

G7 Multihole Total Conventional Hip Investigation

Note: This analysis compares the G7 Multihole 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-2025>.

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 2024 are excluded from the comparator.

TABLE 1
Revision Rate of Primary Total Conventional Hip Replacement

The revision rate of the G7 Multihole 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)
G7 Multihole	81	1588	3846	2.11 (1.67, 2.62)
Other Total Conventional Hip	19413	550607	3548759	0.55 (0.54, 0.55)
TOTAL	19494	552195	3552605	0.55 (0.54, 0.56)

Note: Prostheses no longer used in 2024 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 G7 Multihole total conventional hip prosthesis is compared to all other total conventional hip prostheses.

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

CPR	1 Yr	2 Yrs	3 Yrs	4 Yrs	5 Yrs	6 Yrs	7 Yrs	8 Yrs
G7 Multihole	4.7 (3.7, 5.9)	5.0 (4.0, 6.3)	5.7 (4.6, 7.2)	6.2 (4.9, 7.7)	6.2 (4.9, 7.7)	6.2 (4.9, 7.7)		
Other Total Conventional Hip	1.7 (1.7, 1.8)	2.1 (2.1, 2.2)	2.5 (2.4, 2.5)	2.8 (2.7, 2.8)	3.0 (3.0, 3.1)	3.3 (3.3, 3.4)	3.6 (3.5, 3.6)	3.8 (3.8, 3.9)

CPR	9 Yrs	10 Yrs	11 Yrs	12 Yrs	13 Yrs	14 Yrs	15 Yrs	16 Yrs
G7 Multihole								
Other Total Conventional Hip	4.1 (4.1, 4.2)	4.4 (4.4, 4.5)	4.8 (4.7, 4.8)	5.2 (5.1, 5.3)	5.5 (5.4, 5.6)	5.9 (5.8, 6.0)	6.3 (6.2, 6.4)	6.7 (6.6, 6.8)

CPR	17 Yrs	18 Yrs	19 Yrs	20 Yrs	21 Yrs	22 Yrs	23 Yrs
G7 Multihole							
Other Total Conventional Hip	7.1 (6.9, 7.2)	7.4 (7.3, 7.6)	7.9 (7.7, 8.1)	8.3 (8.0, 8.5)	8.8 (8.5, 9.1)	9.3 (9.0, 9.7)	9.9 (9.4, 10.4)

Note: Prostheses no longer used in 2024 are excluded from the comparator. Procedures using metal/metal prostheses with head size larger than 32mm are excluded from the comparator.

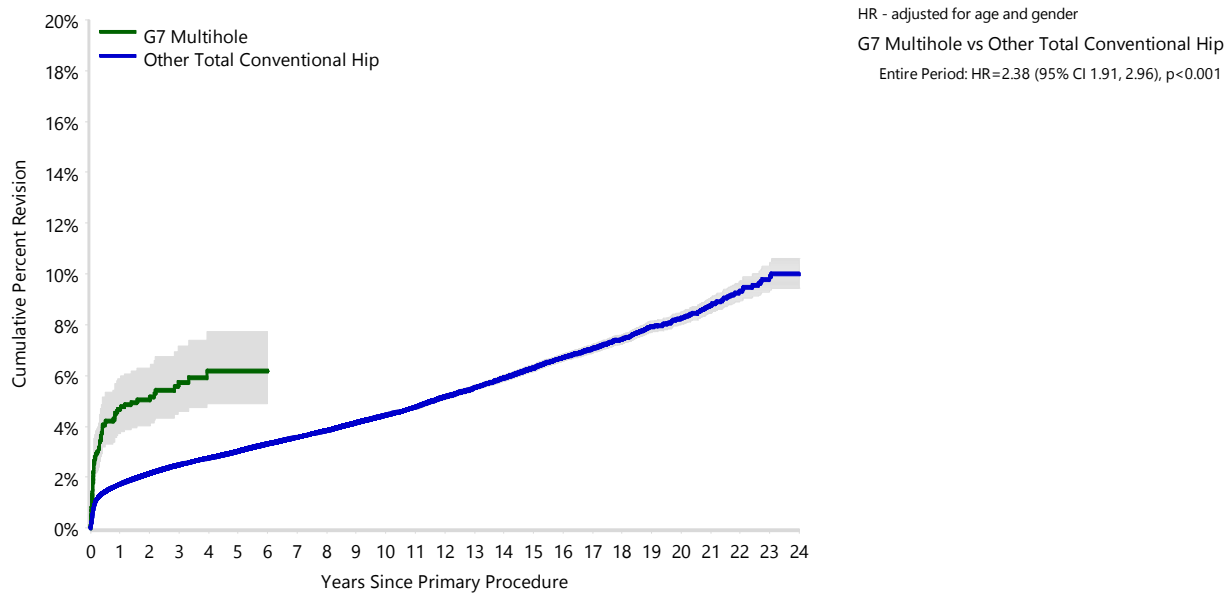
FIGURE 1

Yearly Cumulative Percent Revision of Primary Total Conventional Hip Replacement

The yearly cumulative percent revision of the G7 Multihole 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



