

Equinox Total Stemmed Anatomic Shoulder Investigation

Note: This analysis compares the Equinox humeral stem prosthesis with all other total stemmed anatomic shoulder 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-2026>.

Note: Procedures using modular metal-backed glenoids are excluded from the comparator. Procedures using prostheses with no recorded use in 2025 are excluded from the comparator.

TABLE 1

Revision Rate of Primary Total Stemmed Anatomic Shoulder Replacement

The revision rate of the Equinox total stemmed anatomic shoulder prosthesis is compared to all other total stemmed anatomic shoulder prostheses.

Table 1: Revision Rates of Primary Total Stemmed Anatomic Shoulder Replacement

Component	N Revised	N Total	Obs. Years	Revisions/100 Obs. Yrs (95% CI)
Equinox	104	782	4457	2.33 (1.91, 2.83)
Other Total Stemmed Anatomic Shoulder	244	4976	31223	0.78 (0.69, 0.89)
TOTAL	348	5758	35680	0.98 (0.88, 1.08)

Note: Prostheses no longer used in 2025 are excluded from the comparator. Procedures using modular metal-backed glenoids are excluded from the comparator.

TABLE 2

Yearly Cumulative Percent Revision of Primary Total Stemmed Anatomic Shoulder Replacement

The yearly cumulative percent revision of the Equinox total stemmed anatomic shoulder prosthesis is compared to all other total stemmed anatomic shoulder prostheses.

Table 2: Yearly Cumulative Percent Revision (95% CI) of Primary Total Stemmed Anatomic Shoulder Replacement

CPR	1 Yr	2 Yrs	3 Yrs	4 Yrs	5 Yrs
Equinox	2.9 (1.9, 4.3)	4.9 (3.5, 6.7)	6.1 (4.6, 8.1)	7.4 (5.7, 9.5)	9.4 (7.5, 11.9)
Other Total Stemmed Anatomic Shoulder	1.8 (1.5, 2.2)	2.8 (2.3, 3.3)	3.3 (2.8, 3.8)	3.8 (3.3, 4.4)	4.2 (3.6, 4.8)

CPR	6 Yrs	7 Yrs	8 Yrs	9 Yrs	10 Yrs	11 Yrs
Equinox	11.8 (9.4, 14.7)	14.2 (11.5, 17.6)	17.9 (14.5, 22.0)	20.7 (16.7, 25.4)	24.5 (19.5, 30.5)	25.5 (20.2, 31.8)
Other Total Stemmed Anatomic Shoulder	4.6 (4.0, 5.3)	5.2 (4.5, 5.9)	5.8 (5.1, 6.7)	6.3 (5.5, 7.2)	6.6 (5.7, 7.5)	6.9 (6.0, 8.0)

CPR	12 Yrs	13 Yrs	14 Yrs	15 Yrs	16 Yrs	17 Yrs
Equinox						
Other Total Stemmed Anatomic Shoulder	8.0 (6.8, 9.5)	8.6 (7.1, 10.3)	8.6 (7.1, 10.3)	9.4 (7.7, 11.6)	10.2 (8.0, 12.9)	11.1 (8.4, 14.4)

Note: Prostheses no longer used in 2025 are excluded from the comparator. Procedures using modular metal-backed glenoids are excluded from the comparator.

