Conserve Plus/Conserve Plus Total Resurfacing Hip Investigation

Note: This analysis compares the Conserve Plus/Conserve Plus head/acetabular combination with all other total resurfacing hip 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-2025.

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

TABLE 1

Revision Rate of Primary Total Resurfacing Hip Replacement

The revision rate of the Conserve Plus/Conserve Plus total resurfacing hip combination is compared to all other total resurfacing hip prostheses.

Table 1: Revision Rates of Primary Total Resurfacing Hip Replacement

Component	N Revised	N Total	Obs. Years	Revisions/100 Obs. Yrs (95% CI)
Conserve Plus/Conserve Plus	17	63	1011	1.68 (0.98, 2.69)
Other Total Resurfacing Hip	1313	16808	215628	0.61 (0.58, 0.64)
TOTAL	**1330**	**16871**	**216640**	**0.61 (0.58, 0.65)**

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

TABLE 2

Yearly Cumulative Percent Revision of Primary Total Resurfacing Hip Replacement

The yearly cumulative percent revision of the Conserve Plus/Conserve Plus total resurfacing hip combination is compared to all other total resurfacing hip prostheses.

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

CPR	1 Yr	2 Yrs	3 Yrs	4 Yrs	5 Yrs	6 Yrs	7 Yrs	8 Yrs
Conserve Plus/Conserve Plus	4.8 (1.6, 14.0)	4.8 (1.6, 14.0)	6.4 (2.4, 16.1)	9.6 (4.4, 20.1)	9.6 (4.4, 20.1)	9.6 (4.4, 20.1)	12.8 (6.6, 24.0)	14.4 (7.8, 25.9)
Other Total Resurfacing Hip	1.3 (1.2, 1.5)	1.9 (1.7, 2.1)	2.3 (2.1, 2.5)	2.7 (2.5, 3.0)	3.2 (2.9, 3.5)	3.7 (3.4, 4.0)	4.3 (4.0, 4.7)	4.9 (4.6, 5.3)

CPR	9 Yrs	10 Yrs	11 Yrs	12 Yrs	13 Yrs	14 Yrs	15 Yrs	16 Yrs
Conserve Plus/Conserve Plus	14.4 (7.8, 25.9)	14.4 (7.8, 25.9)	16.1 (9.0, 27.9)	22.8 (14.2, 35.5)	26.2 (16.9, 39.1)	26.2 (16.9, 39.1)	26.2 (16.9, 39.1)	26.2 (16.9, 39.1)
Other Total Resurfacing Hip	5.4 (5.0, 5.8)	6.1 (5.7, 6.5)	6.6 (6.2, 7.0)	7.1 (6.7, 7.6)	7.8 (7.3, 8.2)	8.3 (7.8, 8.8)	8.8 (8.3, 9.3)	9.3 (8.8, 9.8)

CPR	17 Yrs	18 Yrs	19 Yrs	20 Yrs	21 Yrs	22 Yrs	23 Yrs
Conserve Plus/Conserve Plus	27.9 (18.3, 41.0)	27.9 (18.3, 41.0)	27.9 (18.3, 41.0)	27.9 (18.3, 41.0)	27.9 (18.3, 41.0)		
Other Total Resurfacing Hip	9.8 (9.3, 10.4)	10.2 (9.7, 10.8)	10.7 (10.1, 11.3)	11.2 (10.6, 11.8)	11.7 (11.0, 12.4)	12.1 (11.4, 12.8)	12.3 (11.6, 13.1)