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
G7 Multihole	1588	1139	801	575	361	172	41	8	0	0	0	0
Other Total Conventional Hip	550607	486610	432050	383666	336877	295653	254909	217116	182233	150376	122151	99378

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
G7 Multihole	0	0	0	0	0	0	0	0	0	0	0	0
Other Total Conventional Hip	80223	63999	49890	37936	28064	20581	15102	10871	7426	4536	2346	851

Note: Prostheses no longer used in 2024 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	G7 Multihole		Other Total Conventional Hip	
	Number	Percent	Number	Percent
Osteoarthritis	41	50.6	16133	83.1
Fractured Neck Of Femur	9	11.1	1428	7.4
Osteonecrosis	7	8.6	849	4.4
Developmental Dysplasia	8	9.9	305	1.6
Rheumatoid Arthritis	2	2.5	208	1.1
Failed Internal Fixation	9	11.1	149	0.8
Tumour	1	1.2	147	0.8
Other Inflammatory Arthritis			112	0.6
Fracture/Dislocation	4	4.9	49	0.3
Other			19	0.1
Arthrodesis Takedown			14	0.1
TOTAL	81	100.0	19413	100.0

Note: Prostheses no longer used in 2024 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 7.4 Years)

Revision Diagnosis	Number	G7 Multihole		Other Total Conventional Hip		
		% Primaries Revised	% Revisions	Number	% Primaries Revised	% Revisions
Infection	27	1.7	33.3	4392	0.8	27.1
Prosthesis Dislocation/Instability	27	1.7	33.3	3957	0.7	24.4
Fracture	16	1.0	19.8	3411	0.6	21.0
Loosening	4	0.3	4.9	2758	0.5	17.0
Leg Length Discrepancy	1	0.1	1.2	290	0.1	1.8
Pain	2	0.1	2.5	283	0.1	1.7
Malposition	2	0.1	2.5	245	0.0	1.5
Implant Breakage Stem	1	0.1	1.2	108	0.0	0.7
Incorrect Sizing				97	0.0	0.6
Implant Breakage Acetabular Insert				96	0.0	0.6
Lysis				78	0.0	0.5
Metal Related Pathology				54	0.0	0.3
Implant Breakage Acetabular				51	0.0	0.3
Tumour				35	0.0	0.2
Wear Head				29	0.0	0.2
Heterotopic Bone				26	0.0	0.2
Wear Acetabular Insert				24	0.0	0.1
Implant Breakage Head				15	0.0	0.1
Wear Acetabulum				4	0.0	0.0
Osteonecrosis				3	0.0	0.0
Synovitis				1	0.0	0.0
Other	1	0.1	1.2	269	0.0	1.7
N Revision	81	5.1	100.0	16226	2.9	100.0
N Primary	1588			550607		

Note: This table is restricted to revisions within 7.4 years for all groups to allow a time-matched comparison of revisions.

Note: Prostheses no longer used in 2024 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 G7 Multihole 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

