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2021 Annual Report Patient Presentation for Surgeons

SHOULDER REPLACEMENT



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SHOULDER REPLACEMENT

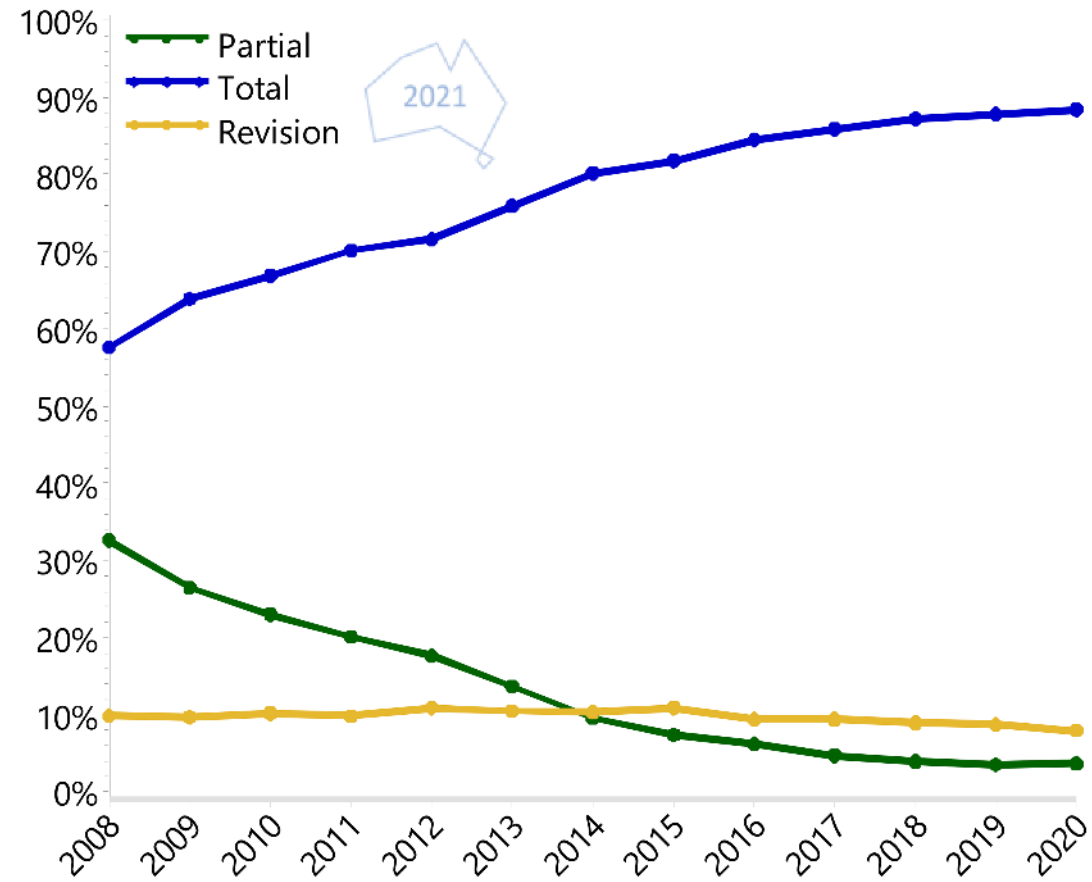
Figure S1

Proportion of Shoulder Replacement



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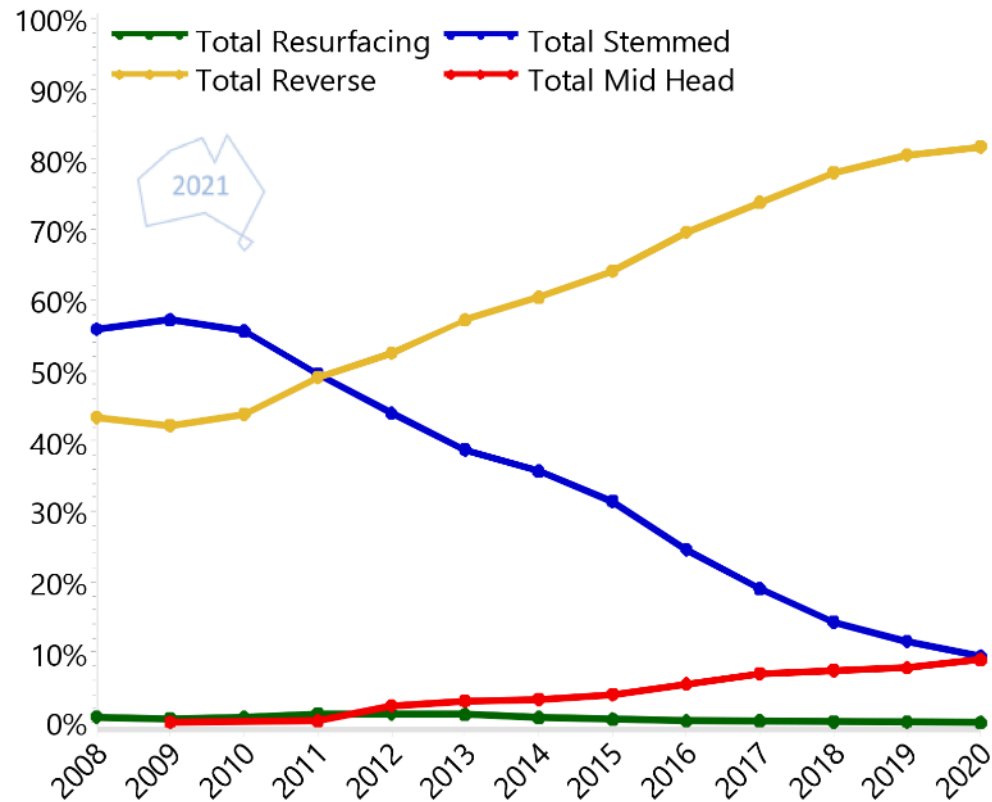


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Total Shoulder Replacement

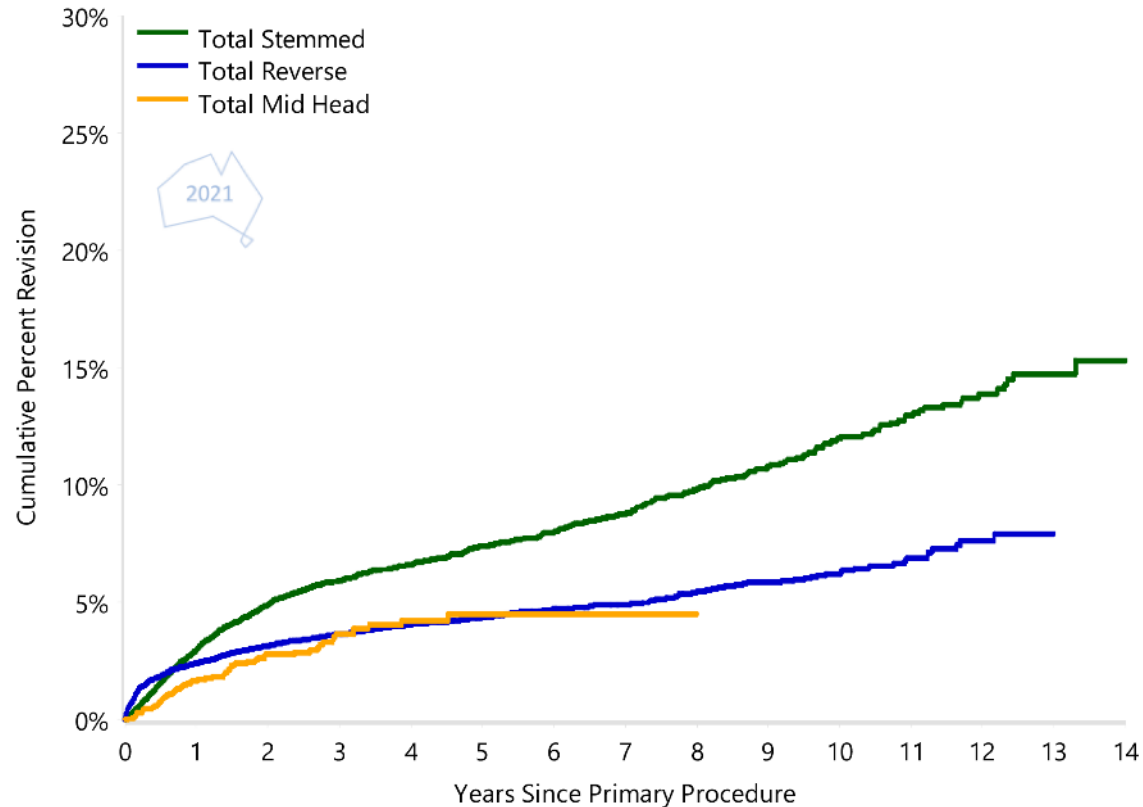
Figure ST1 & Table ST1 Primary Total Shoulder Replacement by Class



Shoulder Class	Number	Percent
Total Resurfacing	235	0.4
Total Stemmed	14872	27.6
Total Reverse	35980	66.9
Total Mid Head	2728	5.1
TOTAL	53815	100.0

Figure ST2

Cumulative Percent Revision of Primary Total Shoulder Replacement by Class (All Prostheses)



Total mid head shoulder replacement has a lower rate of revision compared to:

- total stemmed
- total reverse (0-3 months)

Total reverse:

- has a higher rate of revision than total stemmed (0-3 months)
- has a lower rate of revision than total stemmed (3 months+)

Note: Restricted to modern prostheses



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Total Stemmed Shoulder Replacement



Table ST24

Cumulative Percent Revision of Primary Total Stemmed Shoulder Replacement by Primary Diagnosis



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Primary Diagnosis	N Revised	N Total	1 Yr	3 Yrs	5 Yrs	7 Yrs	10 Yrs	14 Yrs
Osteoarthritis	591	7850	2.9 (2.5, 3.3)	5.8 (5.3, 6.4)	7.2 (6.6, 7.8)	8.6 (7.9, 9.4)	11.7 (10.7, 12.9)	
Osteonecrosis	13	150	4.3 (1.9, 9.3)	7.6 (4.1, 13.7)	11.4 (6.7, 19.3)			
Rheumatoid Arthritis	8	116	0.9 (0.1, 6.3)	3.0 (1.0, 9.0)	4.3 (1.6, 11.1)	6.0 (2.5, 14.2)		
Fracture	10	72	7.2 (3.1, 16.5)	14.9 (8.3, 26.0)	14.9 (8.3, 26.0)	14.9 (8.3, 26.0)	14.9 (8.3, 26.0)	
Rotator Cuff Arthropathy	9	57	7.4 (2.8, 18.4)	14.1 (7.0, 27.6)	17.3 (8.9, 32.2)	17.3 (8.9, 32.2)		
Other Inflammatory Arthritis	4	45	4.7 (1.2, 17.3)	4.7 (1.2, 17.3)	7.7 (2.5, 22.3)	7.7 (2.5, 22.3)	16.1 (5.2, 43.7)	
Other (3)	5	34	6.3 (1.6, 23.0)	15.1 (5.8, 36.0)	21.1 (9.0, 45.0)			
TOTAL	640	8324						

Note: Only primary diagnoses with over 30 procedures have been listed
Restricted to modern prostheses

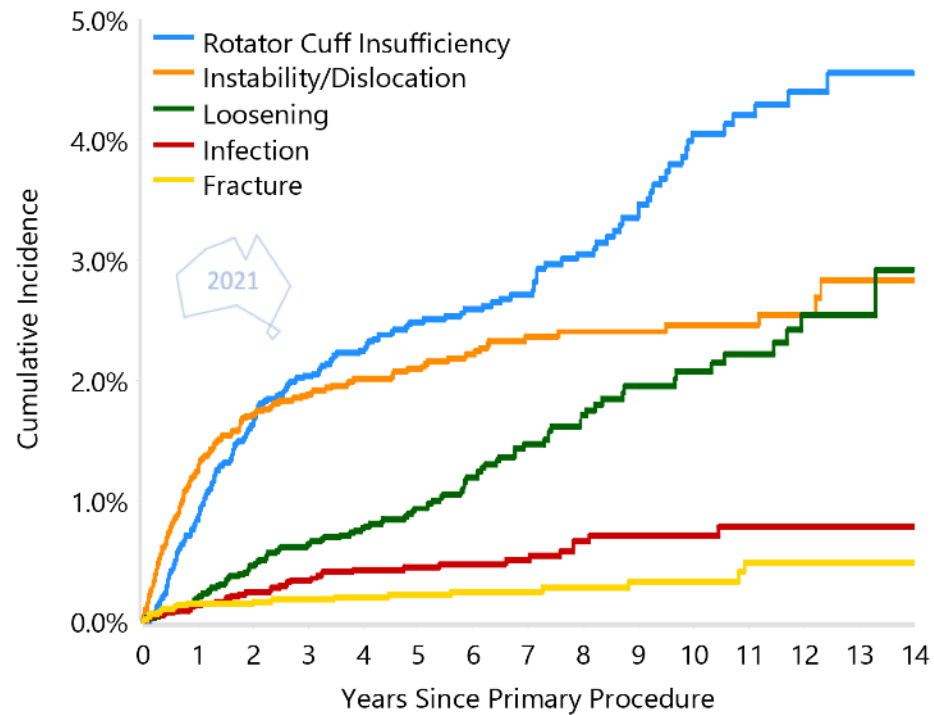
Figure ST7

Cumulative Incidence Revision Diagnosis of Primary Total Stemmed Shoulder Replacement



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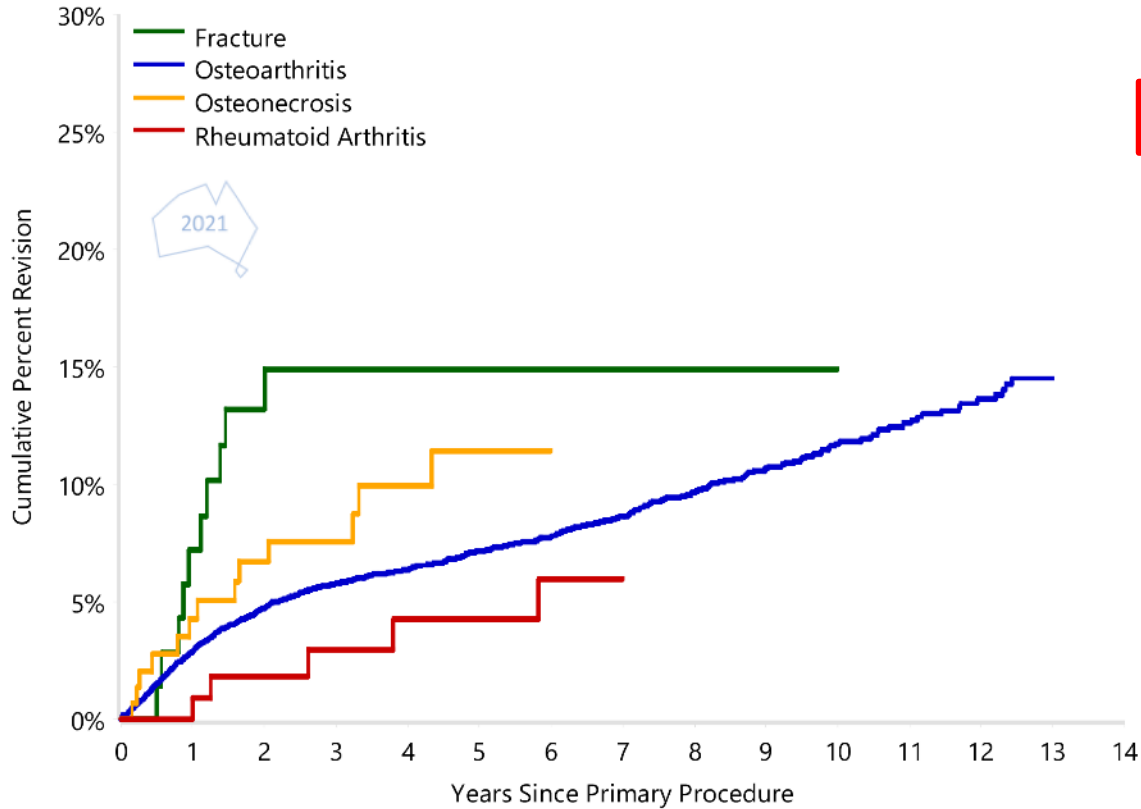


Rotator cuff insufficiency is the most common reason for revision.

