

Versafitcup DM Total Conventional Hip Investigation

Note: This analysis compares the Versafitcup DM acetabular prosthesis with all other total conventional hip 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-2024>.

Note: Procedures using metal/metal prostheses with head size larger than 32mm are excluded from the comparator. Procedures using prostheses with no recorded use in 2023 are excluded from the comparator.

TABLE 1

Revision Rate of Primary Total Conventional Hip Replacement

The revision rate of the Versafitcup DM total conventional hip prosthesis is compared to all other total conventional hip prostheses.

Table 1: Revision Rates of Primary Total Conventional Hip Replacement

Component	N Revised	N Total	Obs. Years	Revisions/100 Obs. Yrs (95% CI)
Versafitcup DM	71	2090	7634	0.93 (0.73, 1.17)
Other Total Conventional Hip	19187	536611	3447941	0.56 (0.55, 0.56)
TOTAL	19258	538701	3455574	0.56 (0.55, 0.57)

Note: Prostheses no longer used in 2023 are excluded from the comparator. Procedures using metal/metal prostheses with head size larger than 32mm are excluded from the comparator.

TABLE 2

Yearly Cumulative Percent Revision of Primary Total Conventional Hip Replacement

The yearly cumulative percent revision of the Versafitcup DM total conventional hip prosthesis is compared to all other total conventional hip prostheses.

Table 2: Yearly Cumulative Percent Revision of Primary Total Conventional Hip Replacement

CPR	1 Yr	2 Yrs	3 Yrs	4 Yrs	5 Yrs	6 Yrs	7 Yrs	8 Yrs
Versafitcup DM	2.4 (1.8, 3.2)	3.1 (2.4, 4.0)	3.5 (2.7, 4.5)	3.7 (2.9, 4.7)	4.1 (3.2, 5.2)	4.1 (3.2, 5.2)	4.3 (3.3, 5.5)	5.2 (3.8, 7.3)
Other Total Conventional Hip	1.7 (1.7, 1.8)	2.2 (2.1, 2.2)	2.5 (2.5, 2.5)	2.8 (2.7, 2.8)	3.1 (3.0, 3.1)	3.3 (3.3, 3.4)	3.6 (3.6, 3.7)	3.9 (3.8, 4.0)

CPR	9 Yrs	10 Yrs	11 Yrs	12 Yrs	13 Yrs	14 Yrs	15 Yrs	16 Yrs
Versafitcup DM								
Other Total Conventional Hip	4.2 (4.2, 4.3)	4.5 (4.5, 4.6)	4.9 (4.8, 4.9)	5.3 (5.2, 5.4)	5.7 (5.6, 5.8)	6.0 (5.9, 6.2)	6.5 (6.3, 6.6)	6.9 (6.7, 7.0)

CPR	17 Yrs	18 Yrs	19 Yrs	20 Yrs	21 Yrs	22 Yrs	23 Yrs
Versafitcup DM							
Other Total Conventional Hip	7.3 (7.1, 7.4)	7.6 (7.5, 7.8)	8.2 (8.0, 8.4)	8.5 (8.2, 8.7)	9.0 (8.7, 9.3)	9.7 (9.2, 10.1)	10.3 (9.5, 11.2)

Note: Prostheses no longer used in 2023 are excluded from the comparator. Procedures using metal/metal prostheses with head size larger than 32mm are excluded from the comparator.