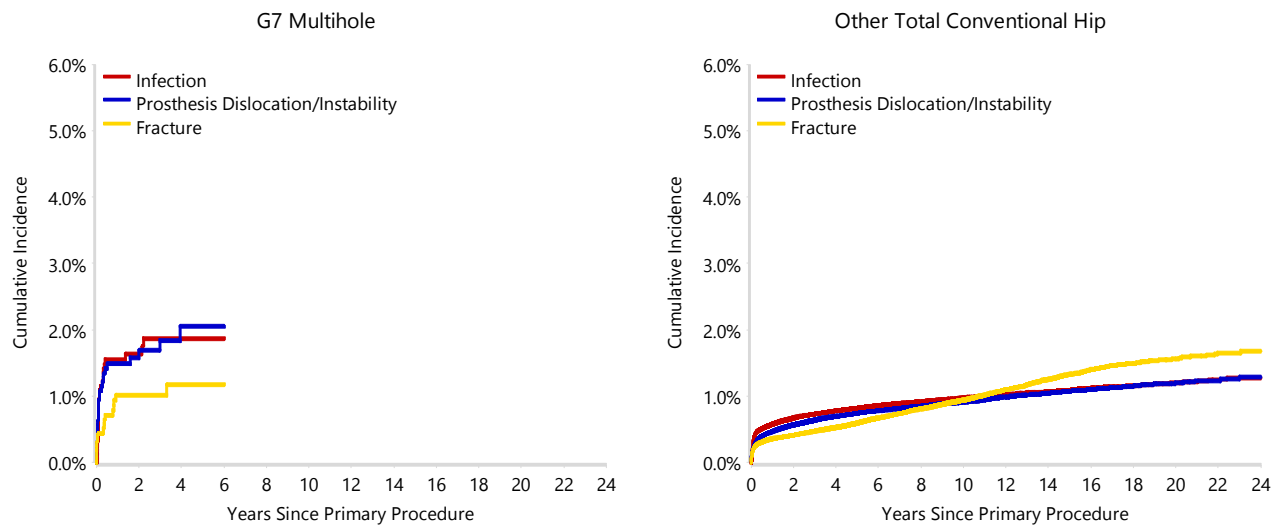


TABLE 5

Type of Revision Performed for Primary Total Conventional Hip Replacement

This analysis identifies the components used in the revision of the G7 Multihole 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 G7 Multihole 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 7.4 Years)

Type of Revision	G7 Multihole		Other Total Conventional Hip	
	Number	Percent	Number	Percent
Femoral Component	20	24.7	5185	32.0
Acetabular Component	12	14.8	2793	17.2
THR (Femoral/Acetabular)	10	12.3	1741	10.7
Cement Spacer	1	1.2	526	3.2
Removal of Prostheses			87	0.5
Reinsertion of Components			29	0.2
Bipolar Head and Femoral			9	0.1
Total Femoral			9	0.1
N Major	43	53.1	10379	64.0
Head/Insert	33	40.7	4561	28.1
Head Only	2	2.5	862	5.3
Minor Components			256	1.6
Insert Only	3	3.7	165	1.0
Bipolar Only			1	0.0
Cement Only			1	0.0
Head/Neck			1	0.0
N Minor	38	46.9	5847	36.0
TOTAL	81	100.0	16226	100.0

Note: This table is restricted to revisions within 7.4 years for all groups to allow a time-matched comparison of revisions.

Note: Prostheses no longer used in 2024 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 G7 Multihole 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 G7 Multihole Primary Total Conventional Hip Replacement by Fixation

Fixation	N Revised	N Total
Cemented	4	28
Cementless	40	811
Hybrid (Femur Cemented)	37	726
Reverse Hybrid (Femur Cementless)	0	23
TOTAL	81	1588

TABLE 7

Revision Rates of G7 Multihole 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 G7 Multihole Primary Total Conventional Hip Replacement by Bearing Surface

Bearing Surface	N Revised	N Total
Ceramic/Ceramic	0	9
Ceramic/XLPE + Antioxidant	28	610
Metal/XLPE + Antioxidant	53	958
Ceramicised Metal/XLPE + Antioxidant	0	7
Unknown	0	4
TOTAL	81	1588

TABLE 8**Revision Rates of G7 Multihole 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 G7 Multihole Primary Total Conventional Hip Replacement by Approach

Approach	N Revised	N Total
Anterior	5	163
Lateral	17	232
Posterior	58	1181
TOTAL	80	1576

Note: Excludes 12 procedures with no approach recorded

TABLE 9**Number of Revisions of G7 Multihole Primary Total Conventional Hip Replacement by Year of Implant**

This analysis details the number of prostheses reported each year to the Registry for the G7 Multihole 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 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 9: Number of Revisions of G7 Multihole Primary Total Conventional Hip Replacement by Year of Implant

Year of Implant	Number Revised	Total Number
2017	1	15
2018	4	49
2019	13	169
2020	10	222
2021	19	244
2022	12	236
2023	14	334
2024	8	319
TOTAL	81	1588

TABLE 10**Revision Rates of G7 Multihole 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 10: Revised Number of G7 Multihole Primary Total Conventional Hip Replacement by Femoral Stem Component

Femoral Stem Component	N Revised	N Total
ACTIS	0	2
AMIStem H	0	7
Absolut	0	5
Accolade II	0	2
Arcos	9	63
Avenir	0	52
Avenir Complete	0	3
C-Stem AMT	0	13
CLS	1	10
CORAIL	0	40
CPCS	0	9
CPT	24	510
Echo	0	4
Evolve	1	7
Exeter V40	4	46
Generic Stem	0	1
INDIVIDUAL	0	2
KAR	0	1
M/L Taper	0	1
MS 30	5	80
Metafix	0	4
Modulus	0	1
Mutars	1	20
Optimys	0	1
Origin	0	4
Oss	2	4
Paragon	1	8
Polarstem	0	3
Quadra-C	2	7
Redapt	0	2
S-Rom	2	36
Segmental System	1	5
Short Exeter V40	1	6
Sirius	0	1
Spectron EF	0	3
Summit	0	7
Taper Fit	0	8
Taperloc	23	462
Taperloc Microplasty	2	99
VerSys	1	21
Wagner	0	6
X-Acta	0	8
ZMR	1	14
TOTAL	81	1588