Australian Orthopaedic Association National Joint Replacement Registry

2025 SUPPLEMENTARY REPORT

Demographics of Hip, Knee and Shoulder Arthroplasty

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Demographics of Hip, Knee and Shoulder Arthroplasty

2025 Supplementary Report

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Australian Orthopaedic Association
National Joint Replacement Registry

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Contents

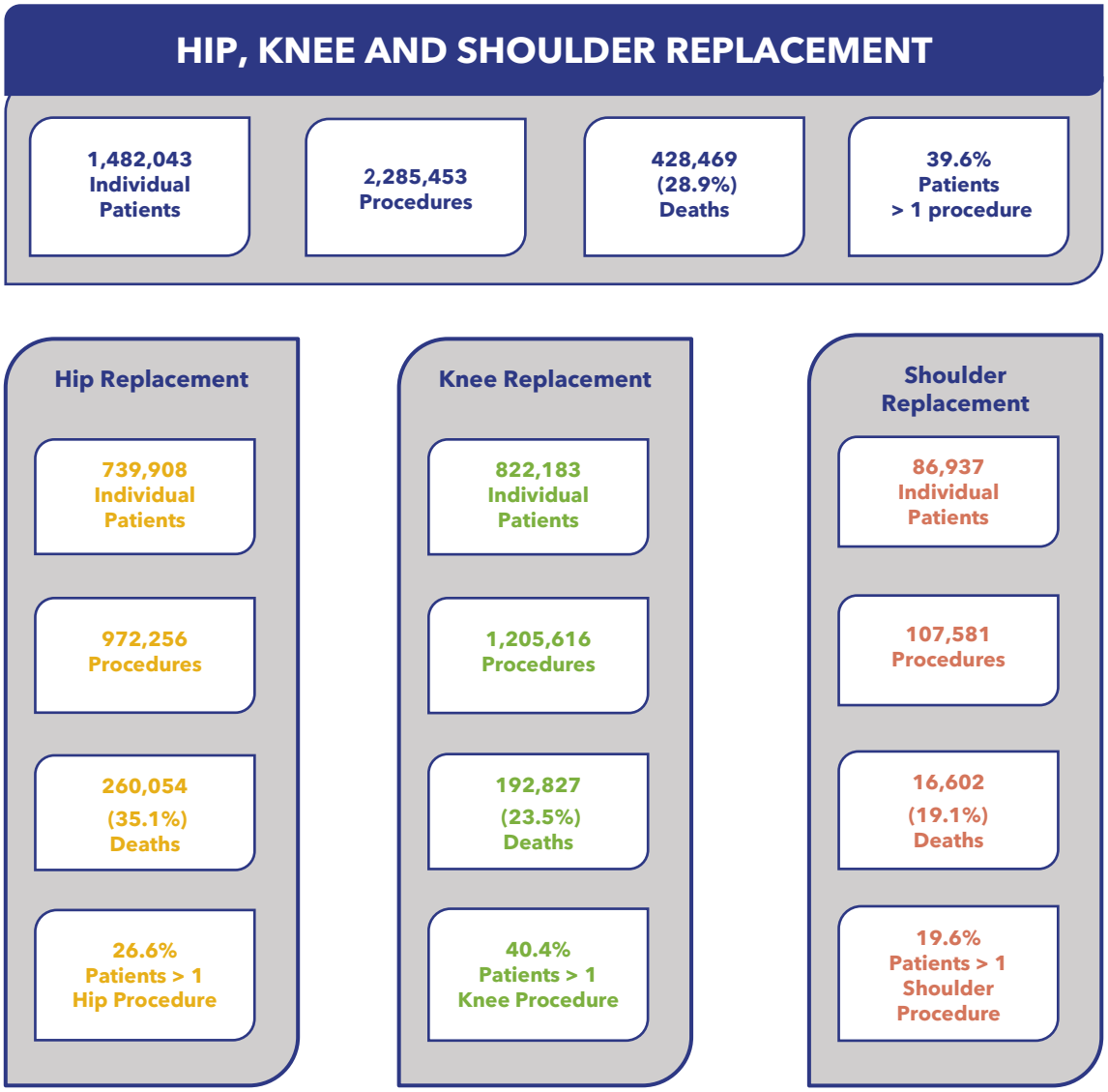
Introduction

Data presented in this report have been submitted to the Registry by both public and private hospitals. Currently, 368 hospitals contribute nationally but this number varies from time to time due to hospital closures, new hospitals or changes to services within hospitals.

The Registry was implemented in a staged manner on a state-by-state basis. Implementation was completed nationally by mid-2002; therefore 2003 was the first year of complete national data.

All hip, knee and shoulder replacement procedures recorded by the Registry from the commencement date to 31 December 2024 have been included in this report.

Number of Patients and Procedures Recorded by the Registry Between 1/9/1999 and 31/12/2024



Hip Replacement

CATEGORIES OF HIP REPLACEMENT

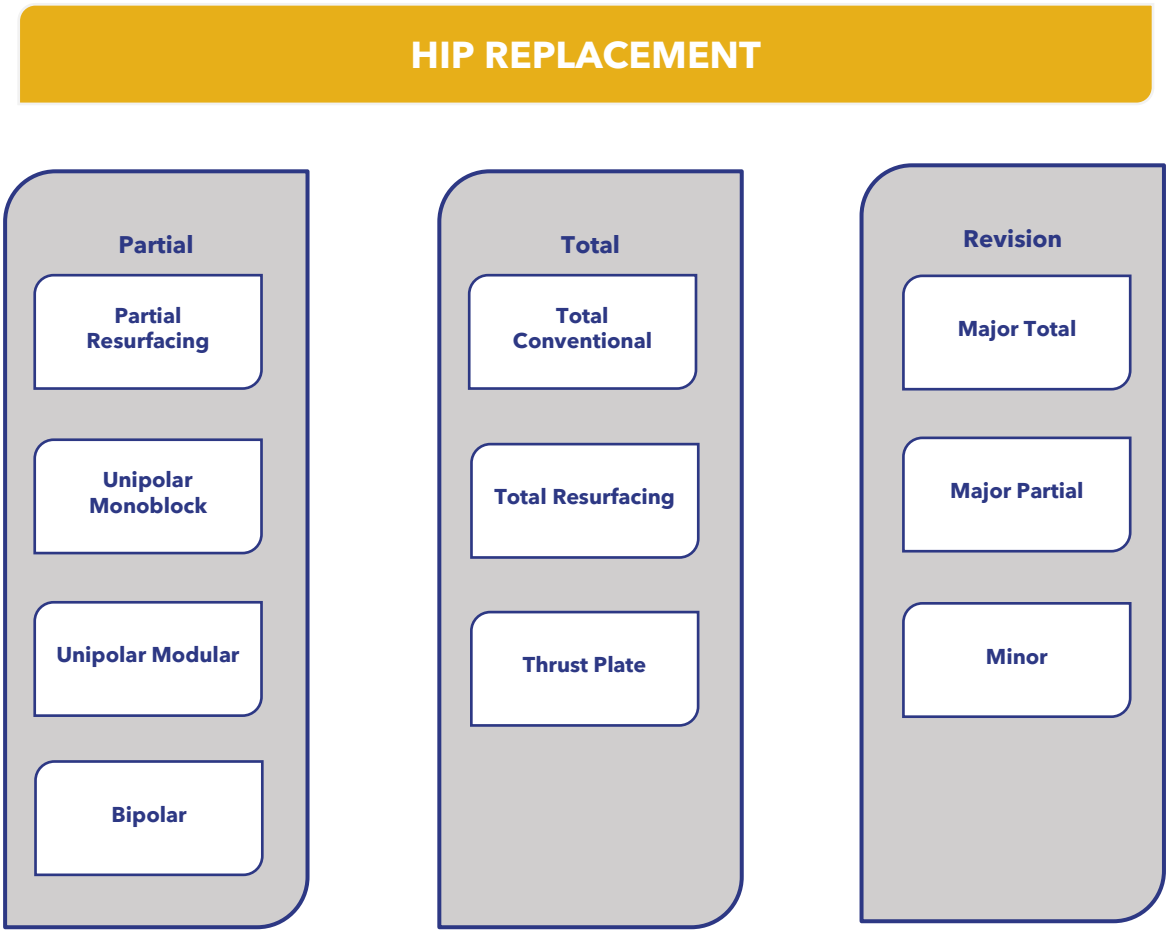
The Registry groups hip replacement into three broad categories, primary partial, primary total and revision hip replacement.

A primary replacement is the initial replacement procedure undertaken on a joint and involves replacing either part (partial) or all (total) of the articular surface.

Primary partial and primary total hip replacement are further subcategorised into classes depending on the type of prostheses used. Partial hip classes are partial resurfacing, unipolar monoblock, unipolar modular and bipolar. Total hip classes are resurfacing, conventional and thrust plate.

Revision hips are re-operations of previous hip replacements where one or more of the prosthetic components are replaced, removed, or another component is added. Revisions include re-operations of primary partial, primary total or previous revision procedures.

Hip revisions are subcategorised into three classes: major total, major partial or minor revisions. These are defined in the chapter on revision outcomes.

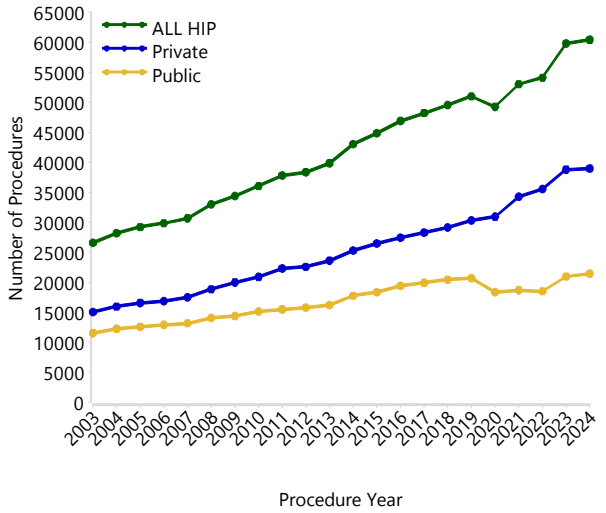


PUBLIC AND PRIVATE SECTOR

Over 60% of all hip replacement procedures reported to the Registry are undertaken in private hospitals (64.5% in 2024).
There were 38,972 private sector hip replacements reported in 2024, an increase of 0.4% compared to 2023. In the public sector, there were 21,442 hip replacements. Since 2003, hip replacement in the private sector has increased by 159.2% compared to 85.3% in the public sector.

Primary partial hip replacement has increased in the public sector since 2023 (3.4%) and decreased in the private sector (-0.5%). In 2024, there were 6,122 primary partial hip replacements reported in the public sector and 810 in the private sector. Since 2003, primary partial hip replacement has increased in the public sector by 70.5% compared to a decrease of 12.9% in the private sector.

Figure SD1 Hip Replacement by Hospital Sector



In 2024, 36,113 private sector primary total hip replacements were reported; an increase of 0.8% compared to 2023. In the public sector, there were 13,295 primary total hip replacements; an increase of 2.6% compared to 2023. Since 2003, primary total hip replacement has increased in the private sector by 200.1% compared to an increase of 101.3% in the public sector.

There were 2,049 revision hip replacements reported in the private sector in 2024, which is 4.9% less than the number recorded in 2023. In the public sector, there were 2,025 revision hip replacements, a decrease of 3.7% compared to 2023. Since 2003, revision hip replacement in the private sector has decreased by 1.0% and has increased by 47.4% in the public sector.

Table SD1 All Hip Replacement by Age and Gender

Gender	Number	Percent	Minimum	Maximum	Median	Mean	Std Dev
Male	427529	44.0%	5	108	69	67.8	12.6
Female	544727	56.0%	9	108	73	71.6	12.3
TOTAL	**972256**	**100.0%**	**5**	**108**	**71**	**69.9**	**12.5**

Table SD2 Number of Hip Replacements by Gender

Hip Replacement	Female		Male		TOTAL	
	N	%	N	%	N	%
Partial Resurfacing	3	20.0	12	80.0	15	0.0
Unipolar Monoblock	21352	72.6	8065	27.4	29417	21.9
Unipolar Modular	41700	69.3	18461	30.7	60161	44.8
Bipolar	30303	67.7	14444	32.3	44747	33.3
All Primary Partial	**93358**	**69.5**	**40982**	**30.5**	**134340**	**100.0**
Total Resurfacing	3781	17.9	17392	82.1	21173	2.9
Total Conventional	396629	55.0	324188	45.0	720817	97.1
Thrust Plate	74	28.7	184	71.3	258	0.0
All Primary Total	**400484**	**54.0**	**341764**	**46.0**	**742248**	**100.0**
Major Total	12507	49.4	12808	50.6	25315	26.5
Major Partial	28017	54.6	23331	45.4	51348	53.7
Minor	10361	54.5	8644	45.5	19005	19.9
All Revisions	**50885**	**53.2**	**44783**	**46.8**	**95668**	**100.0**
ALL HIPS	**544727**	**56.0**	**427529**	**44.0**	**972256**	**100.0**

Figure SD2 Percentage of Females by Type of Hip Replacement and Procedure Year

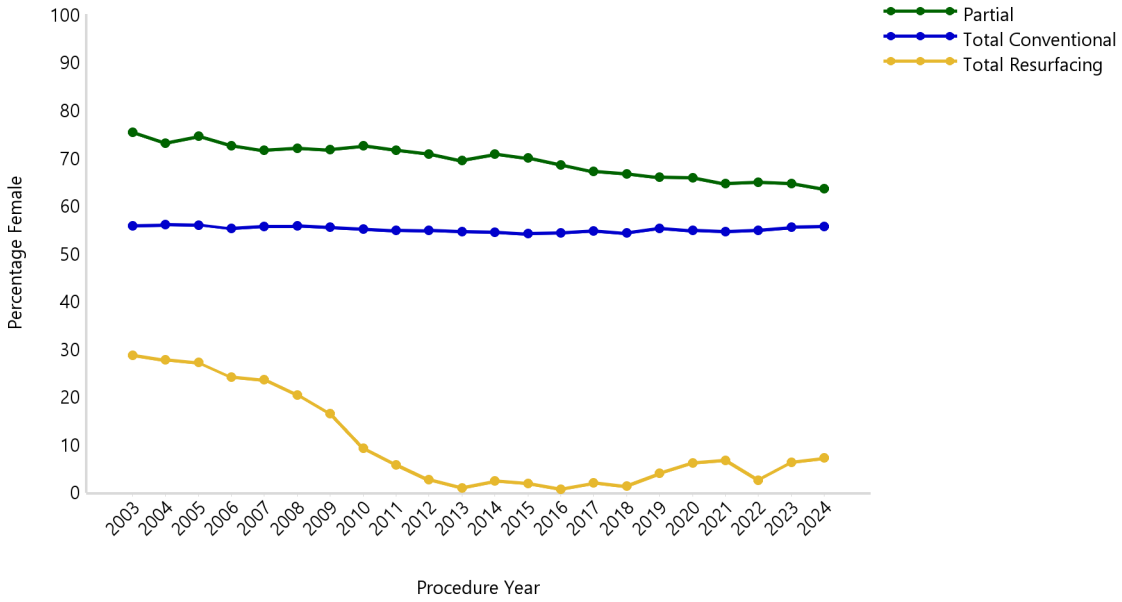


Figure SD3 Percentage of Females by Partial Hip Replacement and Procedure Year (Excluding Partial Resurfacing)

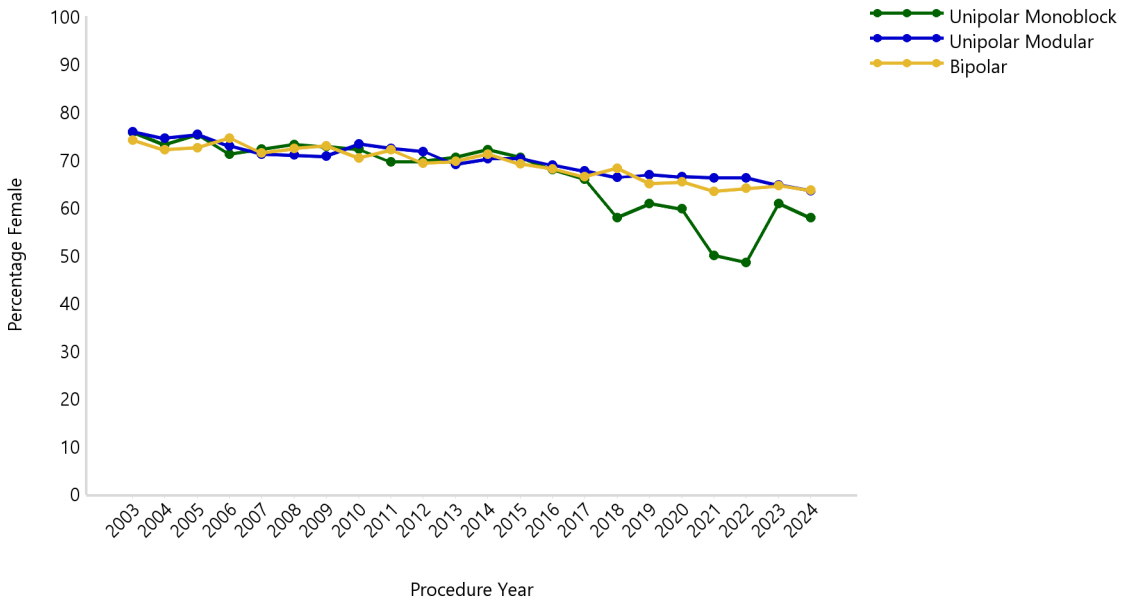


Figure SD4 Percentage of Females by Total Hip Replacement and Procedure Year (Excluding Thrust Plate)

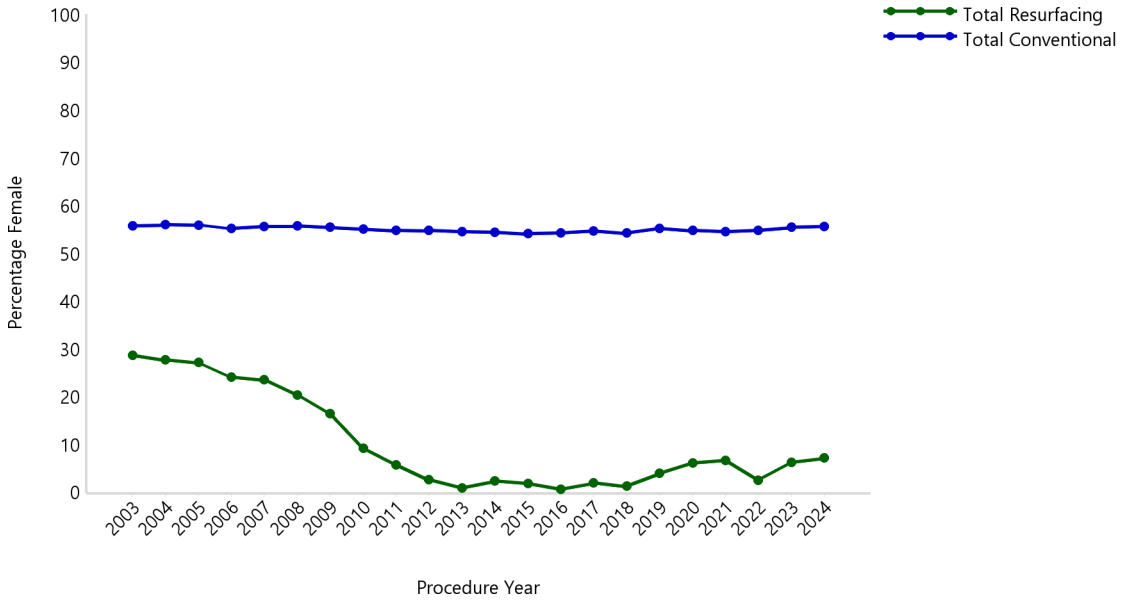


Figure SD5 Percentage of Females by Revision Hip Replacement and Procedure Year

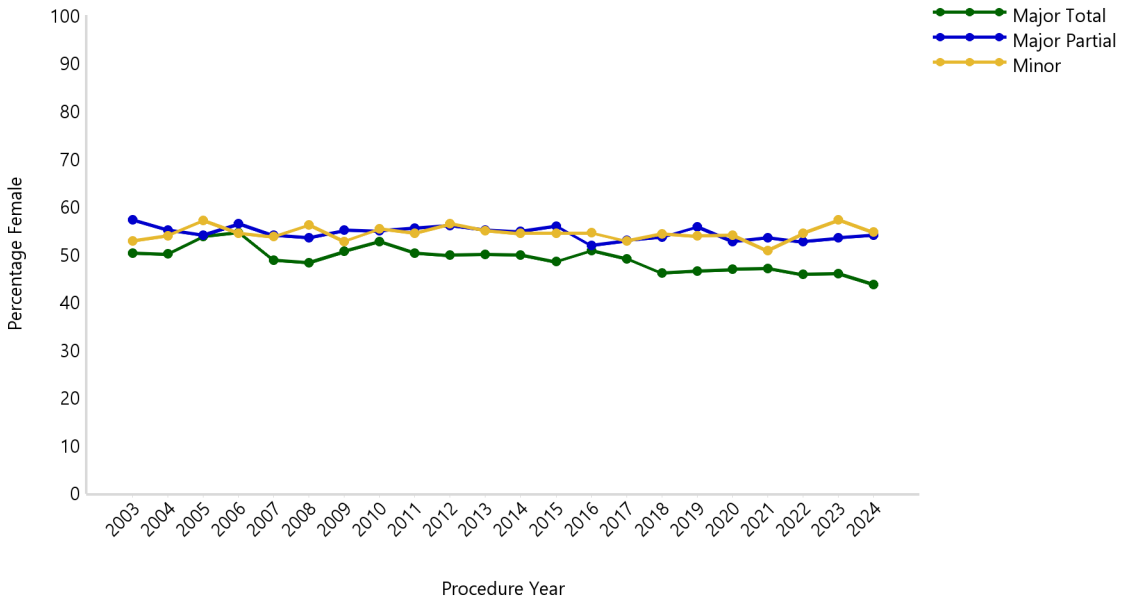


Figure SD6 Percentage of Patients Aged <65 Years by Type of Hip Replacement and Procedure Year

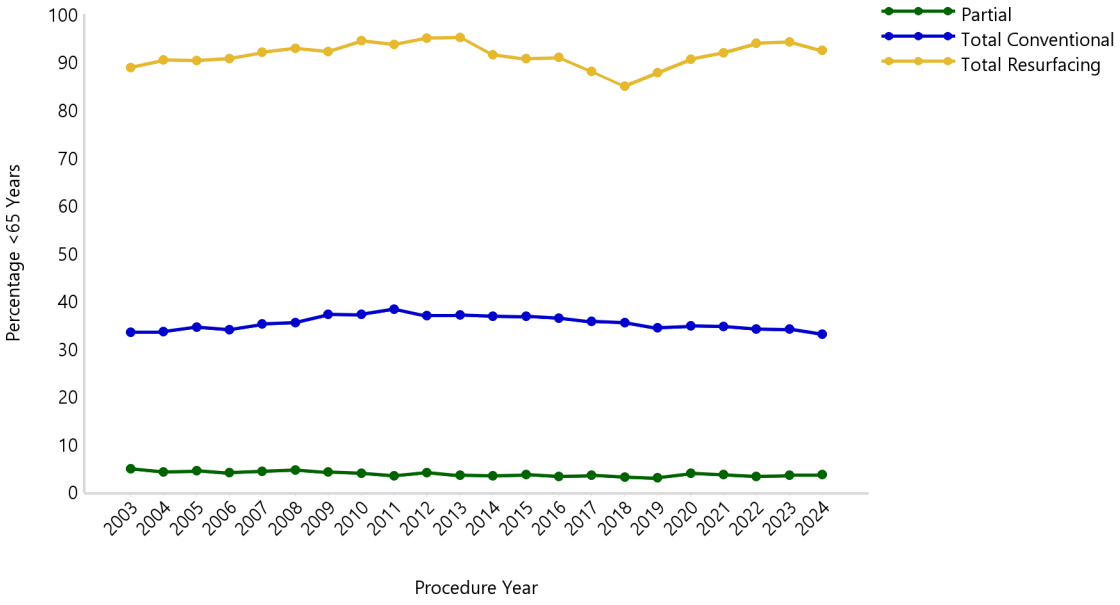


Figure SD7 Percentage of Patients Aged <65 Years by Partial Hip Replacement and Procedure Year (Excluding Partial Resurfacing)

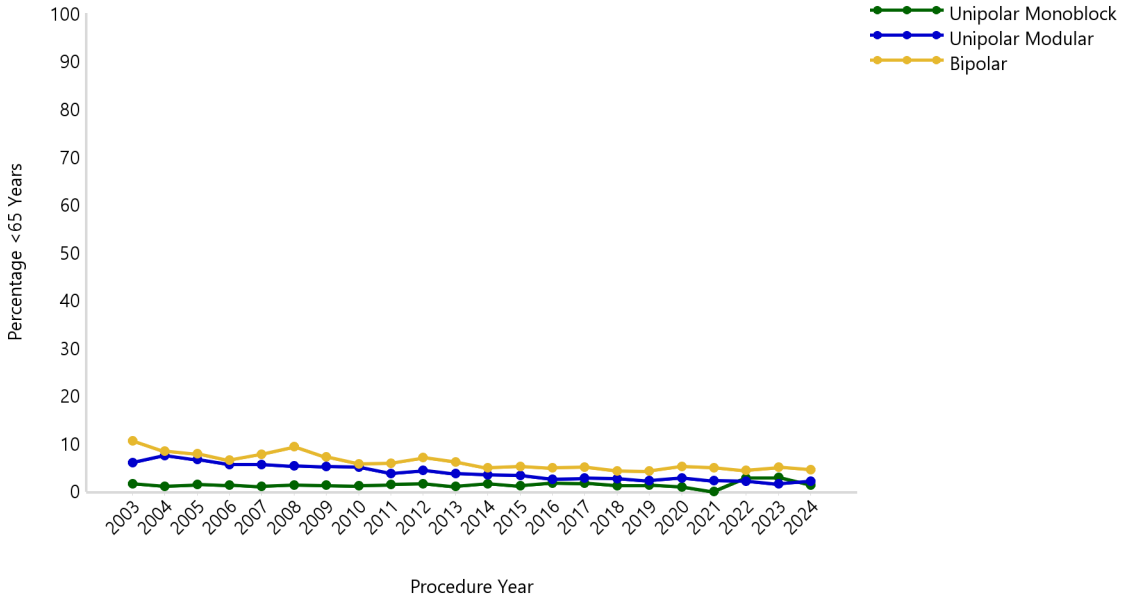


Figure SD8 Percentage of Patients Aged <65 Years by Total Hip Replacement and Procedure Year (Excluding Thrust Plate)

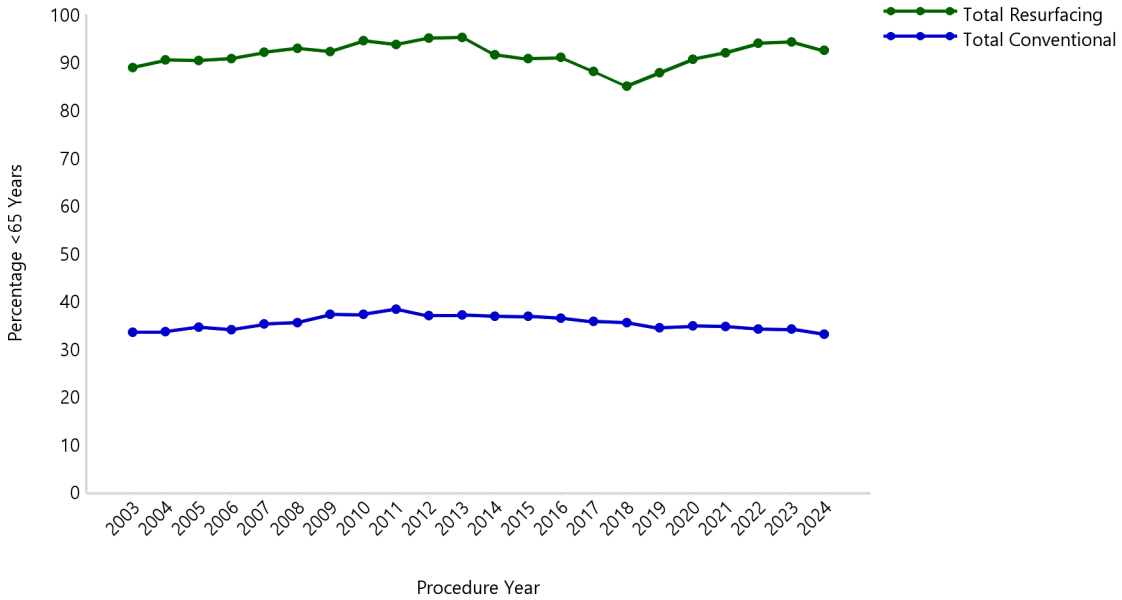


Figure SD9 Percentage of Patients Aged <65 Years by Revision Hip Replacement and Procedure Year

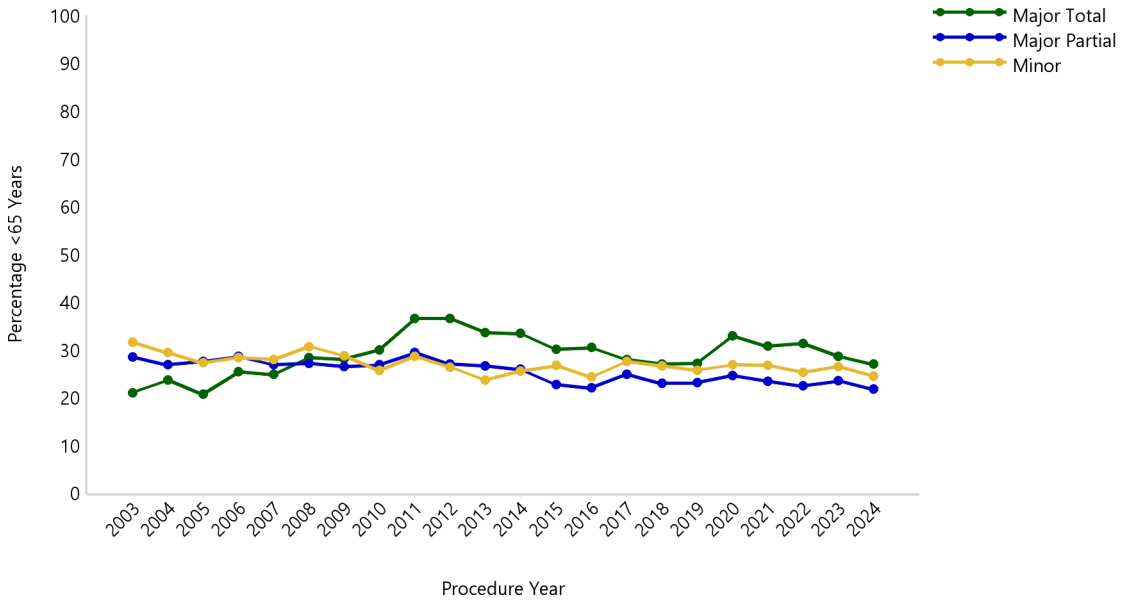


Figure SD10 Trends in Usage of Hip Replacement by Procedure Year

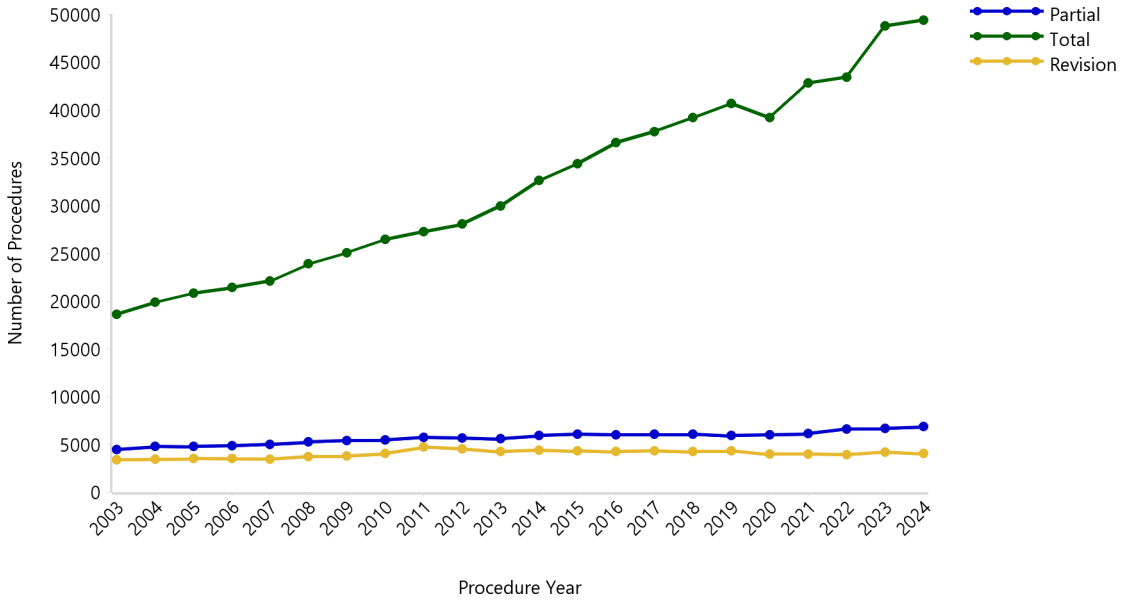


Figure SD11 Trends in Usage of Partial Hip Replacement by Procedure Year (Excluding Partial Resurfacing)

