Legion Revision Tibial Baseplate Total Knee Investigation

Note: This analysis compares the Legion Revision Tibial Baseplate tibial prosthesis with all other total knee prostheses.

This prosthesis 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-2025.

Note: Procedures using prostheses with no recorded use in 2024 are excluded from the comparator.

TABLE 1

Revision Rate of Primary Total Knee Replacement

The revision rate of the Legion Revision Tibial Baseplate total knee prosthesis 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)
Legion Revision Tibial Baseplate	84	1444	7598	1.11 (0.88, 1.37)
Other Total Knee	24625	719627	4528048	0.54 (0.54, 0.55)
TOTAL	**24709**	**721071**	**4535646**	**0.54 (0.54, 0.55)**

Note: Prostheses no longer used in 2024 are excluded from the comparator.

TABLE 2

Yearly Cumulative Percent Revision of Primary Total Knee Replacement

The yearly cumulative percent revision of the Legion Revision Tibial Baseplate total knee prosthesis 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	7 Yrs	8 Yrs
Legion Revision Tibial Baseplate	2.8 (2.1, 3.9)	3.7 (2.8, 4.8)	4.4 (3.4, 5.7)	4.9 (3.8, 6.3)	5.7 (4.4, 7.2)	6.5 (5.1, 8.3)	6.9 (5.5, 8.8)	7.7 (6.1, 9.8)
Other Total Knee	1.0 (1.0, 1.0)	1.8 (1.8, 1.9)	2.4 (2.4, 2.4)	2.8 (2.8, 2.8)	3.1 (3.1, 3.2)	3.5 (3.4, 3.5)	3.8 (3.7, 3.8)	4.1 (4.0, 4.1)

CPR	9 Yrs	10 Yrs	11 Yrs	12 Yrs	13 Yrs	14 Yrs	15 Yrs	16 Yrs
Legion Revision Tibial Baseplate	8.0 (6.3, 10.1)	8.3 (6.5, 10.6)	9.2 (7.1, 11.9)	10.2 (7.8, 13.3)	10.2 (7.8, 13.3)	11.3 (8.3, 15.2)	11.3 (8.3, 15.2)	
Other Total Knee	4.4 (4.3, 4.5)	4.7 (4.7, 4.8)	5.0 (5.0, 5.1)	5.4 (5.3, 5.5)	5.7 (5.6, 5.8)	6.0 (5.9, 6.1)	6.4 (6.3, 6.5)	6.8 (6.7, 7.0)

CPR	17 Yrs	18 Yrs	19 Yrs	20 Yrs	21 Yrs	22 Yrs	23 Yrs
Legion Revision Tibial Baseplate							
Other Total Knee	7.3 (7.1, 7.4)	7.6 (7.4, 7.8)	7.9 (7.7, 8.1)	8.1 (7.9, 8.3)	8.4 (8.1, 8.6)	8.5 (8.2, 8.8)	8.6 (8.3, 8.9)

Note: Prostheses no longer used in 2024 are excluded from the comparator.