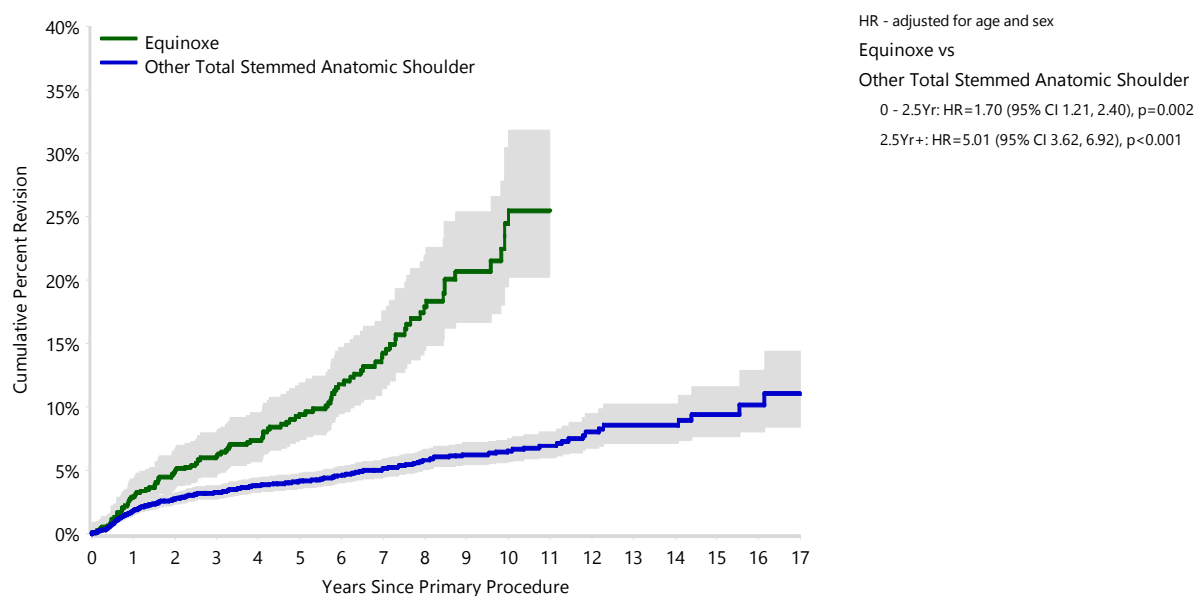
FIGURE 1

Yearly Cumulative Percent Revision of Primary Total Stemmed Anatomic Shoulder Replacement

The yearly cumulative percent revision of the Equinox total stemmed anatomic shoulder prosthesis is compared to all other total stemmed anatomic shoulder 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 Stemmed Anatomic Shoulder Replacement



Number at Risk	0 Yr	1 Yr	2 Yrs	3 Yrs	4 Yrs	5 Yrs	6 Yrs	7 Yrs	8 Yrs	9 Yrs
Equinox	782	737	696	636	538	435	345	245	175	113
Other Total Stemmed Anatomic Shoulder	4976	4558	4156	3747	3314	2920	2530	2064	1624	1241

Number at Risk	10 Yrs	11 Yrs	12 Yrs	13 Yrs	14 Yrs	15 Yrs	16 Yrs	17 Yrs	18 Yrs	19 Yrs
Equinox	74	45	22	7	1	0	0	0	0	0
Other Total Stemmed Anatomic Shoulder	866	549	352	290	227	157	104	66	21	5

Note: Prostheses no longer used in 2025 are excluded from the comparator. Procedures using modular metal-backed glenoids are excluded from the comparator.

TABLE 3**Primary Diagnosis for Revised Primary Total Stemmed Anatomic Shoulder 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 stemmed anatomic shoulder prostheses.

Table 3: Primary Diagnosis for Revised Primary Total Stemmed Anatomic Shoulder Replacement

Primary Diagnosis	Equinox		Other Total Stemmed Anatomic Shoulder	
	Number	Percent	Number	Percent
Osteoarthritis	100	96.2	222	91.0
Osteonecrosis			7	2.9
Rheumatoid Arthritis	1	1.0	5	2.0
Fracture	2	1.9	4	1.6
Other Inflammatory Arthritis			4	1.6
Instability			1	0.4
Rotator Cuff Arthropathy	1	1.0	1	0.4
TOTAL	104	100.0	244	100.0

Note: Prostheses no longer used in 2025 are excluded from the comparator. Procedures using modular metal-backed glenoids 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 Stemmed Anatomic Shoulder Replacement - Reason for Revision (Follow-up Limited to 14 Years)

Revision Diagnosis	Number	Equinox		Other Total Stemmed Anatomic Shoulder		
		% Primaries Revised	% Revisions	Number	% Primaries Revised	% Revisions
Rotator Cuff Insufficiency	15	1.9	14.4	77	1.5	32.1
Loosening	44	5.6	42.3	60	1.2	25.0
Instability/Dislocation	13	1.7	12.5	59	1.2	24.6
Infection	6	0.8	5.8	15	0.3	6.3
Pain	1	0.1	1.0	11	0.2	4.6
Implant Breakage Glenoid	6	0.8	5.8			
Fracture	3	0.4	2.9	5	0.1	2.1
Lysis	5	0.6	4.8	5	0.1	2.1
Incorrect Sizing	3	0.4	2.9	2	0.0	0.8
Arthrofibrosis	2	0.3	1.9	2	0.0	0.8
Implant Breakage Glenoid Insert	2	0.3	1.9			
Malposition	1	0.1	1.0	2	0.0	0.8
Dissociation				1	0.0	0.4
Metal Related Pathology	1	0.1	1.0			
Wear Glenoid Insert	1	0.1	1.0			
Other	1	0.1	1.0	1	0.0	0.4
N Revision	104	13.3	100.0	240	4.8	100.0
N Primary	782			4976		

