

Score (cementless)/Score (cemented) Total Knee Investigation

Note: This analysis compares the Score (class)/Score (ctd) 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-2023>.

Note: Procedures using prostheses with no recorded use in 2022 are excluded from the comparator.

TABLE 1

Revision Rate of Primary Total Knee Replacement

The revision rate of the Score (class)/Score (ctd) 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)
Score (class)/Score (ctd)	109	1679	9441	1.15 (0.95, 1.39)
Other Total Knee	26727	756270	5060338	0.53 (0.52, 0.53)
TOTAL	26836	757949	5069780	0.53 (0.52, 0.54)

Note: Prostheses no longer used in 2022 are excluded from the comparator.

TABLE 2

Yearly Cumulative Percent Revision of Primary Total Knee Replacement

The yearly cumulative percent revision of the Score (class)/Score (ctd) total knee combination is compared to all other total knee prostheses.

Table 2: Yearly Cumulative Percent Revision of Primary Total Knee Replacement

CPR	1 Yr	2 Yrs	3 Yrs	4 Yrs	5 Yrs	6 Yrs	7 Yrs	8 Yrs
Score (class)/Score (ctd)	1.5 (1.0, 2.2)	2.8 (2.1, 3.7)	3.8 (3.0, 4.9)	4.8 (3.8, 5.9)	5.9 (4.9, 7.3)	7.0 (5.8, 8.5)	7.5 (6.2, 9.1)	8.3 (6.8, 10.1)
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, 2.9)	3.1 (3.1, 3.2)	3.5 (3.4, 3.5)	3.7 (3.7, 3.8)	4.0 (4.0, 4.1)

CPR	9 Yrs	10 Yrs	11 Yrs	12 Yrs	13 Yrs	14 Yrs	15 Yrs
Score (class)/Score (ctd)	8.3 (6.8, 10.1)						
Other Total Knee	4.3 (4.3, 4.4)	4.6 (4.6, 4.7)	4.9 (4.8, 5.0)	5.2 (5.1, 5.3)	5.5 (5.5, 5.6)	5.8 (5.8, 5.9)	6.2 (6.1, 6.3)

CPR	16 Yrs	17 Yrs	18 Yrs	19 Yrs	20 Yrs	21 Yrs	22 Yrs
Score (class)/Score (ctd)							
Other Total Knee	6.6 (6.5, 6.8)	7.0 (6.9, 7.1)	7.3 (7.2, 7.5)	7.6 (7.4, 7.8)	7.8 (7.6, 8.0)	8.0 (7.7, 8.2)	8.2 (7.9, 8.6)

Note: Prostheses no longer used in 2022 are excluded from the comparator.