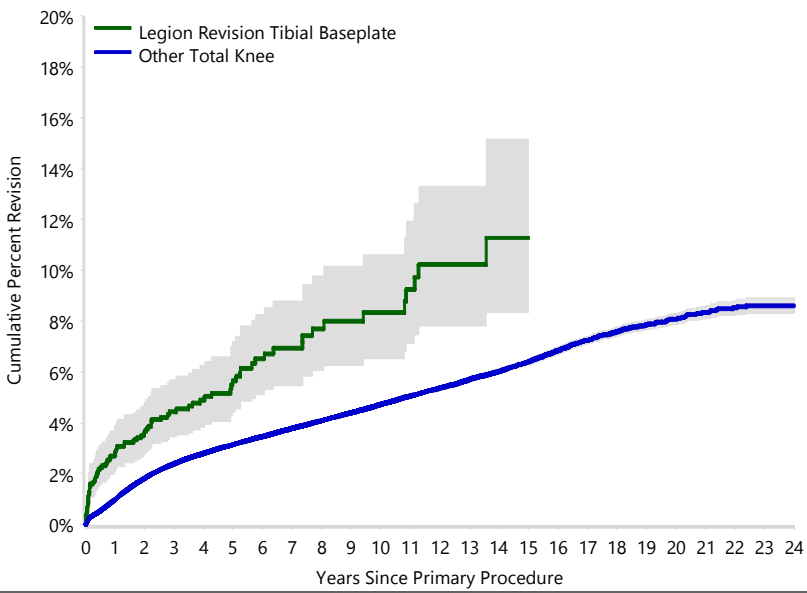
FIGURE 1

Yearly Cumulative Percent Revision of Primary Total Knee Replacement

The yearly cumulative percent revision of the Legion Revision Tibial Baseplate total knee prosthesis 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



HR - adjusted for age and gender

Legion Revision Tibial Baseplate vs Other Total Knee

0 - 6Mth: HR=3.74 (95% CI 2.64, 5.29), p<0.001

6Mth+: HR=1.25 (95% CI 0.95, 1.64), p=0.106

Number at Risk	0 Yr	1 Yr	2 Yrs	3 Yrs	4 Yrs	5 Yrs	6 Yrs	7 Yrs	8 Yrs	9 Yrs	10 Yrs	11 Yrs
Legion Revision Tibial Baseplate	1444	1266	1087	915	720	578	478	391	332	280	231	194
Other Total Knee	719627	639472	560958	497287	434615	379645	325805	276096	231152	190901	154357	123679

Number at Risk	12 Yrs	13 Yrs	14 Yrs	15 Yrs	16 Yrs	17 Yrs	18 Yrs	19 Yrs	20 Yrs	21 Yrs	22 Yrs	23 Yrs
Legion Revision Tibial Baseplate	155	106	75	50	35	14	3	0	0	0	0	0
Other Total Knee	97837	75118	56477	41460	29970	21209	14964	10421	6807	4051	2359	1090

Note: Prostheses no longer used in 2024 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

	Legion Revision Tibial Baseplate		Other Total Knee	
Primary Diagnosis	Number	Percent	Number	Percent
Osteoarthritis	74	88.1	23818	96.7
Rheumatoid Arthritis	2	2.4	299	1.2
Tumour			192	0.8
Other Inflammatory Arthritis	1	1.2	157	0.6
Osteonecrosis	2	2.4	88	0.4
Fracture	2	2.4	48	0.2
Other	3	3.6	22	0.1
Chondrocalcinosis			1	0.0
TOTAL	**84**	**100.0**	**24625**	**100.0**

Note: Prostheses no longer used in 2024 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 18.5 Years)

	Legion Revision Tibial Baseplate			Other Total Knee		
Revision Diagnosis	Number	% Primaries Revised	% Revisions	Number	% Primaries Revised	% Revisions
Infection	35	2.4	41.7	7050	1.0	28.7
Loosening	13	0.9	15.5	5226	0.7	21.3
Instability	8	0.6	9.5	2526	0.4	10.3
Patella Erosion	2	0.1	2.4	1810	0.3	7.4
Pain	6	0.4	7.1	1753	0.2	7.1
Patellofemoral Pain	2	0.1	2.4	1477	0.2	6.0
Arthrofibrosis	2	0.1	2.4	1045	0.1	4.3
Fracture	5	0.3	6.0	1005	0.1	4.1
Malalignment				488	0.1	2.0
Wear Tibial Insert				319	0.0	1.3
Lysis				262	0.0	1.1
Incorrect Sizing				210	0.0	0.9
Implant Breakage Tibial Insert				204	0.0	0.8
Patella Maltracking	2	0.1	2.4	173	0.0	0.7
Bearing Dislocation	7	0.5	8.3	134	0.0	0.5
Implant Breakage Patella				132	0.0	0.5
Metal Related Pathology				101	0.0	0.4
Prosthesis Dislocation	1	0.1	1.2	69	0.0	0.3
Synovitis				59	0.0	0.2
Osteonecrosis				46	0.0	0.2
Implant Breakage Femoral				43	0.0	0.2
Wear Patella				43	0.0	0.2
Implant Breakage Tibial	1	0.1	1.2	34	0.0	0.1
Tumour				30	0.0	0.1
Heterotopic Bone				14	0.0	0.1
Progression Of Disease				8	0.0	0.0
Wear Tibial				6	0.0	0.0
Incorrect Side				1	0.0	0.0
Patella Dislocation				1	0.0	0.0
Wear Femoral				1	0.0	0.0
Other				295	0.0	1.2
N Revision	**84**	**5.8**	**100.0**	**24565**	**3.4**	**100.0**
N Primary	**1444**			**719627**		