Note: Restricted to modern prostheses

Figure ST6

Cumulative Percent Revision of Primary Total Stemmed Shoulder Replacement by Primary Diagnosis



No statistical difference

Note: Only primary diagnoses with over 70 procedures have been listed
Restricted to modern prostheses

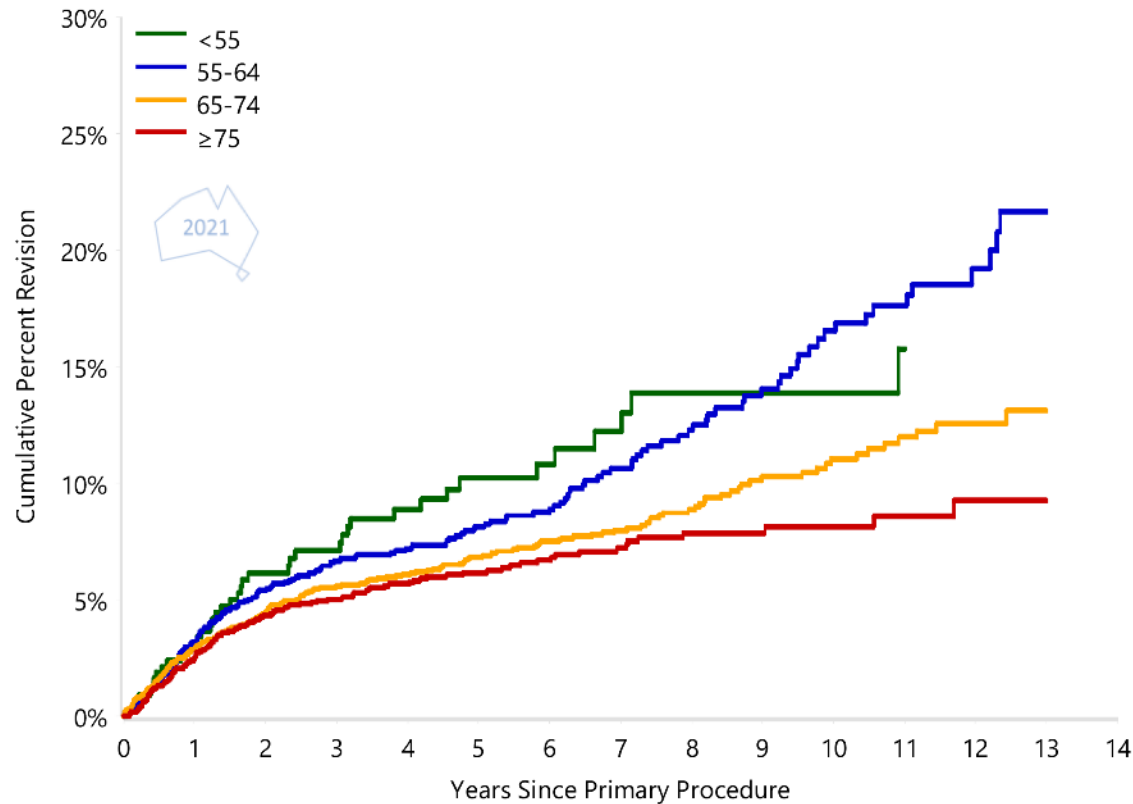
Figure ST8

Cumulative Percent Revision of Primary Total Stemmed Shoulder Replacement by Age (OA)



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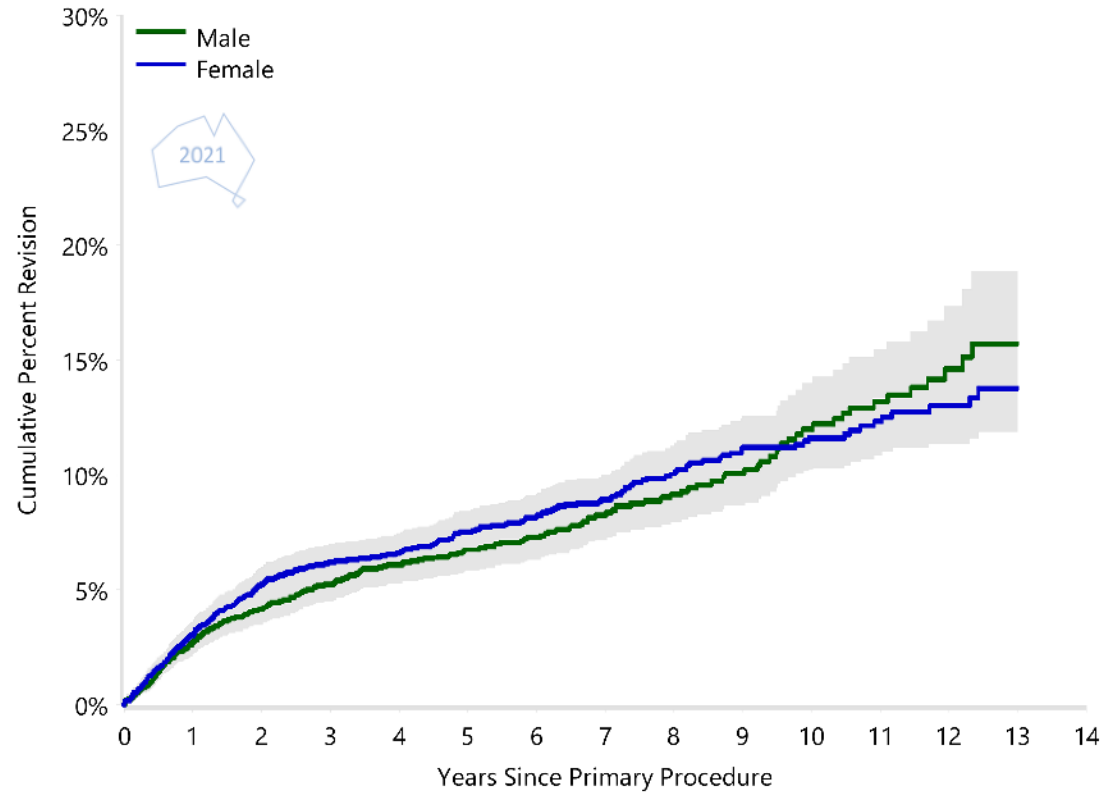


Patients aged <55 years have a significantly higher rate of revision compared to patients aged 65-74 years and ≥75 years.

Note: Restricted to modern prostheses

Figure ST9

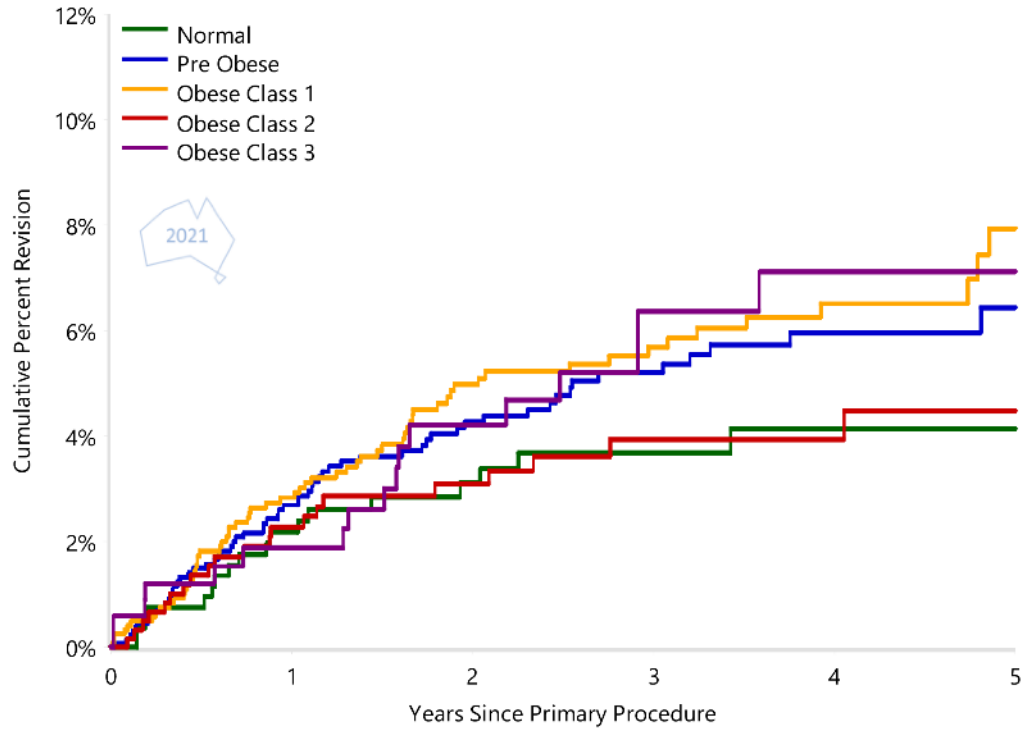
Cumulative Percent Revision of Primary Total Stemmed Shoulder Replacement by Gender (OA)



Note: Restricted to modern prostheses

Figure ST123

Cumulative Percent Revision of Primary Total Stemmed Shoulder Replacement by BMI Category (OA)

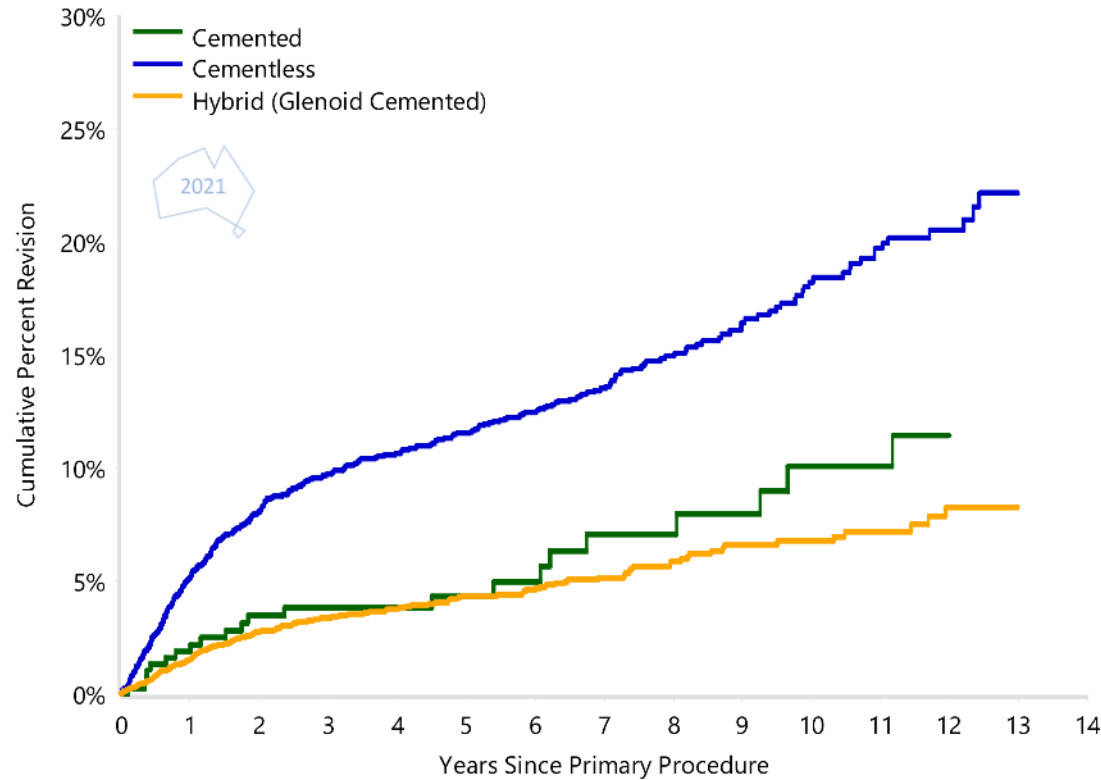


BMI is not a risk factor for revision.

Note: BMI has not been presented for patients aged ≤ 19 years
Restricted to modern prostheses

Figure ST15

Cumulative Percent Revision of Primary Total Stemmed Shoulder Replacement by Fixation (Primary Diagnosis OA)



Cementless fixation has a higher rate of revision compared to the other types of fixation.