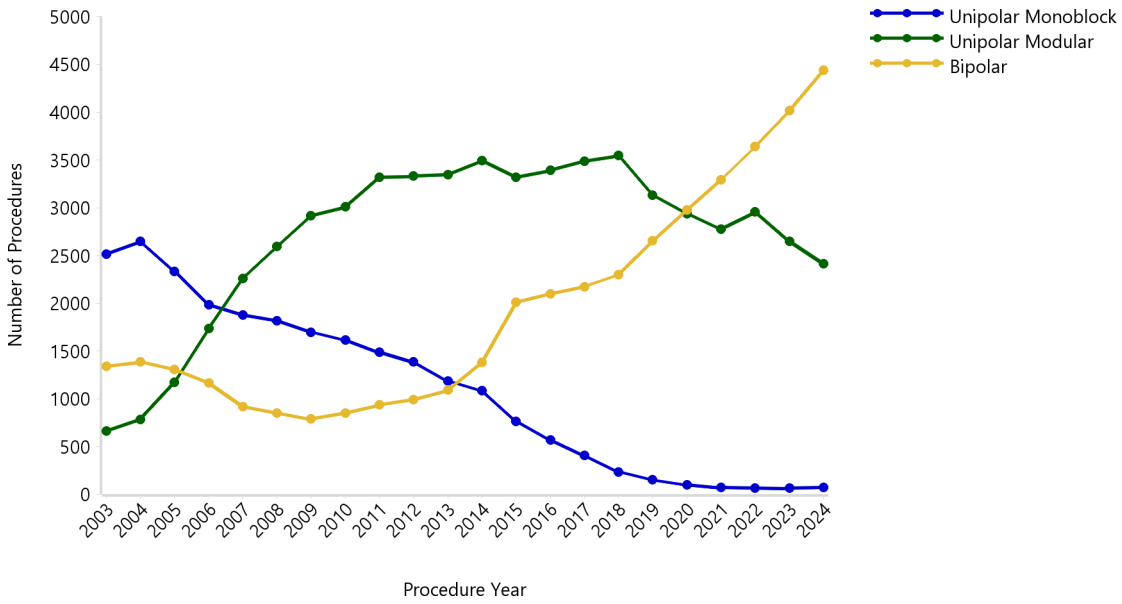


Figure SD12 Trends in Usage of Total Hip Replacement by Procedure Year (Excluding Thrust Plate)

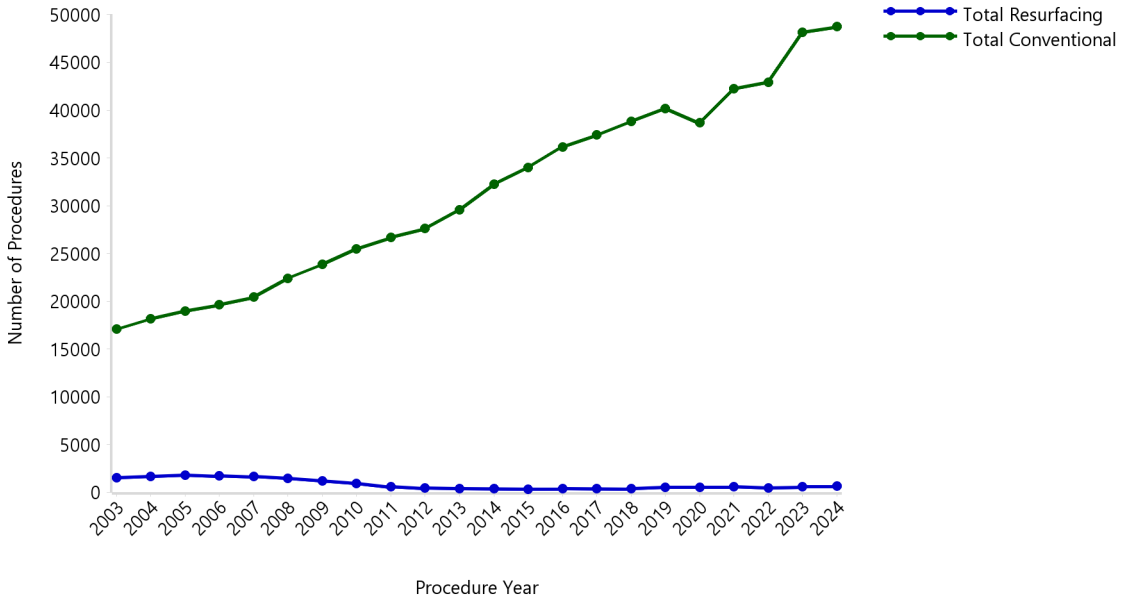
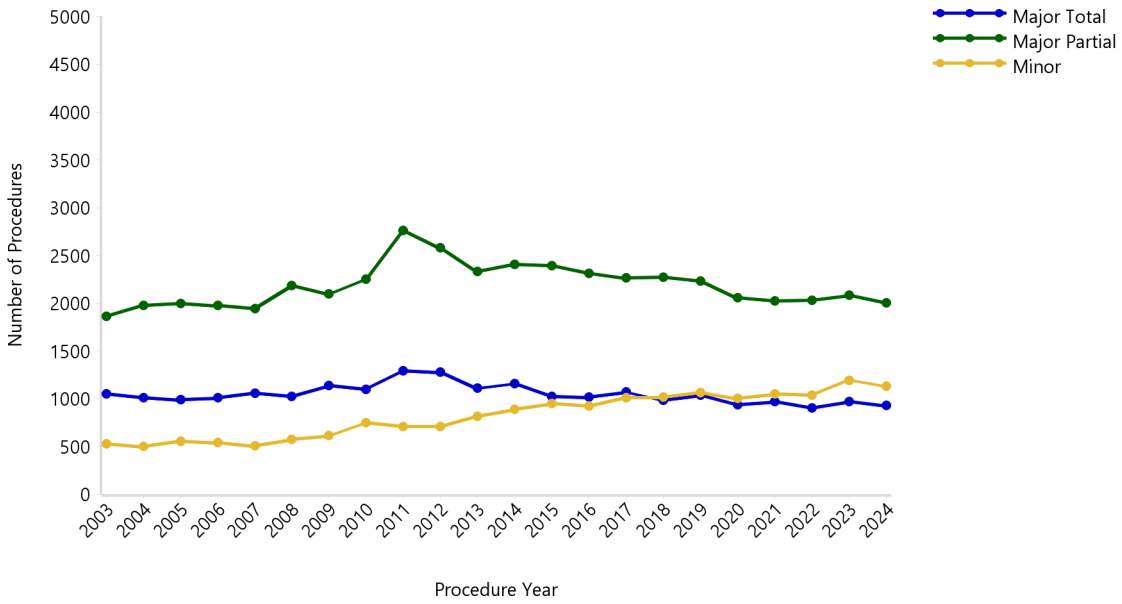


Figure SD13 Trends in Usage of Revision Hip Replacement by Procedure Year



INCIDENCE OF HIP REPLACEMENT

Table SD3 Incidence of Hip Replacement per 100,000 from 2003 to 2024

Hip Replacement	2003 N	2004 N	2005 N	2006 N	2007 N	2008 N	2009 N	2010 N	2011 N	2012 N	2013 N	2014 N
Partial Resurfacing	.	0.0	0.0	0.0	0.0	0.0	0.0	.	.	.	.	0.0
Unipolar Monoblock	12.7	13.3	11.6	9.7	9.0	8.6	7.8	7.3	6.7	6.1	5.1	4.6
Unipolar Modular	3.4	3.9	5.8	8.5	10.9	12.2	13.5	13.7	14.9	14.7	14.5	14.9
Bipolar	6.8	7.0	6.5	5.7	4.4	4.0	3.6	3.9	4.2	4.4	4.7	5.9
All Primary Partial	**22.9**	**24.2**	**23.9**	**23.9**	**24.3**	**24.8**	**25.0**	**24.9**	**25.7**	**25.1**	**24.3**	**25.4**
Total Resurfacing	7.8	8.5	9.1	8.6	7.9	6.9	5.6	4.4	2.6	2.0	1.7	1.6
Total Conventional	86.6	91.2	94.1	96.1	98.1	105.5	110.0	115.7	119.5	121.5	127.9	137.4
Thrust Plate	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	.	.
All Primary Total	**94.5**	**99.8**	**103.3**	**104.8**	**106.2**	**112.5**	**115.8**	**120.1**	**122.2**	**123.5**	**129.6**	**139.0**
All Revisions	**17.5**	**17.5**	**17.6**	**17.3**	**16.9**	**17.8**	**17.8**	**18.6**	**21.4**	**20.1**	**18.4**	**19.0**
ALL HIPS	**134.9**	**141.5**	**144.8**	**145.9**	**147.3**	**155.2**	**158.5**	**163.6**	**169.3**	**168.8**	**172.4**	**183.4**

Hip Replacement	2015 N	2016 N	2017 N	2018 N	2019 N	2020 N	2021 N	2022 N	2023 N	2024 N	TOTAL N
Partial Resurfacing	.	.	.	.	.	.	.	.	.	.	0.0
Unipolar Monoblock	3.2	2.3	1.7	1.0	0.6	0.4	0.3	0.3	0.3	0.3	4.7
Unipolar Modular	13.9	14.0	14.2	14.2	12.4	11.4	10.8	11.4	9.9	8.9	11.6
Bipolar	8.4	8.7	8.8	9.2	10.5	11.6	12.8	14.0	15.1	16.3	8.3
All Primary Partial	**25.6**	**25.0**	**24.7**	**24.4**	**23.4**	**23.4**	**23.9**	**25.6**	**25.3**	**25.5**	**24.6**
Total Resurfacing	1.5	1.7	1.6	1.5	2.1	2.2	2.3	1.9	2.3	2.4	3.7
Total Conventional	142.8	149.5	152.0	155.3	158.5	150.5	164.1	165.2	180.7	179.3	134.7
Thrust Plate	.	.	.	.	.	.	.	.	.	.	0.0
All Primary Total	**144.4**	**151.3**	**153.6**	**156.9**	**160.6**	**152.7**	**166.4**	**167.1**	**183.0**	**181.7**	**138.4**
All Revisions	**18.4**	**17.6**	**17.7**	**17.1**	**17.1**	**15.6**	**15.7**	**15.3**	**16.0**	**15.0**	**17.4**
ALL HIPS	**188.4**	**193.9**	**196.0**	**198.4**	**201.1**	**191.7**	**206.0**	**208.0**	**224.2**	**222.2**	**180.5**

Figure SD14 Incidence of Hip Replacement per 100,000 from 2003 to 2024

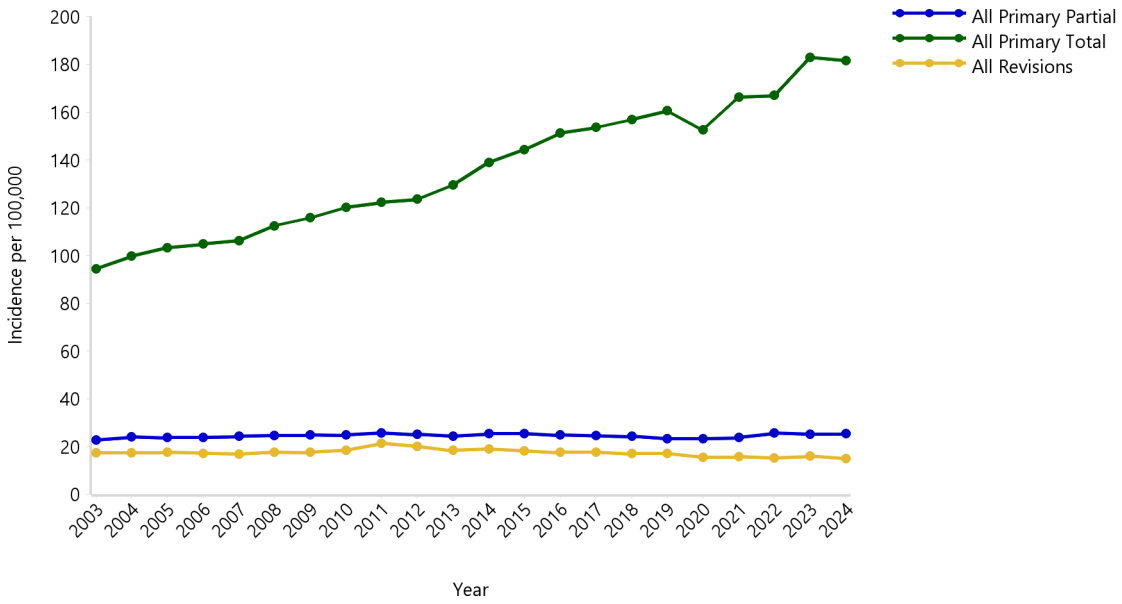


Table SD4 Incidence of Hip Replacement in Patients Aged <55 Years per 100,000 from 2003 to 2024

Hip Replacement	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
	N	N	N	N	N	N	N	N	N	N	N	N
Partial Resurfacing	.	0.0	0.0	0.0	0.0	0.0	0.0	.	.	.	.	0.0
Unipolar Monoblock	0.0	0.0	0.0	.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Unipolar Modular	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1
Bipolar	0.3	0.2	0.2	0.1	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1
All Primary Partial	**0.4**	**0.4**	**0.4**	**0.3**	**0.4**	**0.4**	**0.3**	**0.3**	**0.4**	**0.3**	**0.3**	**0.2**
Total Resurfacing	5.3	5.7	5.8	6.0	5.3	5.0	4.2	3.5	2.2	1.7	1.5	1.3
Total Conventional	13.1	13.0	14.4	14.9	15.3	16.4	18.2	19.9	20.6	21.3	22.9	24.6
Thrust Plate	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.	.
All Primary Total	**18.5**	**18.7**	**20.3**	**20.9**	**20.7**	**21.5**	**22.5**	**23.4**	**22.8**	**23.0**	**24.4**	**25.9**
All Revisions	**2.2**	**2.3**	**2.2**	**2.3**	**2.1**	**2.4**	**2.3**	**2.4**	**3.2**	**3.0**	**2.3**	**2.6**
ALL HIPS	**21.1**	**21.4**	**22.8**	**23.5**	**23.2**	**24.3**	**25.1**	**26.1**	**26.4**	**26.3**	**27.0**	**28.8**

Hip Replacement	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	TOTAL
	N	N	N	N	N	N	N	N	N	N	N
Partial Resurfacing	.	.	.	.	.	.	.	.	.	.	0.0
Unipolar Monoblock	0.0	0.0	0.0	.	0.0	.	.	.	.	.	0.0
Unipolar Modular	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.1	0.0	0.1	0.1
Bipolar	0.1	0.2	0.1	0.2	0.1	0.2	0.2	0.3	0.2	0.2	0.2
All Primary Partial	**0.3**	**0.3**	**0.3**	**0.3**	**0.2**	**0.3**	**0.2**	**0.4**	**0.2**	**0.3**	**0.3**
Total Resurfacing	1.2	1.4	1.1	1.1	1.6	1.8	1.9	1.7	2.0	2.1	2.8
Total Conventional	25.5	25.8	25.9	26.4	25.5	24.6	26.2	26.7	29.0	28.0	22.1
Thrust Plate	.	.	.	.	.	.	.	.	.	.	0.0
All Primary Total	**26.7**	**27.1**	**27.0**	**27.5**	**27.1**	**26.4**	**28.1**	**28.4**	**31.0**	**30.2**	**24.9**
All Revisions	**2.3**	**2.0**	**2.4**	**2.1**	**1.9**	**2.2**	**2.2**	**1.9**	**2.0**	**1.7**	**2.3**
ALL HIPS	**29.3**	**29.5**	**29.7**	**29.8**	**29.3**	**28.8**	**30.5**	**30.7**	**33.3**	**32.2**	**27.5**

Figure SD15 Incidence of Hip Replacement in Patients Aged <55 Years per 100,000 from 2003 to 2024

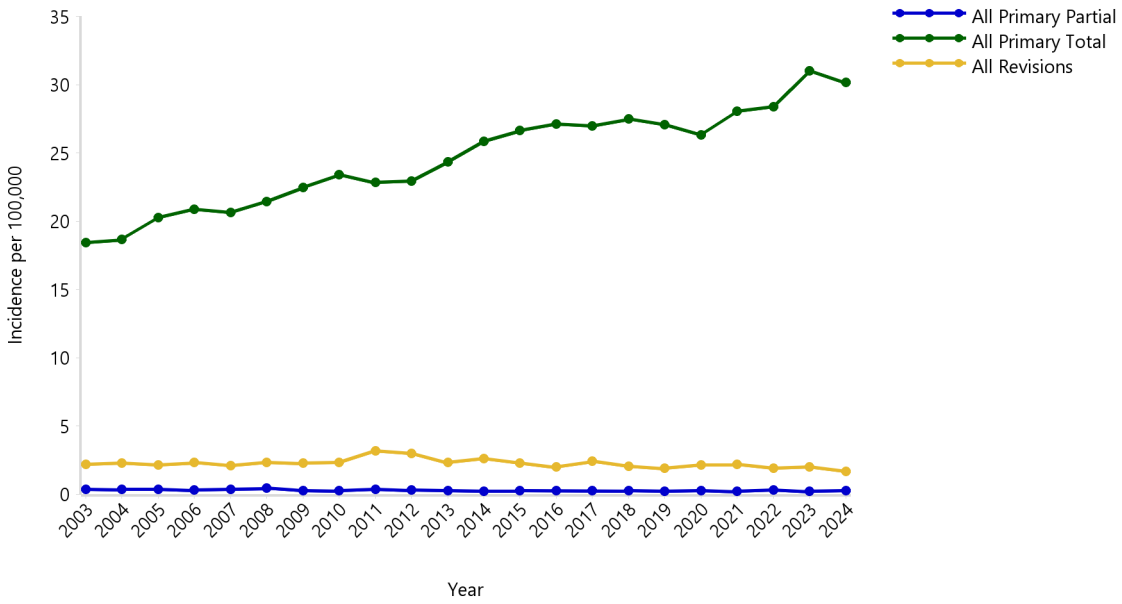


Table SD5 Incidence of Hip Replacement in Patients Aged 55-64 Years per 100,000 from 2003 to 2024

Hip Replacement	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
	N	N	N	N	N	N	N	N	N	N	N	N
Unipolar Monoblock	1.7	1.2	1.3	1.2	0.6	0.9	0.8	0.7	0.8	0.8	0.3	0.6
Unipolar Modular	1.5	2.1	2.8	3.2	4.4	4.4	4.8	4.9	3.4	4.5	3.8	3.7
Bipolar	4.9	4.1	3.4	2.4	2.1	2.1	1.8	1.4	1.4	1.9	1.8	1.9
All Primary Partial	**8.1**	**7.3**	**7.4**	**6.8**	**7.1**	**7.4**	**7.5**	**7.1**	**5.6**	**7.3**	**5.9**	**6.2**
Total Resurfacing	28.4	32.1	35.2	30.4	29.2	23.5	17.7	13.3	7.2	5.7	4.9	4.7
Total Conventional	186.8	197.8	201.1	195.9	207.8	223.9	242.3	247.6	265.7	255.9	268.0	284.6
Thrust Plate	0.3	0.5	0.3	0.4	0.4	0.4	0.4	0.2	0.4	0.1	.	.
All Primary Total	**215.5**	**230.3**	**236.6**	**226.7**	**237.4**	**247.8**	**260.4**	**261.1**	**273.2**	**261.6**	**272.9**	**289.3**
All Revisions	**29.3**	**27.3**	**26.7**	**27.5**	**25.8**	**28.7**	**27.9**	**29.7**	**37.4**	**32.6**	**30.0**	**29.3**
ALL HIPS	**252.9**	**265.0**	**270.8**	**261.0**	**270.3**	**283.9**	**295.8**	**297.9**	**316.2**	**301.5**	**308.8**	**324.8**

Hip Replacement	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	TOTAL
	N	N	N	N	N	N	N	N	N	N	N
Unipolar Monoblock	0.3	0.3	0.2	0.1	0.0	0.0	.	0.1	0.1	0.0	0.5
Unipolar Modular	3.2	2.6	2.7	2.8	1.8	2.5	1.8	1.8	1.2	1.3	2.9
Bipolar	3.0	2.6	3.0	2.3	2.9	3.6	4.4	3.5	5.3	5.2	3.0
All Primary Partial	**6.5**	**5.4**	**5.9**	**5.3**	**4.8**	**6.2**	**6.1**	**5.4**	**6.6**	**6.5**	**6.4**
Total Resurfacing	4.8	5.0	5.2	4.4	6.0	6.2	6.1	5.2	6.5	6.1	11.9
Total Conventional	296.0	311.0	307.5	311.3	311.8	297.7	328.6	322.0	359.2	349.3	277.6
Thrust Plate	.	.	.	.	.	.	.	.	.	.	0.1
All Primary Total	**300.8**	**316.0**	**312.7**	**315.7**	**317.8**	**304.0**	**334.7**	**327.2**	**365.7**	**355.4**	**289.7**
All Revisions	**25.8**	**24.9**	**25.0**	**23.9**	**24.7**	**22.9**	**21.8**	**21.6**	**23.2**	**20.8**	**26.4**
ALL HIPS	**333.1**	**346.3**	**343.6**	**344.9**	**347.3**	**333.1**	**362.7**	**354.1**	**395.5**	**382.7**	**322.5**

Figure SD16 Incidence of Hip Replacement in Patients Aged 55-64 Years per 100,000 from 2003 to 2024

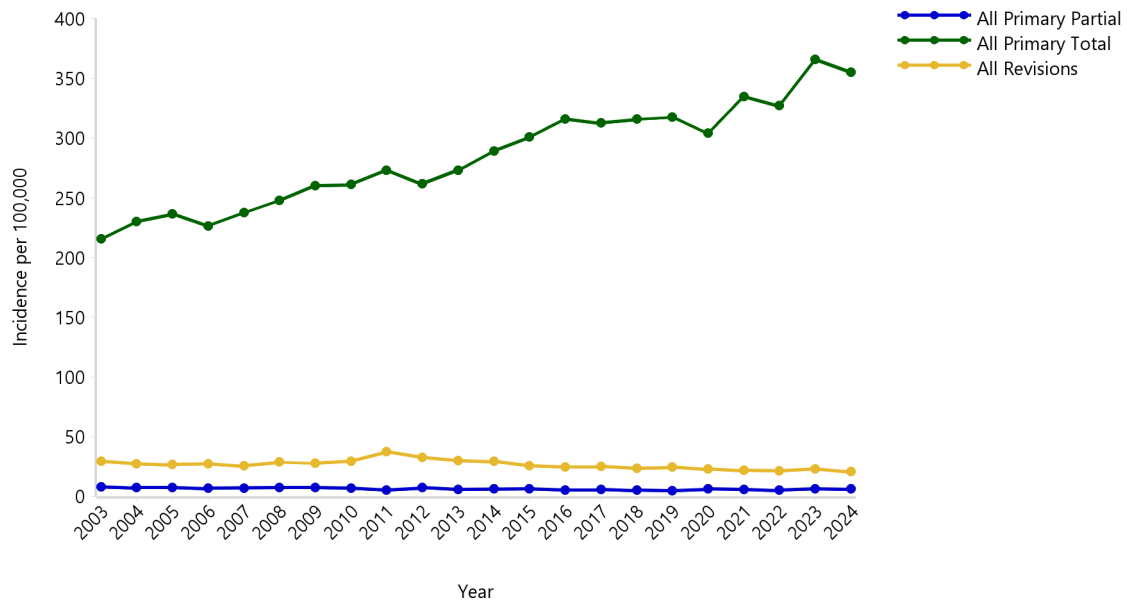


Table SD6 Incidence of Hip Replacement in Patients Aged 65-74 Years per 100,000 from 2003 to 2024

Hip Replacement	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
	N	N	N	N	N	N	N	N	N	N	N	N
Unipolar Monoblock	13.9	15.8	13.0	9.9	10.1	9.0	6.9	6.1	5.9	4.4	4.0	3.4
Unipolar Modular	8.0	10.4	16.2	18.6	22.6	23.4	25.5	21.7	22.7	21.7	18.7	19.4
Bipolar	19.1	19.4	15.3	10.7	9.3	8.2	7.8	6.0	7.4	6.2	7.1	8.7
All Primary Partial	**41.0**	**45.7**	**44.5**	**39.2**	**42.0**	**40.5**	**40.2**	**33.8**	**35.9**	**32.4**	**29.9**	**31.5**
Total Resurfacing	11.7	11.2	12.4	11.4	8.5	6.5	5.9	3.1	2.1	1.2	0.9	1.5
Total Conventional	446.6	457.9	466.8	471.6	464.6	501.4	499.6	524.3	521.1	527.8	549.8	578.4
Thrust Plate	0.2	0.4	0.5	0.2	0.5	0.5	0.5	0.3	0.4	0.1	.	.
All Primary Total	**458.5**	**469.4**	**479.7**	**483.2**	**473.7**	**508.4**	**506.0**	**527.7**	**523.6**	**529.2**	**550.8**	**579.9**
All Revisions	**79.6**	**77.7**	**75.7**	**74.5**	**71.3**	**74.1**	**67.7**	**76.6**	**88.1**	**79.1**	**68.8**	**68.8**
ALL HIPS	**579.1**	**592.8**	**599.9**	**597.0**	**586.9**	**623.0**	**613.8**	**638.1**	**647.5**	**640.7**	**649.4**	**680.2**

Hip Replacement	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	TOTAL
	N	N	N	N	N	N	N	N	N	N	N
Unipolar Monoblock	2.7	1.5	1.3	0.9	0.8	0.3	0.4	0.2	0.3	0.3	4.1
Unipolar Modular	17.3	15.2	15.4	15.5	13.1	11.6	9.9	10.7	10.6	8.1	15.6
Bipolar	13.1	12.1	12.8	13.2	15.4	16.2	16.6	19.1	19.6	21.6	13.4
All Primary Partial	**33.1**	**28.8**	**29.5**	**29.6**	**29.3**	**28.0**	**26.9**	**30.0**	**30.6**	**30.0**	**33.1**
Total Resurfacing	1.7	1.7	2.0	2.5	2.6	2.1	1.7	1.1	1.4	1.8	3.6
Total Conventional	593.7	612.5	609.6	616.4	626.6	580.8	608.6	610.6	666.6	670.9	569.0
Thrust Plate	.	.	.	.	.	.	.	.	.	.	0.1
All Primary Total	**595.4**	**614.2**	**611.6**	**618.9**	**629.2**	**582.9**	**610.3**	**611.6**	**667.9**	**672.7**	**572.7**
All Revisions	**68.8**	**65.8**	**61.4**	**60.9**	**57.7**	**50.0**	**50.5**	**47.8**	**52.2**	**46.5**	**64.4**
ALL HIPS	**697.3**	**708.8**	**702.6**	**709.4**	**716.2**	**660.9**	**687.8**	**689.3**	**750.7**	**749.2**	**670.2**

Figure SD17 Incidence of Hip Replacement in Patients Aged 65-74 Years per 100,000 from 2003 to 2024

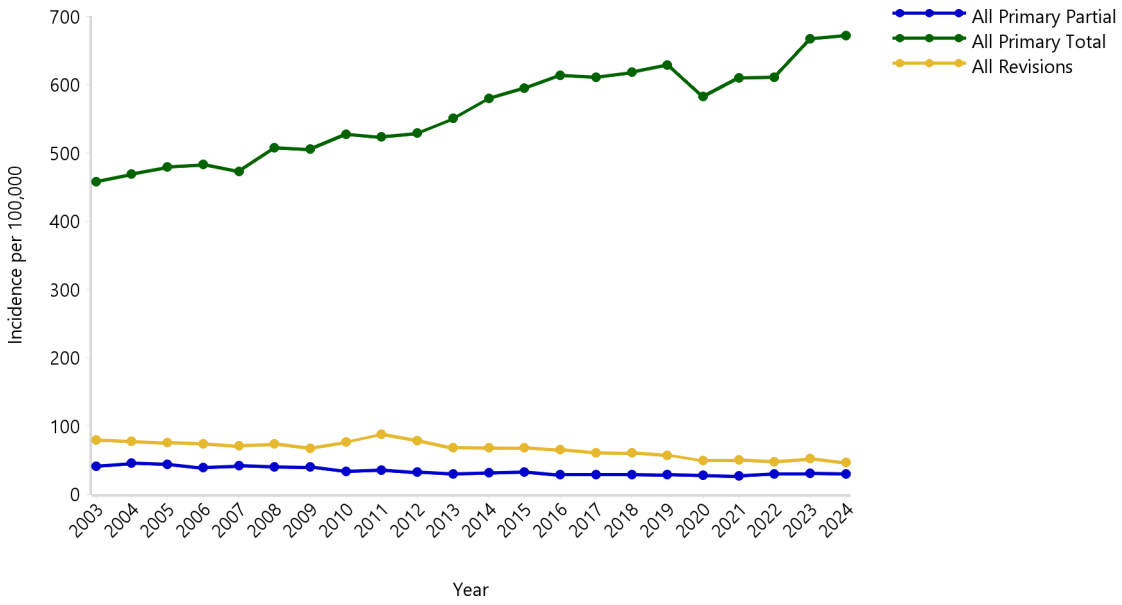


Table SD7 Incidence of Hip Replacement in Patients Aged ≥75 Years per 100,000 from 2003 to 2024

Hip Replacement	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
	N	N	N	N	N	N	N	N	N	N	N	N
Unipolar Monoblock	194.7	199.3	171.4	143.4	132.2	125.9	116.9	109.1	97.2	89.3	75.0	66.3
Unipolar Modular	44.2	48.7	70.5	108.9	139.4	159.7	176.7	182.5	200.1	194.6	195.3	198.5
Bipolar	80.4	83.5	80.3	74.4	55.2	49.4	45.7	51.4	54.0	56.5	60.7	76.0
All Primary Partial	**319.3**	**331.5**	**322.2**	**326.6**	**326.8**	**335.0**	**339.2**	**343.0**	**351.3**	**340.4**	**331.0**	**340.8**
Total Resurfacing	1.3	0.8	0.5	0.2	0.5	0.5	0.2	0.2	0.1	.	0.1	0.2
Total Conventional	456.9	486.8	485.2	502.0	504.3	529.9	538.3	548.9	546.4	558.1	568.9	608.1
All Primary Total	**458.2**	**487.6**	**485.7**	**502.2**	**504.8**	**530.5**	**538.5**	**549.1**	**546.5**	**558.1**	**569.1**	**608.3**
All Revisions	**124.1**	**126.3**	**129.4**	**119.4**	**120.2**	**122.9**	**130.2**	**126.5**	**127.8**	**126.1**	**121.8**	**125.0**
ALL HIPS	**901.6**	**945.5**	**937.3**	**948.2**	**951.7**	**988.4**	**1007.9**	**1018.6**	**1025.5**	**1024.7**	**1021.9**	**1074.1**

Hip Replacement	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	TOTAL
	N	N	N	N	N	N	N	N	N	N	N
Unipolar Monoblock	45.4	33.2	22.6	12.8	7.5	5.1	3.4	3.2	2.8	3.1	64.6
Unipolar Modular	184.9	188.0	186.6	183.9	157.6	141.1	129.4	132.2	113.0	99.6	147.8
Bipolar	106.2	109.6	109.3	112.9	124.8	133.3	142.5	151.5	160.1	170.2	101.2
All Primary Partial	**336.5**	**330.8**	**318.5**	**309.6**	**289.8**	**279.6**	**275.3**	**286.8**	**275.9**	**272.9**	**313.6**
Total Resurfacing	.	0.1	0.3	0.1	0.3	0.2	0.2	0.2	0.0	0.1	0.3
Total Conventional	617.8	641.7	664.4	669.3	686.0	627.4	673.0	669.5	730.3	719.9	606.3
All Primary Total	**617.8**	**641.8**	**664.7**	**669.4**	**686.3**	**627.6**	**673.3**	**669.7**	**730.3**	**720.0**	**606.6**
All Revisions	**121.7**	**116.0**	**114.7**	**109.8**	**110.9**	**94.7**	**92.6**	**90.9**	**90.1**	**88.9**	**112.7**
ALL HIPS	**1076.0**	**1088.6**	**1098.0**	**1088.8**	**1087.0**	**1001.9**	**1041.2**	**1047.4**	**1096.3**	**1081.9**	**1032.9**

Figure SD18 Incidence of Hip Replacement in Patients Aged ≥75 Years per 100,000 from 2003 to 2024

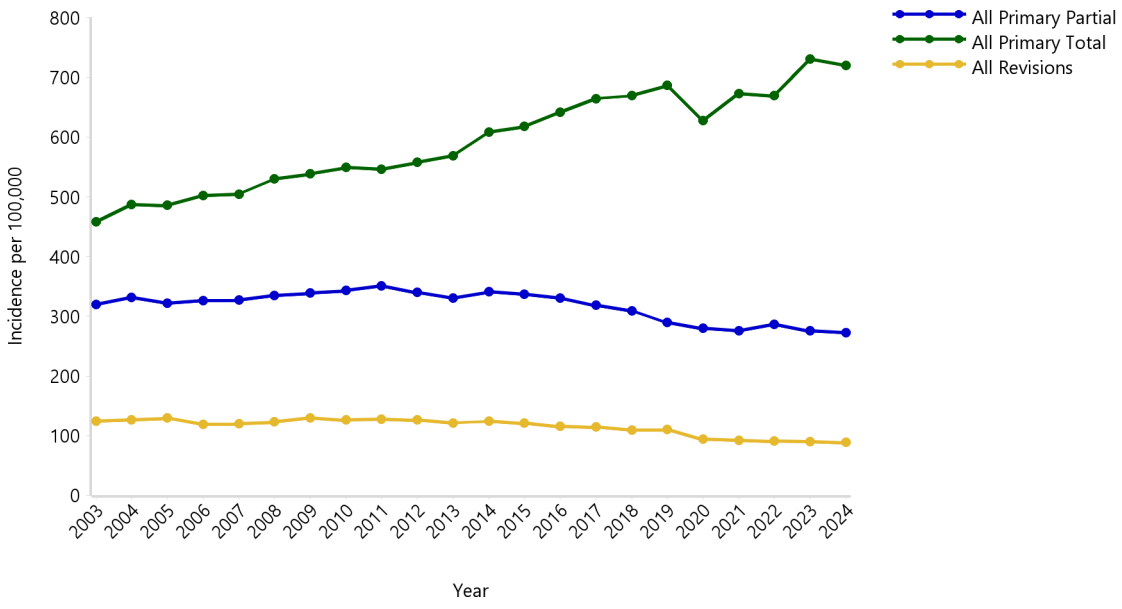


Figure SD19 Trends in Usage of Hip Replacement by State/Territory and Year

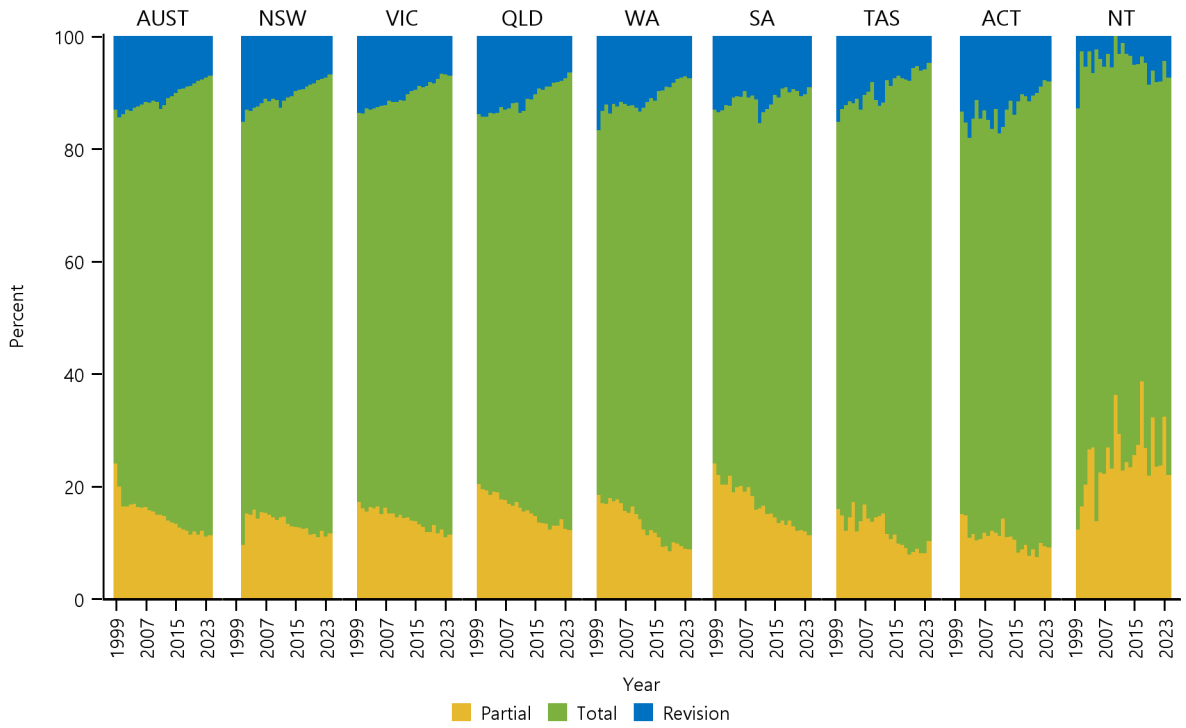


Table SD8 Time between Procedures for Bilateral Primary Hip Replacement

Bilateral Procedures	Same Day			1 day - 3 months			3 months - 6 months			≥6 months			TOTAL		
	N	Row%	Col%	N	Row%	Col%	N	Row%	Col%	N	Row%	Col%	N	Row%	Col%
Both Partial	57	0.9	0.7	850	14.1	10.3	581	9.7	4.1	4521	75.2	3.5	6009	100.0	3.8
Both Total	8308	5.5	99.3	7344	4.9	88.6	13315	8.9	94.9	121018	80.7	93.8	149985	100.0	93.9
Total/Partial	4	0.1	0.0	91	2.4	1.1	130	3.5	0.9	3536	94.0	2.7	3761	100.0	2.4
TOTAL	**8369**	**5.2**	**100.0**	**8285**	**5.2**	**100.0**	**14026**	**8.8**	**100.0**	**129075**	**80.8**	**100.0**	**159755**	**100.0**	**100.0**

Table SD9 Number of Hip Procedures by Patient

Hip Procedures	Not Revised		1 Revision		2 Revisions		3 or more Revisions		TOTAL	
	N	Row%	N	Row%	N	Row%	N	Row%	N	Row%
Unknown Primary/Primaries	.	.	17175	74.4	4161	18.0	1739	7.5	23075	100.0
Single Primary Procedure	525684	94.4	24830	4.5	4484	0.8	2080	0.4	557078	100.0
2 Primary Procedures	144221	90.3	11223	7.0	2878	1.8	1433	0.9	159755	100.0
TOTAL	**669905**	**90.5**	**53228**	**7.2**	**11523**	**1.6**	**5252**	**0.7**	**739908**	**100.0**

PRIMARY PARTIAL HIP REPLACEMENT

CLASSES OF PARTIAL HIP REPLACEMENT

The Registry identifies four classes of primary partial hip replacement. These are defined by the type of prostheses used.