Note: This table is restricted to revisions within 18.5 years for all groups to allow a time-matched comparison of revisions.
Note: Prostheses no longer used in 2024 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 Legion Revision Tibial Baseplate total knee prosthesis. 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

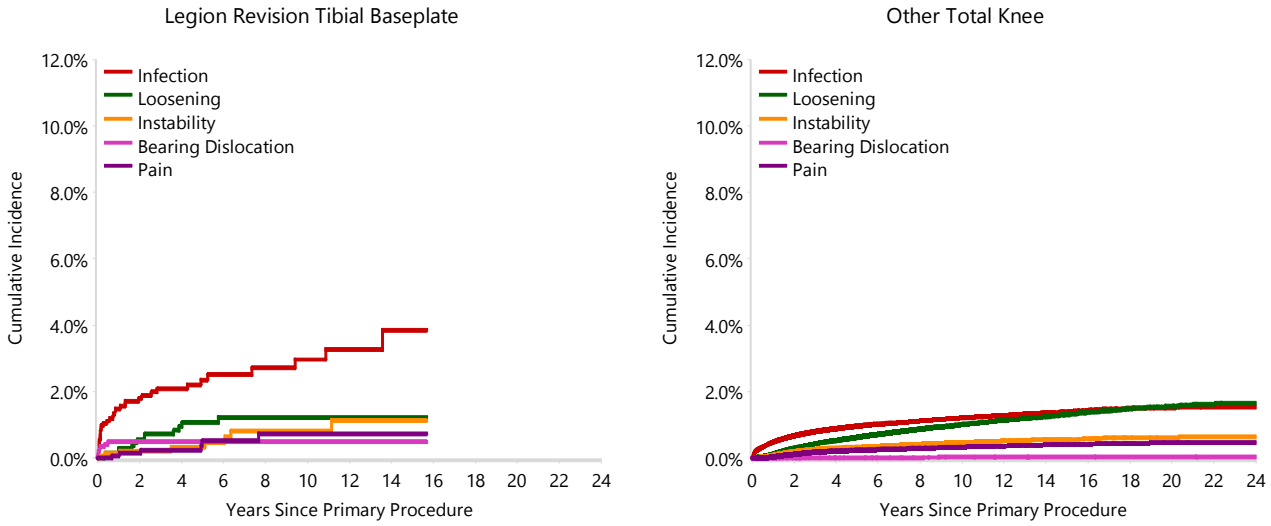


TABLE 5

Type of Revision Performed for Primary Total Knee Replacement

This analysis identifies the components used in the revision of the Legion Revision Tibial Baseplate total knee prosthesis 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 Legion Revision Tibial Baseplate total knee prosthesis compared to all other total knee prostheses.