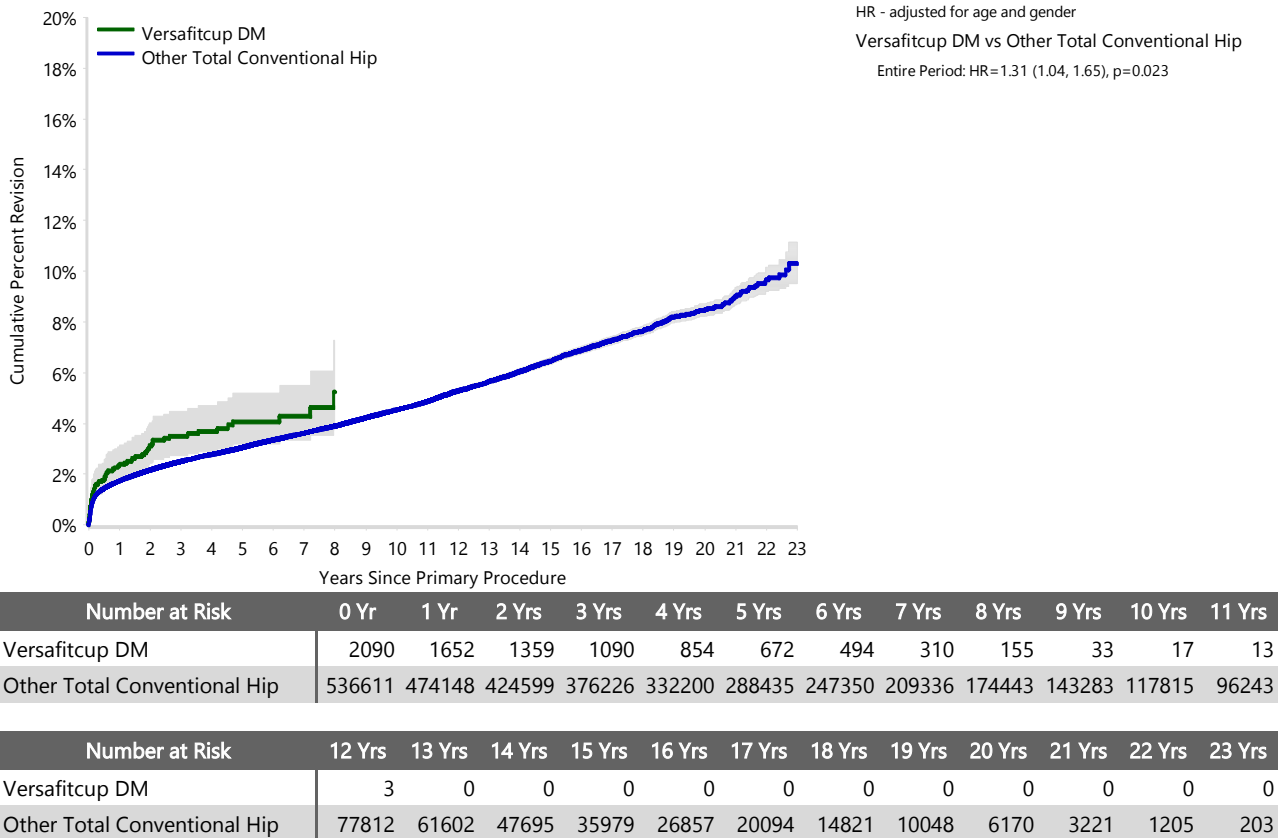
FIGURE 1

Yearly Cumulative Percent Revision of Primary Total Conventional Hip Replacement

The yearly cumulative percent revision of the Versafitcup DM total conventional hip prosthesis is compared to all other total conventional 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 Conventional Hip Replacement



Note: Prostheses no longer used in 2023 are excluded from the comparator. Procedures using metal/metal prostheses with head size larger than 32mm are excluded from the comparator.

TABLE 3

Primary Diagnosis for Revised Primary Total Conventional 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 conventional hip prostheses.

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

Primary Diagnosis	Versafitcup DM		Other Total Conventional Hip	
	Number	Percent	Number	Percent
Osteoarthritis	59	83.1	15900	82.9
Fractured Neck Of Femur	5	7.0	1416	7.4
Osteonecrosis	3	4.2	856	4.5
Developmental Dysplasia	1	1.4	319	1.7
Rheumatoid Arthritis	1	1.4	207	1.1
Failed Internal Fixation	2	2.8	149	0.8
Tumour			149	0.8
Other Inflammatory Arthritis			106	0.6
Fracture/Dislocation			53	0.3
Other			17	0.1
Arthrodesis Takedown			15	0.1
TOTAL	71	100.0	19187	100.0

Note: Prostheses no longer used in 2023 are excluded from the comparator. Procedures using metal/metal prostheses with head size larger than 32mm 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 Conventional Hip Replacement - Reason for Revision (Follow-up Limited to 12.6 Years)

Revision Diagnosis	Versafitcup DM			Other Total Conventional Hip		
	Number	% Primaries Revised	% Revisions	Number	% Primaries Revised	% Revisions
Infection	19	0.9	26.8	4387	0.8	24.1
Prosthesis Dislocation/Instability	3	0.1	4.2	4263	0.8	23.4
Fracture	27	1.3	38.0	3979	0.7	21.8
Loosening	10	0.5	14.1	3514	0.7	19.3
Pain	2	0.1	2.8	323	0.1	1.8
Leg Length Discrepancy	1	0.0	1.4	289	0.1	1.6
Malposition	2	0.1	2.8	264	0.0	1.4
Implant Breakage Stem				173	0.0	0.9
Lysis				160	0.0	0.9
Implant Breakage Acetabular Insert				124	0.0	0.7
Incorrect Sizing	2	0.1	2.8	101	0.0	0.6
Wear Acetabular Insert				72	0.0	0.4
Implant Breakage Acetabular	1	0.0	1.4	67	0.0	0.4
Metal Related Pathology				66	0.0	0.4
Wear Head				44	0.0	0.2
Tumour				42	0.0	0.2
Implant Breakage Head				29	0.0	0.2
Heterotopic Bone				26	0.0	0.1
Wear Acetabulum				8	0.0	0.0
Osteonecrosis				2	0.0	0.0
Progression Of Disease				2	0.0	0.0
Synovitis				1	0.0	0.0
Other	4	0.2	5.6	288	0.1	1.6
N Revision	71	3.4	100.0	18224	3.4	100.0
N Primary	2090			536611		

Note: This table is restricted to revisions within 12.6 years for all groups to allow a time-matched comparison of revisions.