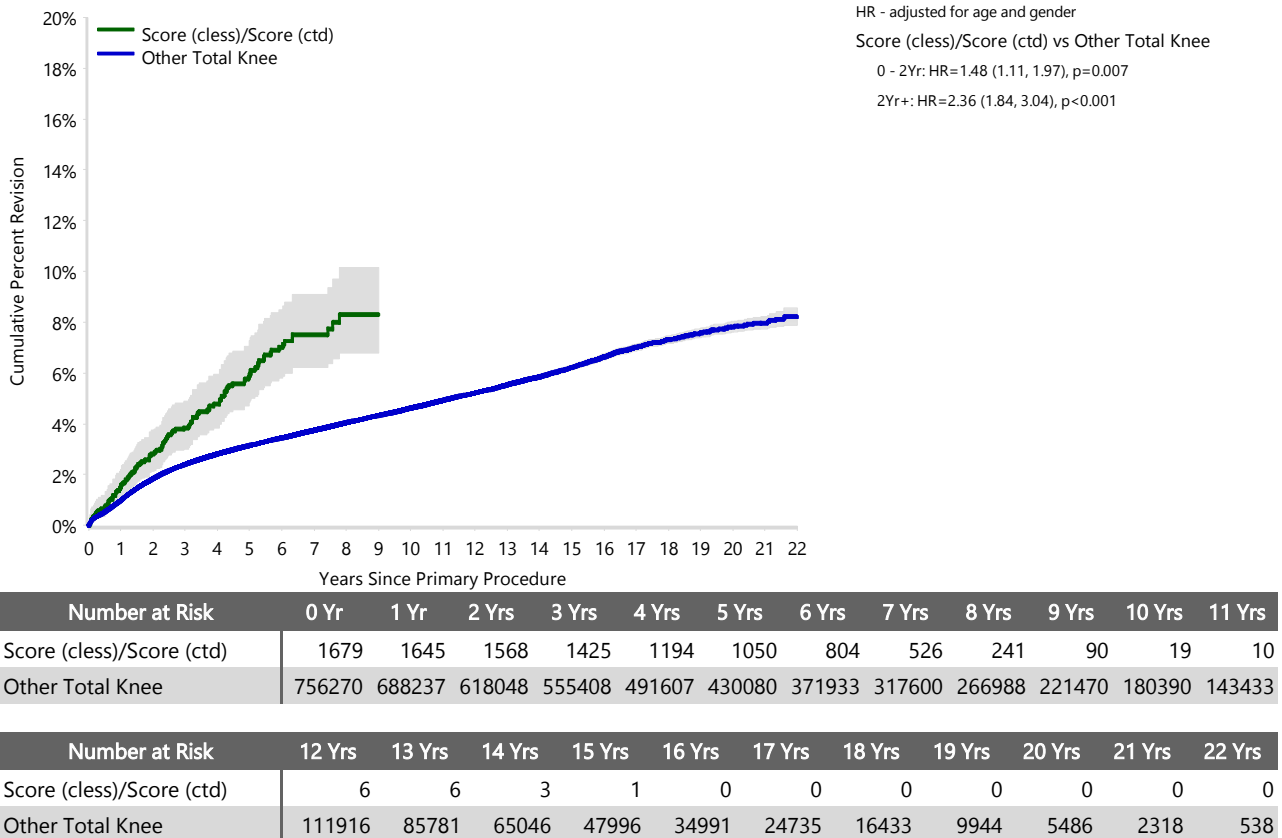
FIGURE 1

Yearly Cumulative Percent Revision of Primary Total Knee Replacement

The yearly cumulative percent revision of the Score (class)/Score (ctd) 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



Note: Prostheses no longer used in 2022 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	Score (class)/Score (ctd)		Other Total Knee	
	Number	Percent	Number	Percent
Osteoarthritis	109	100.0	25895	96.9
Rheumatoid Arthritis			342	1.3
Tumour			162	0.6
Other Inflammatory Arthritis			160	0.6
Osteonecrosis			101	0.4
Fracture			48	0.2
Other			18	0.1
Chondrocalcinosis			1	0.0
TOTAL	109	100.0	26727	100.0

Note: Prostheses no longer used in 2022 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 15.4 Years)