Partial resurfacing involves the use of one or more button prosthesis to replace part of the natural articulating surface on one or both sides of the hip joint. The last recorded procedure was in 2014.

Unipolar monoblock involves the use of a femoral stem with a fixed large head that replaces the natural femoral head.

Unipolar modular involves the use of a femoral stem and exchangeable large head prosthesis that replaces the natural femoral head.

Bipolar involves the use of a femoral stem and standard head prosthesis that articulates with a non-fixed component that replaces the natural femoral head.

Further information on primary partial resurfacing hip replacement is available in the supplementary report 'Prosthesis Types with No and Minimal Use' on the AOANJRR website: https://aoanjrr.sahmri.com/annual-reports-2025

Table SD10 Primary Partial Hip Replacement by Age and Gender

Gender	Number	Percent	Minimum	Maximum	Median	Mean	Std Dev
Female	93358	69.5%	9	108	84	83.3	8.6
Male	40982	30.5%	5	107	83	81.9	9.6
TOTAL	**134340**	**100.0%**	**5**	**108**	**84**	**82.9**	**8.9**

Figure SD20 Primary Partial Hip Replacement by Age and Gender

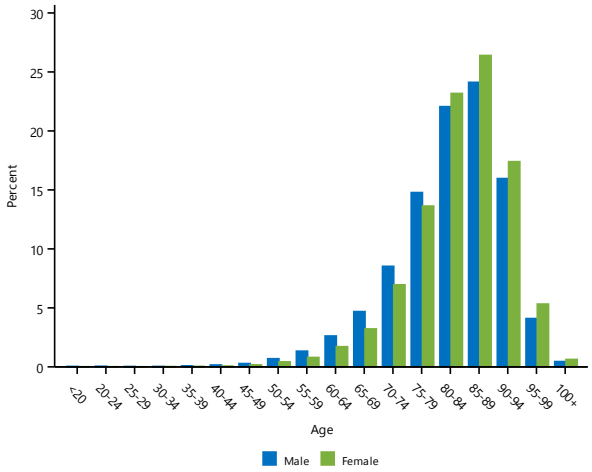
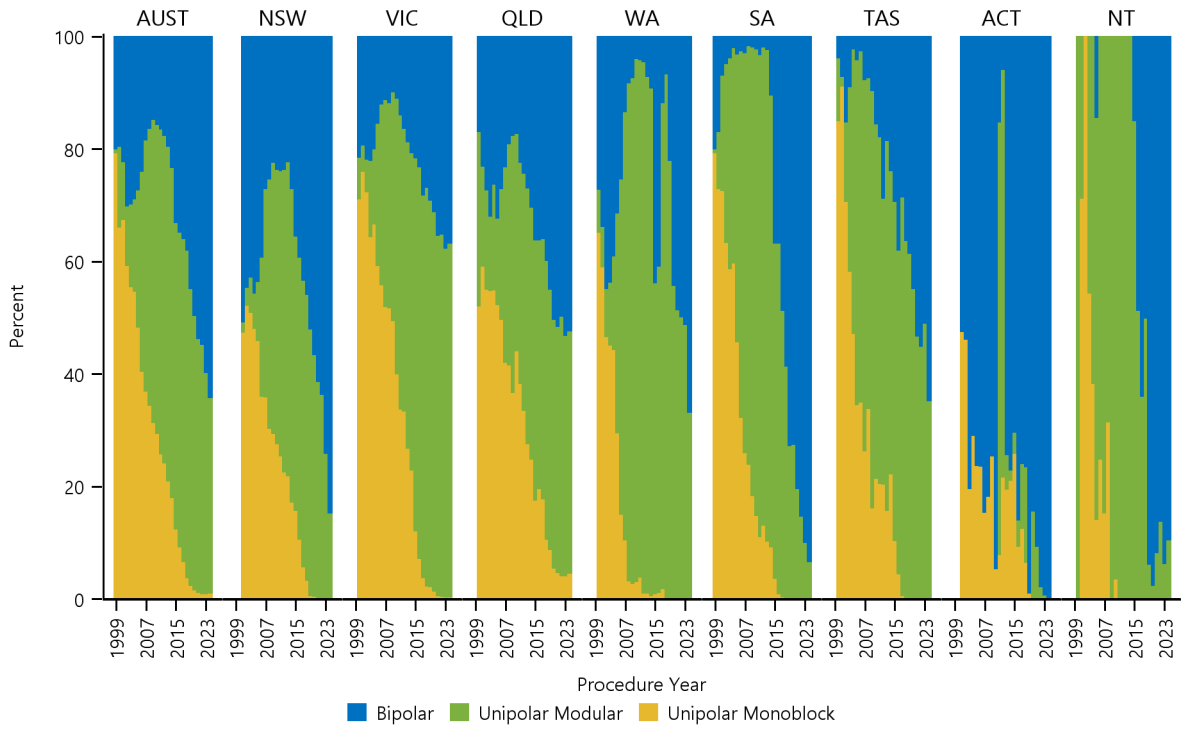


Table SD11 Primary Partial Hip Replacement by Primary Diagnosis

Primary Diagnosis	Number	Percent
Fractured Neck Of Femur	128598	95.7
Osteoarthritis	3173	2.4
Tumour	1443	1.1
Failed Internal Fixation	717	0.5
Osteonecrosis	246	0.2
Rheumatoid Arthritis	60	0.0
Developmental Dysplasia	57	0.0
Osteochondritis Dissecans	1	0.0
Other	45	0.0
TOTAL	**134340**	**100.0**

Figure SD21 Trends in Usage of Primary Partial Hip Replacement by State/Territory and Year



PRIMARY PARTIAL RESURFACING HIP REPLACEMENT

Table SD12 Primary Partial Resurfacing Hip Replacement by Age and Gender

Gender	Number	Percent	Minimum	Maximum	Median	Mean	Std Dev
Female	3	20.0%	17	53	23	31.0	19.3
Male	12	80.0%	18	39	27	26.6	6.6
TOTAL	**15**	**100.0%**	**17**	**53**	**25**	**27.5**	**9.5**

Figure SD22 Primary Partial Resurfacing Hip Replacement by Age and Gender

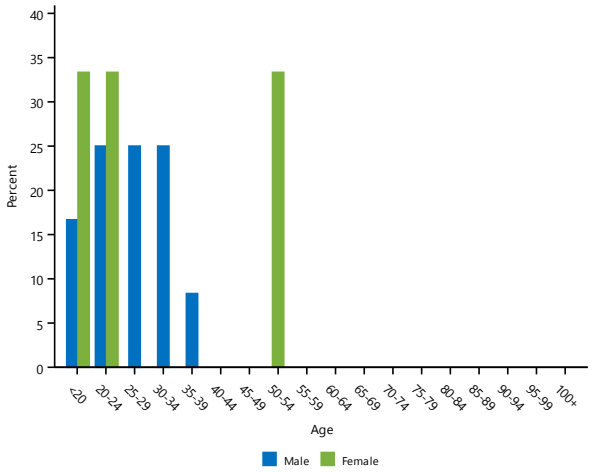


Table SD13 Primary Partial Resurfacing Hip Replacement by Primary Diagnosis

Primary Diagnosis	Number	Percent
Osteonecrosis	7	46.7
Osteoarthritis	5	33.3
Osteochondritis Dissecans	1	6.7
Other	2	13.3
TOTAL	**15**	**100.0**

PRIMARY UNIPOLAR MONOBLOCK HIP REPLACEMENT

Table SD14 Primary Unipolar Monoblock Hip Replacement by Age and Gender

Gender	Number	Percent	Minimum	Maximum	Median	Mean	Std Dev
Female	21352	72.6%	16	108	86	85.0	7.2
Male	8065	27.4%	32	107	84	83.5	7.8
TOTAL	**29417**	**100.0%**	**16**	**108**	**85**	**84.5**	**7.4**

Figure SD23 Primary Unipolar Monoblock Hip Replacement by Age and Gender

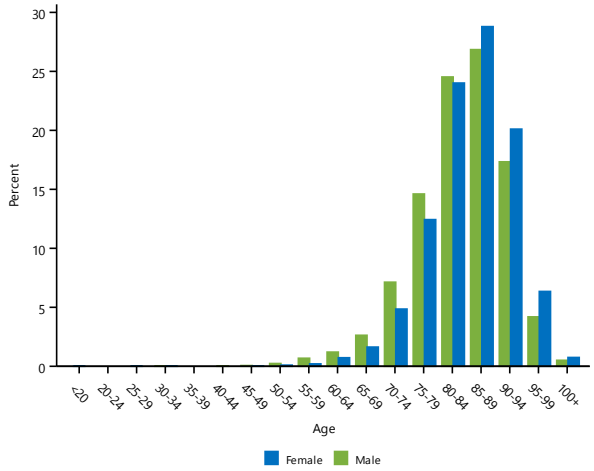
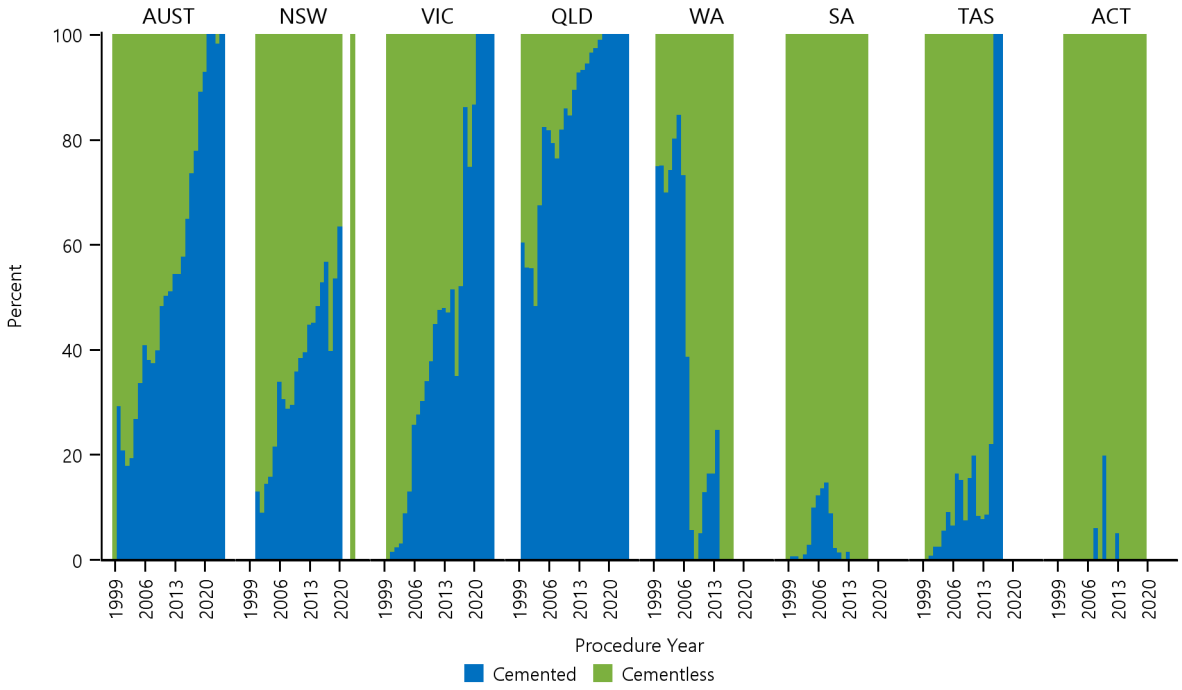


Table SD15 Primary Unipolar Monoblock Hip Replacement by Primary Diagnosis

Primary Diagnosis	Number	Percent
Fractured Neck Of Femur	28731	97.7
Osteoarthritis	497	1.7
Tumour	64	0.2
Osteonecrosis	50	0.2
Failed Internal Fixation	43	0.1
Developmental Dysplasia	15	0.1
Rheumatoid Arthritis	14	0.0
Other	3	0.0
TOTAL	**29417**	**100.0**

Figure SD24 Trends in Fixation of Primary Unipolar Monoblock Hip Replacement by State/Territory and Year



Note: NT is excluded from this graph due to low procedure numbers

PRIMARY UNIPOLAR MODULAR HIP REPLACEMENT

Table SD16 Primary Unipolar Modular Hip Replacement by Age and Gender

Gender	Number	Percent	Minimum	Maximum	Median	Mean	Std Dev
Female	41700	69.3%	18	108	85	83.4	8.4
Male	18461	30.7%	5	106	84	82.1	9.3
TOTAL	**60161**	**100.0%**	**5**	**108**	**84**	**83.0**	**8.7**

Figure SD25 Primary Unipolar Modular Hip Replacement by Age and Gender

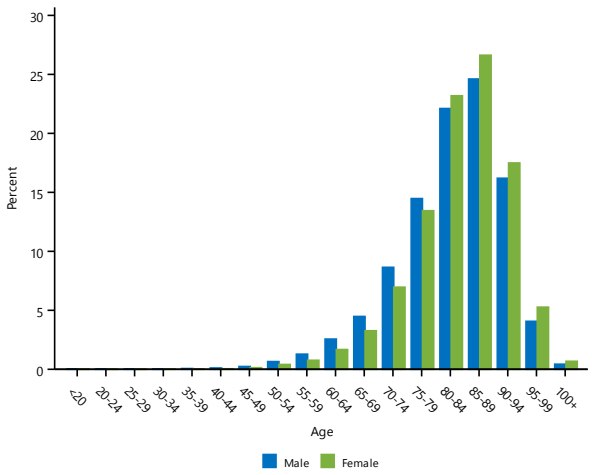


Table SD17 Primary Unipolar Modular Hip Replacement by Primary Diagnosis

Primary Diagnosis	Number	Percent
Fractured Neck Of Femur	57859	96.2
Osteoarthritis	1434	2.4
Tumour	422	0.7
Failed Internal Fixation	307	0.5
Osteonecrosis	71	0.1
Developmental Dysplasia	26	0.0
Rheumatoid Arthritis	22	0.0
Other	20	0.0
TOTAL	**60161**	**100.0**

Figure SD26 Trends in Fixation of Primary Unipolar Modular Hip Replacement by State/Territory and Year

Note: There were no unipolar modular hip replacements in 2002 in NT
ACT is excluded from this graph due to low procedure numbers

PRIMARY BIPOLAR HIP REPLACEMENT

Table SD18 Primary Bipolar Hip Replacement by Age and Gender

Gender	Number	Percent	Minimum	Maximum	Median	Mean	Std Dev
Female	30303	67.7%	9	107	83	82.1	9.5
Male	14444	32.3%	9	105	83	80.7	10.5
TOTAL	**44747**	**100.0%**	**9**	**107**	**83**	**81.6**	**9.8**

Figure SD27 Primary Bipolar Hip Replacement by Age and Gender

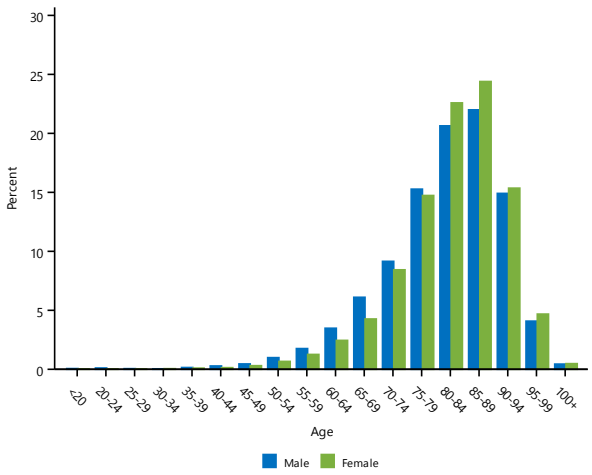
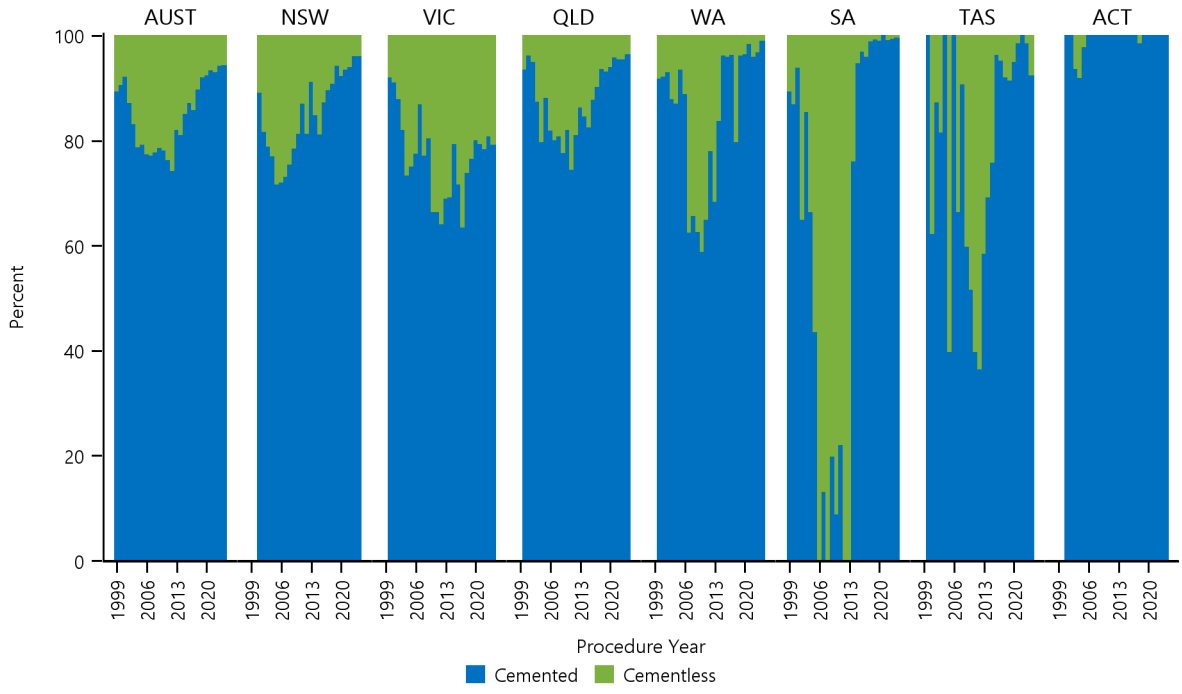


Table SD19 Primary Bipolar Hip Replacement by Primary Diagnosis

Primary Diagnosis	Number	Percent
Fractured Neck Of Femur	42008	93.9
Osteoarthritis	1237	2.8
Tumour	957	2.1
Failed Internal Fixation	367	0.8
Osteonecrosis	118	0.3
Rheumatoid Arthritis	24	0.1
Developmental Dysplasia	16	0.0
Other	20	0.0
TOTAL	**44747**	**100.0**

Figure SD28 Trends in Fixation of Primary Bipolar Hip Replacement by State/Territory and Year



Note: NT is excluded from this graph due to low procedure numbers

PRIMARY TOTAL HIP REPLACEMENT

CLASSES OF TOTAL HIP REPLACEMENT

The Registry subcategorises primary total hip replacement into three classes. These are defined by the type of femoral prosthesis used. A total hip procedure replaces both the femoral and acetabular articular surfaces.

Total conventional includes acetabular replacement combined with resection of the femoral head and replacement with a stemmed femoral prosthesis and femoral head prosthesis.

Total resurfacing includes acetabular replacement and the use of a femoral prosthesis that replaces the femoral articular surface without resecting the head.

Thrust plate includes acetabular replacement combined with resection of the femoral head and replacement with a femoral component that has a lateral fixation plate and femoral head prosthesis. The last recorded procedure was in 2012.

Further information on thrust plate procedures is available in the supplementary report 'Prosthesis Types with No and Minimal Use' on the AOANJRR website: https://aoanjrr.sahmri.com/annual-reports-2025

Table SD20 Primary Total Hip Replacement by Age and Gender

Gender	Number	Percent	Minimum	Maximum	Median	Mean	Std Dev
Female	400484	54.0%	11	103	70	68.9	11.4
Male	341764	46.0%	11	108	67	65.8	11.8
TOTAL	**742248**	**100.0%**	**11**	**108**	**68**	**67.4**	**11.7**

Figure SD29 Primary Total Hip Replacement by Age and Gender

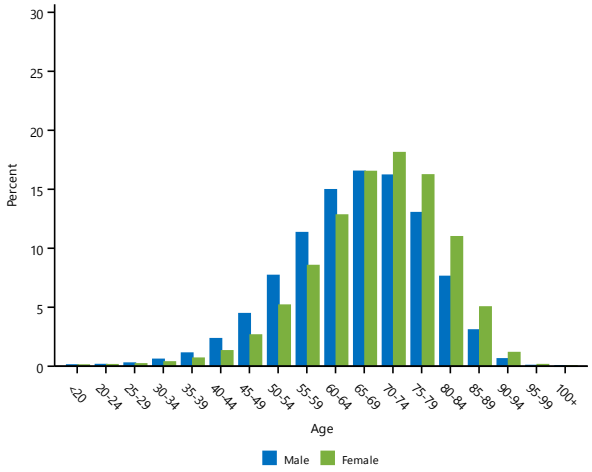
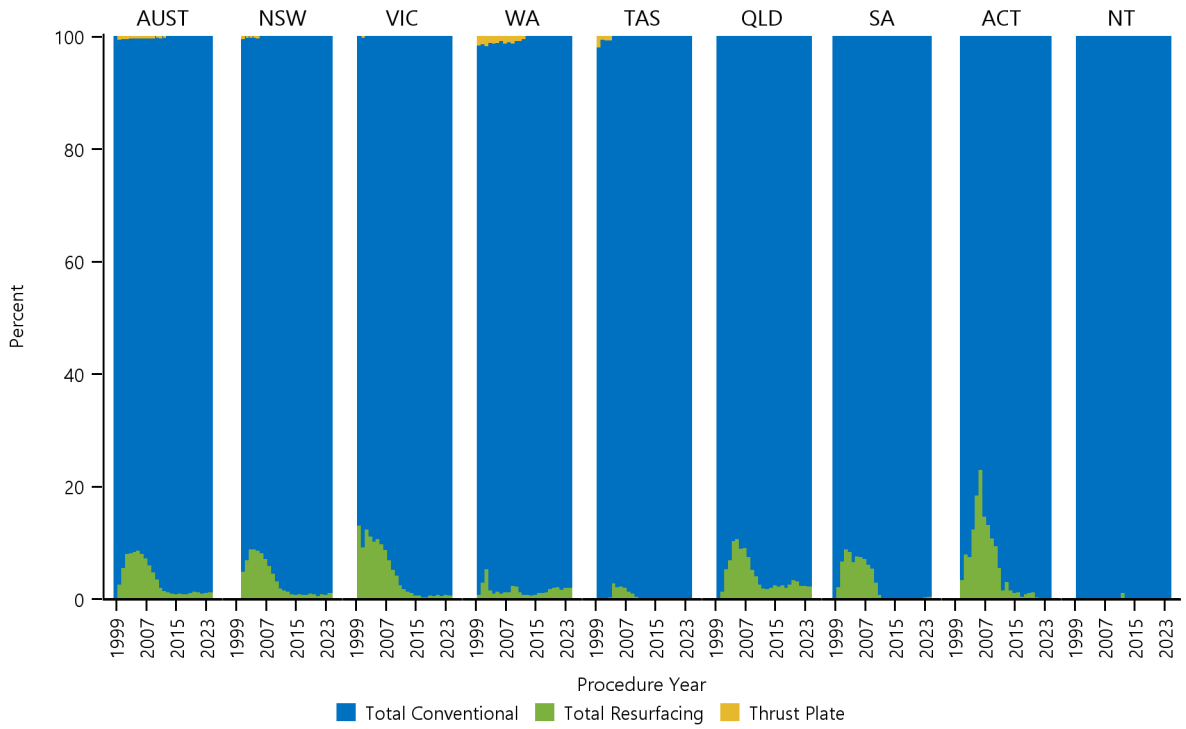


Table SD21 Primary Total Hip Replacement by Primary Diagnosis

Primary Diagnosis	Number	Percent
Osteoarthritis	653997	88.1
Fractured Neck Of Femur	37483	5.0
Osteonecrosis	23641	3.2
Developmental Dysplasia	10327	1.4
Rheumatoid Arthritis	5810	0.8
Tumour	3793	0.5
Other Inflammatory Arthritis	3044	0.4
Failed Internal Fixation	2856	0.4
Fracture/Dislocation	974	0.1
Arthrodesis Takedown	160	0.0
Other	163	0.0
TOTAL	**742248**	**100.0**

Figure SD30 Trends in Usage of Primary Total Hip Replacement by State/Territory and Year



PRIMARY TOTAL CONVENTIONAL HIP REPLACEMENT

Table SD22 Primary Total Conventional Hip Replacement by Age and Gender

Gender	Number	Percent	Minimum	Maximum	Median	Mean	Std Dev
Female	396629	55.0%	11	103	70	69.0	11.3
Male	324188	45.0%	11	108	67	66.5	11.5
TOTAL	**720817**	**100.0%**	**11**	**108**	**69**	**67.9**	**11.4**

Figure SD31 Primary Total Conventional Hip Replacement by Age and Gender

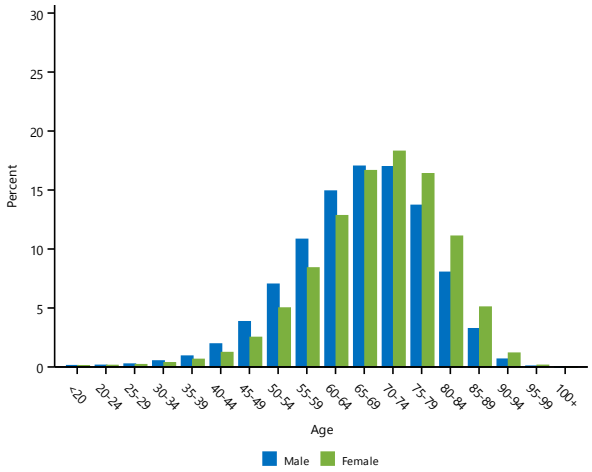
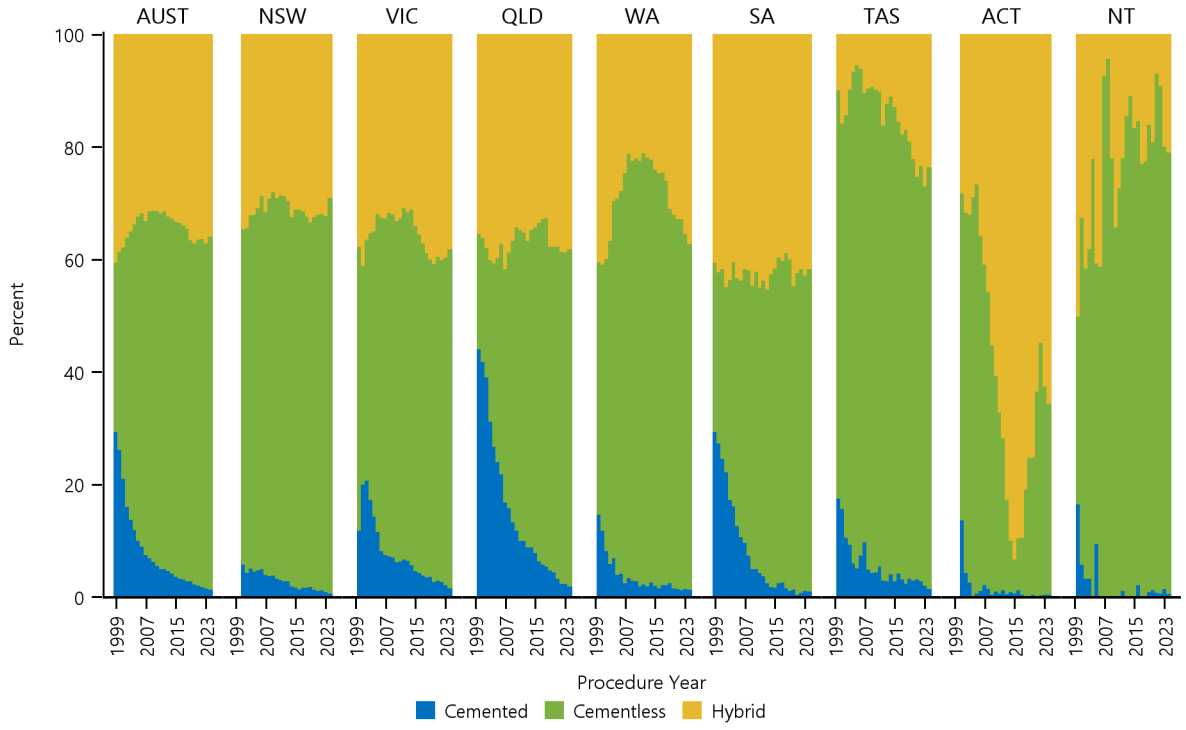


Table SD23 Primary Total Conventional Hip Replacement by Primary Diagnosis

Primary Diagnosis	Number	Percent
Osteoarthritis	633506	87.9
Fractured Neck Of Femur	37483	5.2
Osteonecrosis	23328	3.2
Developmental Dysplasia	9854	1.4
Rheumatoid Arthritis	5745	0.8
Tumour	3791	0.5
Other Inflammatory Arthritis	2967	0.4
Failed Internal Fixation	2856	0.4
Fracture/Dislocation	969	0.1
Arthrodesis Takedown	159	0.0
Other	159	0.0
TOTAL	**720817**	**100.0**

Figure SD32 Trends in Fixation of Primary Total Conventional Hip Replacement by State/Territory and Year



PRIMARY TOTAL RESURFACING HIP REPLACEMENT

Table SD24 Primary Total Resurfacing Hip Replacement by Age and Gender

Gender	Number	Percent	Minimum	Maximum	Median	Mean	Std Dev
Female	3781	17.9%	14	81	52	51.4	8.7
Male	17392	82.1%	13	84	54	53.1	9.2
TOTAL	**21173**	**100.0%**	**13**	**84**	**53**	**52.8**	**9.1**

Figure SD33 Primary Total Resurfacing Hip Replacement by Age and Gender

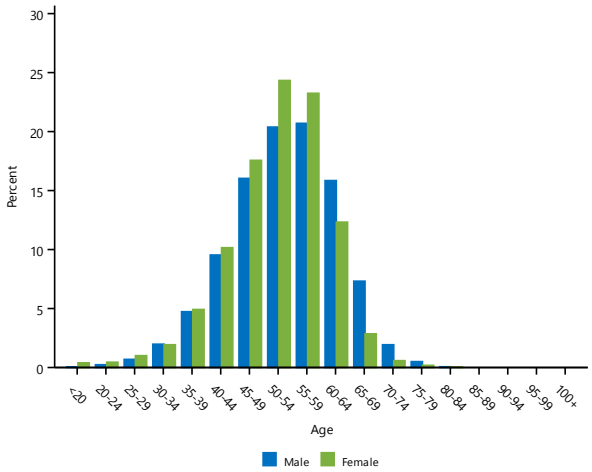
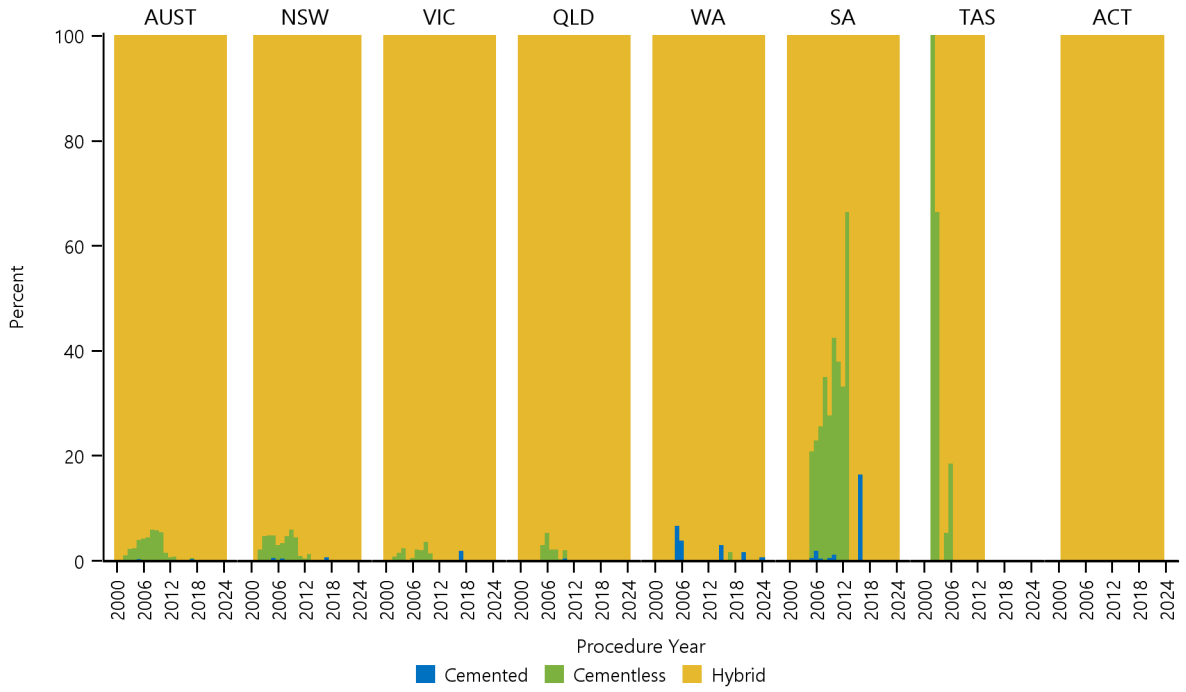


Table SD25 Primary Total Resurfacing Hip Replacement by Primary Diagnosis

Primary Diagnosis	Number	Percent
Osteoarthritis	20248	95.6
Developmental Dysplasia	470	2.2
Osteonecrosis	308	1.5
Other Inflammatory Arthritis	76	0.4
Rheumatoid Arthritis	59	0.3
Fracture/Dislocation	5	0.0
Tumour	2	0.0
Arthrodesis Takedown	1	0.0
Other	4	0.0
TOTAL	**21173**	**100.0**

Figure SD34 Trends in Fixation of Primary Total Resurfacing Hip Replacement by State/Territory and Year



Note: NT is excluded from this graph due to low procedure numbers
The last total resurfacing hip replacement undertaken in Tasmania was 2013

PRIMARY THRUST PLATE HIP REPLACEMENT

Table SD26 Primary Thrust Plate Hip Replacement by Age and Gender

Gender	Number	Percent	Minimum	Maximum	Median	Mean	Std Dev
Female	74	28.7%	27	71	56	54.5	9.9
Male	184	71.3%	33	75	59	58.5	8.7
TOTAL	**258**	**100.0%**	**27**	**75**	**58**	**57.3**	**9.2**

Figure SD35 Primary Thrust Hip Replacement by Primary Diagnosis

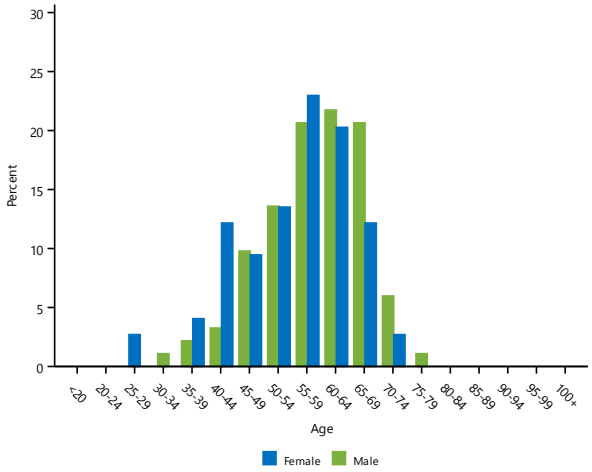


Table SD27 Primary Thrust Plate Hip Replacement by Primary Diagnosis

Primary Diagnosis		Number	Percent
Osteoarthritis		243	94.2
Rheumatoid Arthritis		6	2.3
Osteonecrosis		5	1.9
Developmental Dysplasia		3	1.2
Other Inflammatory Arthritis		1	0.4
TOTAL		**258**	**100.0**

REVISION HIP REPLACEMENT

CLASSES OF REVISION PROCEDURES

The Registry defines revision of a hip replacement as any re-operation of a previous hip replacement procedure that involves the insertion, removal and/or replacement of a prosthesis or implant. Revisions are sub-categorised into three classes: major total, major partial and minor.