Note: Prostheses no longer used in 2023 are excluded from the comparator. Procedures using metal/metal prostheses with head size larger than 32mm are excluded from the comparator.

FIGURE 2

Cumulative Incidence Revision Diagnosis of Primary Total Conventional 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 Versafitcup DM total conventional hip prosthesis. A comparative graph is provided of the cumulative incidence for the same reasons for revisions for all other total conventional hip prostheses.

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

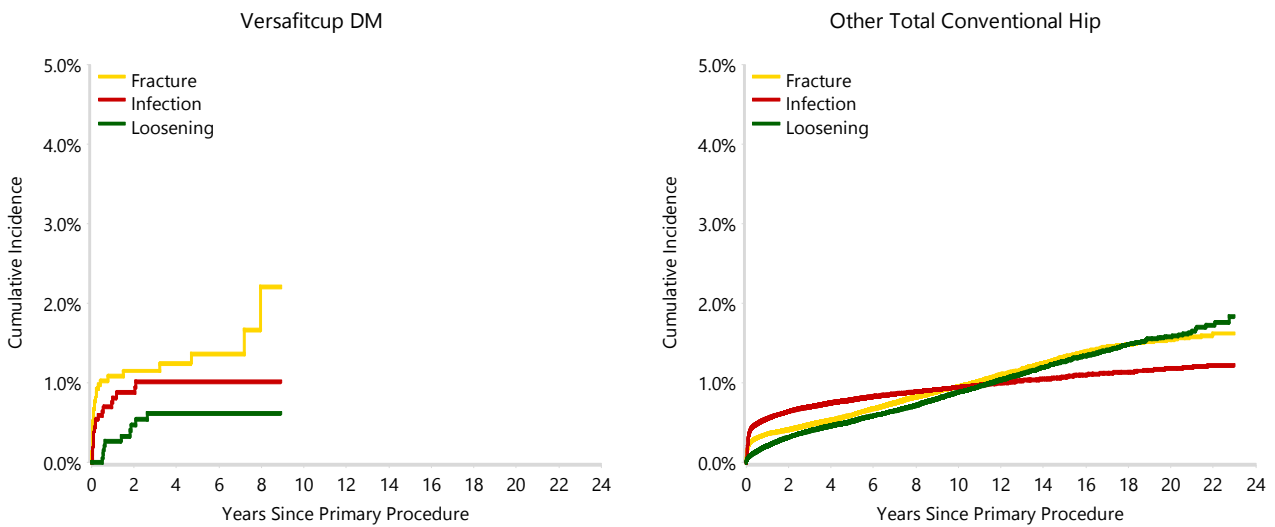


TABLE 5

Type of Revision Performed for Primary Total Conventional Hip Replacement

This analysis identifies the components used in the revision of the Versafitcup DM total conventional hip prosthesis and compares it to the components used in the revision of all other total conventional 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 conventional hip prostheses i.e. is there a difference in the type of revision undertaken for the Versafitcup DM total conventional hip prosthesis compared to all other total conventional hip prostheses.

Table 5: Primary Total Conventional Hip Replacement - Type of Revision (Follow-up Limited to 12.6 Years)

Type of Revision	Versafitcup DM		Other Total Conventional Hip	
	Number	Percent	Number	Percent
Femoral Component	32	45.1	6004	32.9
Acetabular Component	11	15.5	3350	18.4
THR (Femoral/Acetabular)	14	19.7	2045	11.2
Cement Spacer	1	1.4	609	3.3
Removal of Prostheses			95	0.5
Reinsertion of Components			28	0.2
Bipolar Head and Femoral			7	0.0
Total Femoral			7	0.0
Saddle			1	0.0
N Major	58	81.7	12146	66.6
Head/Insert	11	15.5	4681	25.7
Head Only			912	5.0
Minor Components	1	1.4	298	1.6
Insert Only	1	1.4	183	1.0
Bipolar Only			2	0.0
Cement Only			1	0.0
Head/Neck			1	0.0
N Minor	13	18.3	6078	33.4
TOTAL	71	100.0	18224	100.0

Note: This table is restricted to revisions within 12.6 years for all groups to allow a time-matched comparison of revisions.