Revision Diagnosis	Score (class)/Score (ctd)			Other Total Knee		
	Number	% Primaries Revised	% Revisions	Number	% Primaries Revised	% Revisions
Infection	25	1.5	22.9	7282	1.0	27.6
Loosening	32	1.9	29.4	5872	0.8	22.3
Instability	14	0.8	12.8	2563	0.3	9.7
Pain	12	0.7	11.0	2012	0.3	7.6
Patellofemoral Pain				1918	0.3	7.3
Patella Erosion	3	0.2	2.8	1746	0.2	6.6
Arthrofibrosis	3	0.2	2.8	1030	0.1	3.9
Fracture	10	0.6	9.2	985	0.1	3.7
Malalignment	1	0.1	0.9	599	0.1	2.3
Wear Tibial Insert				345	0.0	1.3
Lysis	2	0.1	1.8	305	0.0	1.2
Incorrect Sizing	1	0.1	0.9	260	0.0	1.0
Patella Maltracking				185	0.0	0.7
Implant Breakage Tibial Insert				166	0.0	0.6
Bearing Dislocation				151	0.0	0.6
Implant Breakage Patella	1	0.1	0.9	138	0.0	0.5
Metal Related Pathology	1	0.1	0.9	103	0.0	0.4
Prosthesis Dislocation				83	0.0	0.3
Synovitis				75	0.0	0.3
Osteonecrosis				55	0.0	0.2
Implant Breakage Tibial				40	0.0	0.2
Implant Breakage Femoral				39	0.0	0.1
Tumour				33	0.0	0.1
Wear Patella	1	0.1	0.9	33	0.0	0.1
Heterotopic Bone				13	0.0	0.0
Wear Tibial				9	0.0	0.0
Progression Of Disease				6	0.0	0.0
Patella Dislocation				2	0.0	0.0
Incorrect Side				1	0.0	0.0
Wear Femoral				1	0.0	0.0
Other	3	0.2	2.8	312	0.0	1.2
N Revision	109	6.5	100.0	26362	3.5	100.0
N Primary	1679			756270		

Note: This table is restricted to revisions within 15.4 years for all groups to allow a time-matched comparison of revisions.

Note: Prostheses no longer used in 2022 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 Score (class)/Score (ctd) 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

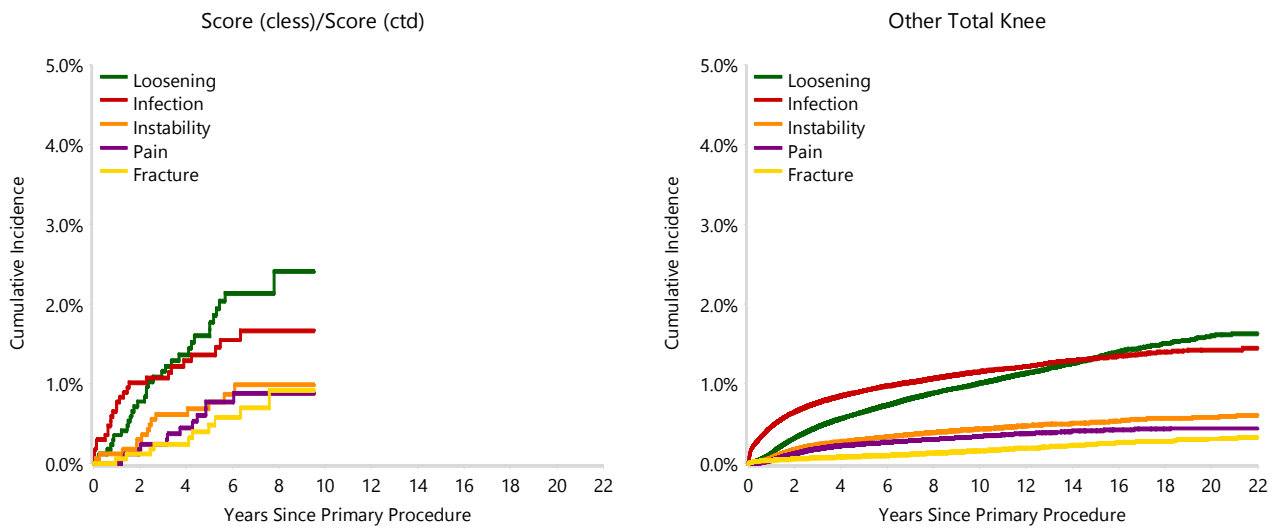


TABLE 5

Type of Revision Performed for Primary Total Knee Replacement

This analysis identifies the components used in the revision of the Score (class)/Score (ctd) 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 Score (class)/Score (ctd) total knee combination compared to all other total knee prostheses.