Major total revision is the insertion, removal and/or replacement of all major components.

Major partial revision is the insertion, removal and/or replacement of one major component.

Major components are prostheses that are fixed to bone. These are the femoral prosthesis and the acetabular shell or cup in hip replacement. Different types of major partial and minor revisions are identified based on the specific prostheses or implants used in the revision.

Minor revision is the insertion, removal and/or replacement of any other prostheses or implant.

Table SD28 All Revision Hip Replacement by Age and Gender

Gender	Number	Percent	Minimum	Maximum	Median	Mean	Std Dev
Male	44783	46.8%	15	102	72	70.2	12.0
Female	50885	53.2%	11	104	73	71.8	12.1
TOTAL	**95668**	**100.0%**	**11**	**104**	**72**	**71.0**	**12.1**

Figure SD36 All Revision Hip Replacement by Age and Gender

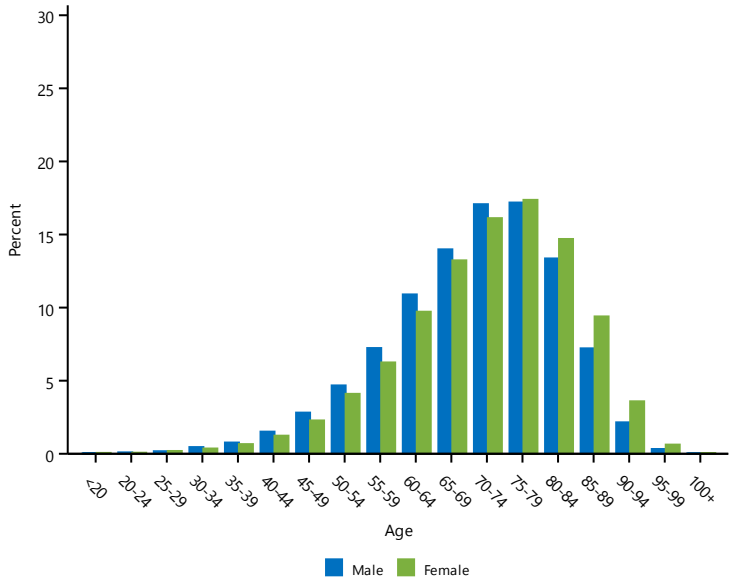


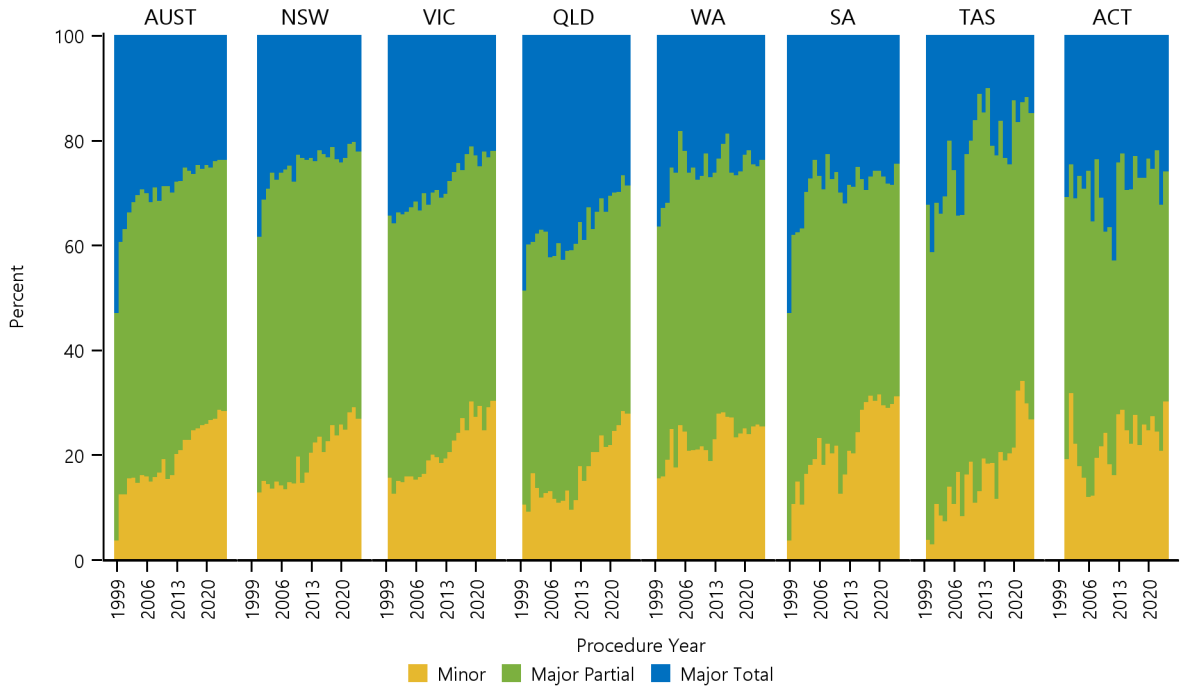
Table SD29 All Revision Hip Replacement by Type of Revision

Type of Revision	Number	Percent
Acetabular Component	26556	27.8
THR (Femoral/Acetabular)	25315	26.5
Femoral Component	19631	20.5
Head/Insert	13799	14.4
Cement Spacer	3443	3.6
Head Only	2632	2.8
Minor Components	1158	1.2
Removal of Prostheses	872	0.9
Bipolar Head and Femoral	768	0.8
Insert Only	755	0.8
Bipolar Only	403	0.4
Head/Neck/Insert	153	0.2
Head/Neck	90	0.1
Reinsertion of Components	71	0.1
Neck Only	9	0.0
Saddle	5	0.0
Cement Only	4	0.0
Thrust Plate	2	0.0
Neck/Insert	1	0.0
Incomplete	1	0.0
TOTAL	**95668**	**100.0**

Table SD30 All Revision Hip Replacement by Reason for Revision

Reason for Revision	Number	Percent
Loosening	30824	32.2
Infection	18859	19.7
Prosthesis Dislocation/Instability	14976	15.7
Fracture	12963	13.5
Lysis	5029	5.3
Metal Related Pathology	3540	3.7
Pain	1779	1.9
Wear Acetabular Insert	1416	1.5
Implant Breakage Stem	1036	1.1
Implant Breakage Acetabular	741	0.8
Chondrolysis/Acetab. Erosion	635	0.7
Malposition	617	0.6
Leg Length Discrepancy	557	0.6
Implant Breakage Acetabular Insert	530	0.6
Wear Acetabulum	350	0.4
Incorrect Sizing	227	0.2
Tumour	192	0.2
Osteonecrosis	145	0.2
Implant Breakage Head	126	0.1
Wear Head	123	0.1
Heterotopic Bone	94	0.1
Synovitis	16	0.0
Progression Of Disease	4	0.0
Other	889	0.9
TOTAL	**95668**	**100.0**

Figure SD37 Trends in All Revision Hip Replacement by State/Territory and Year



Note: NT is excluded from this graph due to low procedure numbers

Knee Replacement

CATEGORIES OF KNEE REPLACEMENT

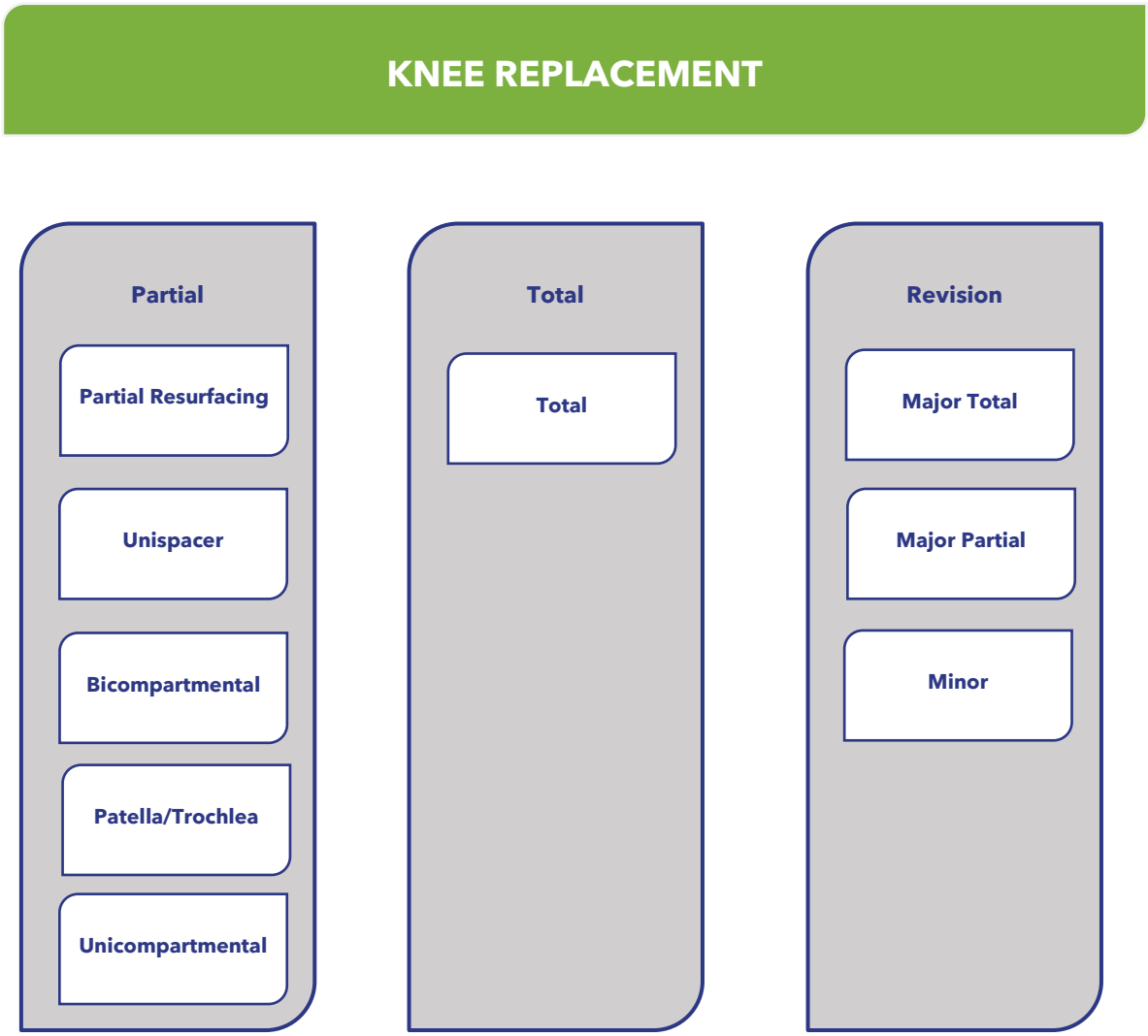
The Registry groups knee replacement into three broad categories, primary partial, primary total and revision knee replacement.

A primary replacement is the initial replacement procedure undertaken on a joint and involves replacing either part (partial) or all (total) of the articular surface.

Primary partial knee replacements are subcategorised into five classes depending on the type of prostheses used. The classes of primary partial knee are partial resurfacing, unispacer, bicompartmental, patella/trochlea and unicompartmental. These are defined in the partial knee arthroplasty chapter in the Annual Report.

Revision knee replacements are re-operations of previous knee replacements where one or more of the prosthetic components are replaced, removed or another component is added. Revisions include re-operations of primary partial, primary total or previous revision procedures.

Knee revisions are subcategorised into three classes: major total, major partial or minor revisions. These are defined in the chapter on revision outcomes.

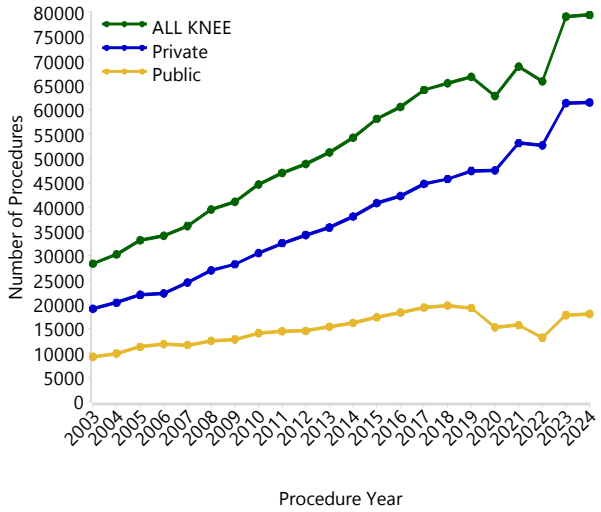


PUBLIC AND PRIVATE SECTOR

In 2024, 77.3% of all knee replacement procedures reported to the Registry were undertaken in private hospitals.

In the last year, there was an increase in the number of knee replacements recorded in both the private and public sectors. The private sector recorded 61,349 procedures, an increase of 0.2% and the public sector recorded 17,982 procedures, an increase of 1.1% compared to 2023.

Figure SD38 Knee Replacement by Hospital Sector



Since 2003, knee replacement has increased by 221.5% in the private sector compared to 94.7% in the public sector.

There were 3,555 primary partial knee replacements reported for the private sector in 2024, an increase of 2.3% compared to 2023 and an increase of 4.3% since 2003. In the public sector, there were 423 partial knee replacements, an increase of 1.9% compared to 2023 and a decrease of 50.8% since 2003.

In 2024, 54,046 primary total knee replacements were reported in the private sector, an increase of 0.1% compared to 2023. In the public sector in 2024, there were 15,865 primary total knee replacements, an increase of 1.1% compared to 2023. Since 2003, primary total knee replacement has increased by 284.0% in the private sector compared to 107.1% in the public sector.

There were 3,748 private sector revision knee replacements reported in 2024. This is a decrease of 1.1% compared to 2023. In the public sector, there were 1,694 revision knee replacements, an increase of 1.5% compared to 2023. Since 2003, revision knee replacement has increased by 134.7% in the private sector compared to 136.3% in the public sector.

Table SD31 All Knee Replacement by Age and Gender

Gender	Number	Percent	Minimum	Maximum	Median	Mean	Std Dev
Male	545298	45.2%	8	101	68	68.0	9.2
Female	660318	54.8%	8	107	69	68.6	9.5
TOTAL	**1205616**	**100.0%**	**8**	**107**	**69**	**68.3**	**9.4**

Table SD32 Number of Knee Replacements by Gender

Knee Replacement	Female		Male		TOTAL	
	N	%	N	%	N	%
Partial Resurfacing	121	48.8	127	51.2	248	0.3
Unispacer	19	47.5	21	52.5	40	0.0
Patella/Trochlear	4382	76.6	1340	23.4	5722	6.8
Unicompartmental	34913	44.6	43306	55.4	78219	92.7
Bicompartmental	101	60.8	65	39.2	166	0.2
All Primary Partial	**39536**	**46.8**	**44859**	**53.2**	**84395**	**100.0**
Total Knee	572988	55.8	453947	44.2	1026935	100.0
All Primary Total	**572988**	**55.8**	**453947**	**44.2**	**1026935**	**100.0**
Major Total	23297	52.4	21156	47.6	44453	47.1
Major Partial	7466	48.9	7806	51.1	15272	16.2
Minor	17031	49.3	17530	50.7	34561	36.7
All Revision	**47794**	**50.7**	**46492**	**49.3**	**94286**	**100.0**
ALL KNEES	**660318**	**54.8**	**545298**	**45.2**	**1205616**	**100.0**

Figure SD39 Percentage of Females by Type of Primary Knee Replacement and Procedure Year

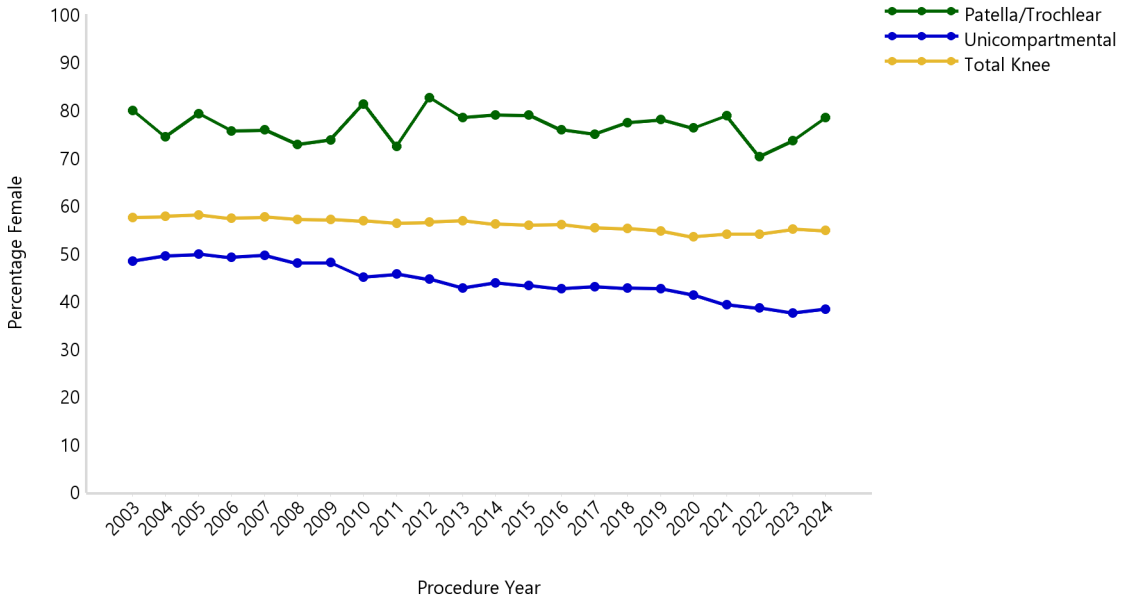


Figure SD40 Percentage of Females by Revision Knee Replacement and Procedure Year

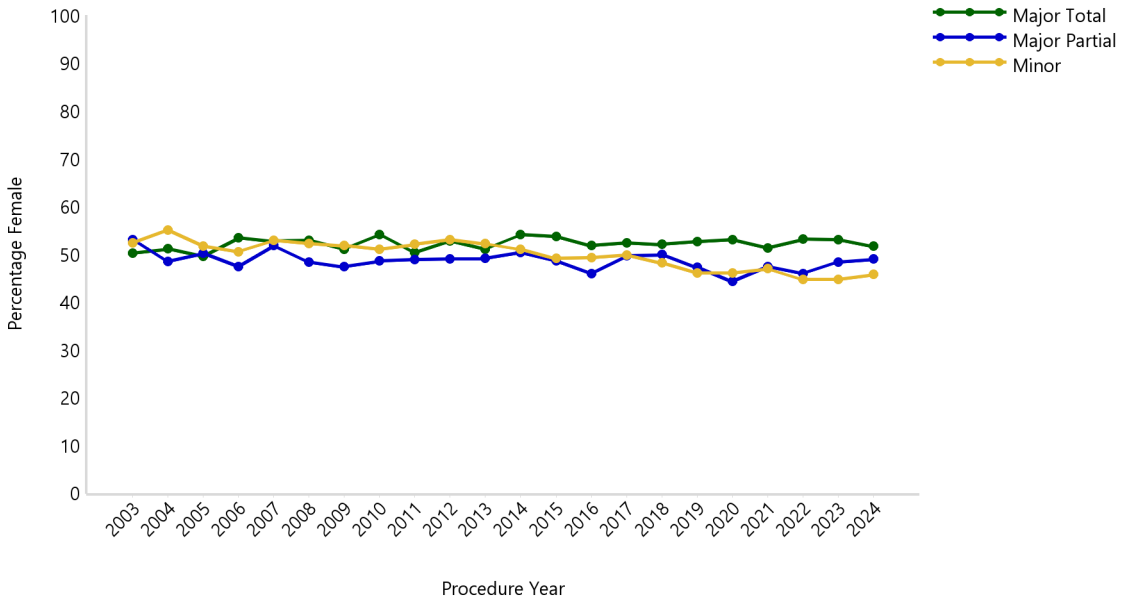


Figure SD41 Percentage of Patients Aged <65 Years by Type of Primary Knee Replacement and Procedure Year

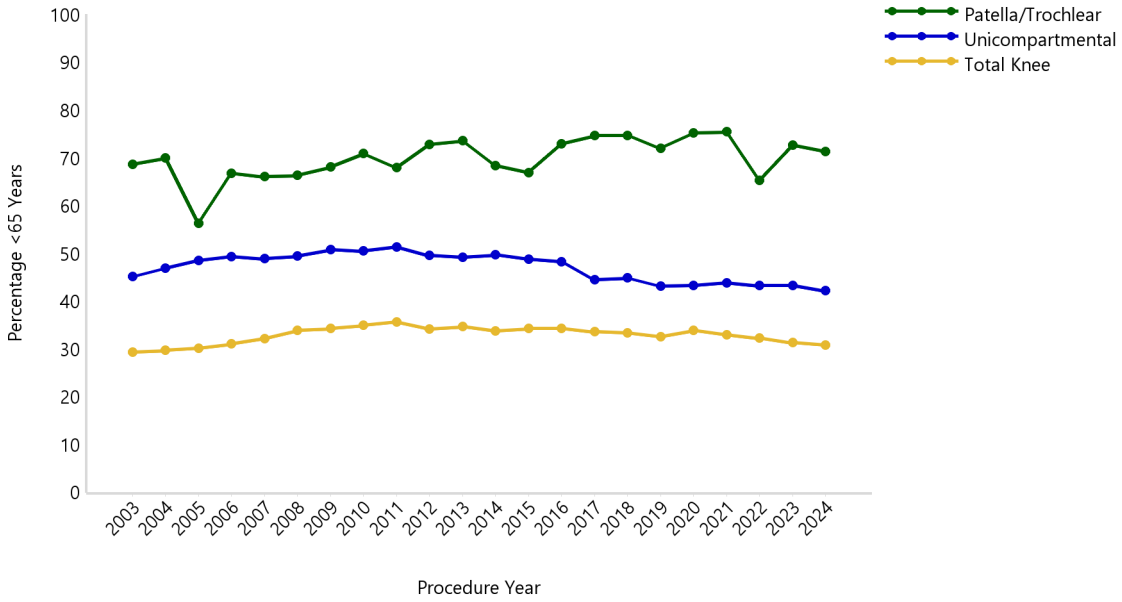


Figure SD42 Percentage of Patients Aged <65 Years by Revision Knee Replacement and Procedure Year

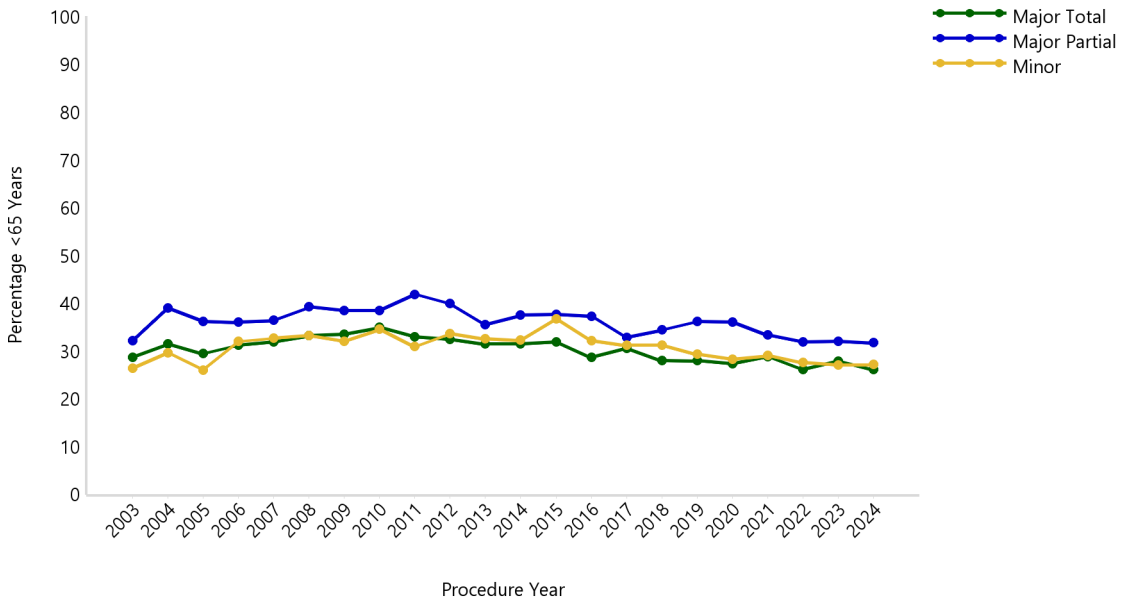


Figure SD43 Trends in Usage of Knee Replacement by Procedure Year

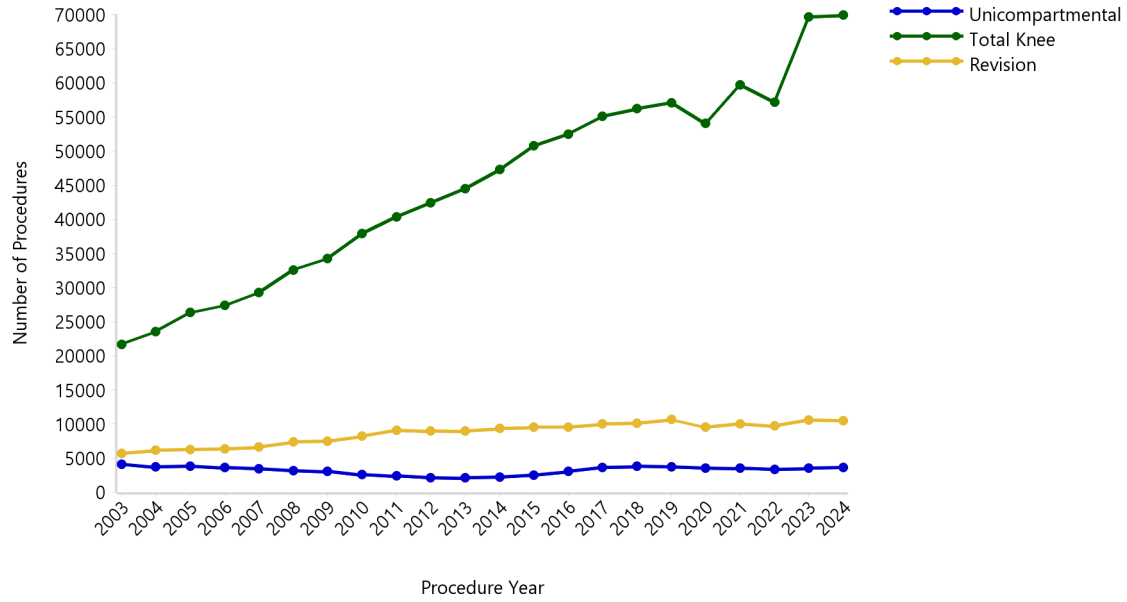


Figure SD44 Trends in Usage of Revision Knee Replacement by Procedure Year

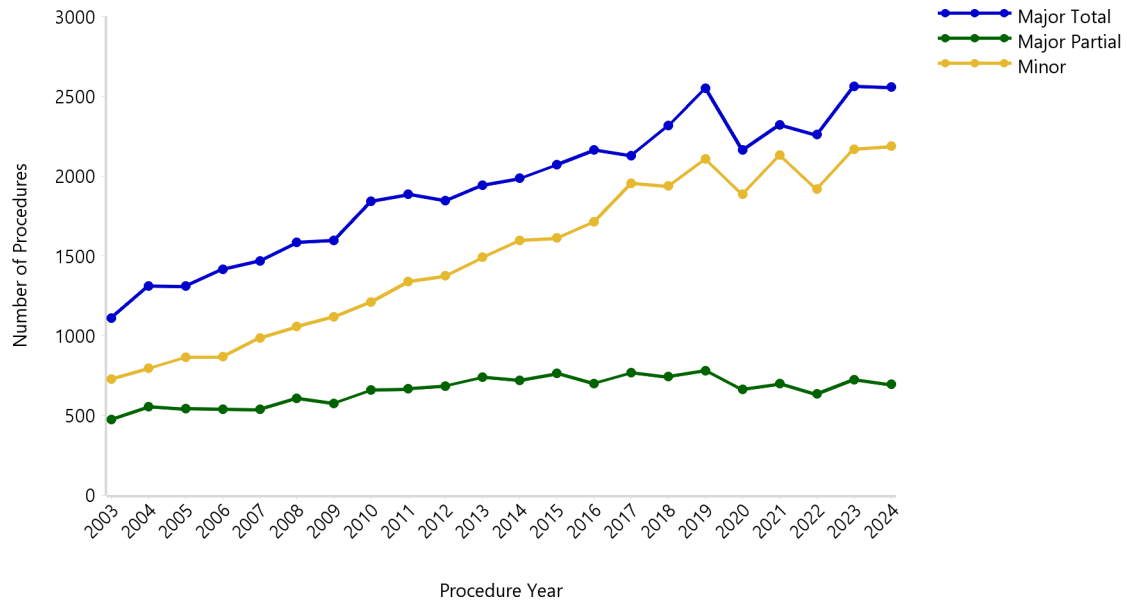


Table SD33 Incidence of Knee Replacement per 100,000 from 2003 to 2024

Knee Replacement	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
	N	N	N	N	N	N	N	N	N	N	N	N
Partial Resurfacing	.	0.0	0.1	0.2	0.2	0.1	0.1	0.0	0.0	0.0	0.1	0.1
Unispacer	0.1	0.1	0.0	.	.	.	.	.	.	.	.	.
Patella/Trochlear	0.8	0.9	0.9	0.9	0.9	1.1	1.1	1.2	1.1	1.0	1.1	1.0
Unicompartmental	20.8	18.7	19.2	17.7	16.8	15.2	14.2	11.9	10.8	9.4	9.2	9.7
Bicompartmental	.	.	.	0.0	0.2	0.2	0.2	0.1	0.0	0.0	.	.
All Primary Partial	**21.7**	**19.8**	**20.2**	**18.8**	**18.1**	**16.6**	**15.6**	**13.2**	**12.0**	**10.5**	**10.4**	**10.8**
Total Knee	110.2	118.4	130.5	133.9	140.7	153.5	158.2	172.1	180.7	186.7	192.5	201.4
All Primary Total	**110.2**	**118.4**	**130.5**	**133.9**	**140.7**	**153.5**	**158.2**	**172.1**	**180.7**	**186.7**	**192.5**	**201.4**
All Revisions	**11.7**	**13.4**	**13.5**	**13.8**	**14.4**	**15.3**	**15.2**	**16.9**	**17.4**	**17.2**	**18.1**	**18.3**
ALL KNEES	**143.6**	**151.5**	**164.2**	**166.5**	**173.1**	**185.5**	**188.9**	**202.2**	**210.1**	**214.4**	**220.9**	**230.5**