Note: Only fixations with over 100 procedures have been listed
Restricted to modern prostheses



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Reverse Shoulder Replacement



Table ST46

Cumulative Percent Revision of Primary Total Reverse Shoulder Replacement by Primary Diagnosis



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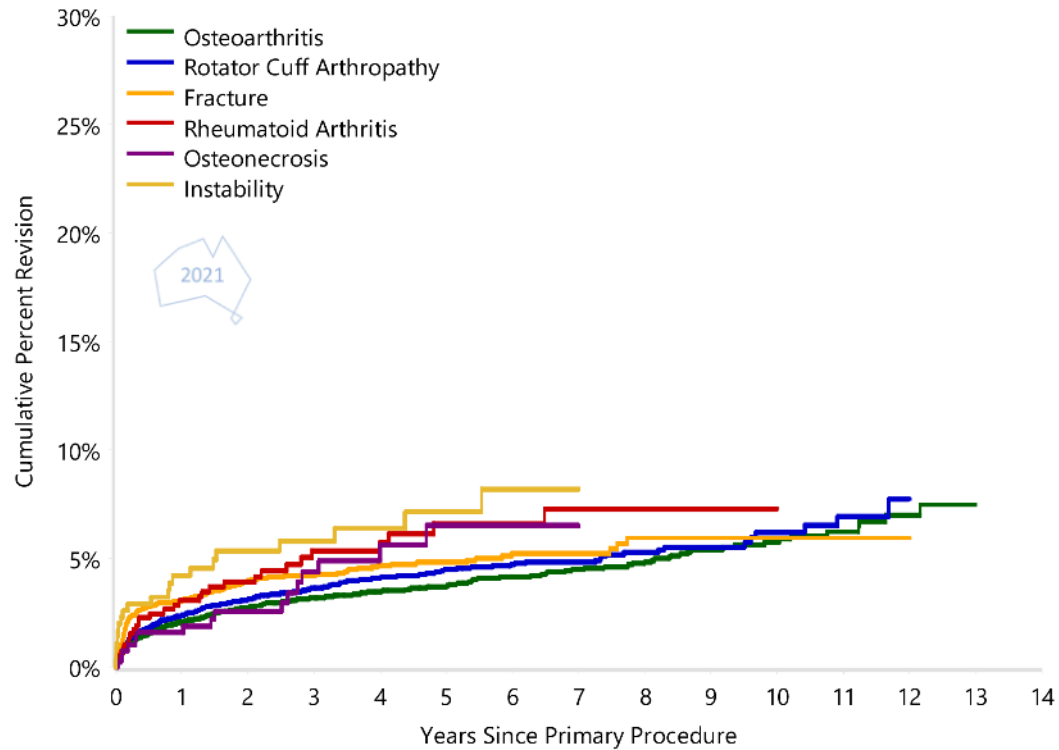
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Primary Diagnosis	N Revised	N Total	1 Yr	3 Yrs	5 Yrs	7 Yrs	10 Yrs	14 Yrs
Osteoarthritis	488	14926	2.1 (1.9, 2.3)	3.2 (2.9, 3.5)	3.7 (3.4, 4.1)	4.5 (4.0, 5.0)	5.8 (5.0, 6.6)	
Rotator Cuff Arthropathy	438	12239	2.4 (2.1, 2.7)	3.6 (3.3, 4.0)	4.5 (4.0, 5.0)	4.8 (4.3, 5.4)	6.2 (5.2, 7.3)	
Fracture	212	5171	3.1 (2.6, 3.6)	4.2 (3.7, 4.8)	4.8 (4.2, 5.6)	5.2 (4.5, 6.1)	5.9 (4.9, 7.2)	
Rheumatoid Arthritis	31	591	3.1 (1.9, 4.9)	5.4 (3.6, 7.8)	6.6 (4.5, 9.6)	7.3 (5.0, 10.7)	7.3 (5.0, 10.7)	
Osteonecrosis	16	392	1.6 (0.7, 3.5)	4.4 (2.5, 7.6)	6.5 (3.9, 10.9)	6.5 (3.9, 10.9)		
Instability	23	348	4.2 (2.5, 7.0)	5.8 (3.7, 9.1)	7.1 (4.6, 11.1)	8.2 (5.2, 12.9)		
Other (3)	30	350	4.2 (2.5, 7.1)	10.0 (6.6, 15.0)	11.9 (7.9, 17.7)			
TOTAL	1238	34017						

Note: Only primary diagnoses with over 300 procedures have been listed
Restricted to modern prostheses

Figure ST27

Cumulative Percent Revision of Primary Total Reverse Shoulder Replacement by Primary Diagnosis



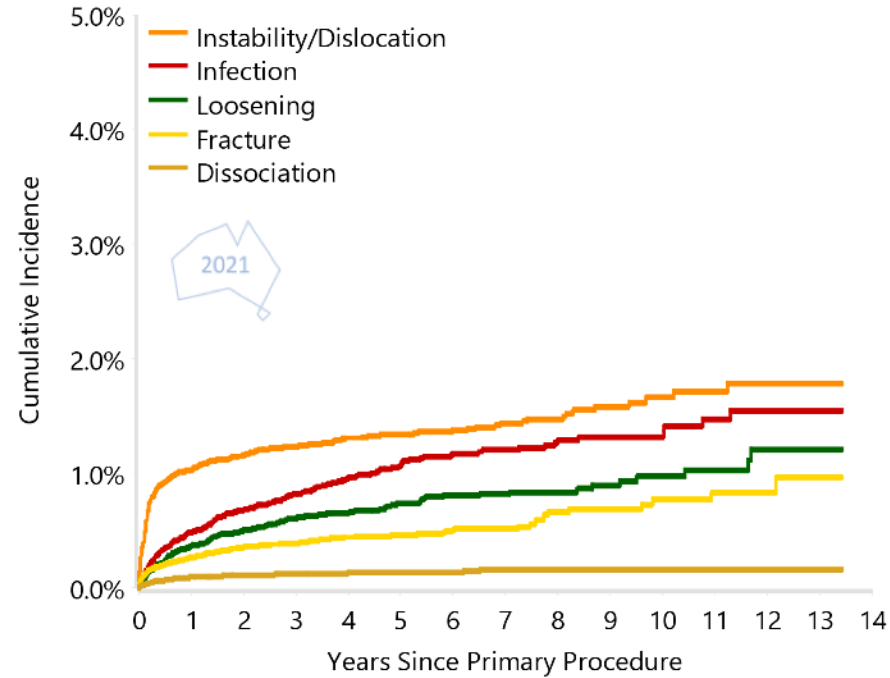
Osteoarthritis has a lower rate of revision compared to:

- Fracture (0-3 months)
- Rheumatoid arthritis
- Instability

Note: Only primary diagnoses with over 300 procedures have been listed
Restricted to modern prostheses

Figure ST28

Cumulative Incidence Revision Diagnosis of Primary Total Reverse Shoulder Replacement



Instability/dislocation is the most common reason for revision.

Note: Restricted to modern prostheses



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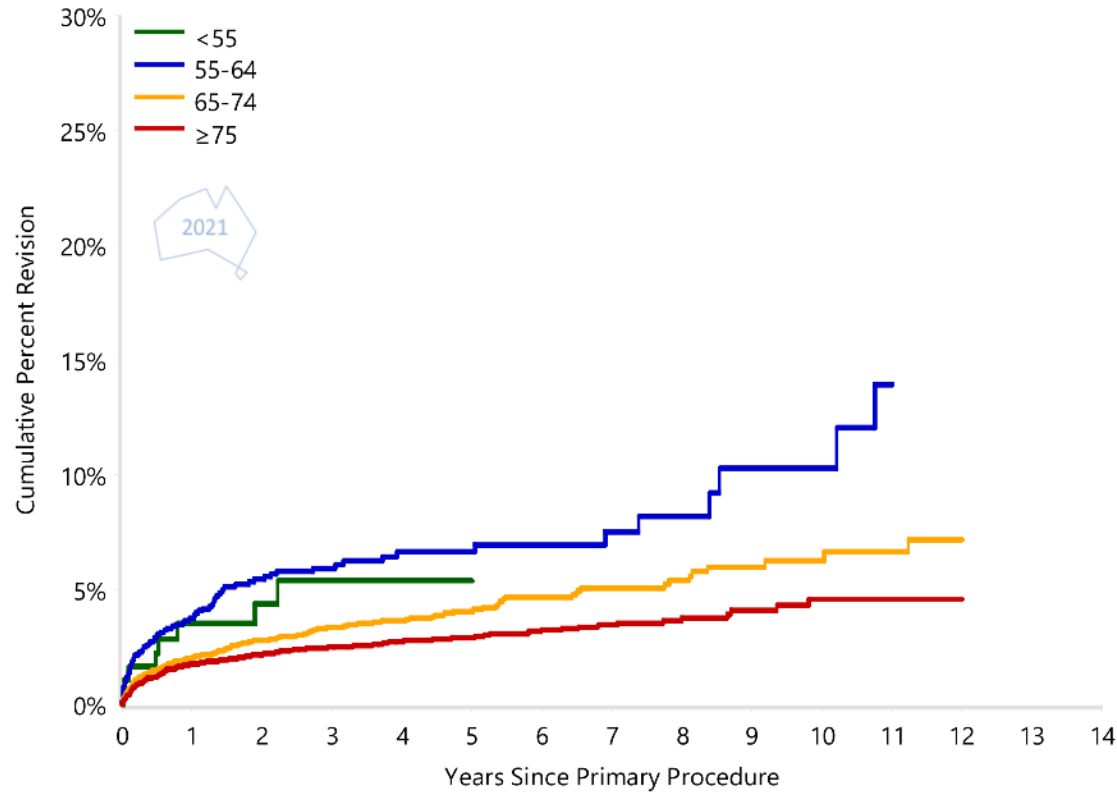
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Reverse Shoulder Replacement

Primary Diagnosis Osteoarthritis

Figure ST29

Cumulative Percent Revision of Primary Total Reverse Shoulder Replacement by Age (OA)



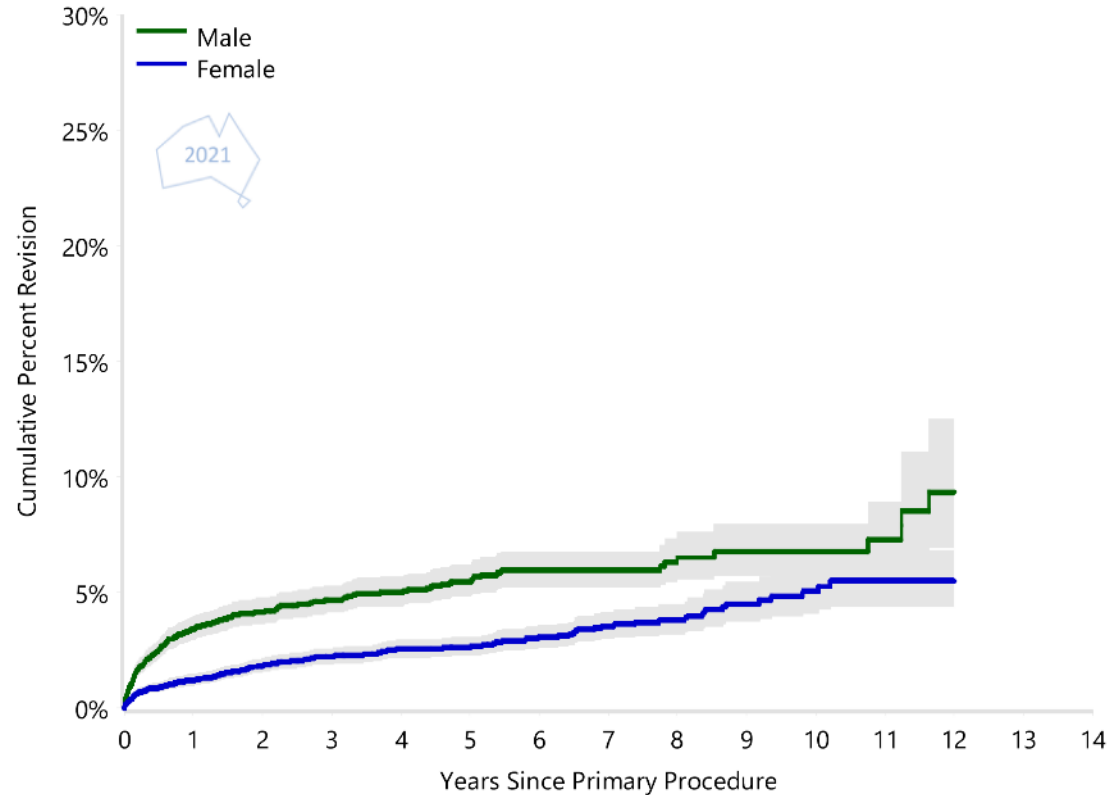
Patients aged 55-64 years and 65-74 years have a higher rate of revision compared to patients aged ≥ 75 years.

Only used in small numbers in patients aged < 55 years

Note: Restricted to modern prostheses

Figure ST30

Cumulative Percent Revision of Primary Total Reverse Shoulder Replacement by Gender (OA)

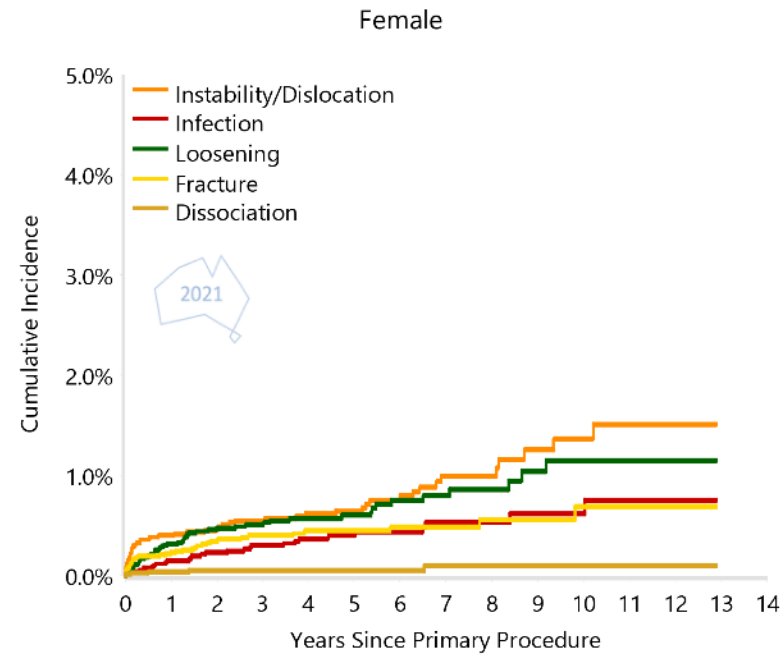
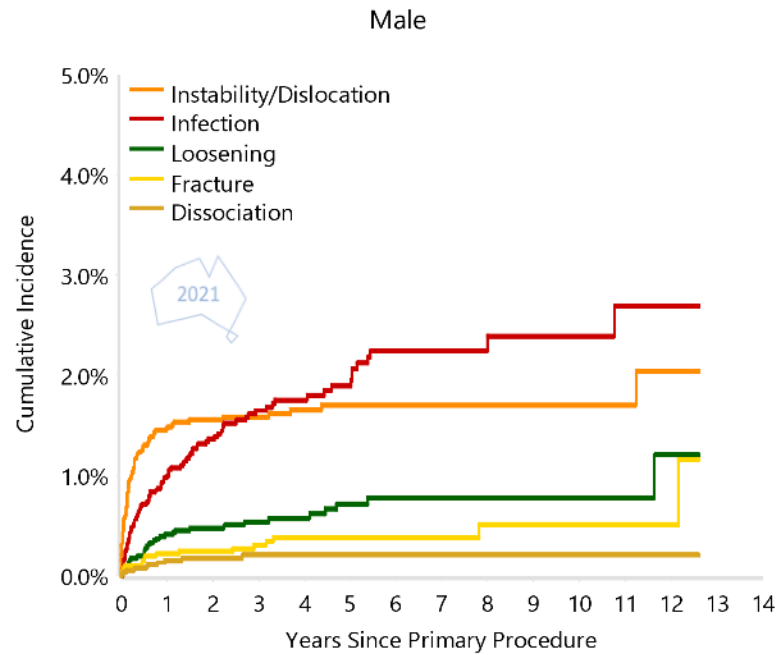


Males have a higher rate of revision compared to females.