Table 5: Primary Total Knee Replacement - Type of Revision (Follow-up Limited to 15.4 Years)

Type of Revision	Score (class)/Score (ctd)		Other Total Knee	
	Number	Percent	Number	Percent
TKR (Tibial/Femoral)	66	60.6	6416	24.3
Tibial Component	1	0.9	2128	8.1
Cement Spacer	4	3.7	1349	5.1
Femoral Component	8	7.3	1312	5.0
Removal of Prostheses			151	0.6
Total Femoral	1	0.9	23	0.1
Reinsertion of Components			13	0.0
N Major	80	73.4	11392	43.2
Insert Only	15	13.8	7506	28.5
Patella Only	13	11.9	4684	17.8
Insert/Patella	1	0.9	2700	10.2
Minor Components			63	0.2
Cement Only			17	0.1
N Minor	29	26.6	14970	56.8
TOTAL	109	100.0	26362	100.0

Note: This table is restricted to revisions within 15.4 years for all groups to allow a time-matched comparison of revisions.

Note: Prostheses no longer used in 2022 are excluded from the comparator.

TABLE 6**Revision Rates of Score (class)/Score (ctd) 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 Score (class)/Score (ctd) Primary Total Knee Replacement by Fixation

Fixation	N Revised	N Total
Cemented	0	14
Cementless	0	2
Hybrid (Tibial Cemented)	109	1663
TOTAL	109	1679

TABLE 7**Revision Rates of Score (class)/Score (ctd) 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 Score (class)/Score (ctd) Primary Total Knee Replacement by Bearing Surface

Bearing Surface	N Revised	N Total
Non XLPE	109	1679
TOTAL	109	1679

TABLE 8**Revision Rates of Score (class)/Score (ctd) 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 Score (class)/Score (ctd) Primary Total Knee Replacement by Bearing Mobility

Bearing Mobility	N Revised	N Total
Rotating	109	1679
TOTAL	109	1679

TABLE 9**Revision Rates of Score (class)/Score (ctd) 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 Score (class)/Score (ctd) Primary Total Knee Replacement by Stability

Stability	N Revised	N Total
Minimally Stabilised	109	1679
TOTAL	109	1679

TABLE 10

Revision Rates of Primary Total Knee Replacement by State

This enables a state by state variation to be identified for the Score (cless)/Score (ctd) 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
Score (cless)/Score (ctd)	NSW	8	189
	QLD	0	26
	WA	21	599
	SA	80	865
	Other Total Knee	NSW	7951
	VIC	5825	153047
	QLD	5766	156982
	WA	3224	80540
	SA	2887	65554
	TAS	437	18133
	ACT/NT	637	19770
TOTAL		26836	757949

Note: Prostheses no longer used in 2022 are excluded from the comparator.

TABLE 11**Number of Revisions of Score (class)/Score (ctd) Primary Total Knee Replacement by Year of Implant**

This analysis details the number of prostheses reported each year to the Registry for the Score (class)/Score (ctd) 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 2022 has a maximum of one year to be revised, whereas a primary procedure performed in 2020 has a maximum of three years to be revised.

Table 11: Number of Revisions of Score (class)/Score (ctd) Primary Total Knee Replacement by Year of Implant

Year of Implant	Number Revised	Total Number
2004	1	3
2007	0	3
2008	0	3
2009	0	3
2011	0	5
2012	3	15
2013	5	90
2014	16	181
2015	21	324
2016	22	300
2017	28	267
2018	5	122
2019	6	205
2020	2	114
2021	0	44
TOTAL	109	1679

TABLE 12

Revision Rates of Score (class)/Score (ctd) 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 Score (class)/Score (ctd) 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	Coating
Femoral				
Score	10200101-10200117	COCR MIN STAB. HA PEGGED STIPPLED SURFACE FEMORAL COMPONENT	NO	HA COATED
Tibial				
Score	10200501-10200507	COCR POLISHED TIBIAL BASEPLATE	YES	

Table 12: Revised Number of Score (class)/Score (ctd) Primary Total Knee Replacement by Catalogue Number Range

Femoral Range	Tibial Range	N Revised	N Total
10200101-10200117	10200501-10200507	109	1679
TOTAL		109	1679