Knee Replacement	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	TOTAL
	N	N	N	N	N	N	N	N	N	N	N
Partial Resurfacing	0.0	0.0	0.0	0.0	.	.	.	0.0	.	0.0	0.0
Unispacer	.	.	.	.	.	.	.	.	.	.	0.0
Patella/Trochlear	1.0	1.3	1.2	1.3	1.2	1.2	1.2	1.1	1.2	1.1	1.1
Unicompartmental	10.7	12.6	14.9	15.2	14.8	13.9	13.8	13.1	13.4	13.5	13.9
Bicompartmental	.	.	.	.	.	.	.	.	0.0	.	0.0
All Primary Partial	**11.8**	**13.9**	**16.1**	**16.6**	**16.0**	**15.1**	**15.0**	**14.2**	**14.6**	**14.6**	**15.1**
Total Knee	213.2	217.1	224.1	224.9	225.2	210.5	232.1	219.9	261.4	257.1	193.4
All Primary Total	**213.2**	**217.1**	**224.1**	**224.9**	**225.2**	**210.5**	**232.1**	**219.9**	**261.4**	**257.1**	**193.4**
All Revisions	**18.7**	**18.9**	**19.7**	**20.0**	**21.5**	**18.4**	**20.0**	**18.5**	**20.5**	**20.0**	**17.6**
ALL KNEES	**243.7**	**250.0**	**259.9**	**261.5**	**262.6**	**243.9**	**267.1**	**252.6**	**296.5**	**291.7**	**226.1**

Figure SD45 Incidence of Knee Replacement per 100,000 from 2003 to 2024

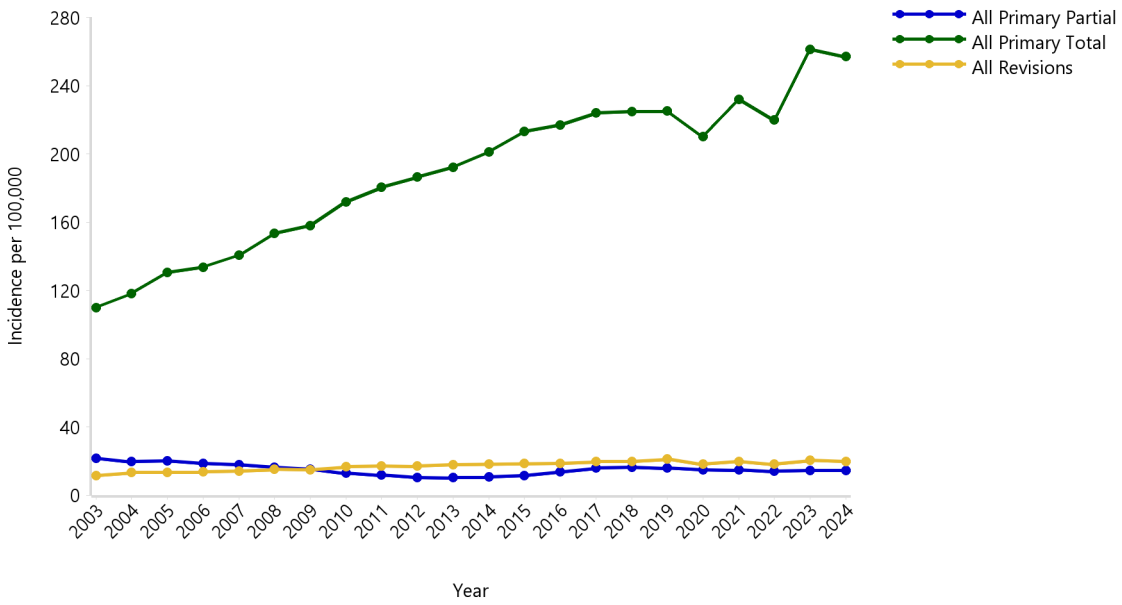


Table SD34 Incidence of Knee Replacement in Patients Aged <55 Years per 100,000 from 2003 to 2024

Knee Replacement	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
	N	N	N	N	N	N	N	N	N	N	N	N
Partial Resurfacing	.	0.0	0.1	0.2	0.2	0.1	0.1	0.0	0.0	0.0	0.1	0.1
Unispacer	0.1	0.1	.	.	.	.	.	.	.	.	.	.
Patella/Trochlear	0.4	0.4	0.4	0.4	0.4	0.5	0.5	0.6	0.5	0.5	0.6	0.6
Unicompartmental	3.5	3.4	3.6	3.6	3.2	2.9	2.7	2.3	2.4	1.9	1.9	2.0
Bicompartmental	.	.	.	.	0.1	0.0	0.0	0.0	0.0	0.0	.	.
All Primary Partial	**3.9**	**3.8**	**4.1**	**4.2**	**3.8**	**3.6**	**3.4**	**3.0**	**2.9**	**2.4**	**2.6**	**2.6**
Total Knee	10.1	10.5	11.3	11.5	12.9	13.9	14.6	16.3	17.2	17.1	18.5	18.2
All Primary Total	**10.1**	**10.5**	**11.3**	**11.5**	**12.9**	**13.9**	**14.6**	**16.3**	**17.2**	**17.1**	**18.5**	**18.2**
All Revisions	**1.4**	**1.8**	**1.5**	**1.6**	**1.7**	**2.0**	**1.7**	**2.1**	**2.0**	**1.9**	**2.0**	**2.0**
ALL KNEES	**15.4**	**16.1**	**16.9**	**17.3**	**18.4**	**19.5**	**19.7**	**21.4**	**22.1**	**21.5**	**23.0**	**22.8**

Knee Replacement	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	TOTAL
	N	N	N	N	N	N	N	N	N	N	N
Partial Resurfacing	0.0	0.0	0.0	0.0	.	.	.	0.0	.	0.0	0.0
Unispacer	.	.	.	.	.	.	.	.	.	.	0.0
Patella/Trochlear	0.6	0.8	0.8	0.7	0.7	0.7	0.7	0.6	0.7	0.6	0.6
Unicompartmental	2.0	2.4	2.6	2.7	2.5	2.5	2.4	2.4	2.4	2.3	2.6
Bicompartmental	.	.	.	.	.	.	.	.	.	.	0.0
All Primary Partial	**2.6**	**3.2**	**3.4**	**3.4**	**3.2**	**3.2**	**3.1**	**2.9**	**3.1**	**2.9**	**3.2**
Total Knee	19.6	20.4	20.4	20.0	19.5	19.8	21.4	20.1	22.3	21.5	17.4
All Primary Total	**19.6**	**20.4**	**20.4**	**20.0**	**19.5**	**19.8**	**21.4**	**20.1**	**22.3**	**21.5**	**17.4**
All Revisions	**2.2**	**2.1**	**2.0**	**2.1**	**2.1**	**1.8**	**1.9**	**1.6**	**1.6**	**1.7**	**1.9**
ALL KNEES	**24.4**	**25.8**	**25.8**	**25.4**	**24.8**	**24.9**	**26.4**	**24.6**	**27.0**	**26.1**	**22.5**

Figure SD46 Incidence of Knee Replacement in Patients Aged <55 Years per 100,000 from 2003 to 2024

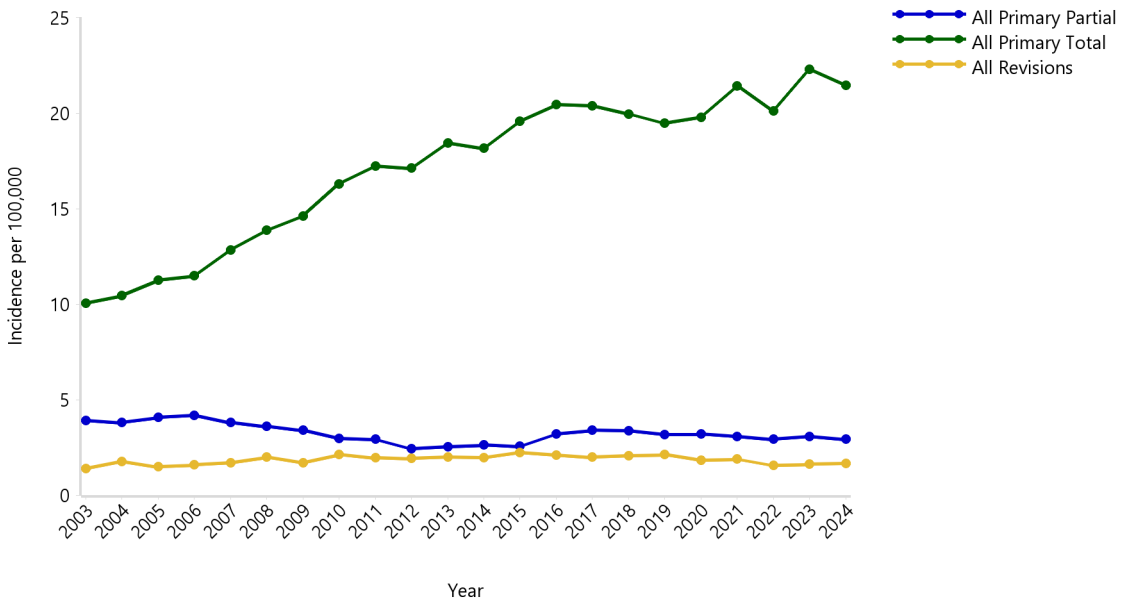


Table SD35 Incidence of Knee Replacement in Patients Aged 55-64 Years per 100,000 from 2003 to 2024

Knee Replacement	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
	N	N	N	N	N	N	N	N	N	N	N	N
Partial Resurfacing	.	.	0.0	0.2	0.2	0.1	0.2	0.1	0.1	0.1	0.2	0.1
Unispacer	0.2	0.6	0.0	.	.	.	.	.	.	.	.	.
Patella/Trochlear	1.9	3.1	1.9	2.4	2.5	3.0	2.9	3.5	3.2	3.2	2.7	2.2
Unicompartmental	66.2	59.4	61.5	55.4	52.5	47.2	45.9	37.6	32.9	28.6	27.8	29.5
Bicompartmental	.	.	.	.	0.5	0.8	0.6	0.5	0.2	0.1	.	.
All Primary Partial	**68.4**	**63.1**	**63.5**	**58.0**	**55.7**	**51.1**	**49.5**	**41.7**	**36.5**	**31.9**	**30.7**	**31.8**
Total Knee	242.7	260.1	287.5	300.7	320.5	370.5	383.7	421.8	449.5	449.2	466.1	479.2
All Primary Total	**242.7**	**260.1**	**287.5**	**300.7**	**320.5**	**370.5**	**383.7**	**421.8**	**449.5**	**449.2**	**466.1**	**479.2**
All Revisions	**22.5**	**28.4**	**26.6**	**29.7**	**31.0**	**33.3**	**34.3**	**38.5**	**38.6**	**39.0**	**38.7**	**39.9**
ALL KNEES	**333.6**	**351.6**	**377.5**	**388.4**	**407.3**	**455.0**	**467.5**	**502.0**	**524.6**	**520.2**	**535.4**	**550.9**

Knee Replacement	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	TOTAL
	N	N	N	N	N	N	N	N	N	N	N
Partial Resurfacing	0.0	0.1	.	.	.	.	.	.	.	.	0.1
Unispacer	.	.	.	.	.	.	.	.	.	.	0.0
Patella/Trochlear	2.5	3.0	3.0	4.4	3.3	2.9	3.2	2.7	3.2	2.7	2.9
Unicompartmental	33.1	37.7	40.8	42.3	39.3	36.5	37.5	34.0	35.7	36.2	40.7
Bicompartmental	.	.	.	.	.	.	.	.	.	.	0.1
All Primary Partial	**35.6**	**40.9**	**43.9**	**46.7**	**42.6**	**39.4**	**40.7**	**36.8**	**39.0**	**38.9**	**43.8**
Total Knee	512.0	518.7	523.6	523.7	513.1	490.6	526.8	488.8	578.2	567.3	451.5
All Primary Total	**512.0**	**518.7**	**523.6**	**523.7**	**513.1**	**490.6**	**526.8**	**488.8**	**578.2**	**567.3**	**451.5**
All Revisions	**42.1**	**38.0**	**40.7**	**39.2**	**41.6**	**34.2**	**39.2**	**34.0**	**40.2**	**37.7**	**36.3**
ALL KNEES	**589.7**	**597.6**	**608.1**	**609.6**	**597.2**	**564.2**	**606.7**	**559.6**	**657.3**	**643.9**	**531.6**

Figure SD47 Incidence of Knee Replacement in Patients Aged 55-64 Years per 100,000 from 2003 to 2024

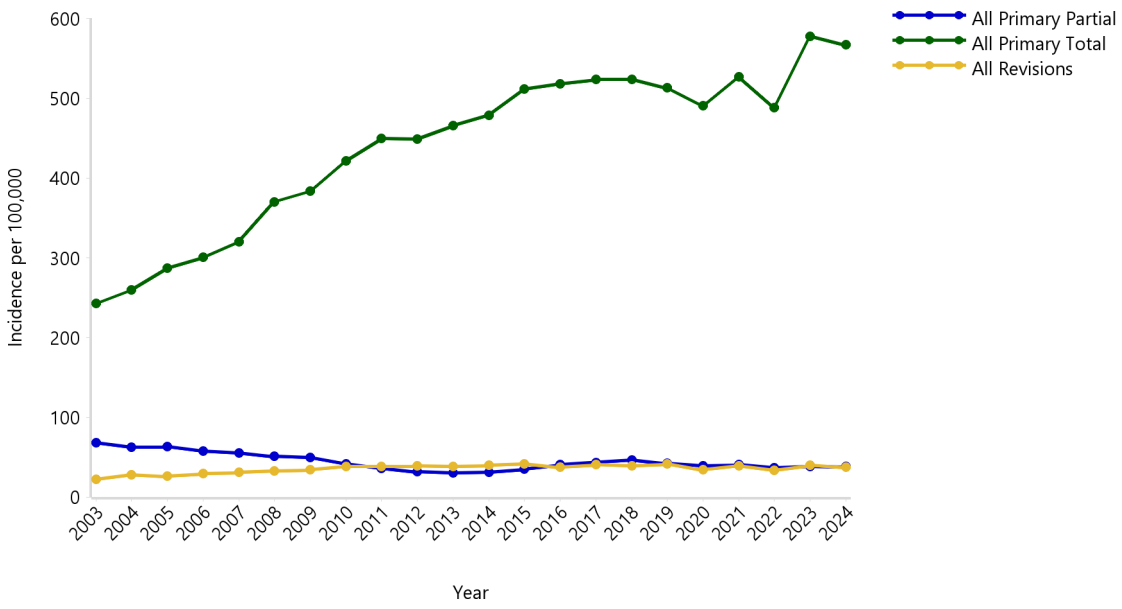


Table SD36 Incidence of Knee Replacement in Patients Aged 65-74 Years per 100,000 from 2003 to 2024

Knee Replacement	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
	N	N	N	N	N	N	N	N	N	N	N	N
Partial Resurfacing	.	.	.	0.4	0.3	0.3	0.1	.	.	0.1	0.3	0.1
Unispacer	.	0.2	.	.	.	.	.	.	.	.	.	.
Patella/Trochlear	2.2	1.8	3.0	2.6	2.8	2.6	2.5	2.9	2.8	2.1	2.1	2.8
Unicompartmental	101.7	84.2	87.5	81.2	73.9	65.7	62.5	52.5	44.5	39.5	37.8	38.9
Bicompartmental	.	.	.	0.2	0.6	0.7	0.6	0.2	0.1	.	.	.
All Primary Partial	**104.0**	**86.2**	**90.5**	**84.3**	**77.7**	**69.2**	**65.8**	**55.7**	**47.4**	**41.7**	**40.2**	**41.8**
Total Knee	616.4	659.7	705.4	726.2	750.5	810.5	835.2	886.5	910.0	944.6	945.2	994.7
All Primary Total	**616.4**	**659.7**	**705.4**	**726.2**	**750.5**	**810.5**	**835.2**	**886.5**	**910.0**	**944.6**	**945.2**	**994.7**
All Revisions	**56.3**	**65.8**	**67.2**	**66.3**	**66.4**	**70.8**	**73.4**	**80.5**	**82.4**	**80.7**	**85.4**	**86.3**
ALL KNEES	**776.7**	**811.7**	**863.0**	**876.8**	**894.6**	**950.5**	**974.4**	**1022.7**	**1039.9**	**1066.9**	**1070.8**	**1122.7**

Knee Replacement	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	TOTAL
	N	N	N	N	N	N	N	N	N	N	N
Partial Resurfacing	0.1	.	.	.	.	.	.	.	.	.	0.1
Unispacer	.	.	.	.	.	.	.	.	.	.	0.0
Patella/Trochlear	2.8	2.6	2.4	2.8	2.4	1.9	2.0	2.8	2.6	2.2	2.5
Unicompartmental	44.1	53.6	64.7	62.2	61.6	57.8	52.8	50.4	50.4	52.1	58.0
Bicompartmental	.	.	.	.	.	.	.	.	0.0	.	0.1
All Primary Partial	**47.0**	**56.3**	**67.1**	**65.0**	**63.9**	**59.8**	**54.8**	**53.2**	**53.1**	**54.3**	**60.6**
Total Knee	1024.0	1031.0	1065.8	1054.2	1046.6	949.3	1025.1	951.8	1149.1	1127.3	947.3
All Primary Total	**1024.0**	**1031.0**	**1065.8**	**1054.2**	**1046.6**	**949.3**	**1025.1**	**951.8**	**1149.1**	**1127.3**	**947.3**
All Revisions	**83.8**	**84.6**	**88.5**	**91.0**	**93.5**	**81.5**	**80.5**	**76.9**	**83.8**	**81.3**	**79.9**
ALL KNEES	**1154.8**	**1171.9**	**1221.3**	**1210.2**	**1204.1**	**1090.5**	**1160.3**	**1081.9**	**1286.0**	**1262.9**	**1087.8**

Figure SD48 Incidence of Knee Replacement in Patients Aged 65-74 Years per 100,000 from 2003 to 2024

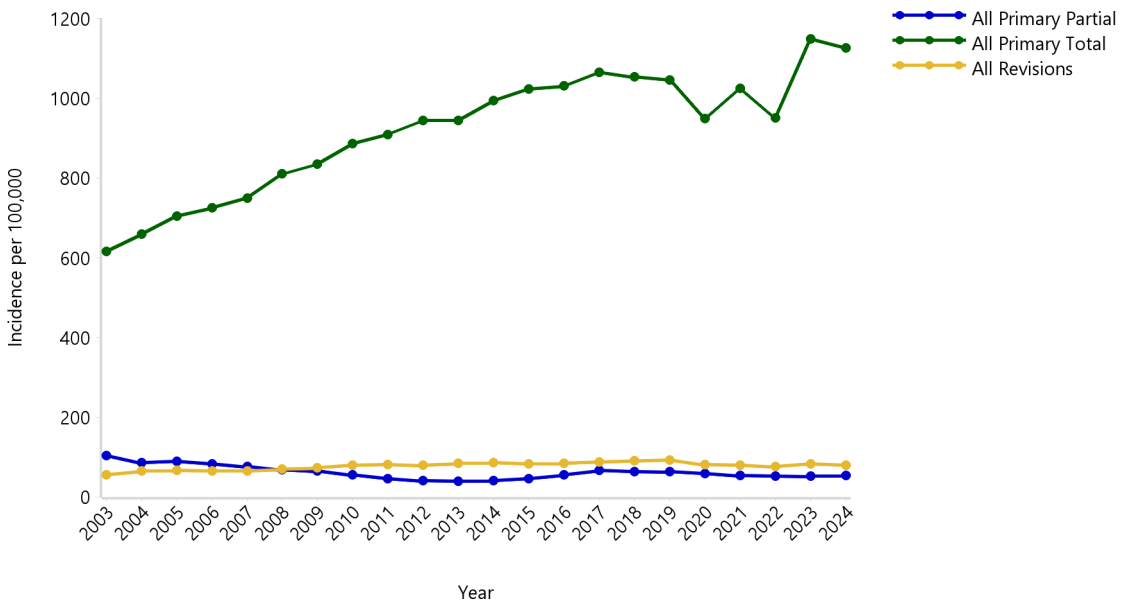


Table SD37 Incidence of Knee Replacement in Patients Aged ≥75 Years per 100,000 from 2003 to 2024

Knee Replacement	2003 N	2004 N	2005 N	2006 N	2007 N	2008 N	2009 N	2010 N	2011 N	2012 N	2013 N	2014 N
Partial Resurfacing	.	.	.	.	0.1	0.1	.	.	.	0.1	0.4	.
Unispacer	.	0.1	.	.	.	.	.	.	.	.	.	.
Patella/Trochlear	1.4	2.5	2.8	1.9	2.0	3.0	2.5	2.3	2.3	1.6	1.8	1.3
Unicompartmental	76.0	69.8	64.2	55.3	55.8	49.5	41.1	32.5	30.1	26.5	25.9	25.8
Bicompartmental	.	.	.	0.1	0.7	1.1	0.4	0.3	.	.	.	.
All Primary Partial	**77.5**	**72.3**	**67.0**	**57.3**	**58.6**	**53.7**	**44.0**	**35.1**	**32.4**	**28.2**	**28.1**	**27.2**
Total Knee	604.2	635.4	702.6	688.3	698.5	720.8	715.6	754.7	759.1	774.4	781.9	799.3
All Primary Total	**604.2**	**635.4**	**702.6**	**688.3**	**698.5**	**720.8**	**715.6**	**754.7**	**759.1**	**774.4**	**781.9**	**799.3**
All Revisions	**76.4**	**75.2**	**79.9**	**77.8**	**80.9**	**81.9**	**77.4**	**79.9**	**84.7**	**79.2**	**83.4**	**81.3**
ALL KNEES	**758.0**	**782.9**	**849.5**	**823.3**	**838.0**	**856.4**	**837.0**	**869.7**	**876.2**	**881.8**	**893.3**	**907.7**

Knee Replacement	2015 N	2016 N	2017 N	2018 N	2019 N	2020 N	2021 N	2022 N	2023 N	2024 N	TOTAL N
Partial Resurfacing	0.1	.	.	.	.	.	.	.	.	.	0.0
Unispacer	.	.	.	.	.	.	.	.	.	.	0.0
Patella/Trochlear	1.7	1.8	1.5	1.4	1.7	1.5	1.3	1.5	1.0	1.3	1.7
Unicompartmental	27.3	29.1	38.8	42.4	41.5	35.9	37.5	35.0	37.5	37.3	40.3
Bicompartmental	.	.	.	.	.	.	.	.	.	.	0.1
All Primary Partial	**29.1**	**30.8**	**40.3**	**43.7**	**43.2**	**37.4**	**38.8**	**36.5**	**38.5**	**38.6**	**42.2**
Total Knee	828.2	817.4	834.3	827.8	830.2	726.3	795.7	773.9	929.6	912.5	780.2
All Primary Total	**828.2**	**817.4**	**834.3**	**827.8**	**830.2**	**726.3**	**795.7**	**773.9**	**929.6**	**912.5**	**780.2**
All Revisions	**79.2**	**87.1**	**87.6**	**86.5**	**96.3**	**77.8**	**88.2**	**81.0**	**88.7**	**87.6**	**83.2**
ALL KNEES	**936.5**	**935.3**	**962.1**	**958.0**	**969.7**	**841.5**	**922.7**	**891.5**	**1056.7**	**1038.8**	**905.6**

Figure SD49 Incidence of Knee Replacement in Patients Aged ≥75 Years per 100,000 from 2003 to 2024

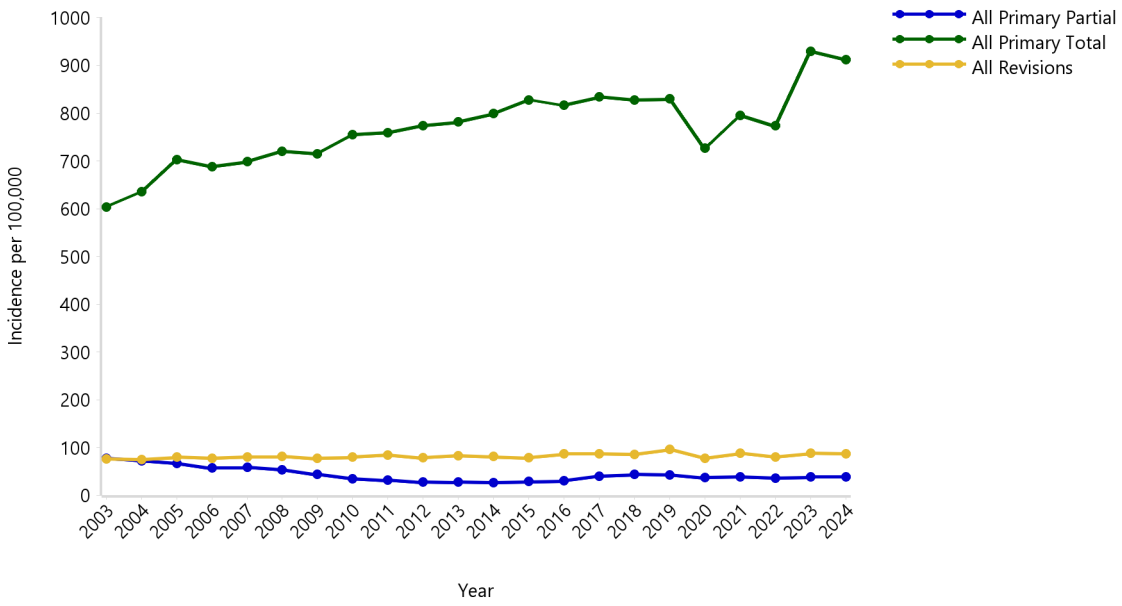


Figure SD50 Trends in Usage of Knee Replacement by State/Territory and Year

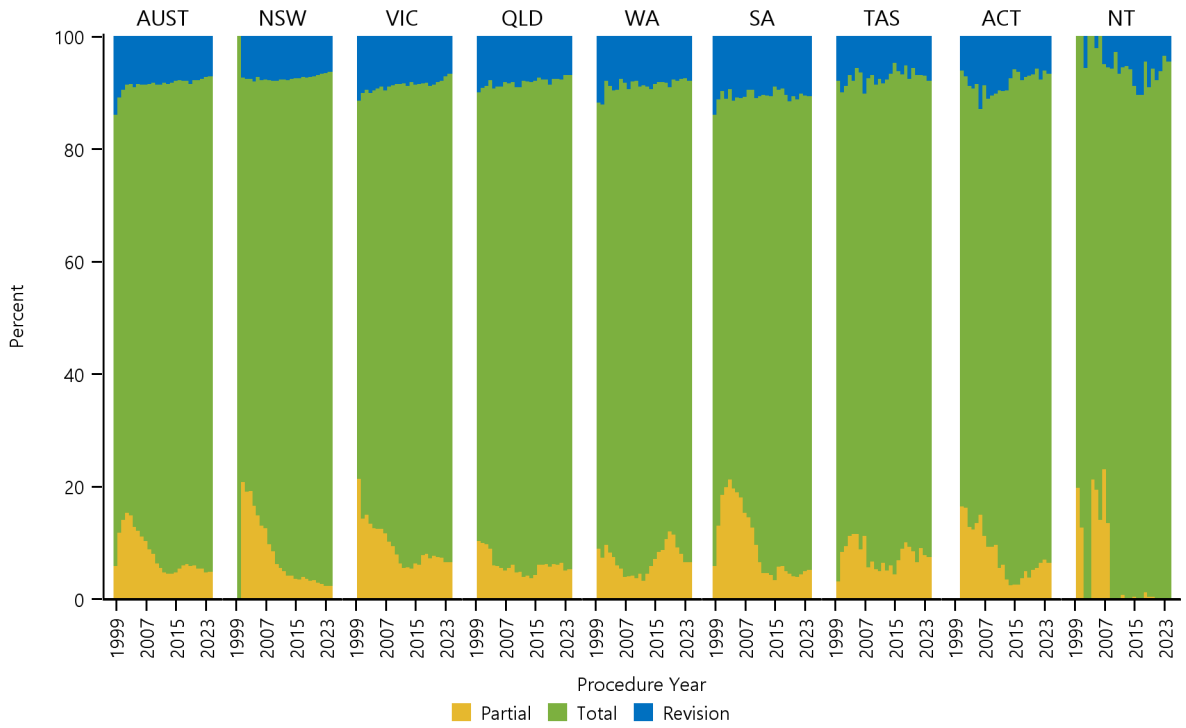


Table SD38 Time between Procedures for Bilateral Primary Knee Replacement

Bilateral Procedures	Same Day			1 day - 3 months			3 months - 6 months			≥6 months			TOTAL		
	N	Row%	Col%	N	Row%	Col%	N	Row%	Col%	N	Row%	Col%	N	Row%	Col%
Both Partial	5929	39.1	9.3	789	5.2	7.9	1056	7.0	4.9	7392	48.7	3.6	15166	100.0	5.0
Both Total	57630	21.2	89.9	9090	3.3	91.0	20362	7.5	94.0	184664	68.0	90.2	271746	100.0	90.5
Total/Partial	513	3.8	0.8	107	0.8	1.1	246	1.8	1.1	12602	93.6	6.2	13468	100.0	4.5
TOTAL	**64072**	**21.3**	**100.0**	**9986**	**3.3**	**100.0**	**21664**	**7.2**	**100.0**	**204658**	**68.1**	**100.0**	**300380**	**100.0**	**100.0**

Table SD39 Number of Knee Procedures by Patient

Knee Procedures	Not Revised		1 Revision		2 Revisions		3 or more Revisions		TOTAL	
	N	Row%	N	Row%	N	Row%	N	Row%	N	Row%
Unknown Primary/Primaries	.	.	8462	75.3	2022	18.0	749	6.7	11233	100.0
Single Primary Procedure	481387	94.3	22550	4.4	4414	0.9	2219	0.4	510570	100.0
2 Primary Procedures	273532	91.1	19028	6.3	5268	1.8	2552	0.8	300380	100.0
TOTAL	**754919**	**91.8**	**50040**	**6.1**	**11704**	**1.4**	**5520**	**0.7**	**822183**	**100.0**

PRIMARY PARTIAL KNEE REPLACEMENT

CLASSES OF PARTIAL KNEE REPLACEMENT

The Registry subcategorises partial knee replacement into five classes. These are defined by the type of prostheses used.

Partial resurfacing involves the use of one or more button prostheses to replace part of the natural articulating surface on one or more sides of the joint in one or more articular compartments of the knee. The last recorded procedure was in 2022.

Unispacer involves the use of a medial or lateral femorotibial compartment articular spacer. The last recorded procedure was in 2005.

Bicompartmental involves the replacement of the medial femoral and trochlea articular surface of the knee with a single femoral prosthesis, as well as the medial tibial articular surface with a unicompartmental tibial prosthesis. It may also include the use of a patella prosthesis. The last recorded procedure was in 2012.

Patella/trochlea involves the use of a trochlea prosthesis to replace the femoral trochlea articular surface and on most occasions a patella prosthesis.

Unicompartmental involves the replacement of the femoral and tibial articular surface of either the medial or lateral femorotibial compartment using unicompartmental femoral and tibial prostheses.

