Oxinium CR (cless)/Genesis II	41.8 (33.1, 51.7)	42.8 (34.0, 52.7)	42.8 (34.0, 52.7)	42.8 (34.0, 52.7)	42.8 (34.0, 52.7)	44.0 (35.2, 54.1)
Other Total Knee	3.7 (3.7, 3.8)	4.0 (3.9, 4.1)	4.3 (4.3, 4.4)	4.6 (4.6, 4.7)	4.9 (4.9, 5.0)	5.3 (5.2, 5.3)

CPR	13 Yrs	14 Yrs	15 Yrs	16 Yrs	17 Yrs	18 Yrs
Genesis II Oxinium CR (cless)/Genesis II	44.0 (35.2, 54.1)	44.0 (35.2, 54.1)				
Other Total Knee	5.6 (5.5, 5.7)	5.9 (5.8, 6.0)	6.3 (6.2, 6.4)	6.7 (6.6, 6.8)	7.2 (7.0, 7.3)	7.5 (7.4, 7.7)

CPR	19 Yrs	20 Yrs	21 Yrs	22 Yrs	23 Yrs	24 Yrs	25 Yrs
Genesis II Oxinium CR (cless)/Genesis II							
Other Total Knee	7.8 (7.7, 8.0)	8.1 (7.9, 8.3)	8.5 (8.2, 8.7)	8.7 (8.4, 9.0)	8.8 (8.5, 9.1)	9.1 (8.7, 9.5)	9.5 (8.8, 10.2)

Note: Prostheses no longer used in 2025 are excluded from the comparator.

FIGURE 1

Yearly Cumulative Percent Revision of Primary Total Knee Replacement

The yearly cumulative percent revision of the Genesis II Oxinium CR (cless)/Genesis II total knee combination is compared to all other total knee prostheses. In addition, hazard ratios are reported.

Hazard ratios are reported for specific time periods during which the hazard ratio is constant. This is done to enable more specific and valid comparisons of the risk of revision over time. The pattern of variation in risk has important implications with respect to the underlying reasons for any difference.

Figure 1: Cumulative Percent Revision of Primary Total Knee Replacement

***** Proportionality Not Achieved :-(*****

var1 VS var2 (Genesis II Oxinium CR (cless)/Genesis II VS Other Total Knee) is non-proportional in time period 2.5Yr_max

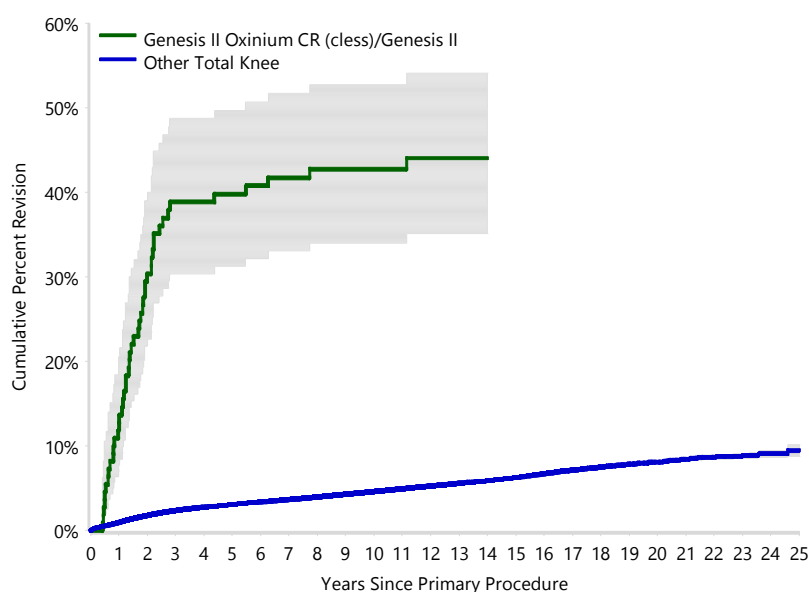
The algorithm is not able to select a time point. Please specify time periods manually