Note: Restricted to modern prostheses

Figure ST31

Cumulative Incidence Revision Diagnosis of Primary Total Reverse Shoulder Replacement by Gender (OA)

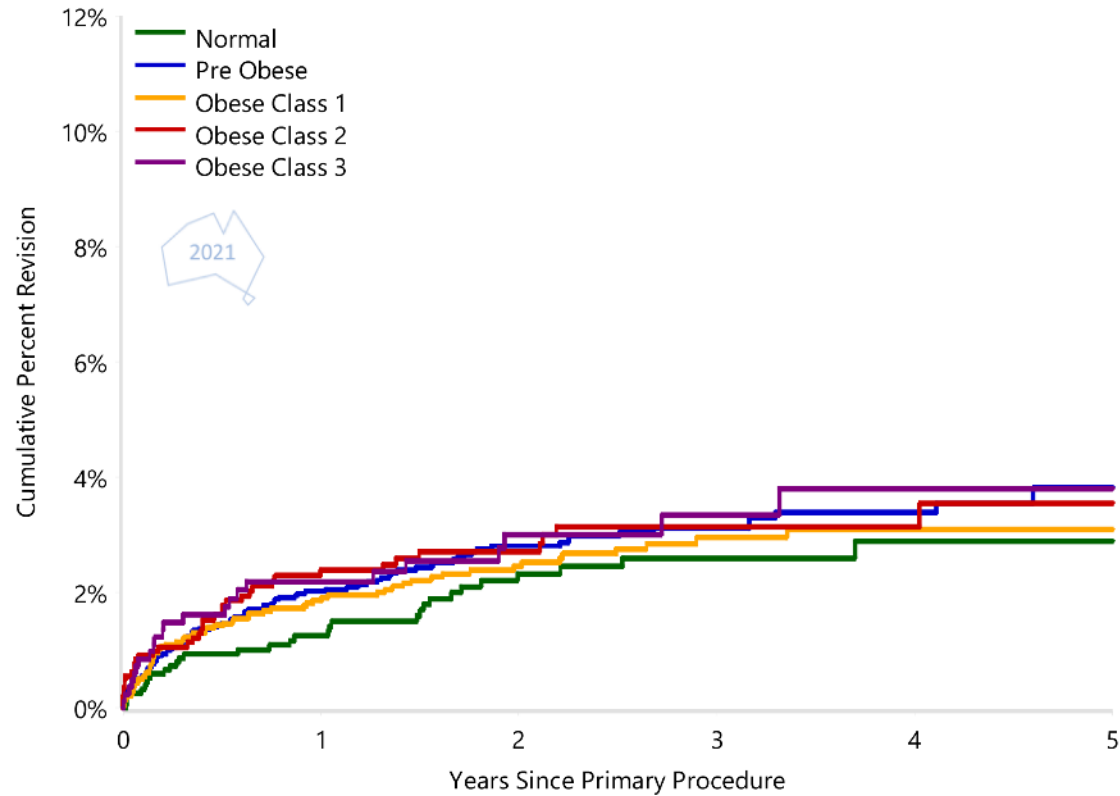


Males have a higher rate of revision for instability/dislocation and infection.

Note: Restricted to modern prostheses

Figure ST34

Cumulative Percent Revision of Primary Total Reverse Shoulder Replacement by BMI Category (OA)



BMI is not a risk factor for revision.

Note: Restricted to modern prostheses
BMI has not been presented for patients aged ≤ 19 years



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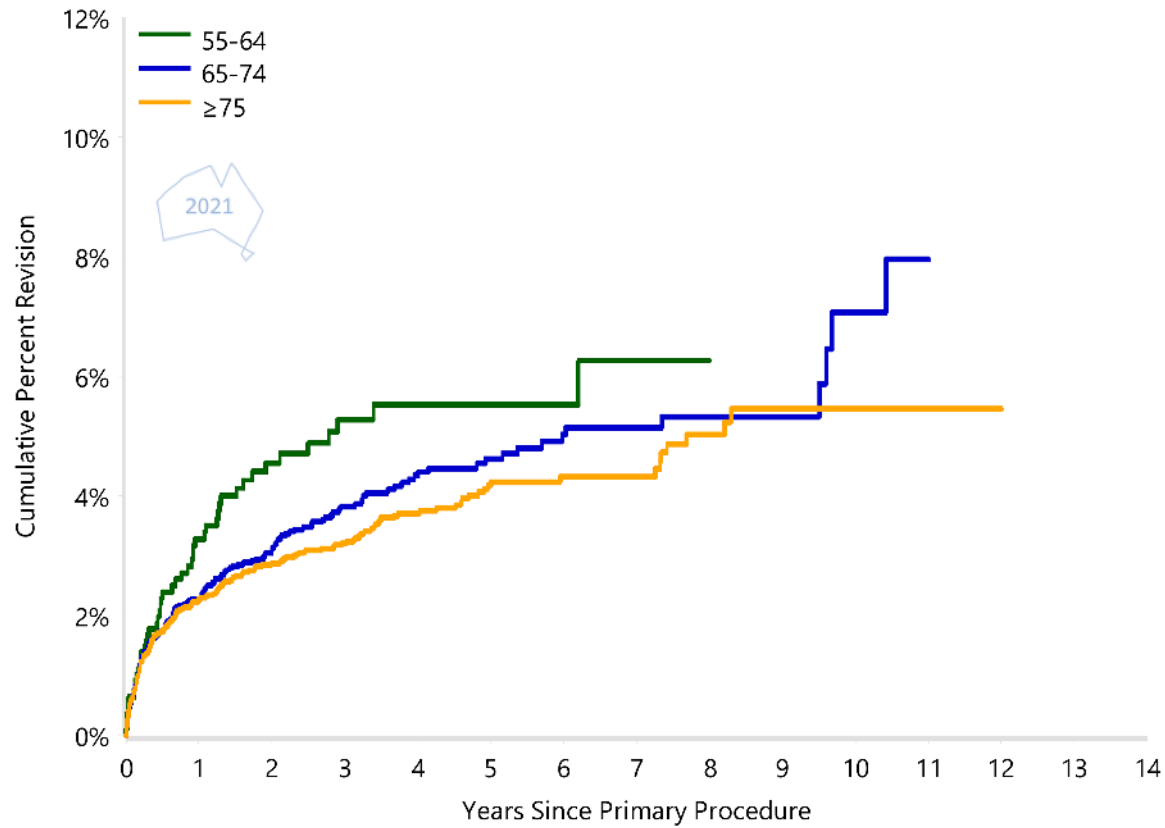
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Reverse Shoulder Replacement

Primary Diagnosis Rotator Cuff Arthropathy

Figure ST42

Cumulative Percent Revision of Primary Total Reverse Shoulder Replacement by Age (Rotator Cuff Arthropathy)

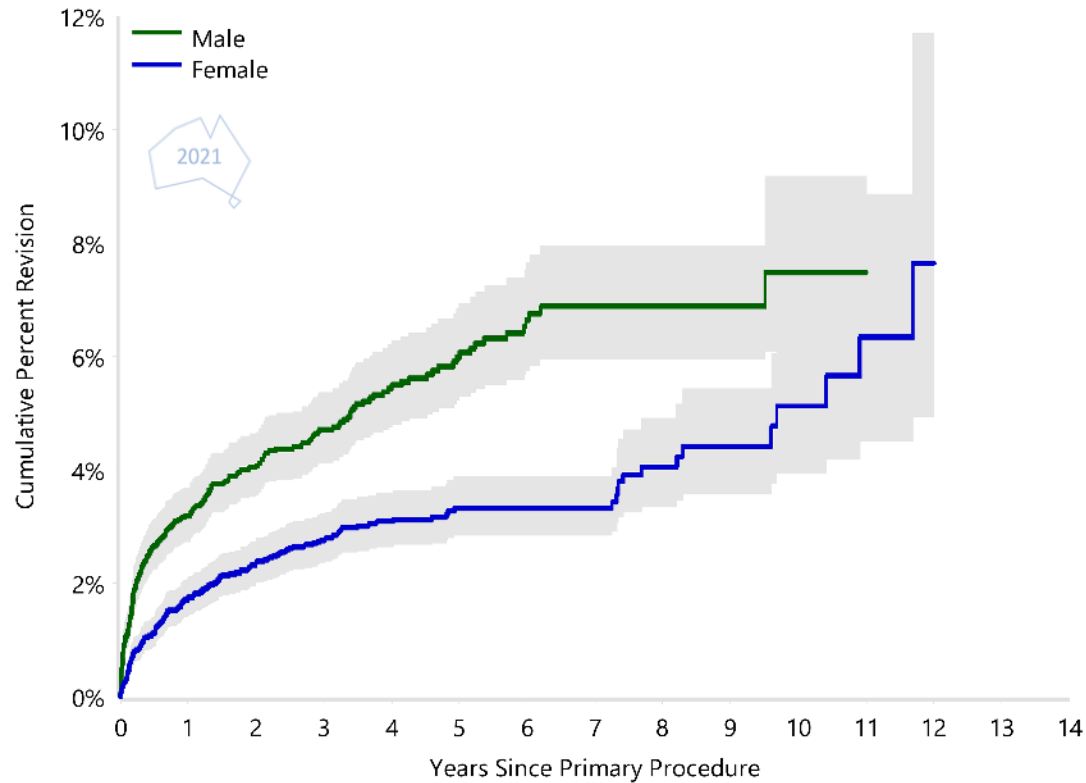


Age is not a risk factor for revision.

Note: Restricted to modern prostheses

Figure ST43

Cumulative Percent Revision of Primary Total Reverse Shoulder Replacement by Gender (Rotator Cuff Arthropathy)



Males have a higher rate of revision compared to females.

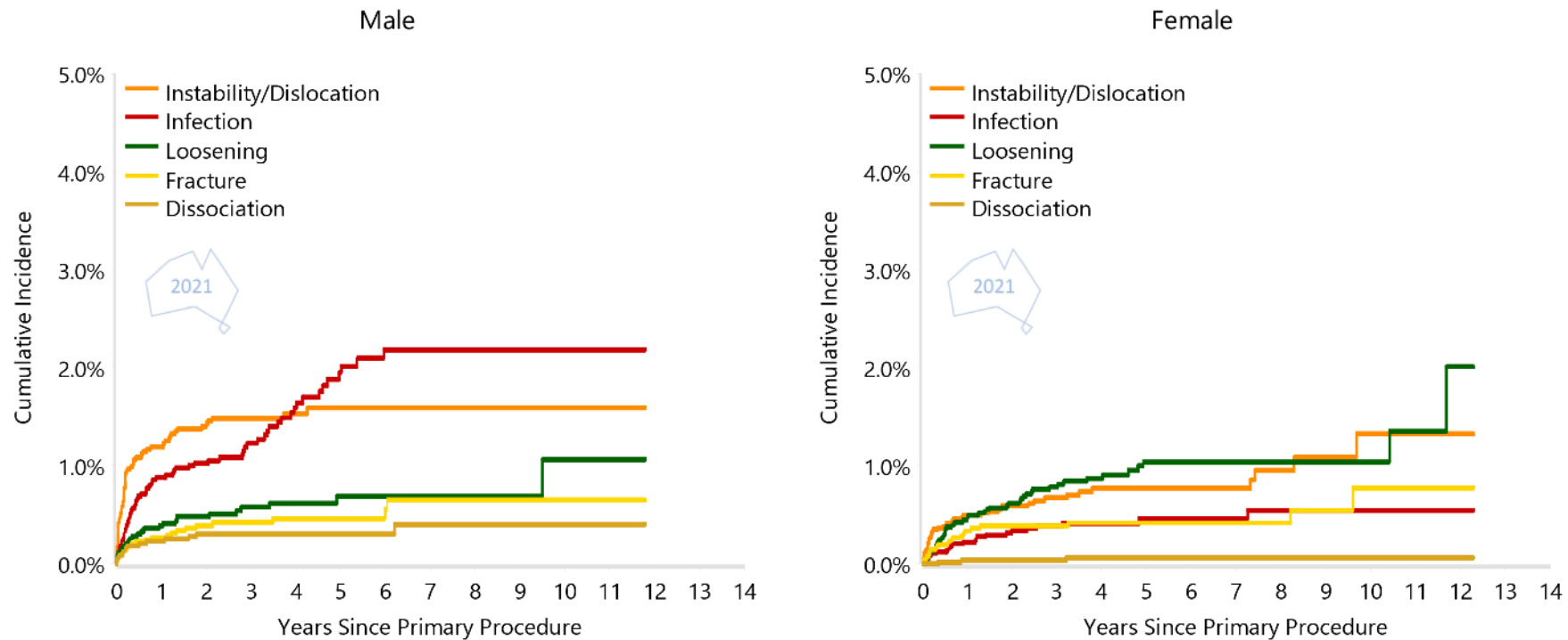
Note: Restricted to modern prostheses

Figure ST44

Cumulative Incidence Revision Diagnosis of Primary Total Reverse Shoulder Replacement by Gender (Rotator Cuff Arthropathy)