Detailed information on partial resurfacing, Unispacer and bicompartmental knee replacement is available in the supplementary report 'Prosthesis Types with No or Minimal Use' on the AOANJRR website: https://aoanjrr.sahmri.com/annual-reports-2025

Table SD40 Primary Partial Knee Replacement by Age and Gender

Gender	Number	Percent	Minimum	Maximum	Median	Mean	Std Dev
Female	39536	46.8%	13	98	64	64.2	10.6
Male	44859	53.2%	17	98	66	65.7	9.8
TOTAL	**84395**	**100.0%**	**13**	**98**	**65**	**65.0**	**10.2**

Figure SD51 Primary Partial Knee Replacement by Age and Gender

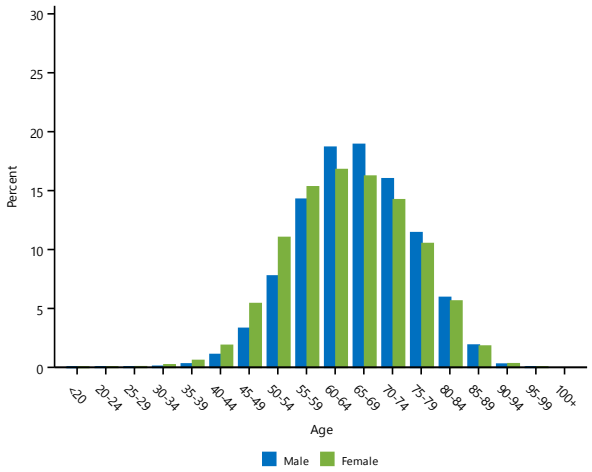
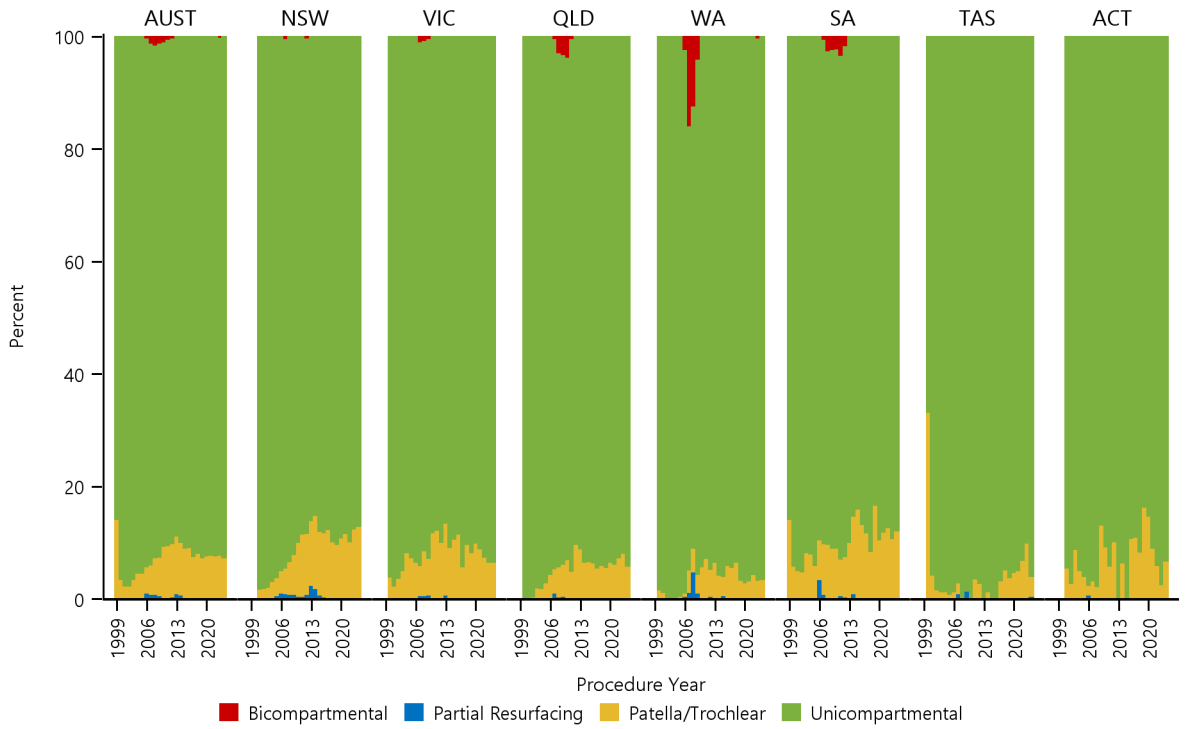


Table SD41 Primary Partial Knee Replacement by Primary Diagnosis

Primary Diagnosis	Number	Percent
Osteoarthritis	83621	99.1
Osteonecrosis	480	0.6
Rheumatoid Arthritis	169	0.2
Other Inflammatory Arthritis	81	0.1
Fracture	9	0.0
Osteochondritis Dissecans	6	0.0
Tumour	3	0.0
Chondrocalcinosis	1	0.0
Other	25	0.0
TOTAL	**84395**	**100.0**

Figure SD52 Trends in Usage of Primary Partial Knee Replacement by State/Territory and Year



Note: NT is excluded from this graph due to low procedure numbers

PRIMARY PARTIAL RESURFACING KNEE REPLACEMENT

Table SD42 Primary Partial Resurfacing Knee Replacement by Age and Gender

Gender	Number	Percent	Minimum	Maximum	Median	Mean	Std Dev
Female	121	48.8%	30	88	51	51.3	11.7
Male	127	51.2%	17	85	49	48.8	14.3
TOTAL	**248**	**100.0%**	**17**	**88**	**50**	**50.0**	**13.1**

Figure SD53 Primary Partial Resurfacing Knee Replacement by Age and Gender

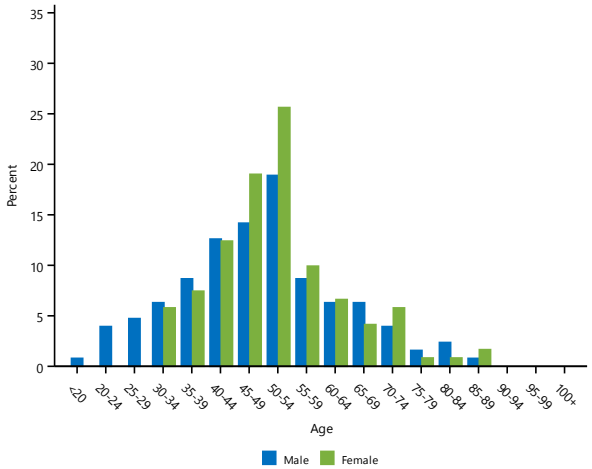


Table SD43 Primary Partial Resurfacing Knee Replacement by Primary Diagnosis

Primary Diagnosis	Number	Percent
Osteoarthritis	227	91.5
Osteonecrosis	11	4.4
Osteochondritis Dissecans	4	1.6
Other Inflammatory Arthritis	2	0.8
Chondrocalcinosis	1	0.4
Other	3	1.2
TOTAL	**248**	**100.0**

PRIMARY UNISPACER KNEE REPLACEMENT

Table SD44 Primary Unispacer Knee Replacement by Age and Gender

Gender	Number	Percent	Minimum	Maximum	Median	Mean	Std Dev
Female	19	47.5%	40	69	56	54.1	8.4
Male	21	52.5%	41	75	55	55.2	9.2
TOTAL	**40**	**100.0%**	**40**	**75**	**55**	**54.7**	**8.7**

Figure SD54 Primary Unispacer Knee Replacement by Age and Gender

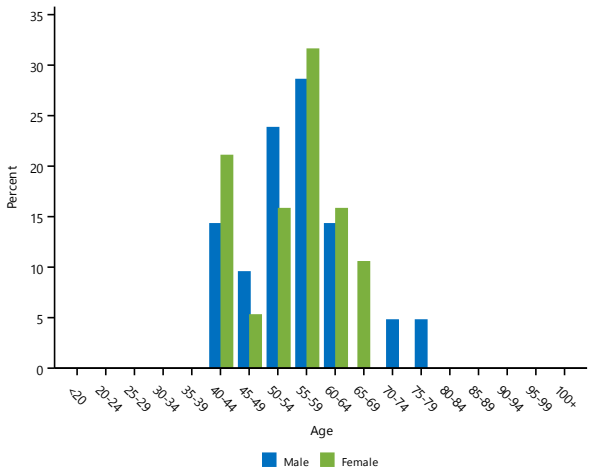


Table SD45 Primary Unispacer Knee Replacement by Primary Diagnosis

Primary Diagnosis	Number	Percent
Osteoarthritis	40	100.0
TOTAL	**40**	**100.0**

PRIMARY BICOMPARTMENTAL KNEE REPLACEMENT

Table SD46 Primary Bicompartmental Knee Replacement by Age and Gender

Gender	Number	Percent	Minimum	Maximum	Median	Mean	Std Dev
Female	101	60.8%	46	84	61	63.9	10.5
Male	65	39.2%	45	86	62	65.1	9.9
TOTAL	**166**	**100.0%**	**45**	**86**	**62**	**64.3**	**10.3**

Figure SD55 Primary Bicompartmental Knee Replacement by Age and Gender

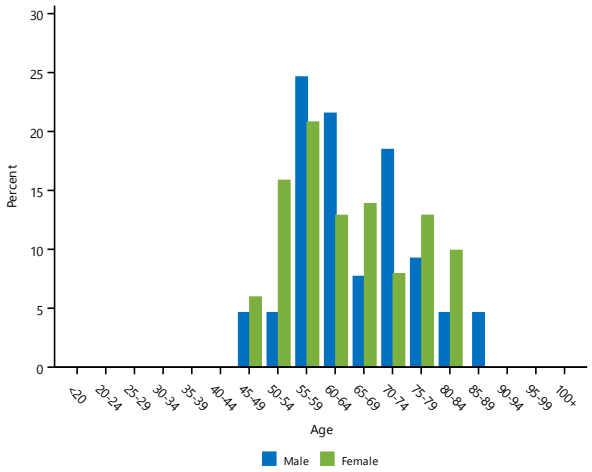


Table SD47 Primary Bicompartmental Knee Replacement by Primary Diagnosis

Primary Diagnosis	Number	Percent
Osteoarthritis	161	97.0
Osteonecrosis	3	1.8
Other Inflammatory Arthritis	1	0.6
Rheumatoid Arthritis	1	0.6
TOTAL	**166**	**100.0**

PRIMARY PATELLA/TROCHLEA KNEE REPLACEMENT

Table SD48 Primary Patella/Trochlea Knee Replacement by Age and Gender

Gender	Number	Percent	Minimum	Maximum	Median	Mean	Std Dev
Female	4382	76.6%	21	95	57	57.7	11.7
Male	1340	23.4%	24	95	61	60.8	12.8
TOTAL	**5722**	**100.0%**	**21**	**95**	**58**	**58.4**	**12.1**

Figure SD56 Primary Patella/Trochlea Knee Replacement by Age and Gender

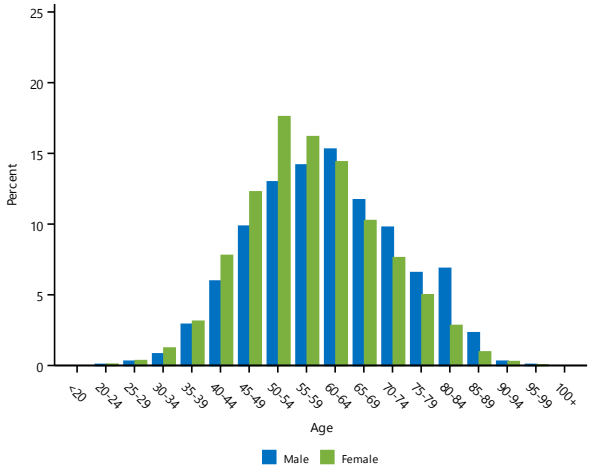


Table SD49 Primary Patella/Trochlea Knee Replacement by Primary Diagnosis

Primary Diagnosis	Number	Percent
Osteoarthritis	5658	98.9
Other Inflammatory Arthritis	23	0.4
Rheumatoid Arthritis	9	0.2
Osteonecrosis	6	0.1
Fracture	4	0.1
Tumour	2	0.0
Other	20	0.3
TOTAL	**5722**	**100.0**

PRIMARY UNICOMPARTMENTAL KNEE REPLACEMENT

Table SD50 Primary Unicompartmental Knee Replacement by Age and Gender

Gender	Number	Percent	Minimum	Maximum	Median	Mean	Std Dev
Female	34913	44.6%	13	98	65	65.0	10.2
Male	43306	55.4%	24	98	66	65.9	9.6
TOTAL	**78219**	**100.0%**	**13**	**98**	**65**	**65.5**	**9.8**

Figure SD57 Primary Unicompartmental Knee Replacement by Age and Gender

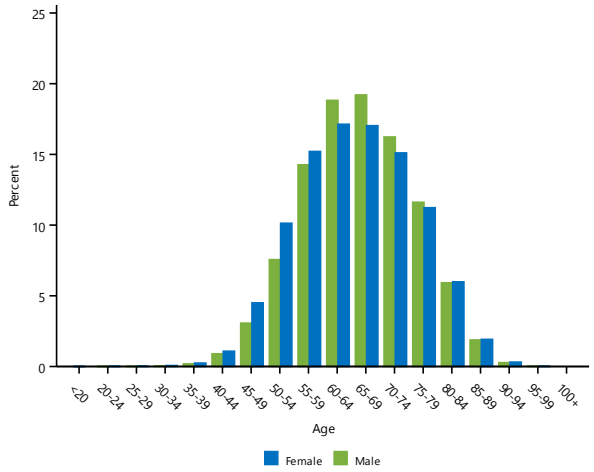
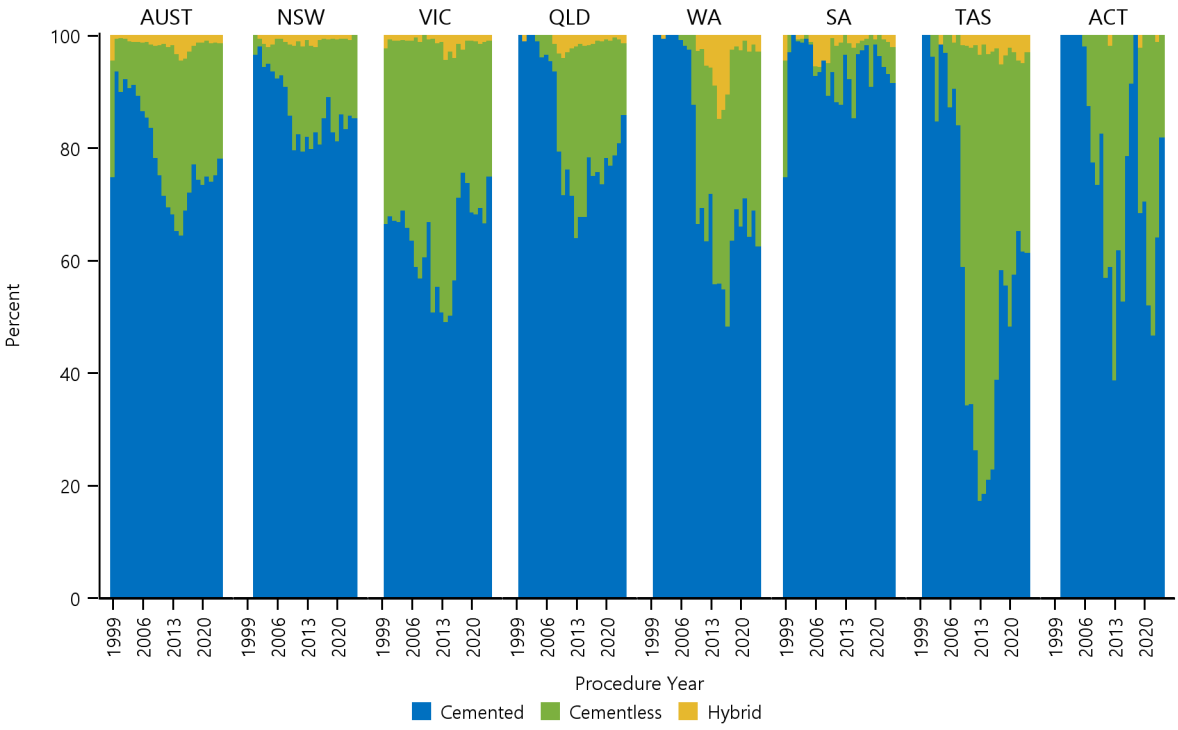


Table SD51 Primary Unicompartmental Knee Replacement by Primary Diagnosis

Primary Diagnosis	Number	Percent
Osteoarthritis	77535	99.1
Osteonecrosis	460	0.6
Rheumatoid Arthritis	159	0.2
Other Inflammatory Arthritis	55	0.1
Fracture	5	0.0
Osteochondritis Dissecans	2	0.0
Tumour	1	0.0
Other	2	0.0
TOTAL	**78219**	**100.0**

Figure SD58 Trends in Fixation of Primary Unicompartmental Knee Replacement by State/Territory and Year



Note: NT is excluded from this graph due to low procedure numbers

PRIMARY TOTAL KNEE REPLACEMENT

The Registry defines a total knee replacement as a replacement of the entire femorotibial articulation using a single femoral and a single tibial prosthesis. This may or may not be combined with a patella replacement.

Table SD52 Primary Total Knee Replacement by Age and Gender

Gender	Number	Percent	Minimum	Maximum	Median	Mean	Std Dev
Female	572988	55.8%	8	107	69	68.8	9.3
Male	453947	44.2%	8	101	68	68.1	9.0
TOTAL	**1026935**	**100.0%**	**8**	**107**	**69**	**68.5**	**9.2**

Figure SD59 Primary Total Knee Replacement by Age and Gender

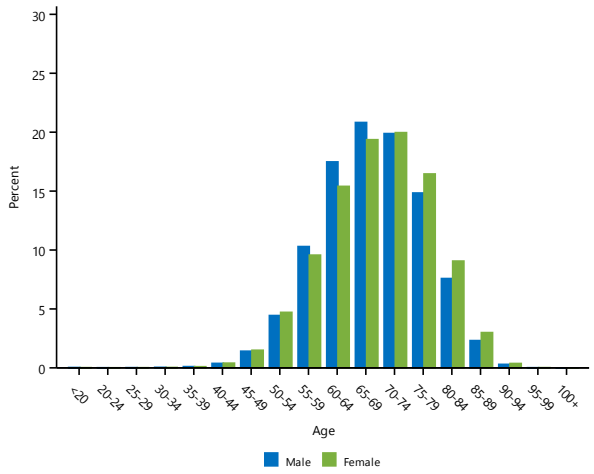
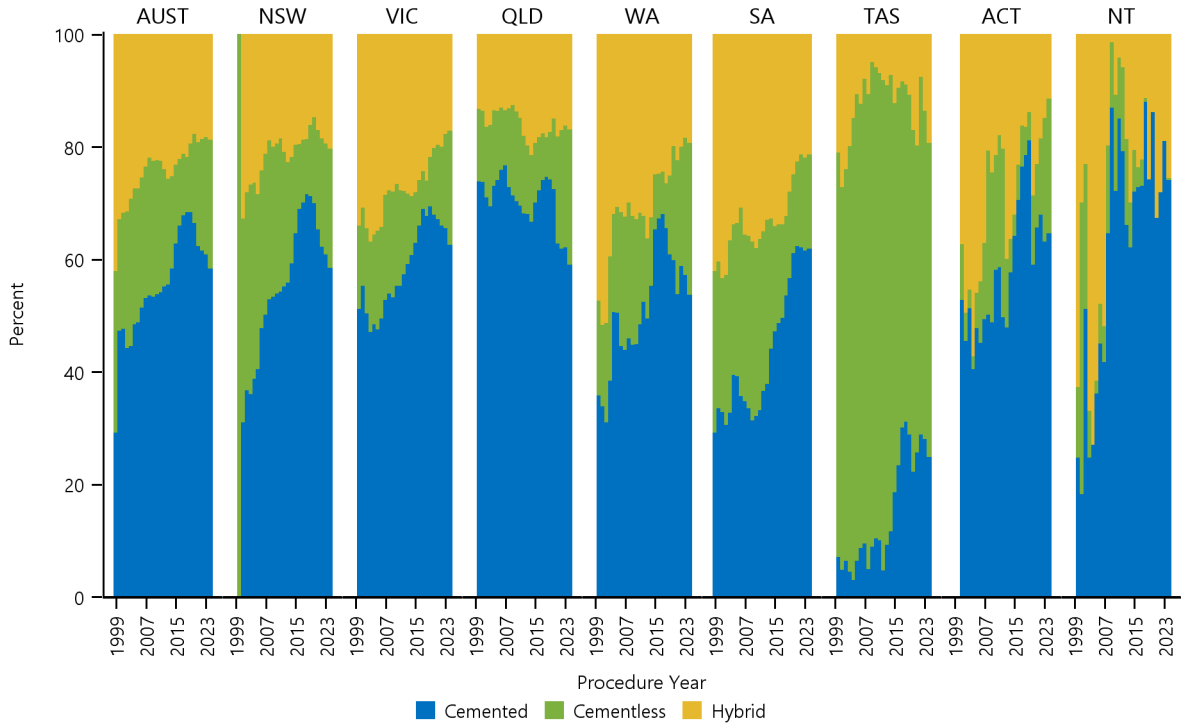


Table SD53 Primary Total Knee Replacement by Primary Diagnosis

Primary Diagnosis	Number	Percent
Osteoarthritis	1005322	97.9
Rheumatoid Arthritis	11193	1.1
Other Inflammatory Arthritis	5104	0.5
Osteonecrosis	2921	0.3
Tumour	1196	0.1
Fracture	884	0.1
Chondrocalcinosis	15	0.0
Other	300	0.0
TOTAL	**1026935**	**100.0**

Figure SD60 Trends in Fixation of Primary Total Knee Replacement by State/Territory and Year



ALL REVISION KNEE REPLACEMENT

CLASSES OF REVISION PROCEDURES

The Registry defines revision of a joint replacement as any re-operation of a previous joint replacement procedure that involves the insertion, removal and/or replacement of a prosthesis or implant. Revisions are sub-categorised into three classes: major total, major partial and minor.

Major total revision is the insertion, removal and/or replacement of all major components.

Major partial revision is the insertion, removal and/or replacement of one major component.

Minor revision is the insertion removal and/or replacement of any other prostheses or implant including patellar prostheses in knee replacement.

Major components are prostheses that are fixed to bone. These are the femoral and tibial prostheses in either partial or total knee replacement. Although a patella prosthesis is fixed to bone it is not considered a major component.

Different types of major partial and minor revisions are identified based on the specific prostheses or implants used in the revision.

Table SD54 All Revision Knee Replacement by Age and Gender

Gender	Number	Percent	Minimum	Maximum	Median	Mean	Std Dev
Male	46492	49.3%	13	101	70	69.0	10.1
Female	47794	50.7%	10	99	70	69.3	10.4
TOTAL	**94286**	**100.0%**	**10**	**101**	**70**	**69.2**	**10.2**

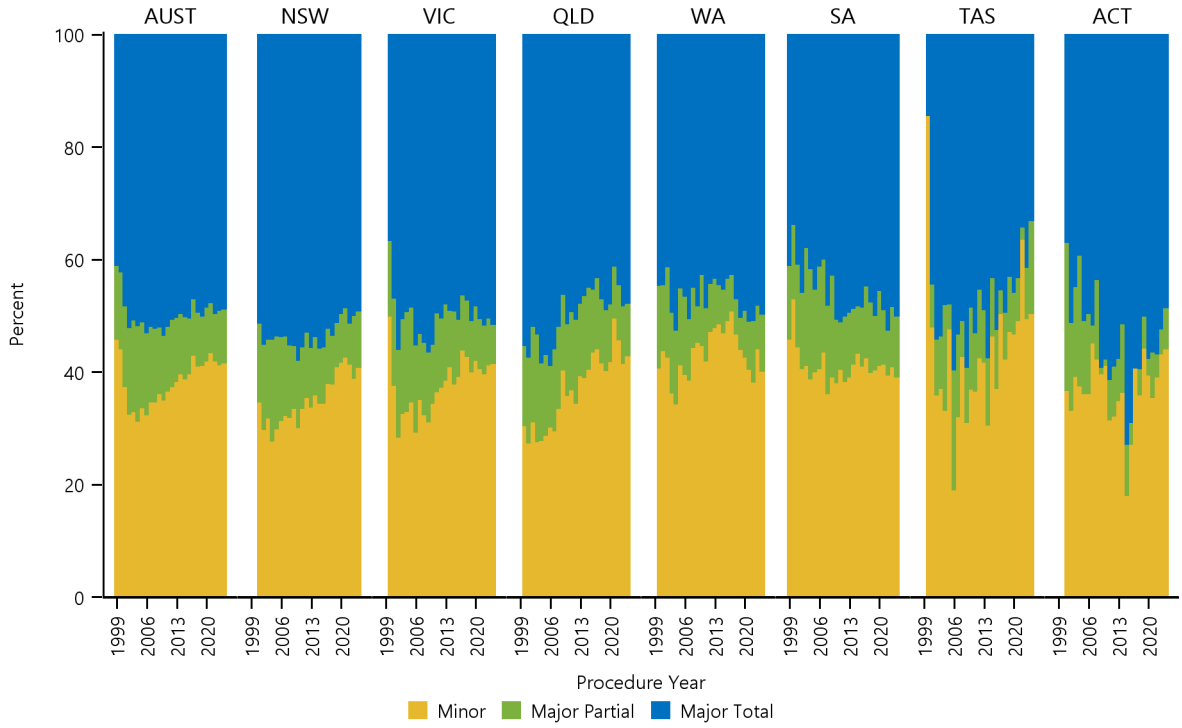
Table SD55 Reason for Revision of All Knee Replacement

Reason for Revision	Number	Percent
Loosening	25813	27.4
Infection	24889	26.4
Progression Of Disease	6276	6.7
Instability	5831	6.2
Pain	5465	5.8
Patellofemoral Pain	3853	4.1
Patella Erosion	3180	3.4
Wear Tibial Insert	2951	3.1
Lysis	2852	3.0
Fracture	2739	2.9
Arthrofibrosis	2091	2.2
Malalignment	1375	1.5
Implant Breakage Tibial Insert	936	1.0
Metal Related Pathology	756	0.8
Bearing Dislocation	691	0.7
Incorrect Sizing	536	0.6
Implant Breakage Tibial	517	0.5
Implant Breakage Patella	494	0.5
Wear Tibial	493	0.5
Patella Maltracking	454	0.5
Prosthesis Dislocation	331	0.4
Wear Patella	310	0.3
Implant Breakage Femoral	277	0.3
Synovitis	213	0.2
Osteonecrosis	142	0.2
Tumour	88	0.1
Heterotopic Bone	51	0.1
Wear Femoral	22	0.0
Patella Dislocation	6	0.0
Incorrect Side	3	0.0
Other	651	0.7
TOTAL	**94286**	**100.0**

Table SD56 Type of Revision of All Knee Replacement

Type of Revision	Number	Percent
TKR (Tibial/Femoral)	44453	47.1
Insert Only	16987	18.0
Patella Only	9514	10.1
Insert/Patella	6670	7.1
Tibial Component	5194	5.5
Cement Spacer	4783	5.1
Femoral Component	4058	4.3
Uni Insert Only	877	0.9
Removal of Prostheses	473	0.5
Minor Components	437	0.5
Uni Tibial Component	291	0.3
UKR (Uni Tibial/Uni Femoral)	210	0.2
Uni Femoral Component	116	0.1
Patella/Trochlear Resurfacing	104	0.1
Cement Only	56	0.1
Reinsertion of Components	43	0.0
Removal of Patella	8	0.0
Partial Resurfacing	7	0.0
Unispacer	4	0.0
Uni Insert/Patella	1	0.0
TOTAL	**94286**	**100.0**

Figure SD61 Trends in Usage of All Revision Knee Replacement by State/Territory and Year



Note: NT is excluded from this graph due to low procedure numbers

Shoulder Replacement

CATEGORIES OF SHOULDER REPLACEMENT

The Registry groups shoulder replacement into three broad categories: primary partial, primary total and revision shoulder replacement.

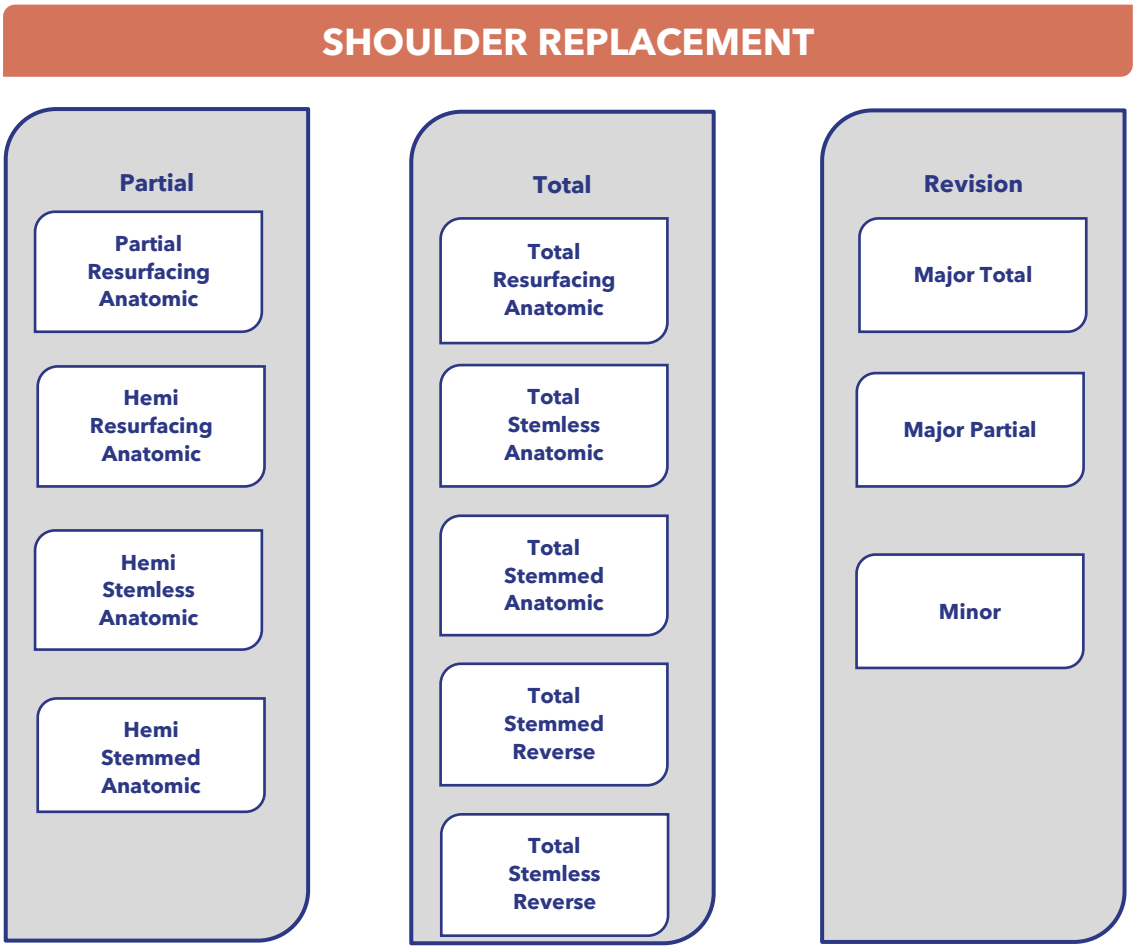
A primary replacement is the initial joint replacement procedure and involves replacing either part (partial) or all (total) of the articular surface.
Primary partial and primary total shoulder replacements are further categorised into subclasses depending on the type of prosthesis used. Partial shoulder subclasses include partial resurfacing anatomic, hemi resurfacing anatomic, hemi stemless anatomic and hemi stemmed anatomic.

Primary total shoulder replacement is subcategorised into five classes. These are defined by the type of prosthesis used. The use of stemless anatomic shoulder replacement has been growing considerably. As such mid head humeral prostheses are now classified as stemless anatomic and stemless reverse to reflect their differing polarity.

Total shoulder subclasses include total resurfacing anatomic, total stemless anatomic, total stemmed anatomic, total stemmed reverse and total stemless reverse. Definitions for each of these classes are detailed in the subsequent sections.

Revision procedures are re-operations of previous shoulder replacements where one or more of the prosthetic components are replaced, removed, or another component is added. Revision procedures include re-operations of primary partial, primary total, or previous revision procedures.

Shoulder revision procedures are sub-categorised into three classes: minor, major partial and major total.

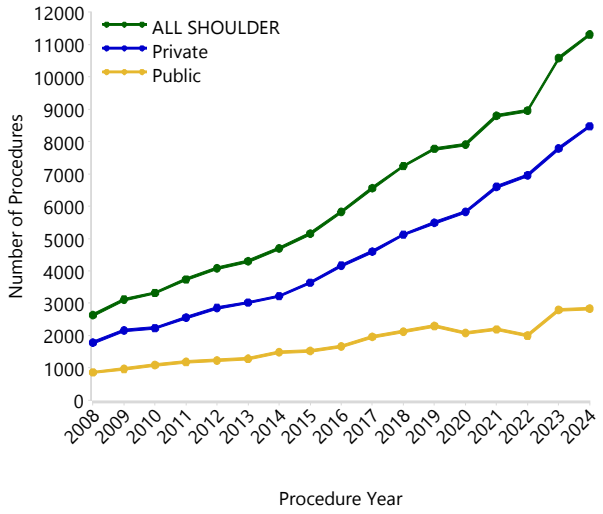


PUBLIC AND PRIVATE SECTOR

The national commencement of shoulder replacement reporting to the Registry was November 2007. In 2024, 74.9% of all shoulder replacement procedures reported to the Registry were undertaken in private hospitals.

In the last year, there was an increase in the number of shoulder replacements recorded in the private and the public sector. There were 8,470 private sector procedures (an increase of 8.9% compared to number of private sector procedures in 2023) and 2,836 public sector procedures (an increase of 1.5% in the number of public sector procedures since 2023) (Figure SD62).

Figure SD62 Shoulder Replacement by Hospital Sector



Since 2008, shoulder replacement has increased by 376.6% in the private sector compared to 230.2% in the public sector.

There were 192 primary partial shoulder replacements reported for the private sector in 2024; an increase of 42.2% compared to 2023 and a decrease of 56.1% since 2008. In the public sector, there were 94 partial shoulder replacements; an increase of 4.4% compared to 2023 and a decrease of 77.7% since 2008.

In 2024, 7,668 primary total shoulder replacements were reported in the private sector, an increase of 7.1% compared to 2023. In the public sector in 2024, there were 2,506 primary total shoulder replacements, an increase of 2.2% compared to 2023. Since 2008, primary total shoulder replacement has increased by 562.2% in the private sector compared to 596.1% in the public sector.

There were 610 private sector revision shoulder replacements reported in 2024. This is an increase of 25.5% compared to 2023. In the public sector, there were 236 revision shoulder replacements, a decrease of 6.3% compared to 2023. Since 2008, revision shoulder replacement has increased by 235.2% in the private sector compared to 206.5% in the public sector.