The model will be fit over this entire period instead

var	timepoint	ProbChiSq
var1	0_1Yr	0.0250
var1	1Yr_1p5Yr	0.7871
var1	1p5Yr_2p5Yr	0.7409
var1	2p5Yr_max	0.0232

The PHREG Procedure

Dummy Text



HR - adjusted for age and sex

Genesis II Oxinium CR (cless)/Genesis II vs
Other Total Knee

0 - 1Yr: HR=10.78 (95% CI 6.25, 18.57), p<0.001

1Yr - 1.5Yr: HR=24.14 (95% CI 13.36, 43.64), p<0.001

1.5Yr - 2.5Yr: HR=25.79 (95% CI 15.54, 42.82), p<0.001

2.5Yr+: HR=2.77 (95% CI 1.44, 5.33), p=0.002

Number at Risk	0 Yr	1 Yr	2 Yrs	3 Yrs	4 Yrs	5 Yrs	6 Yrs	7 Yrs
Genesis II Oxinium CR (cless)/Genesis II	110	96	74	64	64	63	61	57
Other Total Knee	791320	708603	628200	550771	487480	424805	369784	315942

Number at Risk	8 Yrs	9 Yrs	10 Yrs	11 Yrs	12 Yrs	13 Yrs	14 Yrs	15 Yrs	16 Yrs
Genesis II Oxinium CR (cless)/Genesis II	56	53	50	45	43	42	41	37	35
Other Total Knee	266760	222267	182604	146935	117158	92145	70339	52489	38316

Number at Risk	17 Yrs	18 Yrs	19 Yrs	20 Yrs	21 Yrs	22 Yrs	23 Yrs	24 Yrs	25 Yrs
Genesis II Oxinium CR (cless)/Genesis II	32	26	25	22	20	19	1	0	0
Other Total Knee	27596	19408	13591	9405	6144	3638	2095	972	244

Note: Prostheses no longer used in 2025 are excluded from the comparator.

TABLE 3**Primary Diagnosis for Revised Primary Total Knee Replacement**

This table identifies the diagnosis of the primary procedure which was subsequently revised. This information is provided as there is a variation on outcome depending on the primary diagnosis. It is therefore important when considering the reasons for a higher than anticipated rate of revision that there is identification of the primary diagnosis. This information should be compared to the primary diagnosis for the revisions of all other total knee prostheses.

Table 3: Primary Diagnosis for Revised Primary Total Knee Replacement

Primary Diagnosis	Genesis II Oxinium CR (class)/Genesis II		Other Total Knee	
	Number	Percent	Number	Percent
Osteoarthritis	47	97.9	26345	96.7
Rheumatoid Arthritis			330	1.2
Tumour			199	0.7
Other Inflammatory Arthritis			177	0.6
Osteonecrosis	1	2.1	103	0.4
Fracture			55	0.2
Other			26	0.1
Chondrocalcinosis			1	0.0
TOTAL	48	100.0	27236	100.0

Note: Prostheses no longer used in 2025 are excluded from the comparator.

TABLE 4

Reasons for Revision

This is reported in two ways: a percentage of primary procedures revised and as a percentage of all revision procedures.

% Primaries Revised: This shows the proportional contribution of each revision diagnosis as a percentage of the total number of primary procedures. This percentage can be used to approximate the risk of being revised for that diagnosis. Differing percentages between groups, with the same distribution of follow up time, may identify problems of concern.

% Revisions: The number of revisions for each diagnosis is expressed as a percentage of the total number of revisions. This shows the distribution of reasons for revision within a group but cannot be used as a comparison between groups.