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

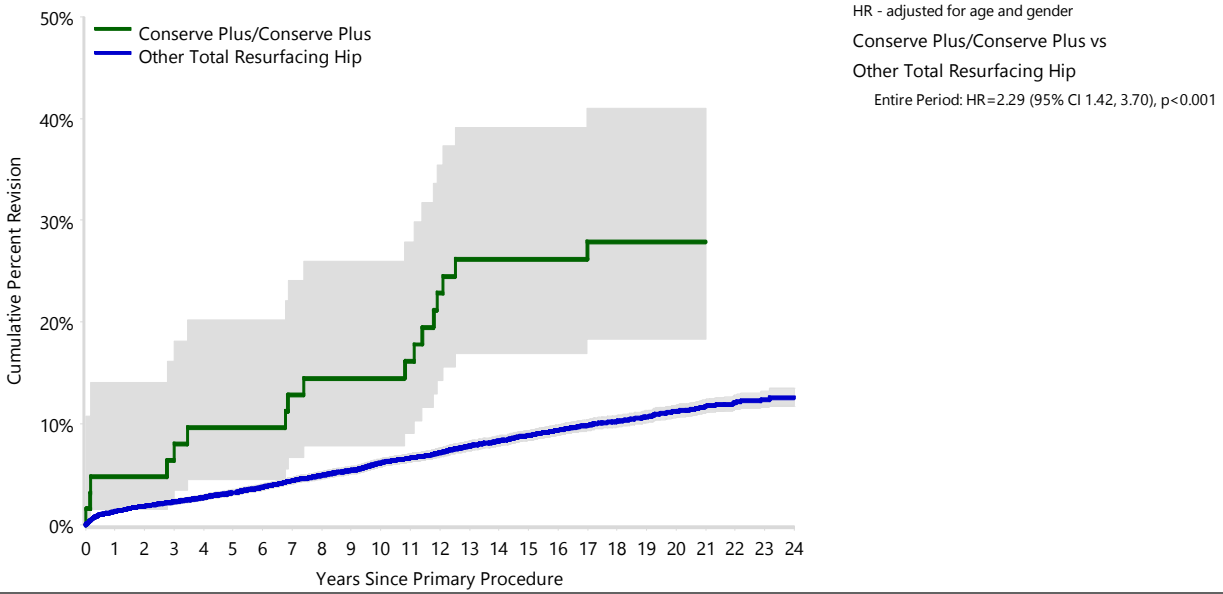
FIGURE 1

Yearly Cumulative Percent Revision of Primary Total Resurfacing Hip Replacement

The yearly cumulative percent revision of the Conserve Plus/Conserve Plus total resurfacing hip combination is compared to all other total resurfacing hip 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 Resurfacing Hip Replacement



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
Conserve Plus/Conserve Plus	63	60	59	58	56	56	56	54	53	53	52	50
Other Total Resurfacing Hip	16808	15920	15198	14609	13946	13279	12645	12146	11637	11126	10632	10160

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
Conserve Plus/Conserve Plus	46	44	44	44	44	42	40	34	21	8	3	3
Other Total Resurfacing Hip	9676	9128	8564	7830	7080	6287	5383	4410	3408	2454	1465	527

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

TABLE 3

Primary Diagnosis for Revised Primary Total Resurfacing Hip 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 resurfacing hip prostheses.

Table 3: Primary Diagnosis for Revised Primary Total Resurfacing Hip Replacement

	Conserve Plus/Conserve Plus		Other Total Resurfacing Hip	
Primary Diagnosis	Number	Percent	Number	Percent
Osteoarthritis	17	100.0	1205	91.8
Developmental Dysplasia			52	4.0
Osteonecrosis			39	3.0
Other Inflammatory Arthritis			10	0.8
Rheumatoid Arthritis			6	0.5
Other			1	0.1
TOTAL	**17**	**100.0**	**1313**	**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 Resurfacing Hip Replacement - Reason for Revision

Revision Diagnosis	Conserve Plus/Conserve Plus			Other Total Resurfacing Hip		
	Number	% Primaries Revised	% Revisions	Number	% Primaries Revised	% Revisions
Loosening	10	15.9	58.8	347	2.1	26.4
Metal Related Pathology	1	1.6	5.9	278	1.7	21.2
Fracture	3	4.8	17.6	261	1.6	19.9
Lysis	1	1.6	5.9	138	0.8	10.5
Infection				87	0.5	6.6
Pain				74	0.4	5.6
Prosthesis Dislocation/Instability				34	0.2	2.6
Osteonecrosis	2	3.2	11.8	33	0.2	2.5
Malposition				22	0.1	1.7
Tumour				7	0.0	0.5
Wear Acetabulum				3	0.0	0.2
Implant Breakage Acetabular				2	0.0	0.2
Leg Length Discrepancy				2	0.0	0.2
Heterotopic Bone				1	0.0	0.1
Implant Breakage Stem				1	0.0	0.1
Incorrect Sizing				1	0.0	0.1
Synovitis				1	0.0	0.1
Other				21	0.1	1.6
N Revision	**17**	**27.0**	**100.0**	**1313**	**7.8**	**100.0**
N Primary	**63**			**16808**		

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

FIGURE 2

Cumulative Incidence Revision Diagnosis of Primary Total Resurfacing Hip 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 Conserve Plus/Conserve Plus total resurfacing hip combination. A comparative graph is provided of the cumulative incidence for the same reasons for revisions for all other total resurfacing hip prostheses.

Figure 2: Cumulative Incidence Revision Diagnosis for Primary Total Resurfacing Hip Replacement