Note: Prostheses no longer used in 2023 are excluded from the comparator. Procedures using metal/metal prostheses with head size larger than 32mm are excluded from the comparator.

TABLE 6**Revision Rates of Versafitcup DM Primary Total Conventional 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 Versafitcup DM Primary Total Conventional Hip Replacement by Fixation

Fixation	N Revised	N Total
Cemented	0	2
Cementless	63	1660
Hybrid (Femur Cemented)	8	428
TOTAL	71	2090

TABLE 7**Revision Rates of Versafitcup DM Primary Total Conventional Hip 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 Versafitcup DM Primary Total Conventional Hip Replacement by Bearing Surface

Bearing Surface	N Revised	N Total
Ceramic/Non XLPE	66	1812
Metal/Non XLPE	5	277
Unknown	0	1
TOTAL	71	2090

TABLE 8**Revision Rates of Versafitcup DM Primary Total Conventional Hip Replacement by Approach**

This analysis is provided as some prostheses are used with a variety of surgical approaches. All surgical approaches used with this prosthesis are listed.

Table 8: Revised Number of Versafitcup DM Primary Total Conventional Hip Replacement by Approach

Approach	N Revised	N Total
Anterior	44	1291
Lateral	1	59
Posterior	24	682
TOTAL	69	2032

Note: Excludes 58 procedures with no approach recorded

TABLE 9

Revision Rates of Primary Total Conventional Hip Replacement by State

This enables a state by state variation to be identified for the Versafitcup DM total conventional hip prosthesis and provides the comparative data for each of the states for all other total conventional 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 9: Revised Number of Primary Total Conventional Hip Replacement by State

Component	State	N Revised	N Total
Versafitcup DM	NSW	23	368
	VIC	40	1373
	QLD	7	273
	WA	0	2
	SA	0	42
	TAS	1	32
	Other Total Conventional Hip	NSW	5189
	VIC	4823	139432
	QLD	3784	94311
	WA	2546	63263
	SA	1825	49357
	TAS	451	18166
	ACT/NT	569	14710
TOTAL		19258	538701

Note: Prostheses no longer used in 2023 are excluded from the comparator. Procedures using metal/metal prostheses with head size larger than 32mm are excluded from the comparator.

TABLE 10**Number of Revisions of Versafitcup DM Primary Total Conventional Hip Replacement by Year of Implant**

This analysis details the number of prostheses reported each year to the Registry for the Versafitcup DM total conventional hip 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 2023 has a maximum of one year to be revised, whereas a primary procedure performed in 2021 has a maximum of three years to be revised.

Table 10: Number of Revisions of Versafitcup DM Primary Total Conventional Hip Replacement by Year of Implant

Year of Implant	Number Revised	Total Number
2011	0	10
2012	0	12
2013	0	4
2014	1	19
2015	11	146
2016	13	193
2017	12	199
2018	10	194
2019	9	188
2020	4	229
2021	3	249
2022	3	269
2023	5	378
TOTAL	71	2090

TABLE 11

Revision Rates of Versafitcup DM Primary Total Conventional 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 Versafitcup DM 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
Acetabular					
Versafitcup DM	012646MB-012664MB	DUAL MOBILITY ACETABULAR SHELL WITHOUT HOLES	NO	METAL	HA COATED

Table 11: Revised Number of Versafitcup DM Primary Total Conventional Hip Replacement by Catalogue Number Range

Acetabular Range	N Revised	N Total
012646MB-012664MB	71	2090
TOTAL	71	2090

TABLE 12

Revision Rates of Versafitcup DM Primary Total Conventional Hip 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 12: Revised Number of Versafitcup DM Primary Total Conventional Hip Replacement by Femoral Stem Component

Femoral Stem Component	N Revised	N Total
AMISem C	0	22
AMISem H	2	205
AMISem-P	0	1
CORAIL	0	6
CPCS	0	9
CPT	0	1
Collo-MIS	1	1
Cone	0	4
Exeter V40	0	1
GHE	3	14
LPS	0	2
M/L Taper	0	4
MasterLoc	1	86
MiniMax	5	125
Mistral	0	1
Modulus	0	1
Mutars	0	1
Polarstem	0	3
Quadra-C	7	343
Quadra-H	50	1175
Quadra-P	0	1
Quadra-R	1	3
Redapt	0	1
Revision Hip	0	7
S-Rom	0	2
Taperloc	0	19
Wagner	0	4
X-Acta	1	48
TOTAL	71	2090