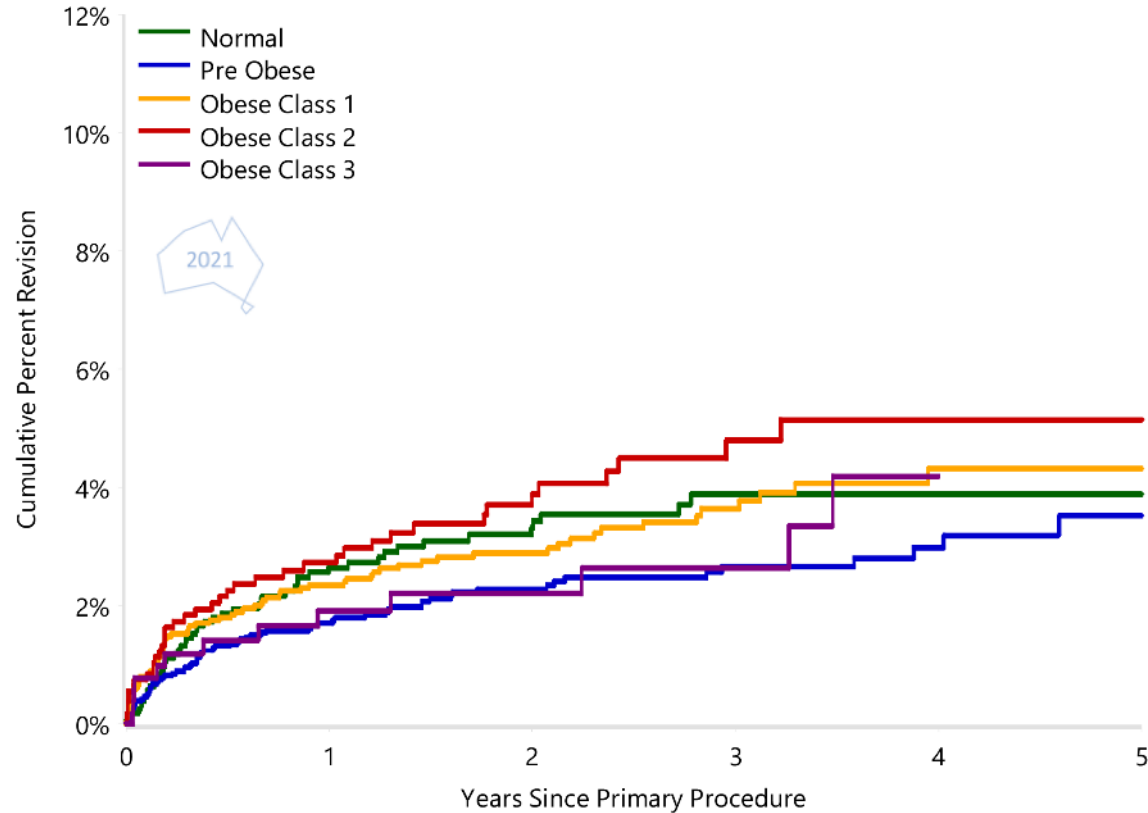
Males have a higher rate of revision for infection and instability/dislocation.



Note: Restricted to modern prostheses

Figure ST47

Cumulative Percent Revision of Primary Total Reverse Shoulder Replacement by BMI Category (RCA)



Pre-obese patients have a lower risk of revision compared to patients with a normal BMI.

Note: Restricted to modern prostheses
BMI has not been presented for patients aged ≤ 19 years



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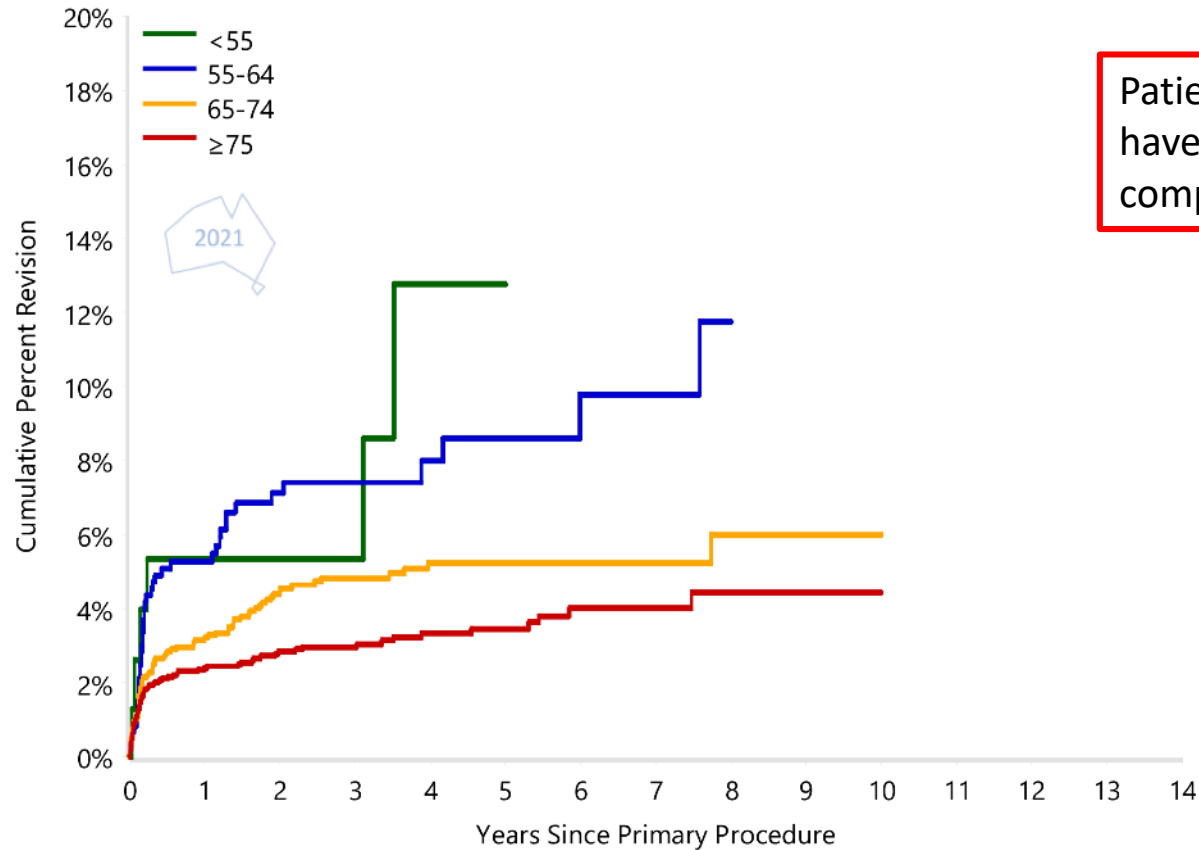
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Reverse Shoulder Replacement

Primary Diagnosis Fracture

Figure ST55

Cumulative Percent Revision of Primary Total Reverse Shoulder Replacement by Age (Fracture)



Patients aged ≥ 75 years have a lower rate of revision compared to the other age groups

Note: Restricted to modern prostheses

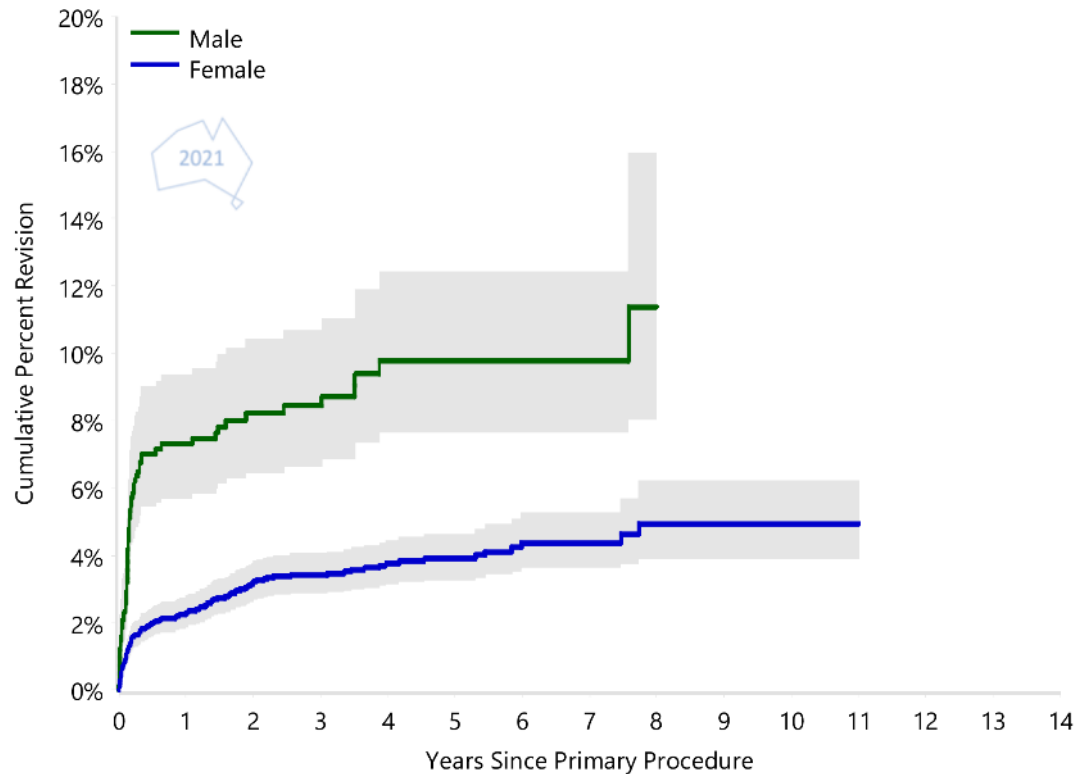
Figure ST56

Cumulative Percent Revision of Primary Total Reverse Shoulder Replacement by Gender (Fracture)



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Males have a higher rate of revision than females for the first 3 months.

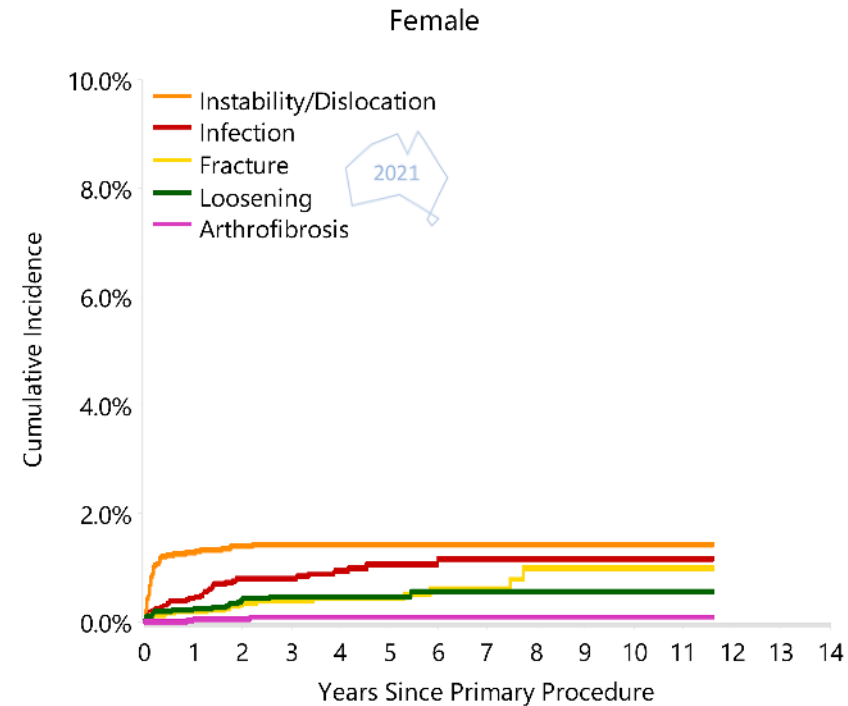
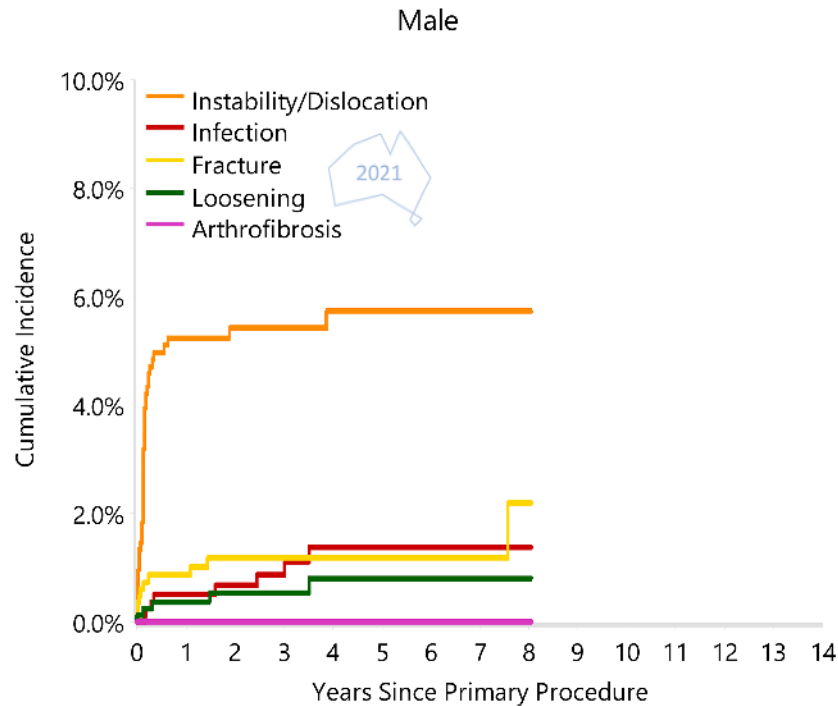
Note: Restricted to modern prostheses

Figure ST57

Cumulative Incidence Revision Diagnosis of Primary Total Reverse Shoulder Replacement by Gender (Fracture)



Males have a higher rate of revision for instability/dislocation.