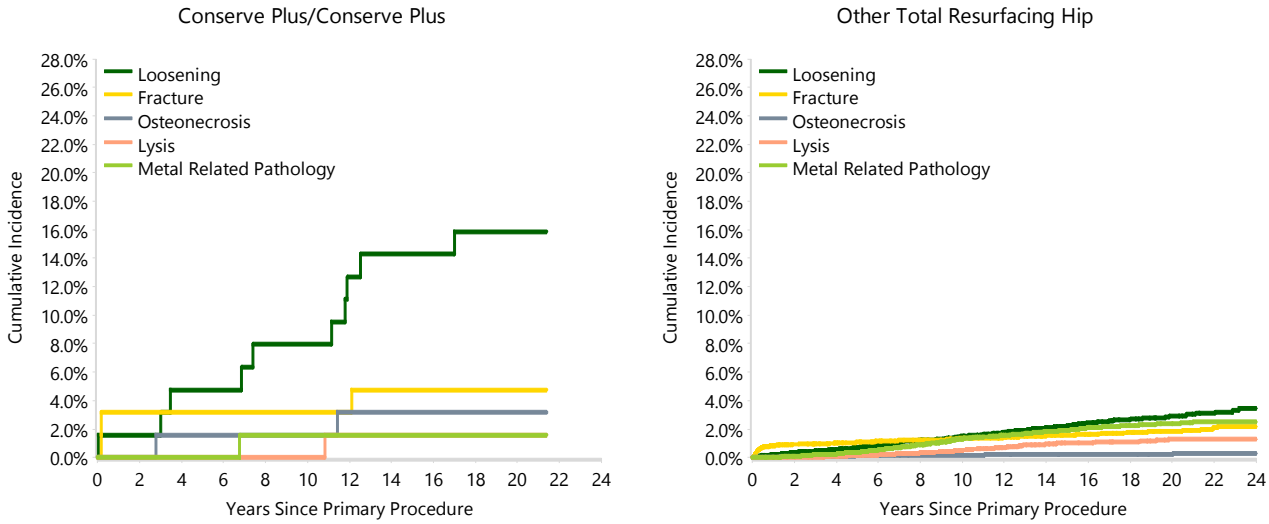


TABLE 5

Type of Revision Performed for Primary Total Resurfacing Hip Replacement

This analysis identifies the components used in the revision of the Conserve Plus/Conserve Plus total resurfacing hip combination and compares it to the components used in the revision of all other total resurfacing hip 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 resurfacing hip prostheses i.e. is there a difference in the type of revision undertaken for the Conserve Plus/Conserve Plus total resurfacing hip combination compared to all other total resurfacing hip prostheses.

Table 5: Primary Total Resurfacing Hip Replacement - Type of Revision

	Conserve Plus/Conserve Plus		Other Total Resurfacing Hip	
Type of Revision	Number	Percent	Number	Percent
THR (Femoral/Acetabular)	13	76.5	877	66.8
Femoral Component	4	23.5	360	27.4
Acetabular Component			39	3.0
Cement Spacer			28	2.1
Removal of Prostheses			7	0.5
N Major	**17**	**100.0**	**1311**	**99.8**
Head/Insert			1	0.1
Minor Components			1	0.1
N Minor			**2**	**0.2**
TOTAL	**17**	**100.0**	**1313**	**100.0**

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

TABLE 6

Revision Rates of Conserve Plus/Conserve Plus Primary Total Resurfacing Hip 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 Conserve Plus/Conserve Plus Primary Total Resurfacing Hip Replacement by Fixation

Fixation	N Revised	N Total
Hybrid (Femur Cemented)	17	63
TOTAL	**17**	**63**

TABLE 7

Revision Rates of Primary Total Resurfacing Hip Replacement by State

This enables a state by state variation to be identified for the Conserve Plus/Conserve Plus total resurfacing hip combination and provides the comparative data for each of the states for all other total resurfacing hip 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 7: Revised Number of Primary Total Resurfacing Hip Replacement by State

Component	State	N Revised	N Total
Conserve Plus/Conserve Plus	NSW	13	51
	VIC	2	2
	QLD	0	4
	WA	0	1
	SA	2	4
	ACT/NT	0	1
Other Total Resurfacing Hip	NSW	322	4366
	VIC	471	5313
	QLD	296	4465
	WA	67	1297
	SA	96	655
	TAS	1	36
	ACT/NT	60	676
TOTAL		**1330**	**16871**

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

TABLE 8

Number of Revisions of Conserve Plus/Conserve Plus Primary Total Resurfacing Hip Replacement by Year of Implant

This analysis details the number of prostheses reported each year to the Registry for the Conserve Plus/Conserve Plus total resurfacing hip 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 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 8: Number of Revisions of Conserve Plus/Conserve Plus Primary Total Resurfacing Hip Replacement by Year of Implant

Year of Implant	Number Revised	Total Number
2000	0	1
2001	2	4
2002	0	3
2003	3	7
2004	3	18
2005	3	15
2006	4	11
2007	1	3
2009	1	1
TOTAL	**17**	**63**

TABLE 9

Revision Rates of Conserve Plus/Conserve Plus Primary Total Resurfacing Hip 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 Conserve Plus/Conserve Plus 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
Head				
Conserve Plus	38021036-38021056	COCR SUPER POLISHED RS FEMORAL HEAD	YES	METAL
Acetabular				
Conserve Plus	38021146-38021162	CONSERVE PLUS CUP SHELL SURFACE BEADED (METAL CEMENTLESS)	NO	METAL
Conserve Plus	38HA3642-38HA5664	TITANIUM SUPER POLISHED HA BEADED THIN ACETABULAR SHELL	NO	METAL
Conserve Plus	SPHC0346-SPHC0364	CONSERVE PLUS CUP BEADED HA	NO	METAL

Table 9: Revised Number of Conserve Plus/Conserve Plus Primary Total Resurfacing Hip Replacement by Catalogue Number Range

Head Range	Acetabular Range	N Revised	N Total
38021036-38021056	38021146-38021162	3	13
	38HA3642-38HA5664	9	43
	SPHC0346-SPHC0364	5	7
TOTAL		**17**	**63**