Note: This table is restricted to revisions within 14 years for all groups to allow a time-matched comparison of revisions.

Note: Prostheses no longer used in 2025 are excluded from the comparator. Procedures using modular metal-backed glenoids are excluded from the comparator.

FIGURE 2

Cumulative Incidence Revision Diagnosis of Primary Total Stemmed Anatomic Shoulder 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 Equinoxe total stemmed anatomic shoulder prosthesis. A comparative graph is provided of the cumulative incidence for the same reasons for revisions for all other total stemmed anatomic shoulder prostheses.

Figure 2: Cumulative Incidence Revision Diagnosis for Primary Total Stemmed Anatomic Shoulder Replacement

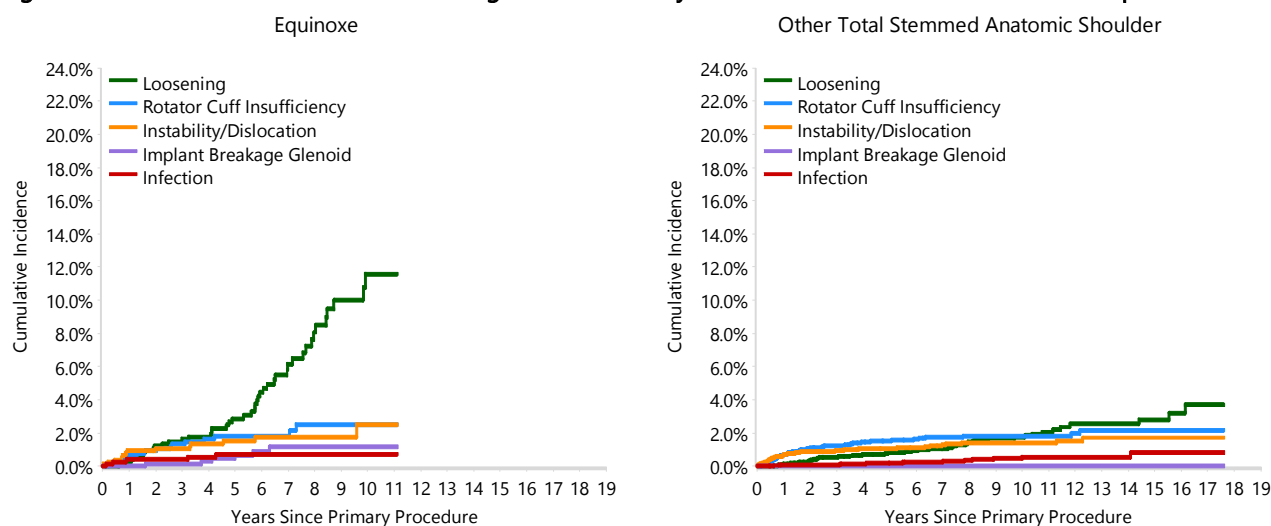


TABLE 5

Type of Revision Performed for Primary Total Stemmed Anatomic Shoulder Replacement

This analysis identifies the components used in the revision of the Equinox total stemmed anatomic shoulder prosthesis and compares it to the components used in the revision of all other total stemmed anatomic shoulder 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 stemmed anatomic shoulder prostheses i.e. is there a difference in the type of revision undertaken for the Equinox total stemmed anatomic shoulder prosthesis compared to all other total stemmed anatomic shoulder prostheses.