Note: Restricted to modern prostheses

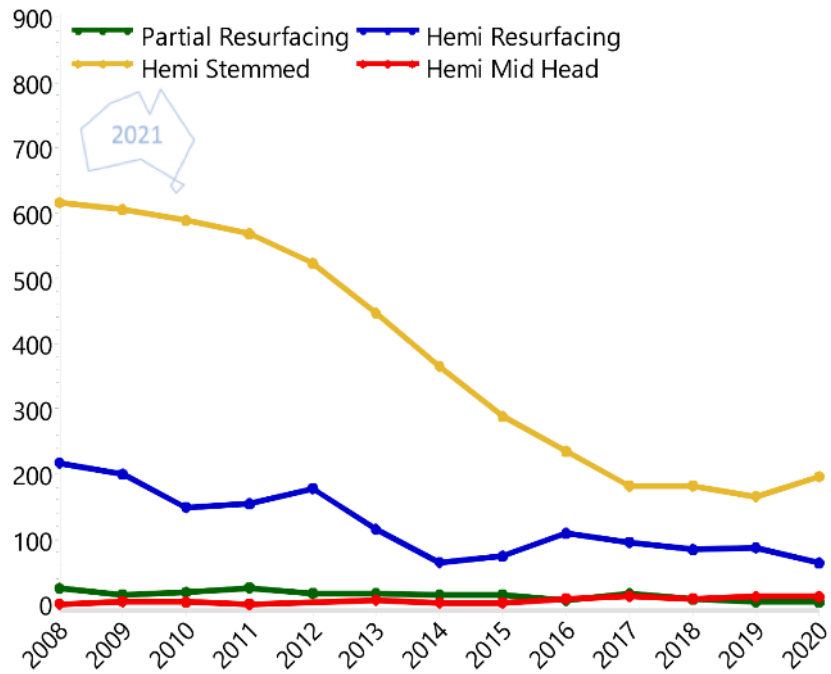


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Partial Shoulder Replacement

Figure SP1 & Table SP1 Primary Partial Shoulder Replacement by Class

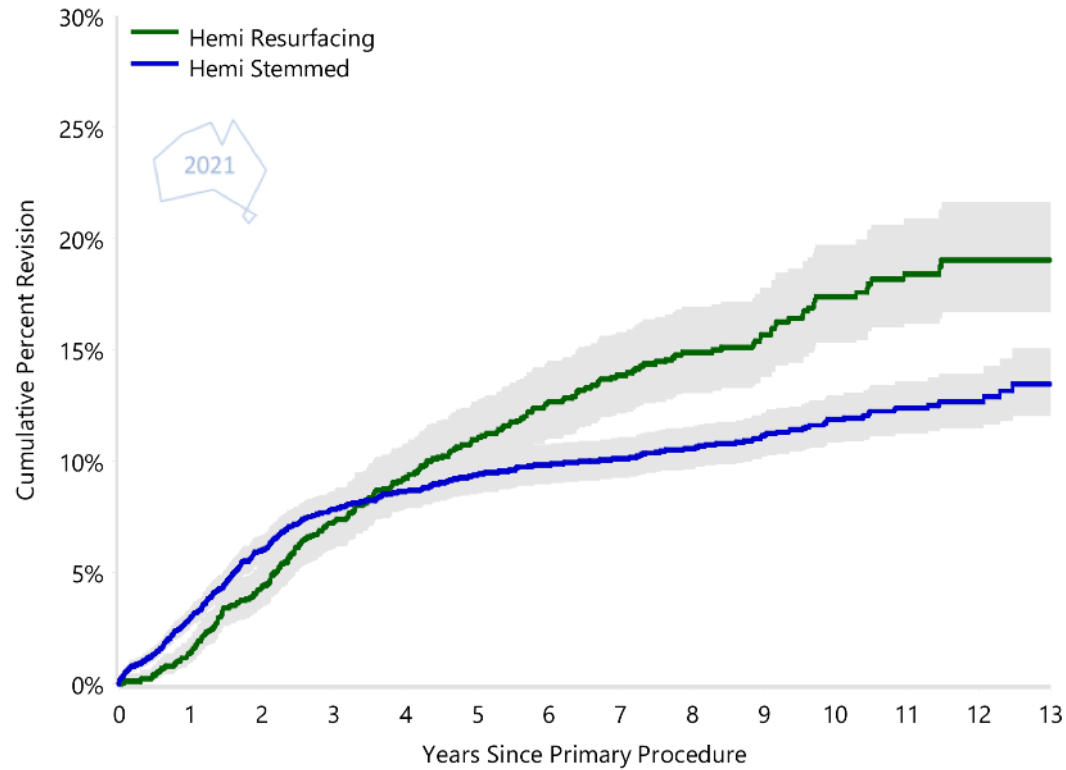


Shoulder Class	Number	Percent
Partial Resurfacing	196	2.7
Hemi Resurfacing	1739	23.7
Hemi Stemmed	5332	72.6
Hemi Mid Head	79	1.1
TOTAL	7346	100.0

Hemi Stemmed and hemi resurfacing are the most common classes of partial shoulder.

Figure SP2

Cumulative Percent Revision of Primary Partial Shoulder Replacement by Class (All Diagnoses)



10 year CPR:
17.4% Hemi Resurfacing
11.9% Hemi Stemmed



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Partial Shoulder Replacement

Hemi Resurfacing

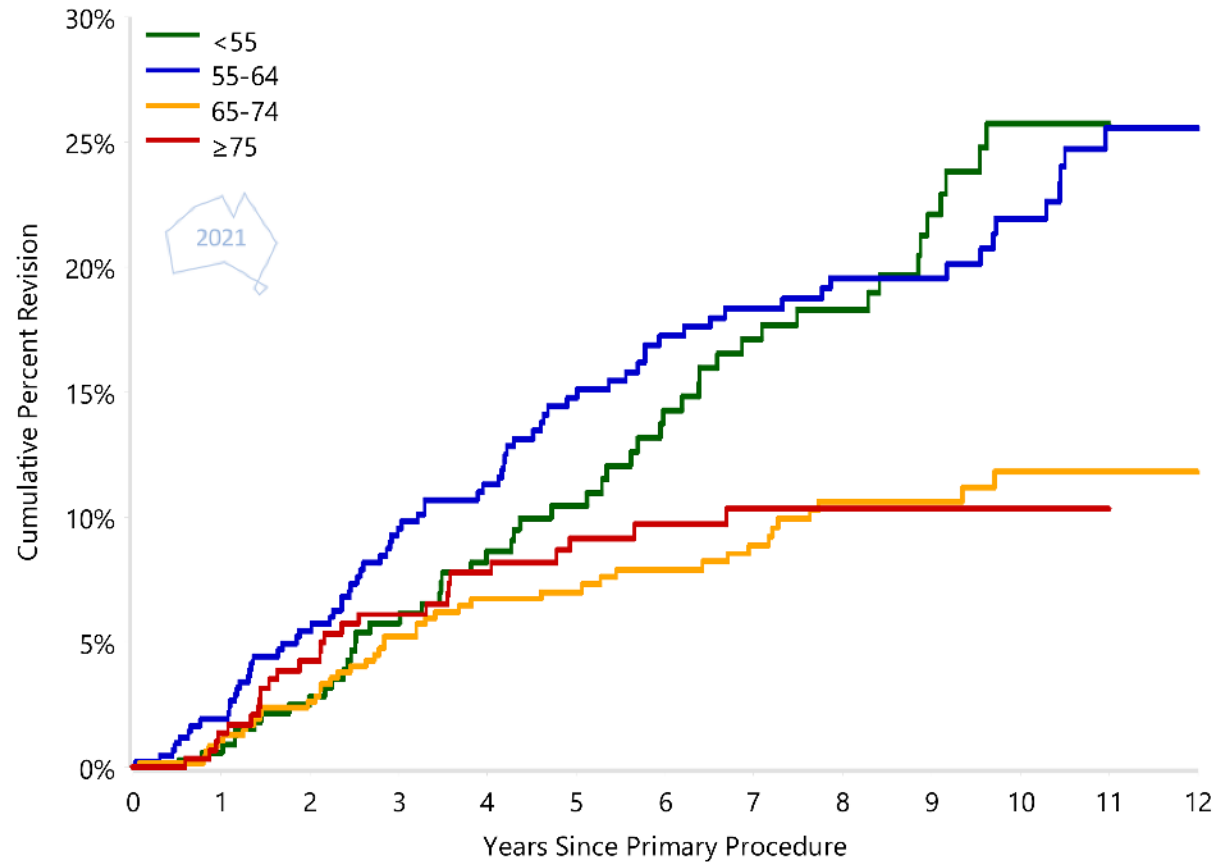
Figure SPS4

Cumulative Percent Revision of Primary Hemi Resurfacing Shoulder Replacement by Age (OA)



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Patients aged <55 years have a higher rate of revision compared to patients aged:

- ≥75 years (2.5-3.5 years and after 4 years)
- 65-74 years (after 1.5 years)

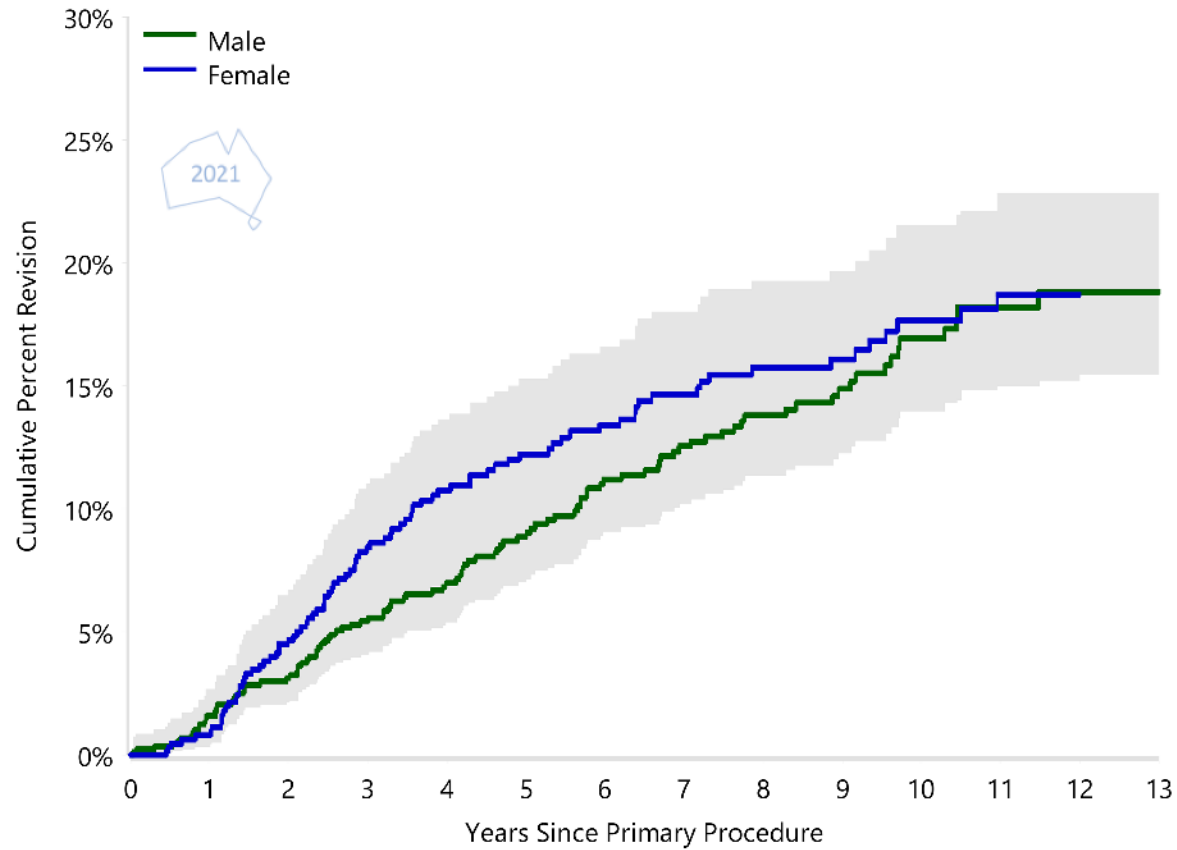
Figure SPS5

Cumulative Percent Revision of Primary Hemi Resurfacing Shoulder Replacement by Gender (OA)



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Females have a higher rate of revision compared to males.

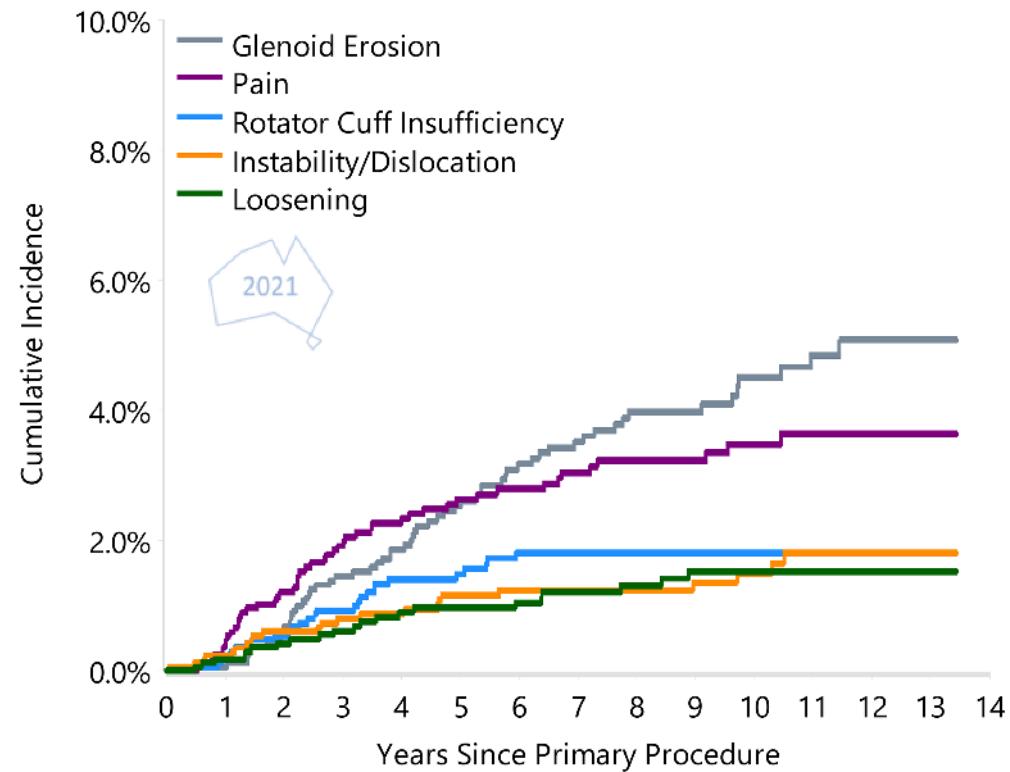
Figure SPS3

Cumulative Incidence Revision Diagnosis of Primary Hemi Resurfacing Shoulder Replacement (All Diagnoses)