Table 4: Primary Total Knee Replacement - Reason for Revision (Follow-up Limited to 23.1 Years)

Revision Diagnosis	Genesis II Oxinium CR (class)/Genesis II			Other Total Knee		
	Number	% Primaries Revised	% Revisions	Number	% Primaries Revised	% Revisions
Infection	3	2.7	6.3	7887	1.0	29.0
Loosening	42	38.2	87.5	5725	0.7	21.0
Instability	1	0.9	2.1	2872	0.4	10.5
Patella Erosion	1	0.9	2.1	2036	0.3	7.5
Pain				1867	0.2	6.9
Patellofemoral Pain	1	0.9	2.1	1556	0.2	5.7
Arthrofibrosis				1181	0.1	4.3
Fracture				1138	0.1	4.2
Malalignment				511	0.1	1.9
Wear Tibial Insert				373	0.0	1.4
Lysis				291	0.0	1.1
Implant Breakage Tibial Insert				252	0.0	0.9
Incorrect Sizing				218	0.0	0.8
Patella Maltracking				192	0.0	0.7
Bearing Dislocation				151	0.0	0.6
Implant Breakage Patella				147	0.0	0.5
Metal Related Pathology				114	0.0	0.4
Prosthesis Dislocation				78	0.0	0.3
Synovitis				64	0.0	0.2
Wear Patella				52	0.0	0.2
Osteonecrosis				51	0.0	0.2
Implant Breakage Femoral				49	0.0	0.2
Implant Breakage Tibial				39	0.0	0.1
Tumour				36	0.0	0.1
Heterotopic Bone				16	0.0	0.1
Progression Of Disease				8	0.0	0.0
Wear Tibial				6	0.0	0.0
Patella Dislocation				3	0.0	0.0
Incorrect Side				1	0.0	0.0
Wear Femoral				1	0.0	0.0
Other				314	0.0	1.2
N Revision	48	43.6	100.0	27229	3.4	100.0
N Primary	110			791320		

Note: This table is restricted to revisions within 23.1 years for all groups to allow a time-matched comparison of revisions.

Note: Prostheses no longer used in 2025 are excluded from the comparator.

FIGURE 2**Cumulative Incidence Revision Diagnosis of Primary Total Knee Replacement**

This figure details the cumulative incidence of the most common reasons for revision. The five most common reasons for revision are included as long as each of these reasons account for more than 10 procedures or at least 5% of all revisions for the Genesis II Oxinium CR (class)/Genesis II total knee combination. A comparative graph is provided of the cumulative incidence for the same reasons for revisions for all other total knee prostheses.

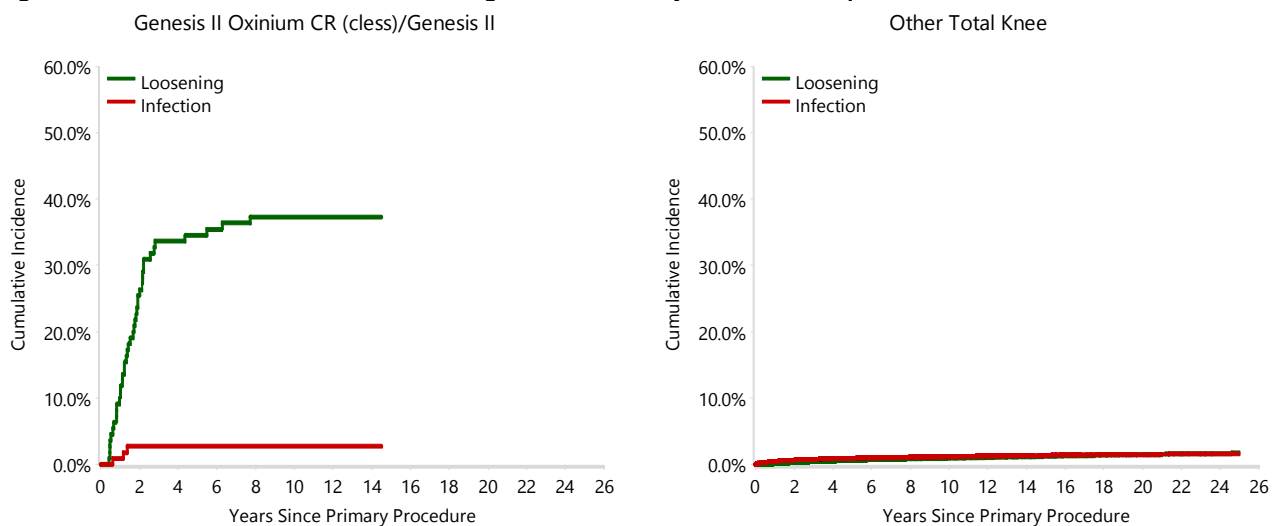
Figure 2: Cumulative Incidence Revision Diagnosis for Primary Total Knee Replacement