Table 5: Primary Total Stemmed Anatomic Shoulder Replacement - Type of Revision (Follow-up Limited to 14 Years)

Type of Revision	Equinox		Other Total Stemmed Anatomic Shoulder	
	Number	Percent	Number	Percent
Humeral/Glenoid	71	68.3	186	77.5
Glenoid Component	4	3.8	11	4.6
Cement Spacer	8	7.7	9	3.8
Humeral Component	8	7.7	7	2.9
Removal of Prostheses	1	1.0	2	0.8
N Major	92	88.5	215	89.6
Head Only	12	11.5	23	9.6
Cup Only			1	0.4
Reoperation			1	0.4
N Minor	12	11.5	25	10.4
TOTAL	104	100.0	240	100.0

Note: This table is restricted to revisions within 14 years for all groups to allow a time-matched comparison of revisions.

Note: Prostheses no longer used in 2025 are excluded from the comparator. Procedures using modular metal-backed glenoids are excluded from the comparator.

TABLE 6**Revision Rates of Equinox Primary Total Stemmed Anatomic Shoulder 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 Equinox Primary Total Stemmed Anatomic Shoulder Replacement by Fixation

Fixation	N Revised	N Total
Cemented	3	31
Cementless	10	58
Hybrid (Glenoid Cemented)	91	693
TOTAL	104	782

TABLE 7**Revision Rates of Equinox Primary Total Stemmed Anatomic Shoulder 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 Equinox Primary Total Stemmed Anatomic Shoulder Replacement by Bearing Surface

Bearing Surface	N Revised	N Total
Metal/Non XLPE	104	782
TOTAL	104	782

TABLE 8

Revision Rates of Primary Total Stemmed Anatomic Shoulder Replacement by State

This enables a state by state variation to be identified for the Equinox total stemmed anatomic shoulder prosthesis and provides the comparative data for each of the states for all other total stemmed anatomic shoulder 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 8: Revised Number of Primary Total Stemmed Anatomic Shoulder Replacement by State

Component	State	N Revised	N Total
Equinox	NSW	32	179
	VIC	24	237
	QLD	11	115
	WA	34	225
	SA	2	11
	TAS	1	14
	ACT/NT	0	1
Other Total Stemmed Anatomic Shoulder	NSW	52	1547
	VIC	83	1269
	QLD	53	1033
	WA	17	340
	SA	23	561
	TAS	4	81
	ACT/NT	12	145
TOTAL		348	5758

Note: Prostheses no longer used in 2025 are excluded from the comparator. Procedures using modular metal-backed glenoids are excluded from the comparator.

TABLE 9**Number of Revisions of Equinox Primary Total Stemmed Anatomic Shoulder Replacement by Year of Implant**

This analysis details the number of prostheses reported each year to the Registry for the Equinox total stemmed anatomic shoulder 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 2025 has a maximum of one year to be revised, whereas a primary procedure performed in 2023 has a maximum of three years to be revised.

Table 9: Number of Revisions of Equinox Primary Total Stemmed Anatomic Shoulder Replacement by Year of Implant

Year of Implant	Number Revised	Total Number
2011	4	6
2012	3	10
2013	6	26
2014	3	32
2015	16	46
2016	6	42
2017	12	71
2018	13	79
2019	17	105
2020	12	92
2021	5	92
2022	5	87
2023	1	48
2024	1	24
2025	0	22
TOTAL	104	782

TABLE 10

Revision Rates of Equinox Primary Total Stemmed Anatomic Shoulder 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 Equinox 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	Stem Type
Humeral Stem					
Equinox	3000107-3000117	PRESSFIT PRIMARY HUMERAL STEM	NO	METAL	
Equinox	3003006-3003014	EQUINOX PRESERVE HUMERAL STEM PRESS FIT PLASMA COATED	NO	METAL	
Equinox	3042107-3042407	PLATFORM FRACTURE HUMERAL STEM	YES	METAL	FRACTURE
Equinox	3060108-3060212	LONG HUMERAL STEM	YES	METAL	

Table 10: Revised Number of Equinox Primary Total Stemmed Anatomic Shoulder Replacement by Catalogue Number Range

Humeral Stem Range	N Revised	N Total
3000107-3000117	96	729
3003006-3003014	6	51
3042107-3042407	1	1
3060108-3060212	1	1
TOTAL	104	782

TABLE 11**Revision Rates of Equinox Primary Total Stemmed Anatomic Shoulder 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 Equinox Primary Total Stemmed Anatomic Shoulder Replacement by Glenoid Component

Glenoid Component	N Revised	N Total
Equinox (All Poly)	38	305
Equinox (Cage)	66	477
TOTAL	104	782