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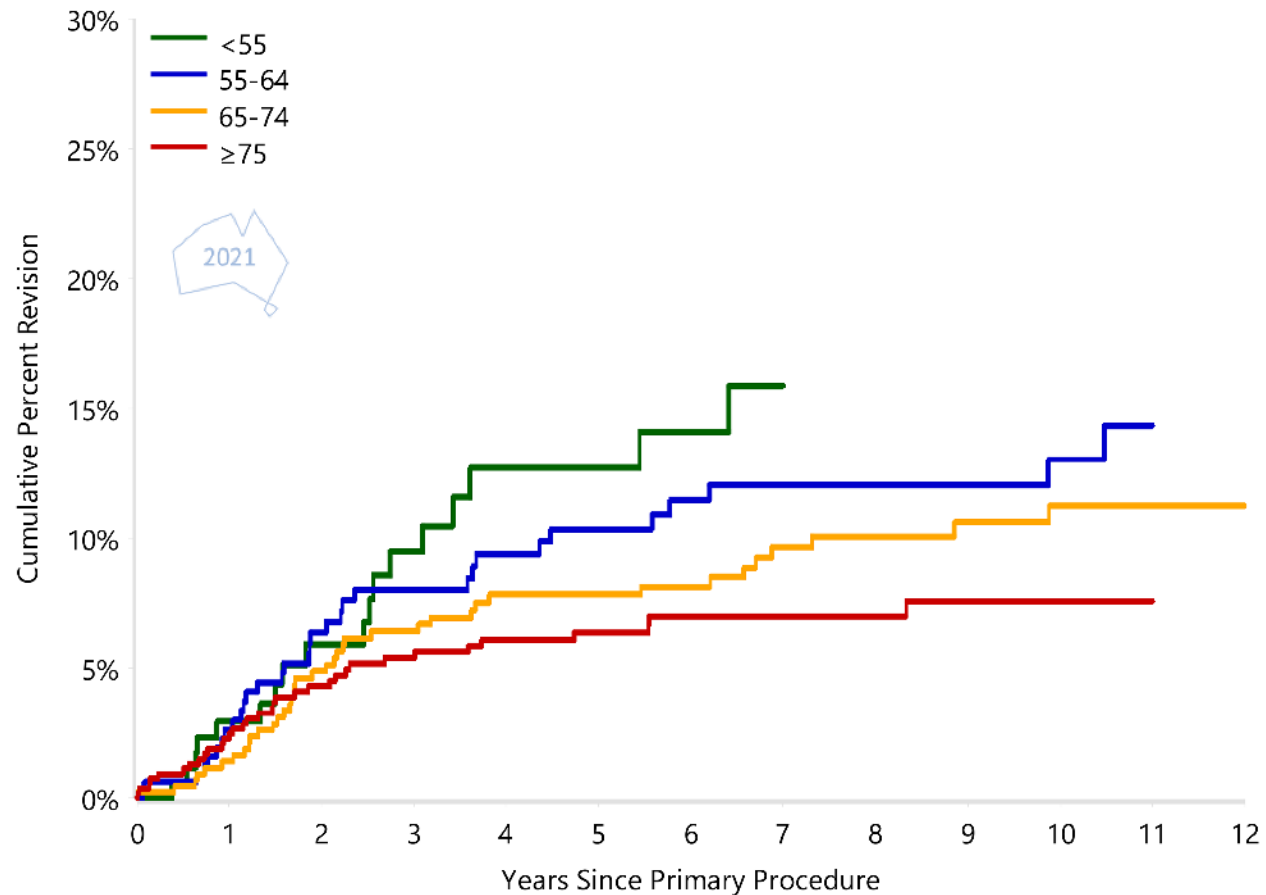
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Partial Shoulder Replacement

Hemi Stemmed

Figure SPS13

Cumulative Percent Revision of Primary Hemi Stemmed Shoulder Replacement by Age (OA)



The rate of revision is lower for patients aged ≥ 75 years compared to:

- patients < 55 years (after 2.5 years) and
- 55-64 years.

No difference between patients aged ≥ 75 years and 65-74 years.

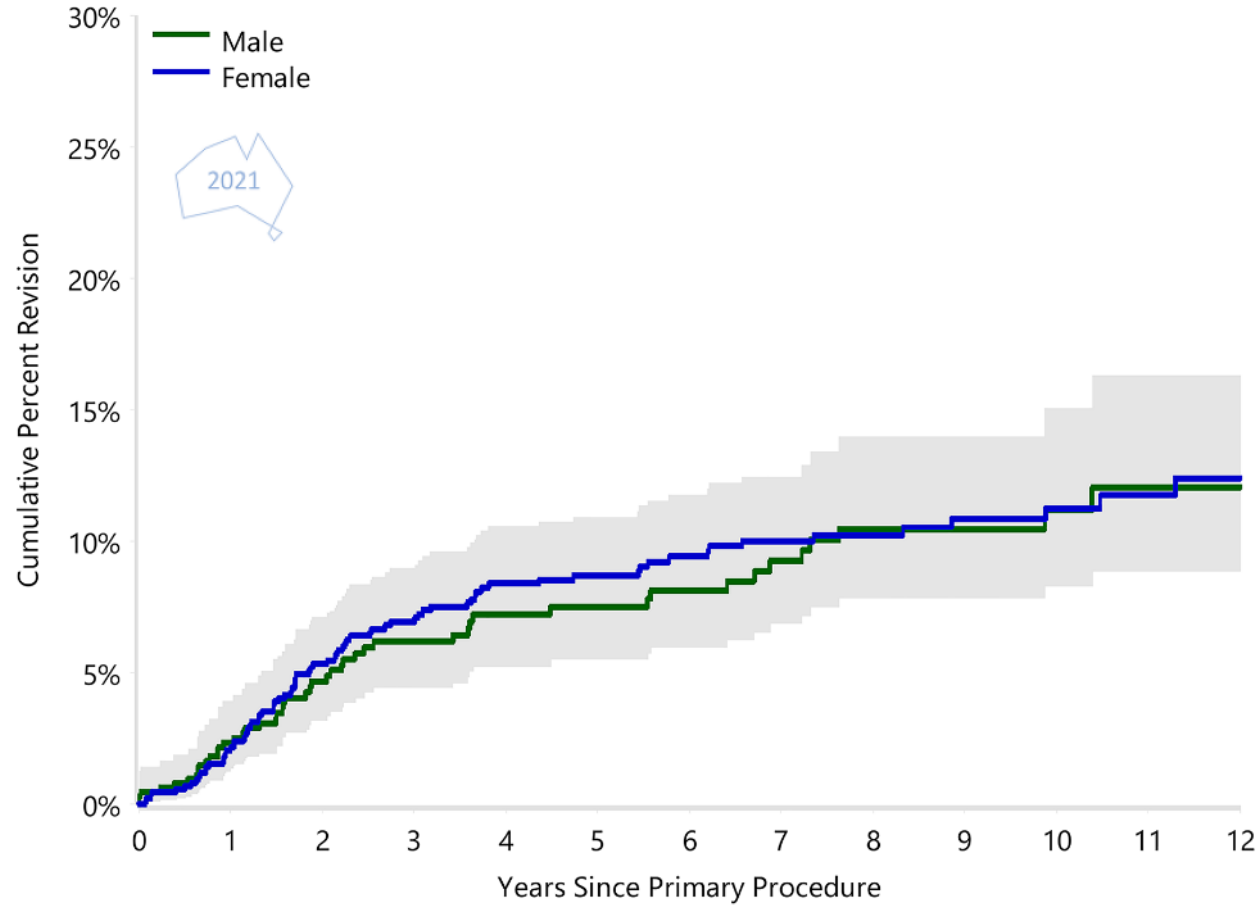
Figure SPS14

Cumulative Percent Revision of Primary Hemi Stemmed Shoulder Replacement by Gender (OA)



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Gender is not a risk factor for revision.

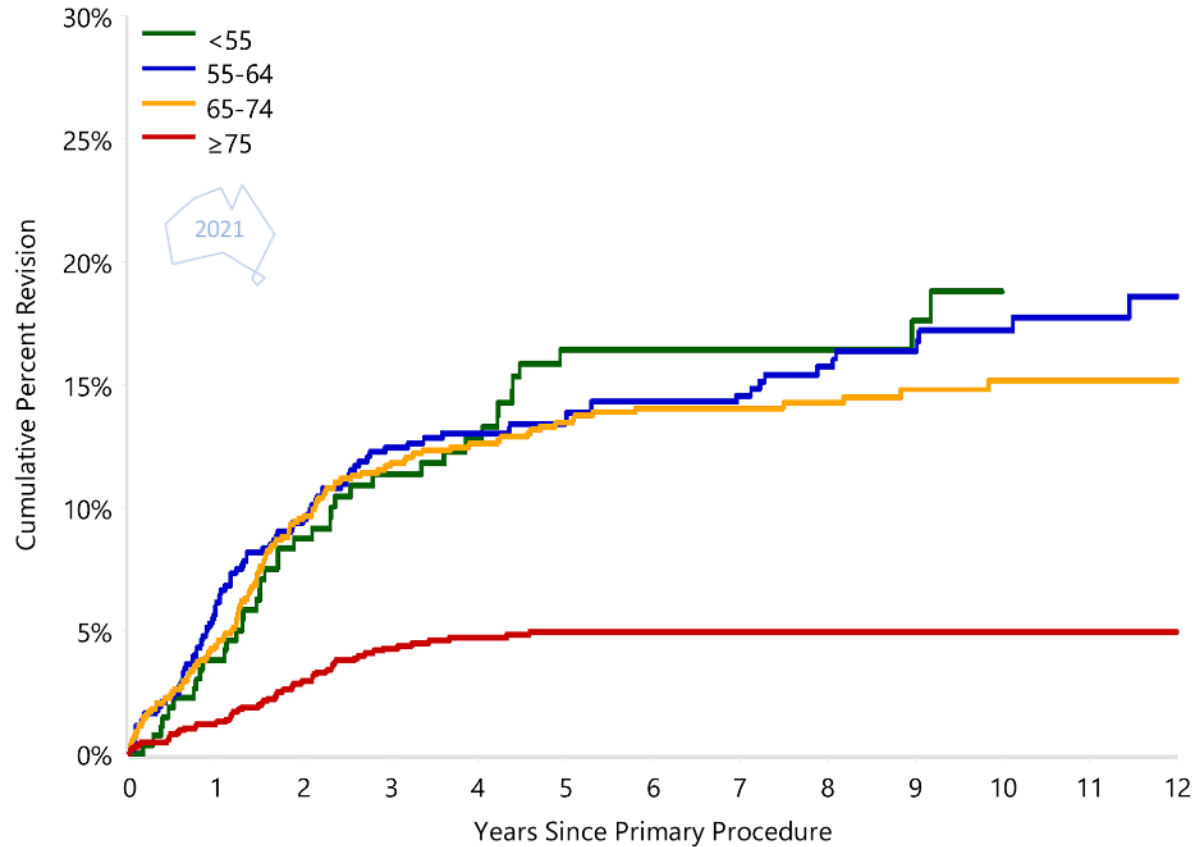
Figure SPS9

Cumulative Percent Revision of Primary Hemi Stemmed Shoulder Replacement by Age (Primary Diagnosis Fracture)



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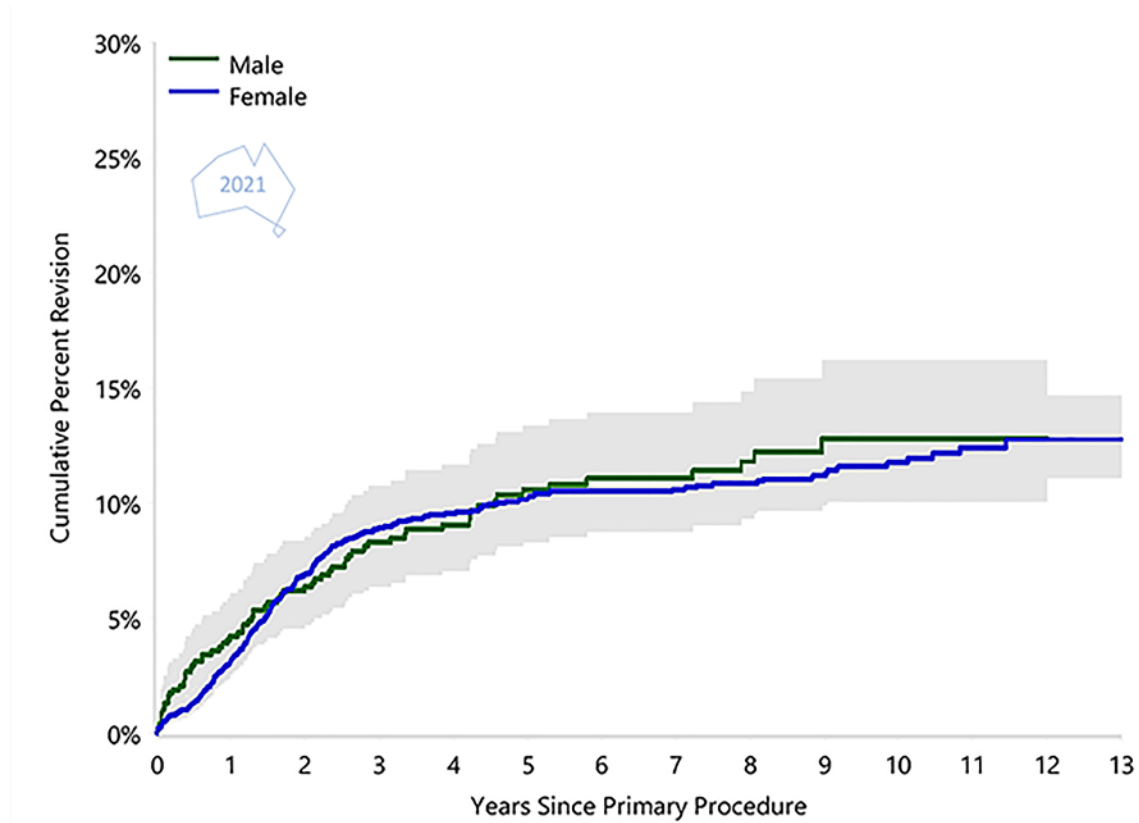
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The rate of revision is lower for patients aged ≥ 75 years compared to all other age groups.