TABLE 5**Type of Revision Performed for Primary Total Knee Replacement**

This analysis identifies the components used in the revision of the Genesis II Oxinium CR (cless)/Genesis II total knee combination and compares it to the components used in the revision of all other total knee prostheses.

The reason this analysis is undertaken is to identify whether there is one or more components which are being replaced that differ from the components replaced for revisions of all other total knee prostheses i.e. is there a difference in the type of revision undertaken for the Genesis II Oxinium CR (cless)/Genesis II total knee combination compared to all other total knee prostheses.

Table 5: Primary Total Knee Replacement - Type of Revision (Follow-up Limited to 23.1 Years)

Type of Revision	Genesis II Oxinium CR (cless)/Genesis II		Other Total Knee	
	Number	Percent	Number	Percent
TKR (Tibial/Femoral)	10	20.8	6661	24.5
Tibial Component			1908	7.0
Femoral Component	33	68.8	1280	4.7
Cement Spacer	2	4.2	1135	4.2
Removal of Prostheses			135	0.5
Total Femoral			23	0.1
Reinsertion of Components			8	0.0
N Major	45	93.8	11150	40.9
Insert Only	1	2.1	8571	31.5
Patella Only	1	2.1	4494	16.5
Insert/Patella	1	2.1	2937	10.8
Minor Components			66	0.2
Cement Only			11	0.0
N Minor	3	6.3	16079	59.1
TOTAL	48	100.0	27229	100.0

Note: This table is restricted to revisions within 23.1 years for all groups to allow a time-matched comparison of revisions.

Note: Prostheses no longer used in 2025 are excluded from the comparator.

TABLE 6**Revision Rates of Genesis II Oxinium CR (cless)/Genesis II Primary Total Knee Replacement by Fixation**

This analysis is provided as some prostheses have more than one fixation option. Additionally there are prostheses where an alternative to the recommended approach to fixation was used e.g. a cementless prosthesis that has been cemented or vice-versa.

Table 6: Revised Number of Genesis II Oxinium CR (cless)/Genesis II Primary Total Knee Replacement by Fixation

Fixation	N Revised	N Total
Cementless	16	25
Hybrid (Tibial Cemented)	32	84
Hybrid (Tibial Cementless)	0	1
TOTAL	48	110

TABLE 7**Revision Rates of Genesis II Oxinium CR (cless)/Genesis II Primary Total Knee Replacement by Bearing Surface**

This analysis is provided as some prostheses are combined with a variety of bearing surfaces. All bearing surfaces used with this combination are listed.

Table 7: Revised Number of Genesis II Oxinium CR (cless)/Genesis II Primary Total Knee Replacement by Bearing Surface

Bearing Surface	N Revised	N Total
Non XLPE	48	110
TOTAL	48	110

TABLE 8**Revision Rates of Genesis II Oxinium CR (cless)/Genesis II Primary Total Knee Replacement by Bearing Mobility**

This analysis is provided as some prostheses are combined with a variety of bearing mobilities. All bearing mobilities used with this combination are listed.

Table 8: Revised Number of Genesis II Oxinium CR (cless)/Genesis II Primary Total Knee Replacement by Bearing Mobility

Bearing Mobility	N Revised	N Total
Fixed	48	110
TOTAL	48	110

TABLE 9**Revision Rates of Genesis II Oxinium CR (cless)/Genesis II Primary Total Knee Replacement by Stability**

This analysis is provided as some prostheses are combined with a variety of stabilities. All stabilities used with this combination are listed.