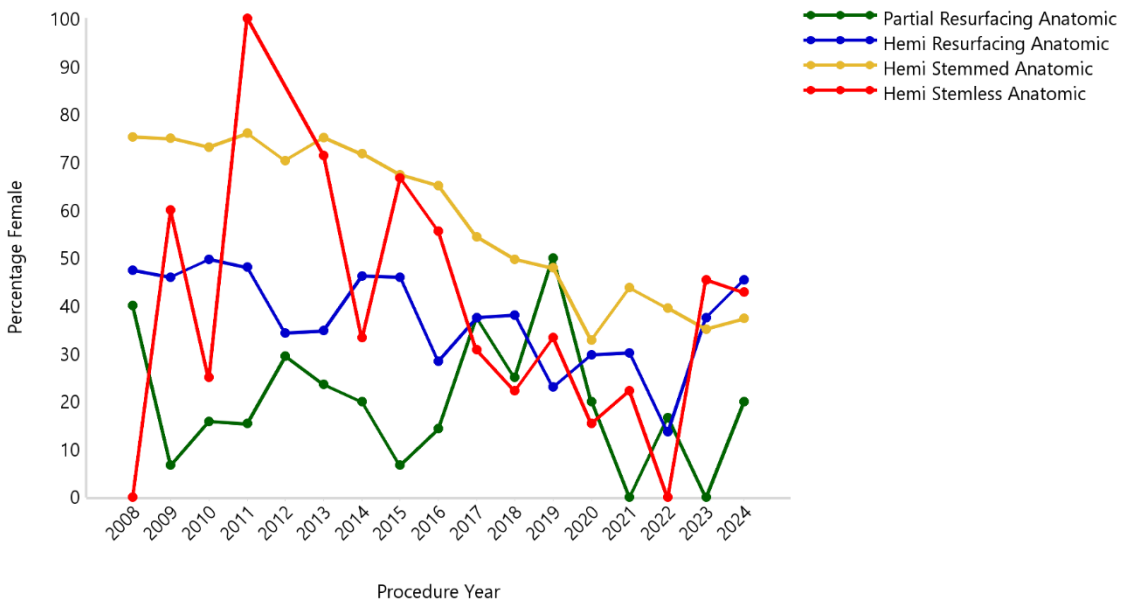
Table SD57 All Shoulder Replacements by Age and Gender

Gender	Number	Percent	Minimum	Maximum	Median	Mean	Std Dev
Male	44194	41.1%	14	100	70	69.1	10.1
Female	63387	58.9%	12	103	74	73.0	8.8
TOTAL	**107581**	**100.0%**	**12**	**103**	**72**	**71.4**	**9.6**

Table SD58 Number of Shoulder Replacements by Gender

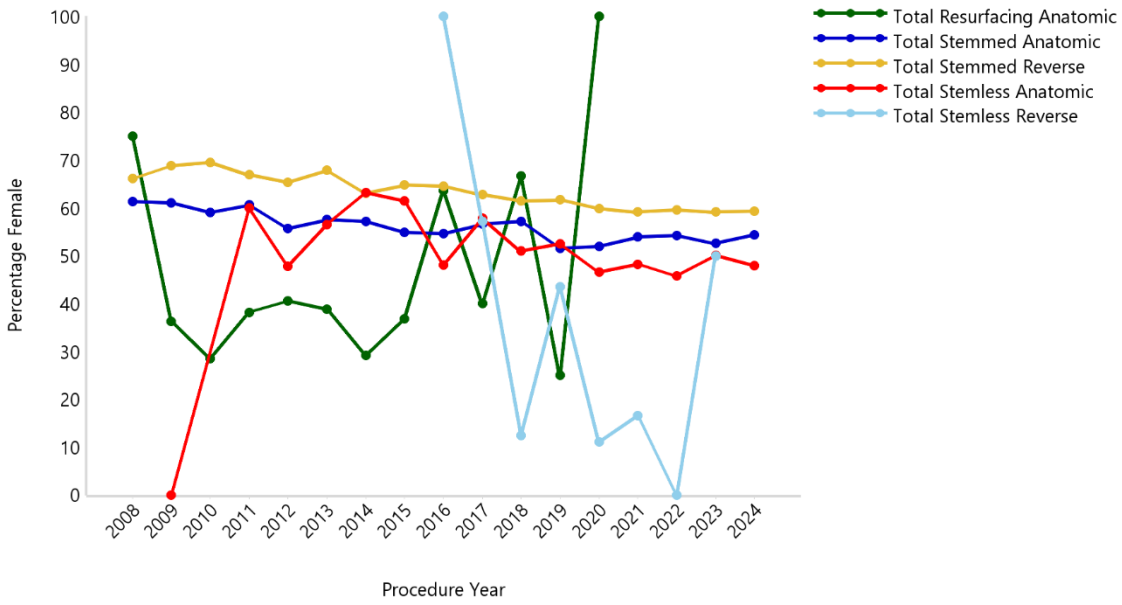
Shoulder Replacement	Female		Male		TOTAL	
	N	%	N	%	N	%
Partial Resurfacing Anatomic	51	21.3	188	78.7	239	2.8
Hemi Resurfacing Anatomic	753	39.9	1132	60.1	1885	22.4
Hemi Stemmed Anatomic	4031	65.5	2127	34.5	6158	73.3
Hemi Stemless Anatomic	43	35.2	79	64.8	122	1.5
All Primary Partial	**4878**	**58.0**	**3526**	**42.0**	**8404**	**100.0**
Total Resurfacing Anatomic	95	40.4	140	59.6	235	0.3
Total Stemmed Anatomic	9609	56.9	7284	43.1	16893	18.8
Total Stemmed Reverse	40943	61.5	25664	38.5	66607	74.2
Total Stemless Anatomic	2961	50.1	2955	49.9	5916	6.6
Total Stemless Reverse	21	30.9	47	69.1	68	0.1
All Primary Total	**53629**	**59.8**	**36090**	**40.2**	**89719**	**100.0**
Major Total	1897	55.3	1535	44.7	3432	36.3
Major Partial	1999	50.5	1962	49.5	3961	41.9
Minor	984	47.7	1081	52.3	2065	21.8
All Revision	**4880**	**51.6**	**4578**	**48.4**	**9458**	**100.0**
ALL SHOULDERS	**63387**	**58.9**	**44194**	**41.1**	**107581**	**100.0**

Figure SD63 Percentage of Females by Type of Partial Shoulder Replacement and Procedure Year



Note: There were no hemi stemless anatomic procedures recorded in 2012

Figure SD64 Percentage of Females by Type of Total Shoulder Replacement and Procedure Year



Note: There were no total stemless anatomic procedures recorded in 2008 and 2010
There were no total resurfacing anatomic procedures recorded in 2021 and 2023

Figure SD65 Percentage of Females by Revision Shoulder Replacement and Procedure Year

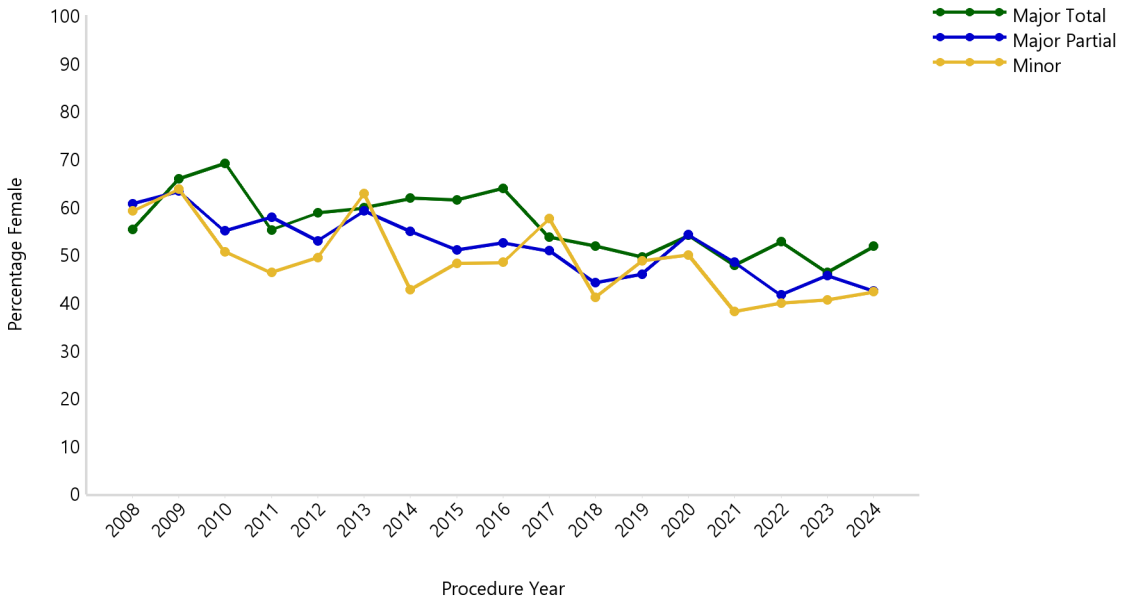
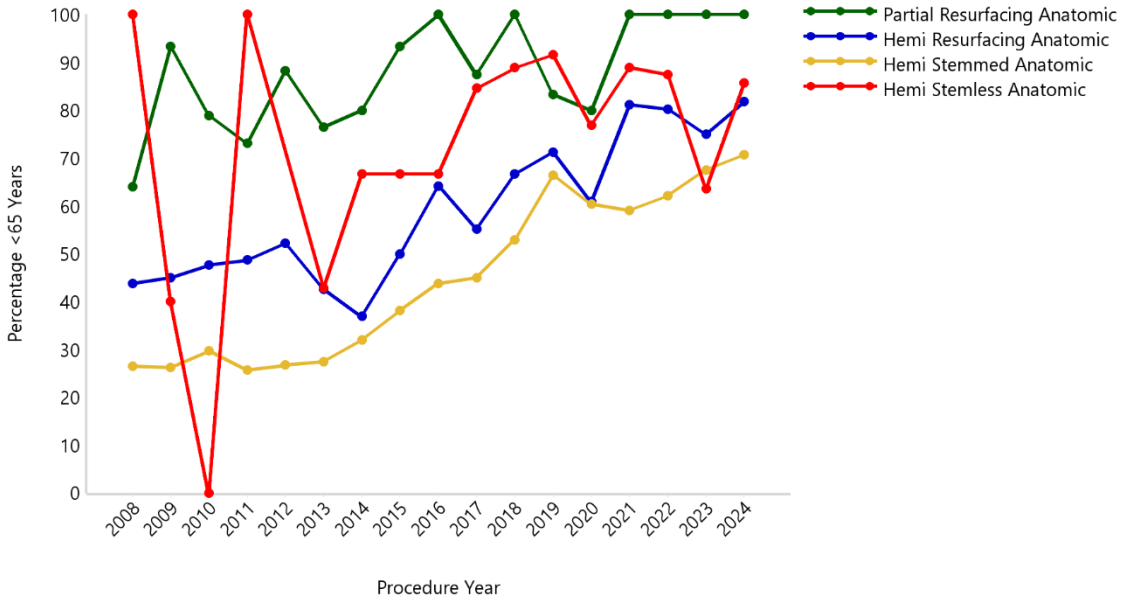
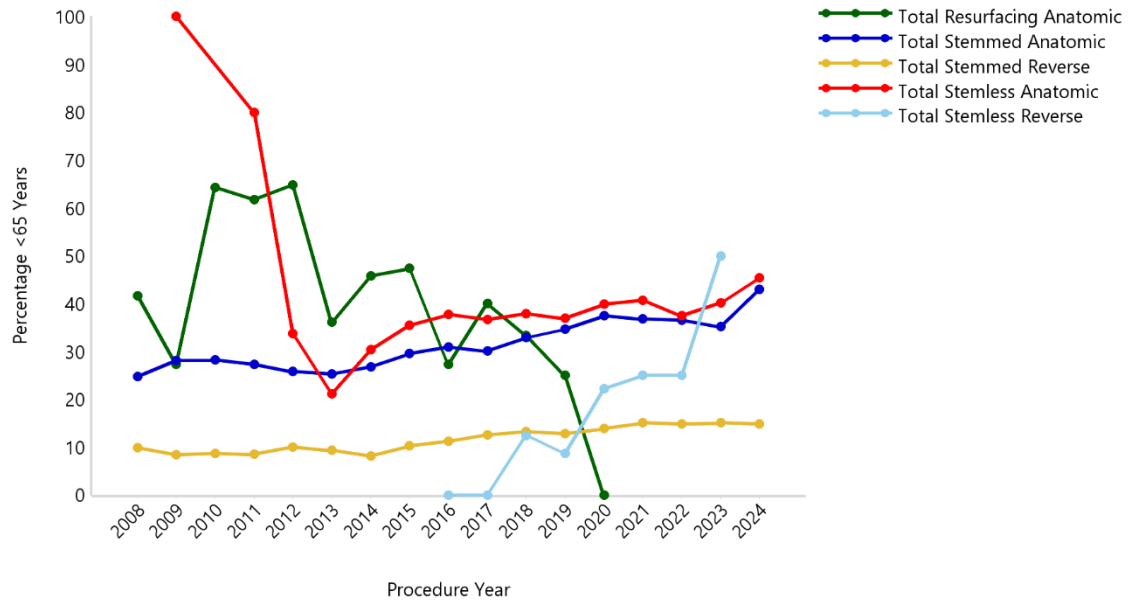


Figure SD66 Percentage of Patients Aged <65 Years by Type of Partial Shoulder Replacement and Procedure Year



Note: There were no hemi stemless anatomic procedures recorded in 2012

Figure SD67 Percentage of Patients Aged <65 Years by Type of Total Shoulder Replacement and Procedure Year



Note: There were no total stemless anatomic procedures recorded in 2008
There were no total resurfacing anatomic procedures recorded between 2021 and 2024

Figure SD68 Percentage of Patients Aged <65 Years by Revision Shoulder Replacement and Procedure Year

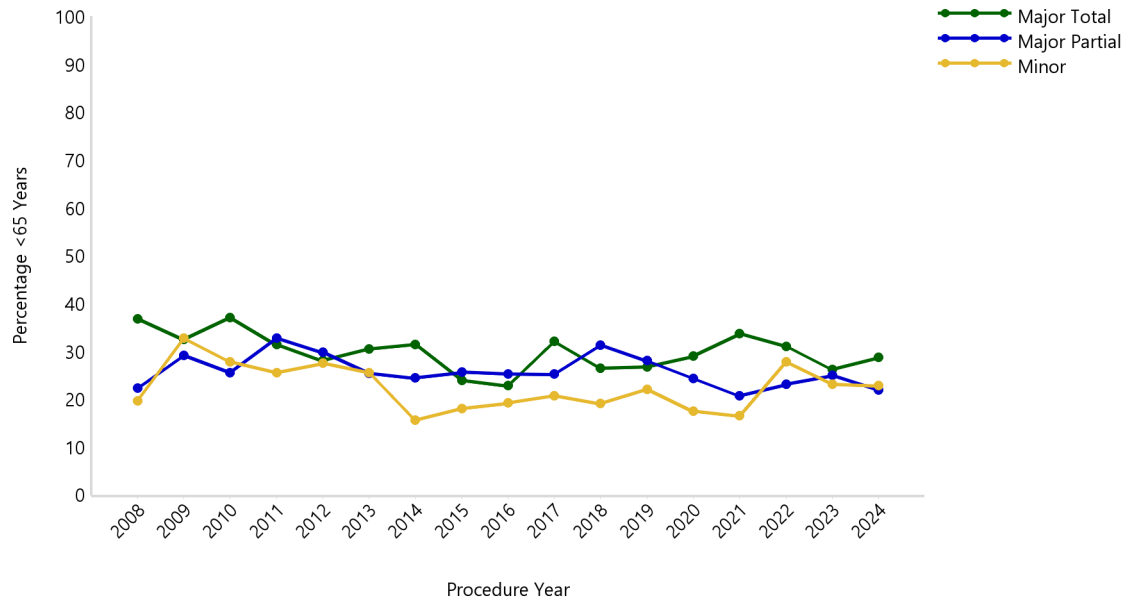


Figure SD69 Trends in Usage of Partial Shoulder Replacement by Procedure Year

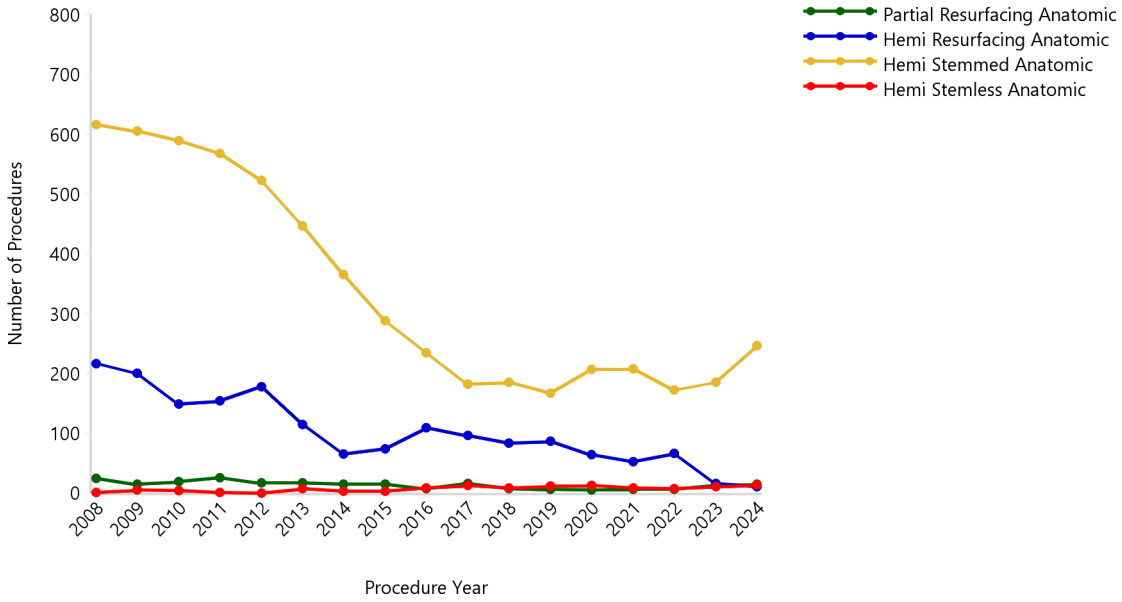


Figure SD70 Trends in Usage of Total Shoulder Replacement by Procedure Year

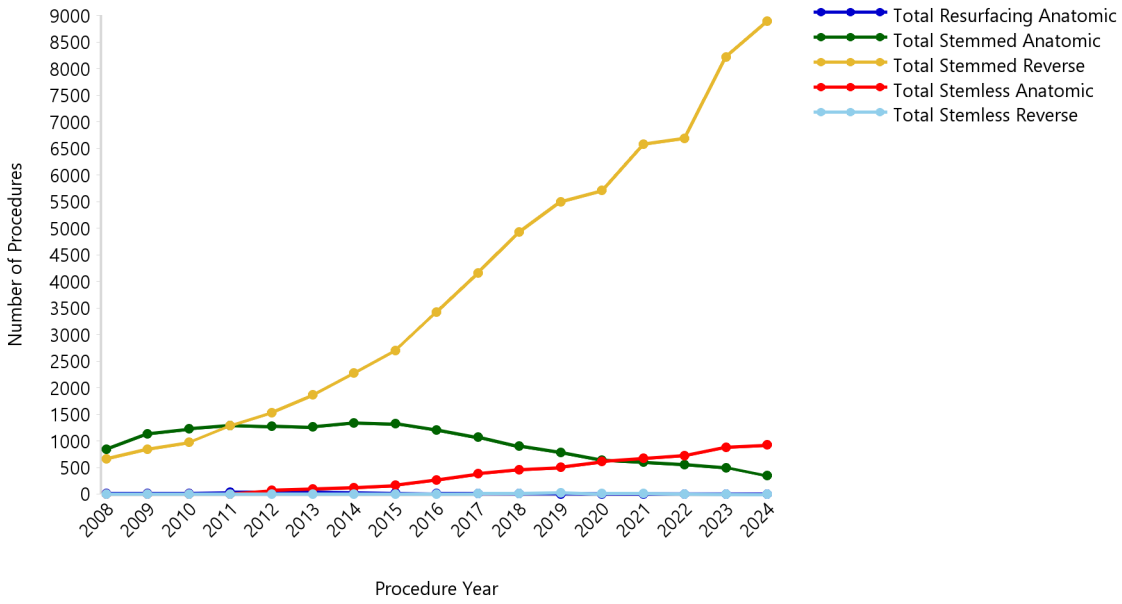


Figure SD71 Trends in Usage of Revision Shoulder Replacement by Procedure Year

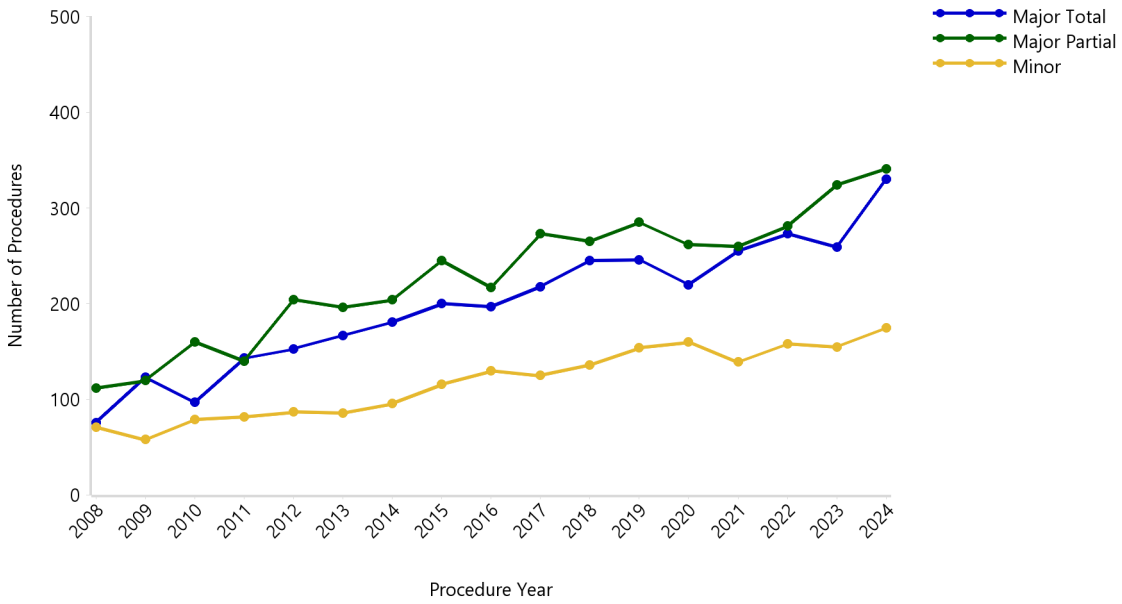


Table SD59 Incidence of Shoulder Replacement per 100,000 from 2008 to 2024

Shoulder Replacement	2008	2009	2010	2011	2012	2013	2014	2015	2016
	N	N	N	N	N	N	N	N	N
Partial Resurfacing Anatomic	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0
Hemi Resurfacing Anatomic	1.0	0.9	0.7	0.7	0.8	0.5	0.3	0.3	0.5
Hemi Stemmed Anatomic	2.9	2.8	2.7	2.5	2.3	1.9	1.6	1.2	1.0
Hemi Stemless Anatomic	0.0	0.0	0.0	0.0	.	0.0	0.0	0.0	0.0
All Primary Partial	**4.0**	**3.8**	**3.5**	**3.4**	**3.2**	**2.5**	**1.9**	**1.6**	**1.5**
Total Resurfacing Anatomic	0.1	0.1	0.1	0.2	0.2	0.2	0.1	0.1	0.0
Total Stemmed Anatomic	4.0	5.2	5.6	5.8	5.6	5.5	5.7	5.6	5.0
Total Stemmed Reverse	3.1	3.9	4.4	5.8	6.7	8.1	9.7	11.3	14.2
Total Stemless Anatomic	.	0.0	.	0.0	0.3	0.4	0.5	0.7	1.1
Total Stemless Reverse	.	.	.	.	.	.	.	.	0.0
All Primary Total	**7.1**	**9.2**	**10.1**	**11.7**	**12.9**	**14.1**	**16.0**	**17.7**	**20.3**
All Revisions	**1.2**	**1.4**	**1.5**	**1.6**	**2.0**	**1.9**	**2.0**	**2.4**	**2.2**
ALL SHOULDERS	**12.4**	**14.4**	**15.1**	**16.7**	**18.0**	**18.6**	**20.0**	**21.6**	**24.1**

Shoulder Replacement	2017	2018	2019	2020	2021	2022	2023	2024	TOTAL
	N	N	N	N	N	N	N	N	N
Partial Resurfacing Anatomic	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0
Hemi Resurfacing Anatomic	0.4	0.3	0.3	0.2	0.2	0.3	0.1	0.0	0.3
Hemi Stemmed Anatomic	0.7	0.7	0.7	0.8	0.8	0.7	0.7	0.9	1.1
Hemi Stemless Anatomic	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.0
All Primary Partial	**1.2**	**1.1**	**1.1**	**1.1**	**1.1**	**1.0**	**0.8**	**1.1**	**1.5**
Total Resurfacing Anatomic	0.0	0.0	0.0	0.0	.	.	.	.	0.0
Total Stemmed Anatomic	4.3	3.6	3.1	2.5	2.3	2.2	1.9	1.3	3.2
Total Stemmed Reverse	16.9	19.7	21.7	22.2	25.6	25.7	30.9	32.7	12.9
Total Stemless Anatomic	1.6	1.8	2.0	2.4	2.6	2.8	3.3	3.4	1.2
Total Stemless Reverse	0.0	0.0	0.1	0.0	0.0	0.0	0.0	.	0.0
All Primary Total	**22.9**	**25.2**	**26.9**	**27.1**	**30.5**	**30.7**	**36.1**	**37.4**	**17.3**
All Revisions	**2.5**	**2.6**	**2.7**	**2.5**	**2.5**	**2.7**	**2.8**	**3.1**	**1.8**
ALL SHOULDERS	**26.6**	**29.0**	**30.7**	**30.8**	**34.2**	**34.4**	**39.7**	**41.6**	**20.7**

Figure SD72 Incidence of Shoulder Replacement per 100,000 from 2008 to 2024

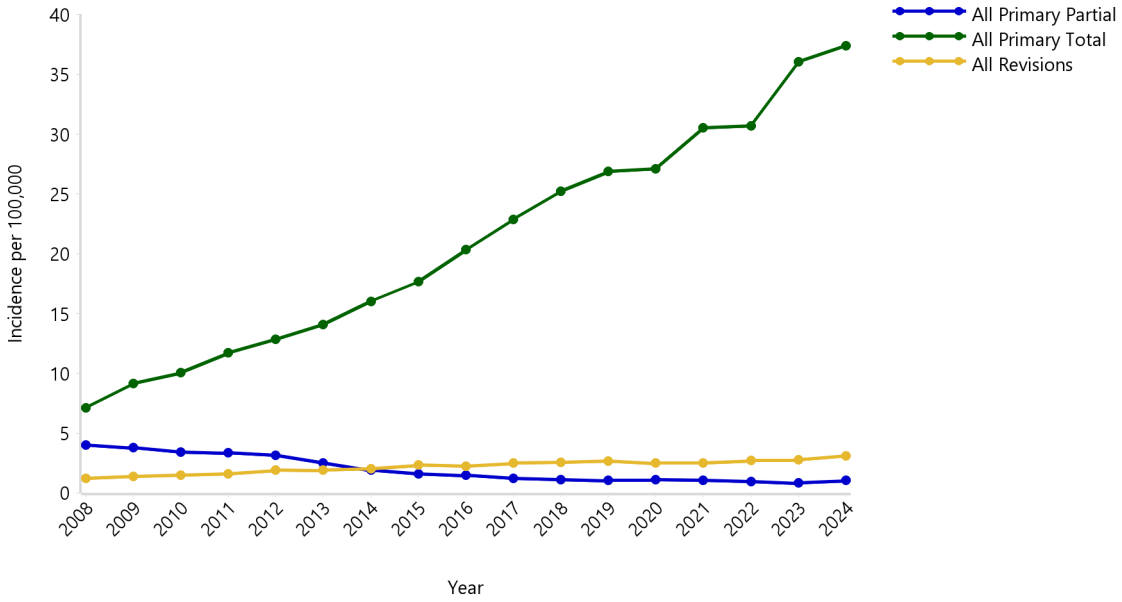


Table SD60 Incidence of Shoulder Replacement in Patients Aged <55 Years per 100,000 from 2008 to 2024

Shoulder Replacement	2008	2009	2010	2011	2012	2013	2014	2015	2016
	N	N	N	N	N	N	N	N	N
Partial Resurfacing Anatomic	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0
Hemi Resurfacing Anatomic	0.2	0.2	0.2	0.2	0.2	0.1	0.0	0.1	0.2
Hemi Stemmed Anatomic	0.2	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.3
Hemi Stemless Anatomic	0.0	.	.	.	.	0.0	0.0	0.0	0.0
All Primary Partial	**0.6**	**0.6**	**0.6**	**0.6**	**0.5**	**0.4**	**0.4**	**0.4**	**0.5**
Total Resurfacing Anatomic	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
Total Stemmed Anatomic	0.3	0.4	0.4	0.4	0.4	0.3	0.3	0.4	0.5
Total Stemmed Reverse	0.1	0.1	0.1	0.1	0.2	0.2	0.1	0.3	0.2
Total Stemless Anatomic	.	0.0	.	.	0.0	0.0	0.0	0.1	0.1
Total Stemless Reverse	.	.	.	.	.	.	.	.	.
All Primary Total	**0.3**	**0.4**	**0.5**	**0.6**	**0.6**	**0.5**	**0.5**	**0.8**	**0.8**
All Revisions	**0.1**	**0.1**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**
ALL SHOULDERS	**1.0**	**1.2**	**1.2**	**1.4**	**1.4**	**1.1**	**1.1**	**1.4**	**1.5**

Shoulder Replacement	2017	2018	2019	2020	2021	2022	2023	2024	TOTAL
	N	N	N	N	N	N	N	N	N
Partial Resurfacing Anatomic	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0
Hemi Resurfacing Anatomic	0.2	0.2	0.2	0.1	0.1	0.2	0.0	0.0	0.1
Hemi Stemmed Anatomic	0.3	0.3	0.3	0.4	0.3	0.3	0.4	0.5	0.2
Hemi Stemless Anatomic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0
All Primary Partial	**0.5**	**0.5**	**0.6**	**0.6**	**0.5**	**0.5**	**0.5**	**0.7**	**0.4**
Total Resurfacing Anatomic	.	0.0	.	.	.	.	.	.	0.0
Total Stemmed Anatomic	0.3	0.4	0.3	0.3	0.3	0.2	0.2	0.2	0.3
Total Stemmed Reverse	0.4	0.4	0.5	0.6	0.7	0.7	0.9	0.9	0.3
Total Stemless Anatomic	0.2	0.2	0.2	0.4	0.4	0.5	0.5	0.6	0.2
Total Stemless Reverse	.	.	.	.	.	.	0.0	.	0.0
All Primary Total	**0.9**	**1.0**	**1.1**	**1.3**	**1.4**	**1.5**	**1.6**	**1.7**	**0.7**
All Revisions	**0.3**	**0.2**	**0.3**	**0.2**	**0.2**	**0.3**	**0.3**	**0.3**	**0.2**
ALL SHOULDERS	**1.7**	**1.8**	**1.9**	**2.0**	**2.1**	**2.2**	**2.5**	**2.7**	**1.3**

Figure SD73 Incidence of Shoulder Replacement in Patients Aged <55 Years per 100,000 from 2008 to 2024

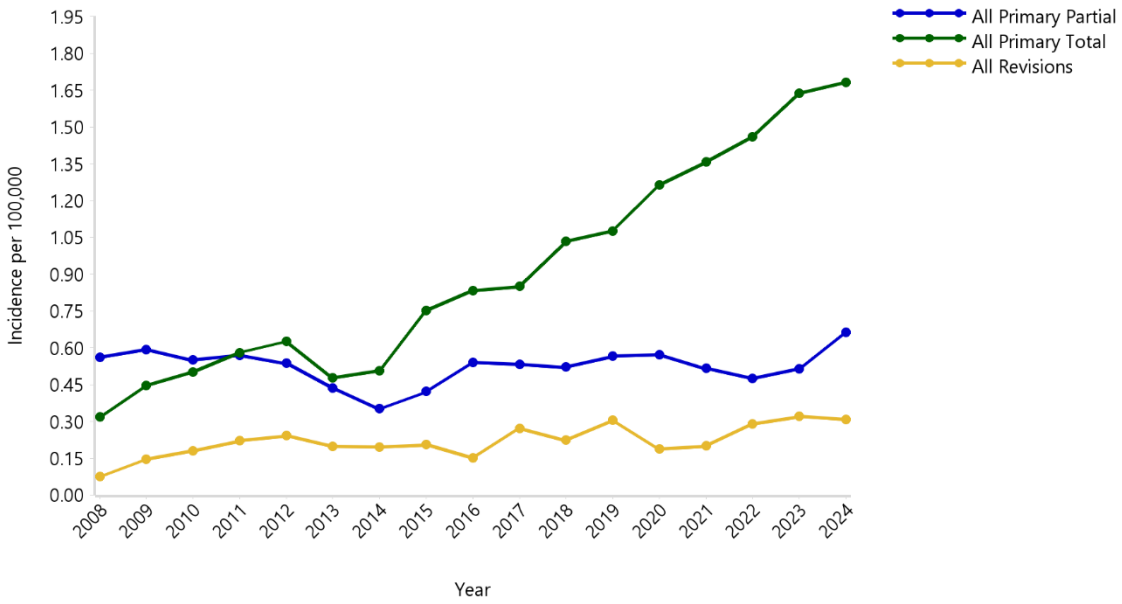


Table SD61 Incidence of Shoulder Replacement in Patients Aged 55-64 Years per 100,000 from 2008 to 2024

Shoulder Replacement	2008	2009	2010	2011	2012	2013	2014	2015	2016
	N	N	N	N	N	N	N	N	N
Partial Resurfacing Anatomic	0.1	0.0	0.1	0.1	0.1	0.0	0.1	0.0	.
Hemi Resurfacing Anatomic	2.4	2.3	1.7	1.6	2.3	1.1	0.6	0.7	1.1
Hemi Stemmed Anatomic	5.2	4.4	5.0	4.0	3.7	3.2	2.8	2.5	2.0
Hemi Stemless Anatomic	.	0.1	.	0.0	.	.	0.0	0.0	0.1
All Primary Partial	**7.8**	**6.9**	**6.8**	**5.7**	**6.1**	**4.3**	**3.5**	**3.3**	**3.2**
Total Resurfacing Anatomic	0.2	.	0.2	0.5	0.8	0.4	0.3	0.3	0.1
Total Stemmed Anatomic	7.1	10.6	11.2	11.1	10.1	10.4	11.2	11.9	10.5
Total Stemmed Reverse	2.3	2.5	3.0	3.6	4.9	5.6	6.1	8.5	12.3
Total Stemless Anatomic	.	.	.	0.2	0.7	0.6	1.3	1.5	2.8
Total Stemless Reverse	.	.	.	.	.	.	.	.	.
All Primary Total	**9.6**	**13.2**	**14.3**	**15.3**	**16.5**	**16.9**	**18.9**	**22.2**	**25.7**
All Revisions	**2.3**	**2.9**	**2.8**	**2.9**	**3.4**	**3.4**	**3.3**	**3.5**	**3.5**
ALL SHOULDERS	**19.7**	**22.9**	**23.9**	**23.9**	**25.9**	**24.6**	**25.7**	**29.0**	**32.5**

Shoulder Replacement	2017	2018	2019	2020	2021	2022	2023	2024	TOTAL
	N	N	N	N	N	N	N	N	N
Partial Resurfacing Anatomic	.	.	.	.	0.0	0.0	0.0	0.1	0.0
Hemi Resurfacing Anatomic	0.8	0.7	0.8	0.5	0.8	0.8	0.2	0.2	0.9
Hemi Stemmed Anatomic	1.3	1.8	2.0	1.9	2.0	1.9	1.6	2.3	2.2
Hemi Stemless Anatomic	0.1	0.1	0.1	0.0	0.1	0.0	0.1	0.1	0.0
All Primary Partial	**2.3**	**2.6**	**2.9**	**2.4**	**2.8**	**2.8**	**1.9**	**2.6**	**3.1**
Total Resurfacing Anatomic	0.1	0.0	0.0	.	.	.	.	.	0.1
Total Stemmed Anatomic	9.4	7.9	7.2	6.1	5.7	5.4	4.3	3.8	6.8
Total Stemmed Reverse	16.2	19.9	21.0	22.9	29.1	28.7	35.5	37.6	13.1
Total Stemless Anatomic	3.7	4.7	4.9	5.8	6.5	5.8	8.4	9.9	2.9
Total Stemless Reverse	.	0.0	0.1	0.1	0.1	0.0	.	.	0.0
All Primary Total	**29.5**	**32.6**	**33.2**	**35.0**	**41.4**	**39.9**	**48.3**	**51.3**	**23.0**
All Revisions	**4.1**	**4.6**	**4.2**	**4.0**	**4.2**	**4.6**	**4.1**	**4.9**	**3.0**
ALL SHOULDERS	**35.9**	**39.8**	**40.3**	**41.4**	**48.4**	**47.3**	**54.3**	**58.8**	**29.1**