Table 5: Primary Total Knee Replacement - Type of Revision (Follow-up Limited to 18.5 Years)

	Legion Revision Tibial Baseplate		Other Total Knee	
Type of Revision	Number	Percent	Number	Percent
TKR (Tibial/Femoral)	11	13.1	5873	23.9
Tibial Component	6	7.1	1796	7.3
Femoral Component	6	7.1	1178	4.8
Cement Spacer	3	3.6	1078	4.4
Removal of Prostheses	1	1.2	123	0.5
Total Femoral			22	0.1
Reinsertion of Components			7	0.0
N Major	**27**	**32.1**	**10077**	**41.0**
Insert Only	44	52.4	7615	31.0
Patella Only	8	9.5	4154	16.9
Insert/Patella	4	4.8	2648	10.8
Minor Components	1	1.2	62	0.3
Cement Only			9	0.0
N Minor	**57**	**67.9**	**14488**	**59.0**
TOTAL	**84**	**100.0**	**24565**	**100.0**

Note: This table is restricted to revisions within 18.5 years for all groups to allow a time-matched comparison of revisions.
Note: Prostheses no longer used in 2024 are excluded from the comparator.

TABLE 6

Revision Rates of Legion Revision Tibial Baseplate 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 Legion Revision Tibial Baseplate Primary Total Knee Replacement by Fixation

Fixation	N Revised	N Total
Cemented	75	958
Cementless	4	380
Hybrid (Tibial Cemented)	2	27
Hybrid (Tibial Cementless)	3	79
TOTAL	**84**	**1444**

TABLE 7

Revision Rates of Legion Revision Tibial Baseplate 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 prosthesis are listed.

Table 7: Revised Number of Legion Revision Tibial Baseplate Primary Total Knee Replacement by Bearing Surface

Bearing Surface	N Revised	N Total
Non XLPE	62	710
XLPE	21	731
Unknown	1	3
TOTAL	**84**	**1444**

TABLE 8

Revision Rates of Legion Revision Tibial Baseplate 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 prosthesis are listed.

Table 8: Revised Number of Legion Revision Tibial Baseplate Primary Total Knee Replacement by Bearing Mobility

Bearing Mobility	N Revised	N Total
Fixed	83	1441
Unknown	1	3
TOTAL	**84**	**1444**

TABLE 9

Revision Rates of Legion Revision Tibial Baseplate 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 prosthesis are listed.

Table 9: Revised Number of Legion Revision Tibial Baseplate Primary Total Knee Replacement by Stability

Stability	N Revised	N Total
Fully Stabilised	37	411
Minimally Stabilised	11	533
Posterior Stabilised	35	497
Unknown	1	3
TOTAL	**84**	**1444**

TABLE 10

Number of Revisions of Legion Revision Tibial Baseplate Primary Total Knee Replacement by Year of Implant

This analysis details the number of prostheses reported each year to the Registry for the Legion Revision Tibial Baseplate total knee prosthesis. 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 2024 has a maximum of one year to be revised, whereas a primary procedure performed in 2022 has a maximum of three years to be revised.

Table 10: Number of Revisions of Legion Revision Tibial Baseplate Primary Total Knee Replacement by Year of Implant

Year of Implant	Number Revised	Total Number
2006	2	16
2007	3	33
2008	5	48
2009	3	40
2010	6	56
2011	8	47
2012	5	63
2013	7	54
2014	2	47
2015	3	38
2016	2	50
2017	3	50
2018	12	87
2019	5	93
2020	5	129
2021	4	173
2022	4	144
2023	4	151
2024	1	125
TOTAL	**84**	**1444**

TABLE 11

Revision Rates of Legion Revision Tibial Baseplate Primary Total Knee Replacement by Component

A prosthesis may be combined with multiple components. This analysis has been undertaken to determine if the revision rate varies according to the component with which it is combined.

Table 11: Revised Number of Legion Revision Tibial Baseplate Primary Total Knee Replacement by Femoral Component

Femoral Component	N Revised	N Total
Genesis II CR	3	261
Genesis II FS	0	5
Genesis II Oxinium CR	0	23
Genesis II Oxinium PS	7	61
Genesis II PS	6	82
Journey Oxinium	2	4
Legion CR	6	167
Legion FS	0	1
Legion Oxinium CR	2	87
Legion Oxinium FS	39	417
Legion Oxinium PS	16	247
Legion PS	3	89
TOTAL	**84**	**1444**