Table 9: Revised Number of Genesis II Oxinium CR (cless)/Genesis II Primary Total Knee Replacement by Stability

Stability	N Revised	N Total
Minimally Stabilised	48	110
TOTAL	48	110

TABLE 10

Revision Rates of Primary Total Knee Replacement by State

This enables a state by state variation to be identified for the Genesis II Oxinium CR (cless)/Genesis II total knee combination and provides the comparative data for each of the states for all other total knee prostheses.

The purpose of this analysis is to determine if the higher than anticipated rate of revision has widespread distribution between states. If there is widespread distribution then the reason for the higher than anticipated rate of revision is unlikely to be surgeon specific. If the prosthesis has been used in only a small number of states it is not possible to distinguish if the higher than anticipated rate of revision is related to the prosthesis, surgeon, technique or patient.

Table 10: Revised Number of Primary Total Knee Replacement by State

Component	State	N Revised	N Total
Genesis II Oxinium CR (cless)/Genesis II	NSW	1	1
	VIC	23	50
	QLD	5	8
	WA	17	39
	SA	1	10
	ACT/NT	1	2
Other Total Knee	NSW	7549	259496
	VIC	5997	163515
	QLD	5784	167236
	WA	3583	92802
	SA	3219	73104
	TAS	475	15075
	ACT/NT	629	20092
TOTAL		27284	791430

Note: Prostheses no longer used in 2025 are excluded from the comparator.

TABLE 11**Number of Revisions of Genesis II Oxinium CR (cless)/Genesis II Primary Total Knee Replacement by Year of Implant**

This analysis details the number of prostheses reported each year to the Registry for the Genesis II Oxinium CR (cless)/Genesis II total knee combination. It also provides the subsequent number of revisions of the primaries reported in that year.

Primary procedures performed in later years have had less follow up time therefore the number revised is expected to be less than the number revised in earlier years. For example, a primary procedure performed in 2025 has a maximum of one year to be revised, whereas a primary procedure performed in 2023 has a maximum of three years to be revised.

Table 11: Number of Revisions of Genesis II Oxinium CR (cless)/Genesis II Primary Total Knee Replacement by Year of Implant

Year of Implant	Number Revised	Total Number
2002	1	4
2003	47	106
TOTAL	48	110

TABLE 12

Revision Rates of Genesis II Oxinium CR (cless)/Genesis II Primary Total Knee Replacement by Catalogue Number Range

Many prostheses have a number of catalogue ranges. The catalogue range is specific to particular design features; more than one catalogue range usually indicates a minor difference in design in a particular Genesis II Oxinium CR (cless)/Genesis II prosthesis.

This analysis has been undertaken to determine if the revision rate varies according to the catalogue number range.

Model	Catalogue Range	Catalogue Description	Cement	Material	Coating	Fixation
Femoral						
Genesis II Oxinium CR	71421123-71421138	GENESIS II CR MACROTEXTURED OXINIUM FEMORAL COMPONENT	NO			MACROTEXTURED
Tibial						
Genesis II	71420160-71420191	NONPOROUS TIBIAL BASEPLATE	YES	METAL		
Genesis II	71420192-71420222	POROUS TIBIAL BASEPLATE	NO			BEADED
Genesis II	71422062-71422090	POROUS HA TIBIAL BASEPLATE	NO	METAL	HA COATED	BEADED
Genesis II	71926777-71926788	POROUS HA TIBIAL BASEPLATE	NO		HA COATED	BEADED

Table 12: Revised Number of Genesis II Oxinium CR (cless)/Genesis II Primary Total Knee Replacement by Catalogue Number Range

Femoral Range	Tibial Range	N Revised	N Total
71421123-71421138	71420160-71420191	32	84
	71420192-71420222	2	3
	71422062-71422090	5	8
	71926777-71926788	9	15
TOTAL		48	110