Figure SPS10

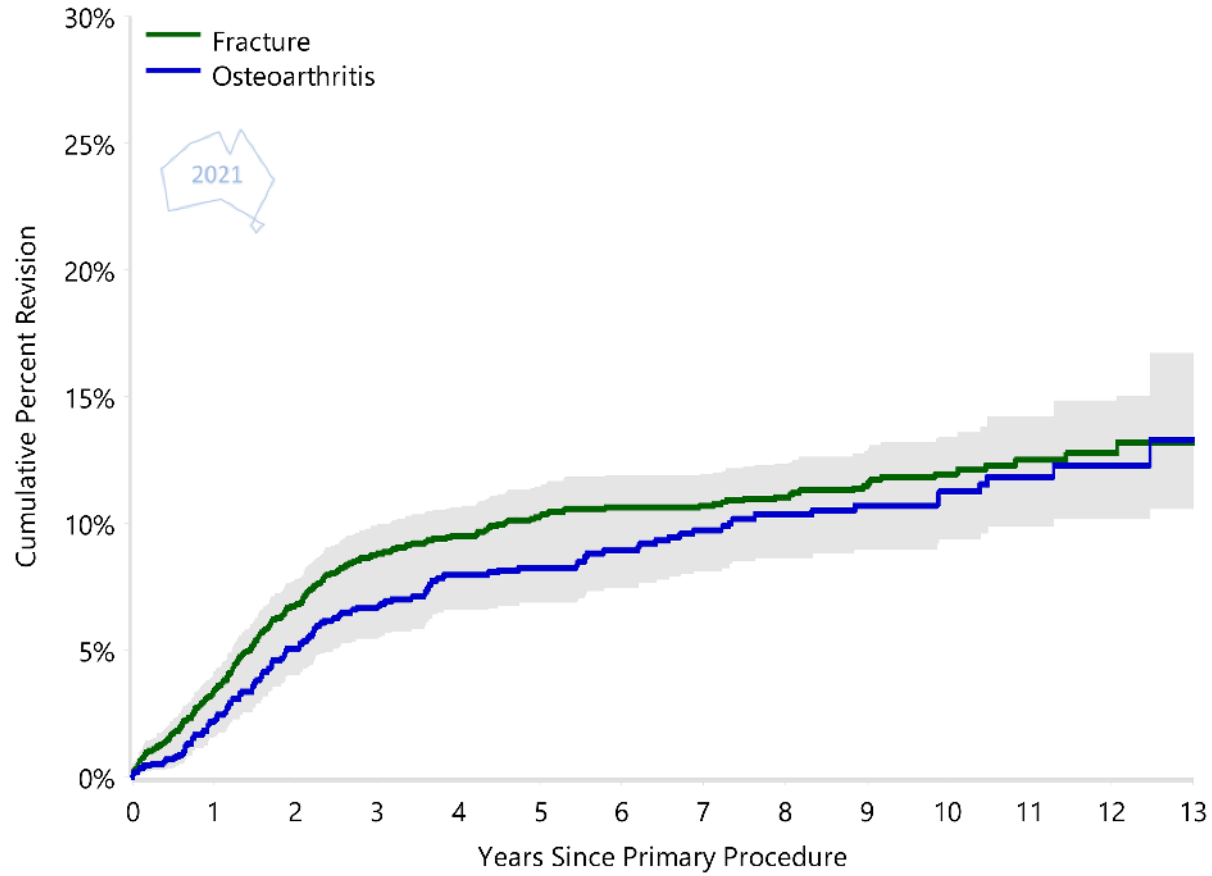
Cumulative Percent Revision of Primary Hemi Stemmed Shoulder Replacement by Gender (Primary Diagnosis Fracture)



Females have a higher rate of revision compared to males.

Figure SP5

Cumulative Percent Revision of Primary Hemi Stemmed Shoulder Replacement by Primary Diagnosis



Fracture has a higher rate of revision than osteoarthritis for the first 6 months only.

Note: Only primary diagnoses with over 1,000 procedures have been listed

Figure SP4

Primary Hemi Stemmed Shoulder Replacement by Primary Diagnosis



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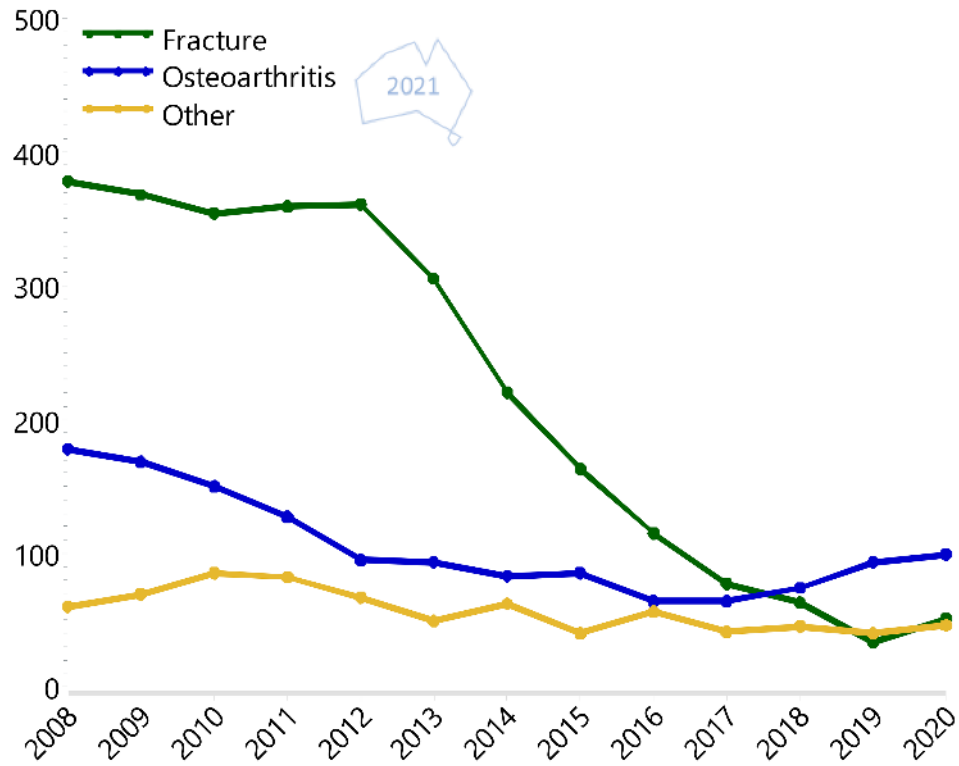
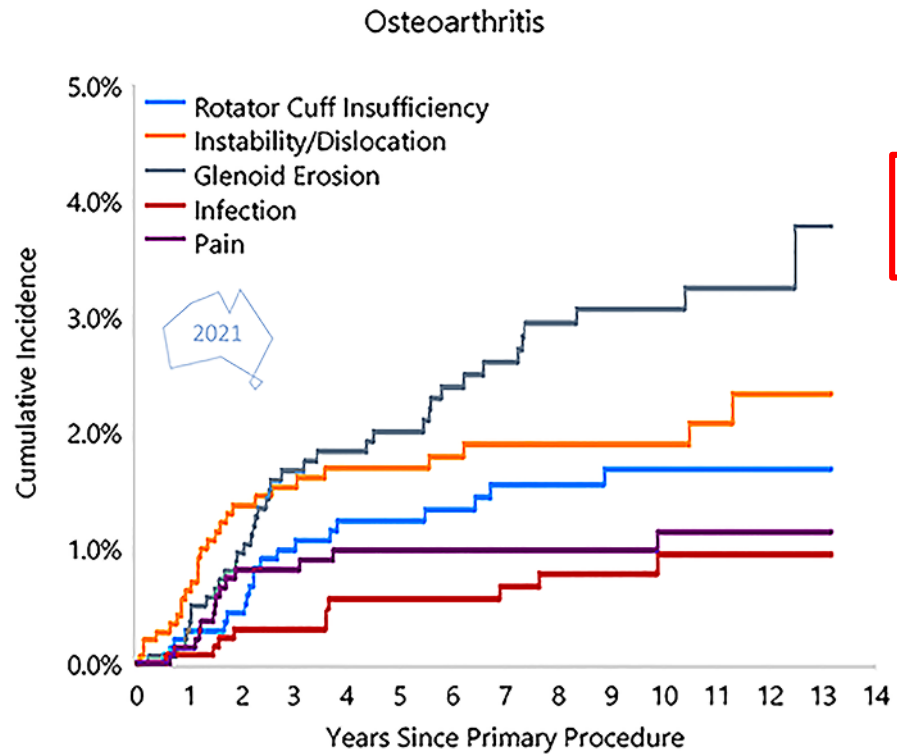
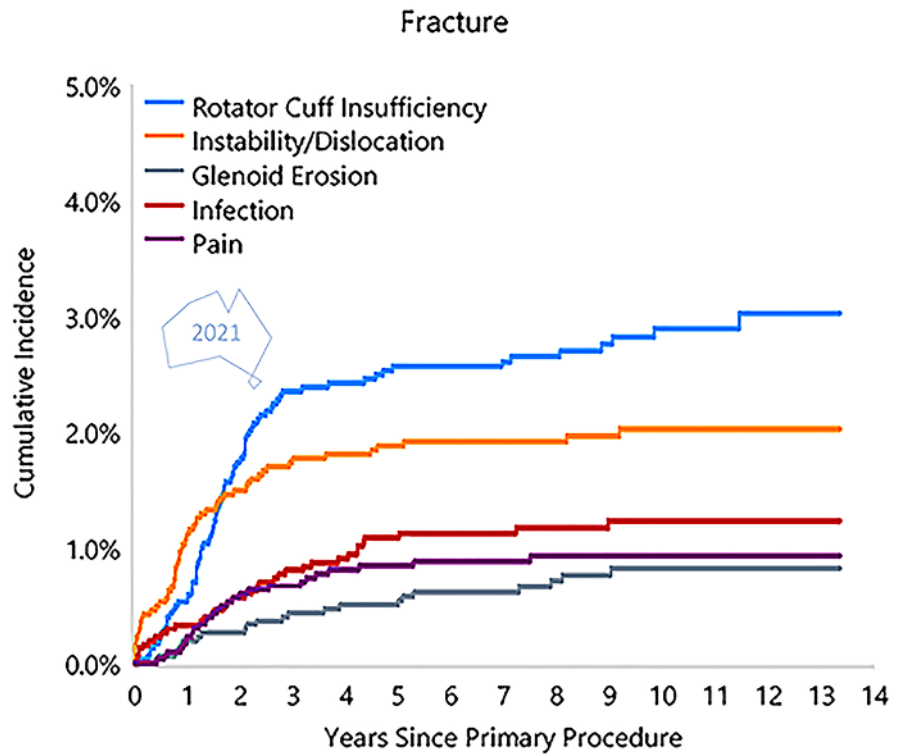


Figure SPS8

Cumulative Incidence Revision Diagnosis of Primary Hemi Stemmed Shoulder Replacement by Primary Diagnosis



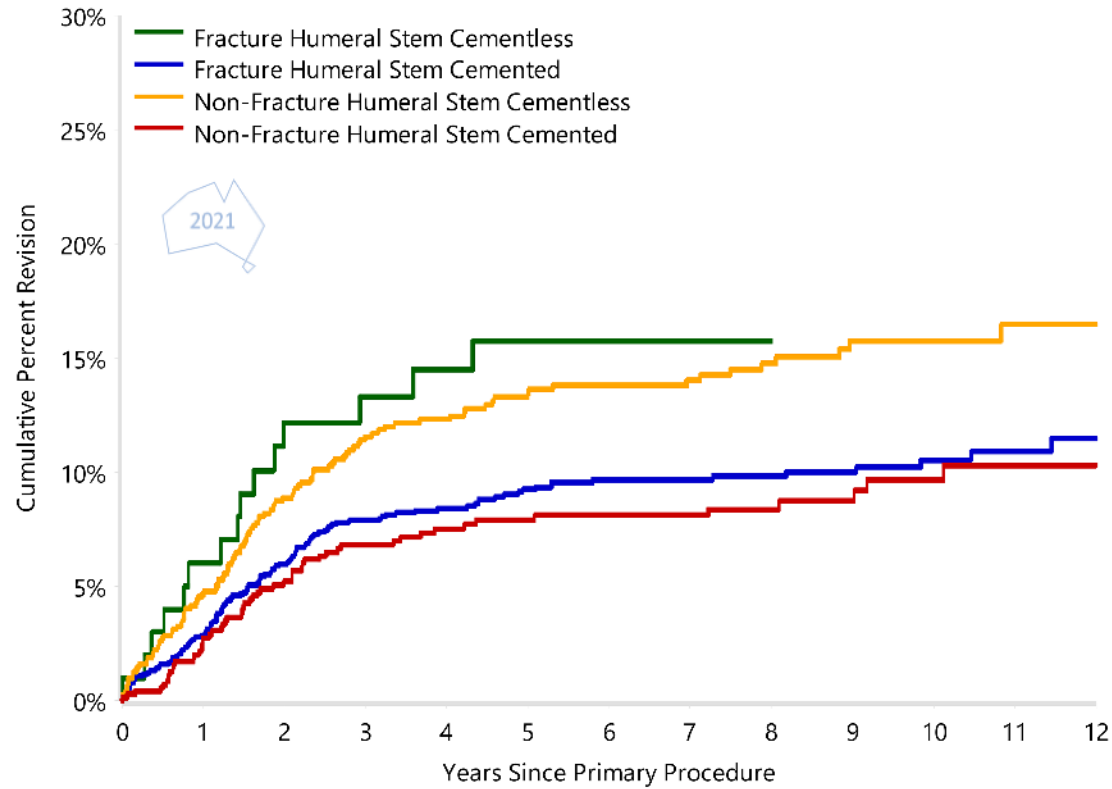
Rotator cuff insufficiency more frequent



Glenoid erosion more frequent

Figure SPS12

Cumulative Percent Revision of Primary Hemi Stemmed Shoulder Replacement by Stem Type and Humeral Fixation (Primary Diagnosis Fracture)



Cemented non-fracture stems have the lowest rate of revision.