Figure SD74 Incidence of Shoulder Replacement in Patients Aged 55-64 Years per 100,000 from 2008 to 2024

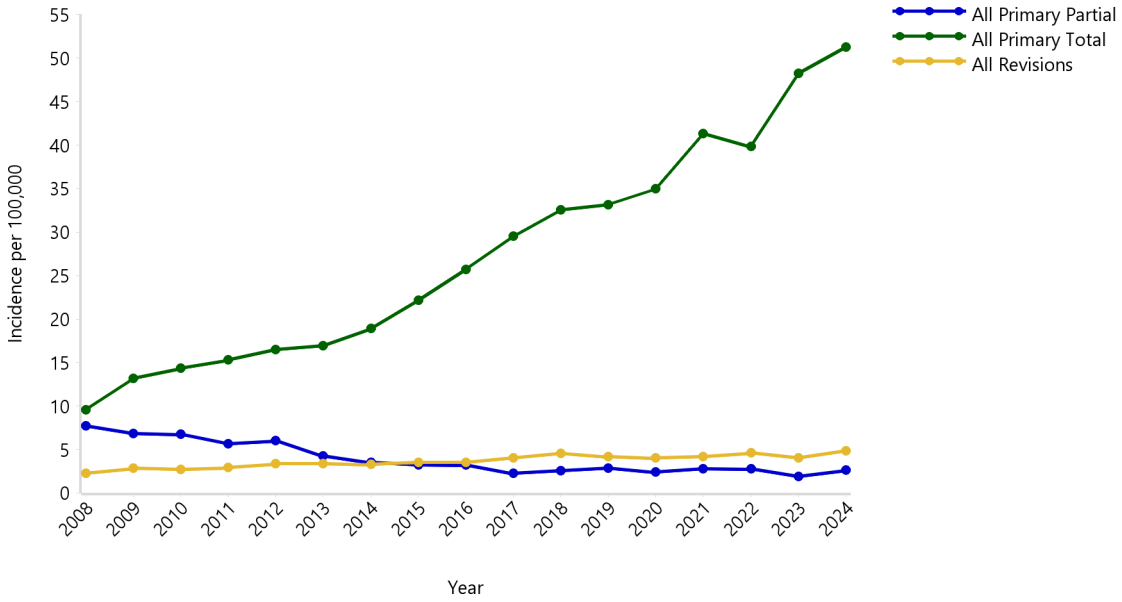


Table SD62 Incidence of Shoulder Replacement in Patients Aged 65-74 Years per 100,000 from 2008 to 2024

Shoulder Replacement	2008	2009	2010	2011	2012	2013	2014	2015	2016
	N	N	N	N	N	N	N	N	N
Partial Resurfacing Anatomic	0.3	.	0.2	0.2	0.1	0.2	0.2	0.0	.
Hemi Resurfacing Anatomic	3.6	3.9	2.9	3.2	3.0	2.4	1.2	1.0	1.4
Hemi Stemmed Anatomic	11.6	11.3	9.8	10.5	9.5	8.1	6.3	4.6	3.0
Hemi Stemless Anatomic	.	0.1	0.1	.	.	0.2	0.1	.	0.1
All Primary Partial	**15.5**	**15.3**	**13.0**	**13.9**	**12.6**	**10.9**	**7.7**	**5.7**	**4.6**
Total Resurfacing Anatomic	0.4	0.4	0.3	0.6	0.7	1.0	0.6	0.5	0.4
Total Stemmed Anatomic	24.4	29.9	30.9	32.1	31.3	33.1	32.3	29.6	26.7
Total Stemmed Reverse	13.7	17.3	18.0	25.4	30.7	34.9	43.5	50.8	68.7
Total Stemless Anatomic	.	.	.	0.1	2.0	2.4	2.8	4.0	5.5
Total Stemless Reverse	.	.	.	.	.	.	.	.	0.0
All Primary Total	**38.5**	**47.6**	**49.3**	**58.2**	**64.6**	**71.4**	**79.2**	**84.9**	**101.3**
All Revisions	**6.1**	**6.3**	**7.0**	**8.4**	**9.4**	**8.7**	**9.4**	**10.9**	**11.4**
ALL SHOULDERS	**60.1**	**69.3**	**69.2**	**80.4**	**86.6**	**91.0**	**96.3**	**101.5**	**117.4**

Shoulder Replacement	2017	2018	2019	2020	2021	2022	2023	2024	TOTAL
	N	N	N	N	N	N	N	N	N
Partial Resurfacing Anatomic	0.1	.	0.0	0.0	.	.	.	.	0.1
Hemi Resurfacing Anatomic	1.3	0.9	0.9	0.9	0.4	0.5	0.2	0.1	1.2
Hemi Stemmed Anatomic	2.2	1.7	0.9	2.2	2.1	1.5	1.4	1.6	3.8
Hemi Stemless Anatomic	0.1	0.0	0.0	0.1	.	0.0	0.0	.	0.0
All Primary Partial	**3.8**	**2.6**	**1.8**	**3.3**	**2.5**	**2.0**	**1.6**	**1.7**	**5.1**
Total Resurfacing Anatomic	0.3	0.2	0.1	0.0	.	.	.	.	0.2
Total Stemmed Anatomic	23.9	18.8	16.0	11.8	10.8	9.2	8.5	5.2	17.3
Total Stemmed Reverse	78.4	87.1	96.1	100.7	111.2	111.1	131.1	140.9	62.5
Total Stemless Anatomic	7.9	9.0	9.8	11.7	11.1	13.3	14.7	13.7	6.0
Total Stemless Reverse	0.1	0.2	0.8	0.3	0.3	0.1	0.0	.	0.1
All Primary Total	**110.6**	**115.4**	**122.7**	**124.5**	**133.5**	**133.8**	**154.3**	**159.8**	**86.1**
All Revisions	**11.4**	**12.2**	**12.2**	**10.5**	**10.4**	**11.4**	**10.9**	**12.2**	**8.5**
ALL SHOULDERS	**125.8**	**130.2**	**136.7**	**138.4**	**146.4**	**147.1**	**166.8**	**173.7**	**99.7**

Figure SD75 Incidence of Shoulder Replacement in Patients Aged 65-74 Years per 100,000 from 2008 to 2024

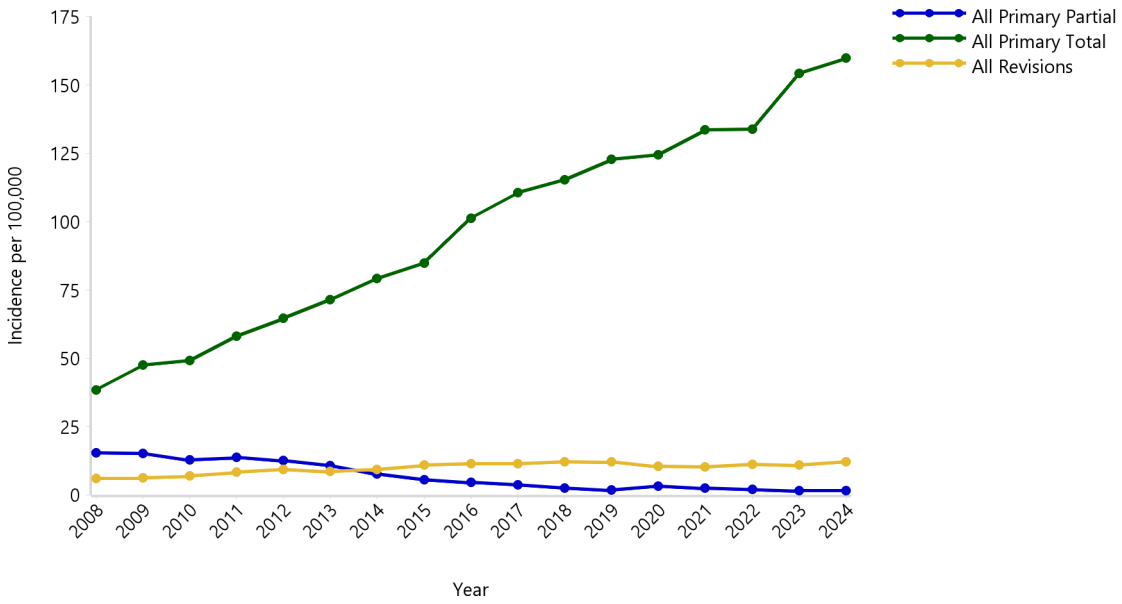


Table SD63 Incidence of Shoulder Replacement in Patients Aged ≥75 Years per 100,000 from 2008 to 2024

Shoulder Replacement	2008 N	2009 N	2010 N	2011 N	2012 N	2013 N	2014 N	2015 N	2016 N
Partial Resurfacing Anatomic	0.4	0.1	0.1	0.3	0.1	0.1	.	.	.
Hemi Resurfacing Anatomic	5.2	3.6	2.3	1.8	2.2	1.4	1.2	1.0	0.6
Hemi Stemmed Anatomic	21.2	20.2	18.6	17.5	15.0	11.8	8.4	5.6	4.3
Hemi Stemless Anatomic	.	0.1	0.1	.	.	0.1	.	0.1	.
All Primary Partial	**26.8**	**24.0**	**21.2**	**19.6**	**17.2**	**13.3**	**9.6**	**6.7**	**4.9**
Total Resurfacing Anatomic	0.1	0.1	.	0.2	0.1	0.3	0.1	.	.
Total Stemmed Anatomic	20.8	26.5	28.2	28.6	27.5	22.2	23.7	21.8	17.6
Total Stemmed Reverse	29.5	37.3	43.3	53.1	58.0	70.8	82.7	90.8	101.4
Total Stemless Anatomic	.	.	.	.	0.8	2.2	2.2	1.9	3.4
Total Stemless Reverse	.	.	.	.	.	.	.	.	.
All Primary Total	**50.4**	**63.9**	**71.5**	**81.9**	**86.3**	**95.5**	**108.7**	**114.5**	**122.4**
All Revisions	**7.7**	**8.1**	**9.0**	**8.0**	**10.4**	**11.2**	**11.7**	**13.6**	**11.4**
ALL SHOULDERS	**84.9**	**96.0**	**101.7**	**109.5**	**113.9**	**120.0**	**130.0**	**134.7**	**138.7**

Shoulder Replacement	2017 N	2018 N	2019 N	2020 N	2021 N	2022 N	2023 N	2024 N	TOTAL N
Partial Resurfacing Anatomic	.	.	.	.	.	.	.	.	0.0
Hemi Resurfacing Anatomic	0.9	0.5	0.3	0.2	.	0.1	.	.	0.9
Hemi Stemmed Anatomic	3.2	2.9	2.1	1.6	1.8	1.5	1.3	1.4	5.9
Hemi Stemless Anatomic	.	.	.	.	0.1	.	0.1	0.1	0.0
All Primary Partial	**4.0**	**3.4**	**2.3**	**1.7**	**1.8**	**1.5**	**1.4**	**1.5**	**6.8**
Total Resurfacing Anatomic	.	0.1	0.1	.	.	.	.	.	0.0
Total Stemmed Anatomic	14.3	10.9	8.3	6.6	6.1	6.5	5.4	3.1	12.3
Total Stemmed Reverse	119.0	138.4	148.0	138.4	151.6	149.8	179.3	184.4	91.7
Total Stemless Anatomic	4.5	5.1	5.6	5.0	6.7	6.4	7.9	7.4	3.2
Total Stemless Reverse	0.2	0.1	0.2	.	0.1	.	0.0	.	0.0
All Primary Total	**138.0**	**154.6**	**162.1**	**150.1**	**164.4**	**162.7**	**192.7**	**194.9**	**107.3**
All Revisions	**12.5**	**11.8**	**12.9**	**13.0**	**12.5**	**12.1**	**13.5**	**15.1**	**9.6**
ALL SHOULDERS	**154.5**	**169.9**	**177.3**	**164.8**	**178.8**	**176.3**	**207.6**	**211.6**	**123.7**

Figure SD76 Incidence of Shoulder Replacement in Patients Aged ≥75 Years per 100,000 from 2008 to 2024

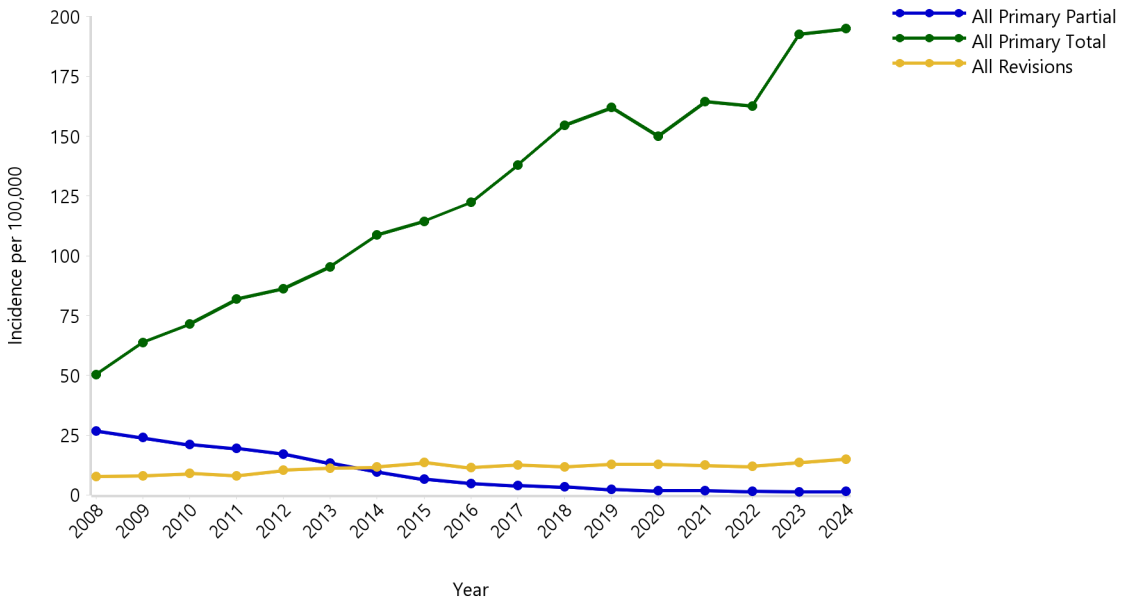
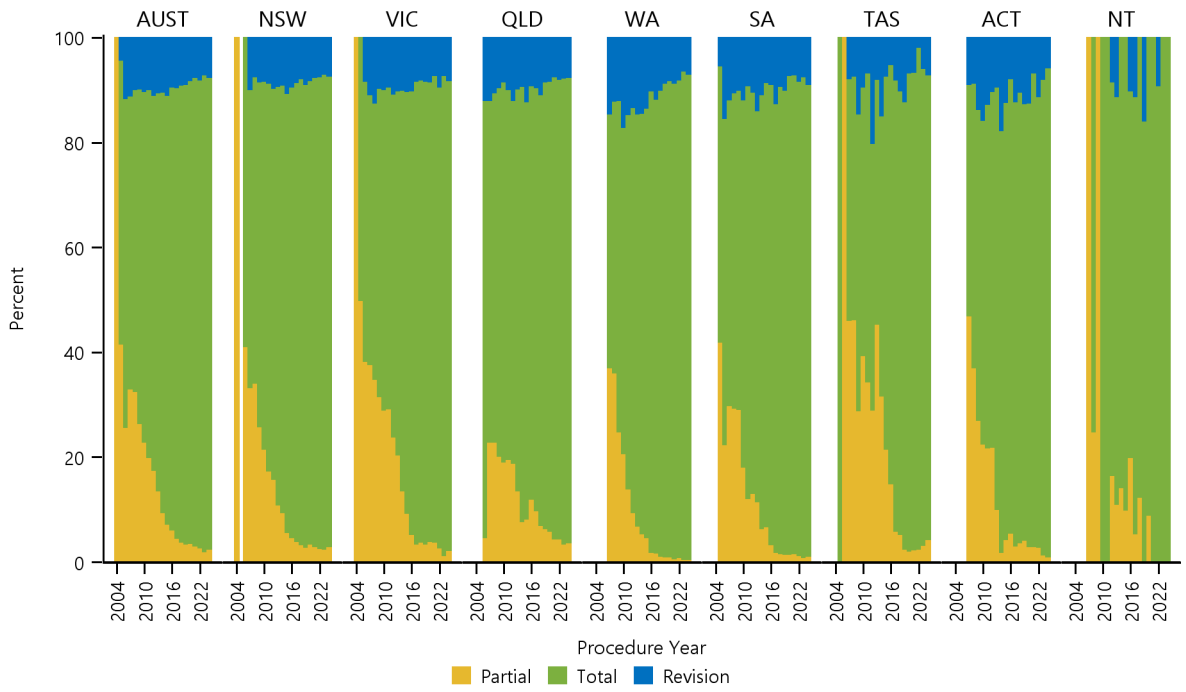


Figure SD77 Trends in Usage of Shoulder Replacement by State/Territory and Year



Note: There were no shoulder replacements undertaken in 2005 in NSW

Note: There were no shoulder replacements undertaken in 2005 in NSW

Table SD64 Time between Procedures for Bilateral Primary Shoulder Replacement

Bilateral Procedures	Same Day			1 day - 3 months			3 months - 6 months			≥6 months			TOTAL		
	N	Row%	Col%	N	Row%	Col%	N	Row%	Col%	N	Row%	Col%	N	Row%	Col%
Both Partial	17	4.7	48.6	24	6.6	9.2	43	11.8	4.2	281	77.0	2.5	365	100.0	2.9
Both Total	18	0.2	51.4	232	2.0	88.9	962	8.3	93.8	10356	89.5	92.6	11568	100.0	92.5
Total/Partial	.	.	.	5	0.9	1.9	21	3.6	2.0	550	95.5	4.9	576	100.0	4.6
TOTAL	**35**	**0.3**	**100.0**	**261**	**2.1**	**100.0**	**1026**	**8.2**	**100.0**	**11187**	**89.4**	**100.0**	**12509**	**100.0**	**100.0**

Table SD65 Number of Shoulder Procedures by Patient

Shoulder Procedures	Not Revised		1 Revision		2 Revisions		3 or more Revisions		TOTAL	
	N	Row%	N	Row%	N	Row%	N	Row%	N	Row%
Unknown Primary/Primaries	.	.	1014	76.8	205	15.5	102	7.7	1321	100.0
Single Primary Procedure	68918	94.3	3220	4.4	658	0.9	311	0.4	73107	100.0
2 Primary Procedures	11091	88.7	1032	8.3	273	2.2	113	0.9	12509	100.0
TOTAL	**80009**	**92.0**	**5266**	**6.1**	**1136**	**1.3**	**526**	**0.6**	**86937**	**100.0**

PRIMARY PARTIAL SHOULDER REPLACEMENT

CLASSES OF PARTIAL SHOULDER REPLACEMENT

The Registry subcategorises primary partial shoulder replacement into four main classes. These are defined as:

Partial resurfacing anatomic involves the use of one or more button prostheses to replace part of the natural articulating surface, on one or both sides of the shoulder joint.

Hemi resurfacing anatomic involves the use of a humeral prosthesis that replaces the humeral articular surface only, without resecting the humeral head.

Hemi stemless anatomic involves resection of part of the humeral head and replacement with a humeral head and an epiphyseal fixation prosthesis.

Hemi stemmed anatomic involves the resection of the humeral head and replacement with a humeral head and a humeral stem prosthesis. A humeral stem prosthesis may have either metaphyseal or diaphyseal fixation.

Table SD66 Primary Partial Shoulder Replacement by Age and Gender

Gender	Number	Percent	Minimum	Maximum	Median	Mean	Std Dev
Female	4878	58.0%	13	101	72	70.5	12.1
Male	3526	42.0%	14	94	61	59.5	14.5
TOTAL	**8404**	**100.0%**	**13**	**101**	**67**	**65.9**	**14.2**

Figure SD78 Primary Partial Shoulder Replacement by Age and Gender

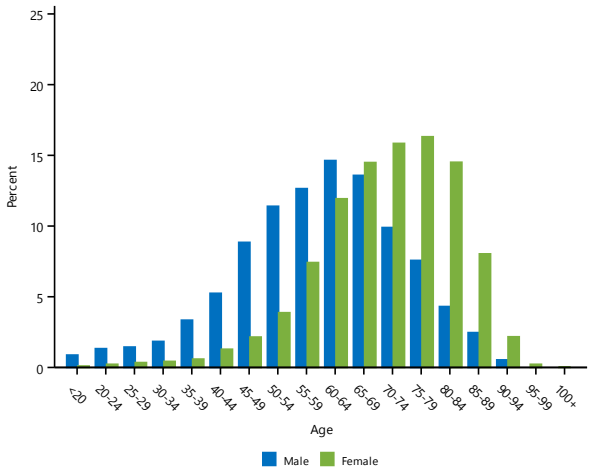
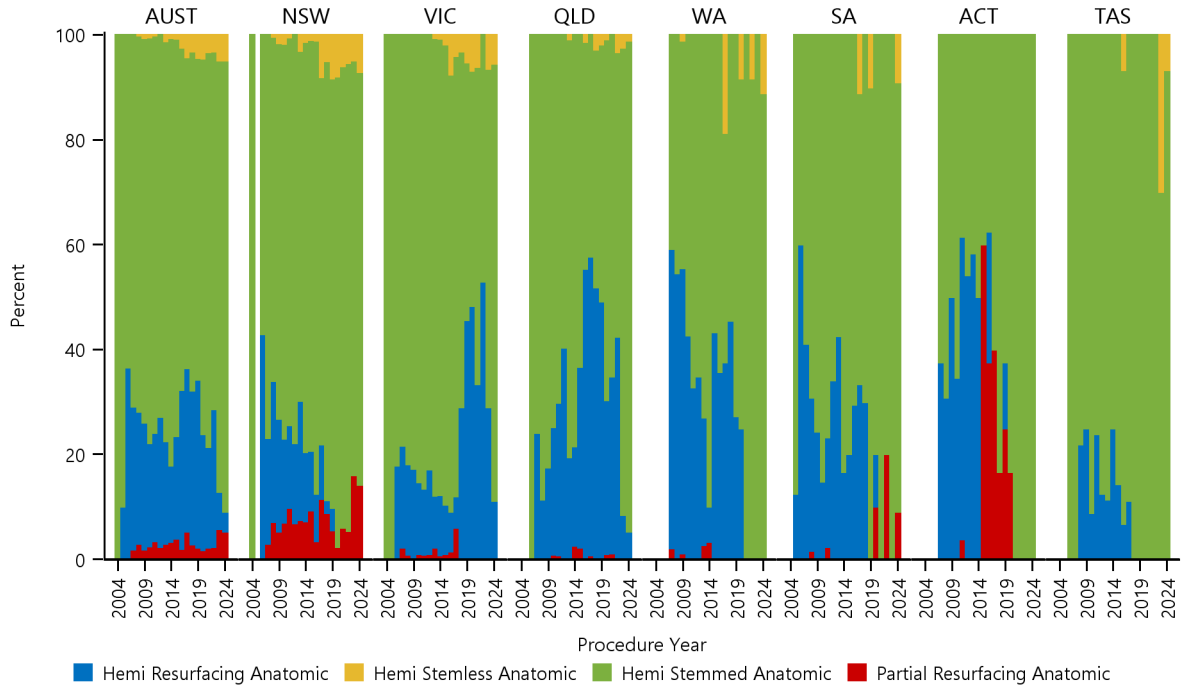


Table SD67 Primary Partial Shoulder Replacement by Primary Diagnosis

Primary Diagnosis	Number	Percent
Osteoarthritis	3806	45.3
Fracture	3251	38.7
Rotator Cuff Arthropathy	366	4.4
Osteonecrosis	321	3.8
Instability	266	3.2
Tumour	210	2.5
Rheumatoid Arthritis	135	1.6
Other Inflammatory Arthritis	43	0.5
Osteochondritis Dissecans	2	0.0
Other	4	0.0
TOTAL	**8404**	**100.0**

Figure SD79 Trends in Usage of Partial Shoulder Replacement by State/Territory and Year



Note: NT is excluded from this graph due to low procedure numbers

PRIMARY PARTIAL RESURFACING ANATOMIC SHOULDER REPLACEMENT

Table SD68 Primary Partial Resurfacing Anatomic Shoulder Replacement by Age and Gender

Gender	Number	Percent	Minimum	Maximum	Median	Mean	Std Dev
Female	51	21.3%	16	88	54	53.3	20.1
Male	188	78.7%	14	87	34	38.0	17.0
TOTAL	**239**	**100.0%**	**14**	**88**	**38**	**41.3**	**18.7**

Figure SD80 Primary Partial Resurfacing Anatomic Shoulder Replacement by Age and Gender

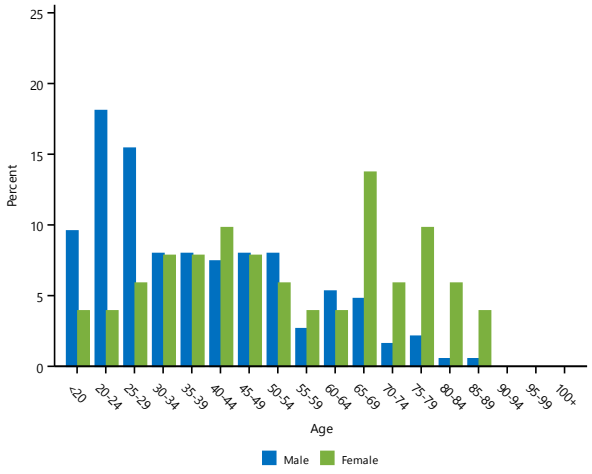


Table SD69 Primary Partial Resurfacing Anatomic Shoulder Replacement by Primary Diagnosis

Primary Diagnosis	Number	Percent
Instability	137	57.3
Osteoarthritis	74	31.0
Fracture	18	7.5
Osteonecrosis	5	2.1
Osteochondritis Dissecans	2	0.8
Rotator Cuff Arthropathy	2	0.8
Rheumatoid Arthritis	1	0.4
TOTAL	**239**	**100.0**

PRIMARY HEMI RESURFACING ANATOMIC SHOULDER REPLACEMENT

Table SD70 Primary Hemi Resurfacing Anatomic Shoulder Replacement by Age and Gender

Gender	Number	Percent	Minimum	Maximum	Median	Mean	Std Dev
Female	753	39.9%	27	93	68	67.5	11.4
Male	1132	60.1%	19	90	60	59.6	12.0
TOTAL	**1885**	**100.0%**	**19**	**93**	**63**	**62.7**	**12.4**

Figure SD81 Primary Hemi Resurfacing Anatomic Shoulder Replacement by Age and Gender

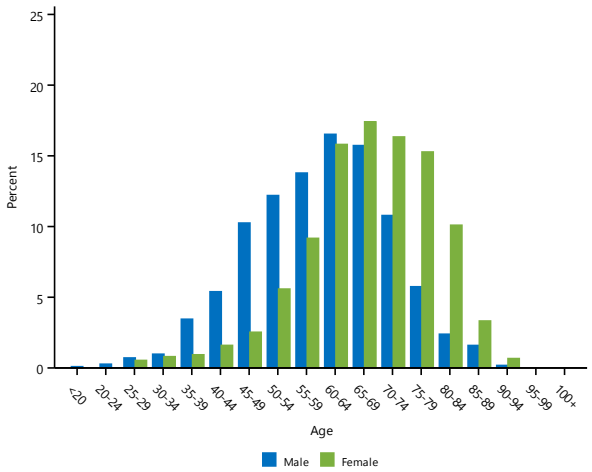


Table SD71 Primary Hemi Resurfacing Anatomic Shoulder Replacement by Primary Diagnosis

Primary Diagnosis	Number	Percent
Osteoarthritis	1669	88.5
Rotator Cuff Arthropathy	87	4.6
Instability	38	2.0
Osteonecrosis	37	2.0
Rheumatoid Arthritis	28	1.5
Fracture	14	0.7
Other Inflammatory Arthritis	12	0.6
TOTAL	**1885**	**100.0**

PRIMARY HEMI STEMMED ANATOMIC SHOULDER REPLACEMENT

Table SD72 Primary Hemi Stemmed Anatomic Shoulder Replacement by Age and Gender

Gender	Number	Percent	Minimum	Maximum	Median	Mean	Std Dev
Female	4031	65.5%	13	101	73	71.4	11.8
Male	2127	34.5%	14	94	62	61.6	13.8
TOTAL	**6158**	**100.0%**	**13**	**101**	**69**	**68.0**	**13.4**

Figure SD82 Primary Hemi Stemmed Anatomic Shoulder Replacement by Age and Gender

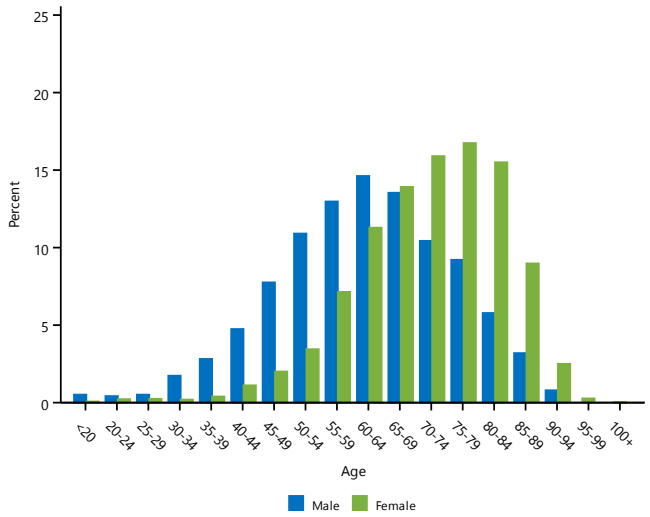


Table SD73 Primary Hemi Stemmed Anatomic Shoulder Replacement by Primary Diagnosis

Primary Diagnosis	Number	Percent
Fracture	3213	52.2
Osteoarthritis	1986	32.3
Rotator Cuff Arthropathy	273	4.4
Osteonecrosis	249	4.0
Tumour	210	3.4
Rheumatoid Arthritis	105	1.7
Instability	89	1.4
Other Inflammatory Arthritis	30	0.5
Other	3	0.0
TOTAL	**6158**	**100.0**

PRIMARY HEMI STEMLESS ANATOMIC SHOULDER REPLACEMENT

Table SD74 Primary Hemi Stemless Anatomic Shoulder Replacement by Age and Gender

Gender	Number	Percent	Minimum	Maximum	Median	Mean	Std Dev
Female	43	35.2%	30	86	66	62.6	15.5
Male	79	64.8%	18	83	51	50.7	12.1
TOTAL	**122**	**100.0%**	**18**	**86**	**53**	**54.9**	**14.5**

Figure SD83 Primary Hemi Stemless Anatomic Shoulder Replacement by Age and Gender

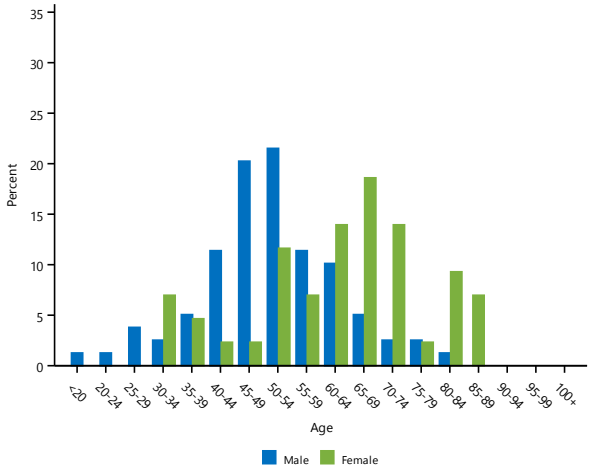


Table SD75 Primary Hemi Stemless Anatomic Shoulder Replacement by Primary Diagnosis

Primary Diagnosis	Number	Percent
Osteoarthritis	77	63.1
Osteonecrosis	30	24.6
Fracture	6	4.9
Rotator Cuff Arthropathy	4	3.3
Instability	2	1.6
Rheumatoid Arthritis	1	0.8
Other Inflammatory Arthritis	1	0.8
Other	1	0.8
TOTAL	**122**	**100.0**

PRIMARY TOTAL SHOULDER REPLACEMENT

CLASSES OF TOTAL SHOULDER REPLACEMENT

The Registry subcategorises primary total shoulder replacement into five classes. These are defined by the type of prostheses used.

Total resurfacing anatomic involves glenoid replacement and the use of a humeral prosthesis that replaces the humeral articular surface without resecting the humeral head.
Total stemless anatomic involves glenoid replacement combined with resection of the humeral head and replacement with a humeral head and an epiphyseal fixation prosthesis.
Total stemmed anatomic involves glenoid replacement combined with resection of the humeral head and replacement with humeral head and humeral stem prostheses. A humeral stem prosthesis may have metaphyseal or diaphyseal fixation.

Total stemmed reverse involves glenoid replacement with a glenosphere prosthesis combined with resection of the humeral head and replacement with humeral cup and humeral stem prosthesis. A humeral stem prosthesis may have metaphyseal or diaphyseal fixation.
Total stemless reverse involves glenoid replacement with a glenosphere prosthesis combined with resection of the humeral head and replacement with a humeral cup and an epiphyseal fixation humeral prosthesis.

Table SD76 Primary Total Shoulder Replacement by Age and Gender

Gender	Number	Percent	Minimum	Maximum	Median	Mean	Std Dev
Female	53629	59.8%	12	103	74	73.4	8.3
Male	36090	40.2%	14	100	71	70.1	9.0
TOTAL	**89719**	**100.0%**	**12**	**103**	**73**	**72.1**	**8.7**

Figure SD84 Primary Total Shoulder Replacement by Age and Gender

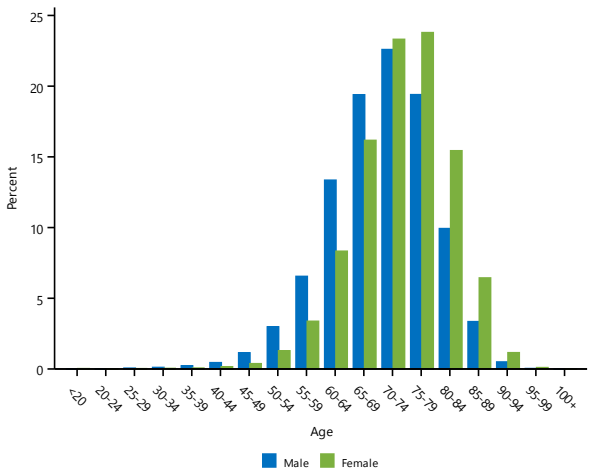
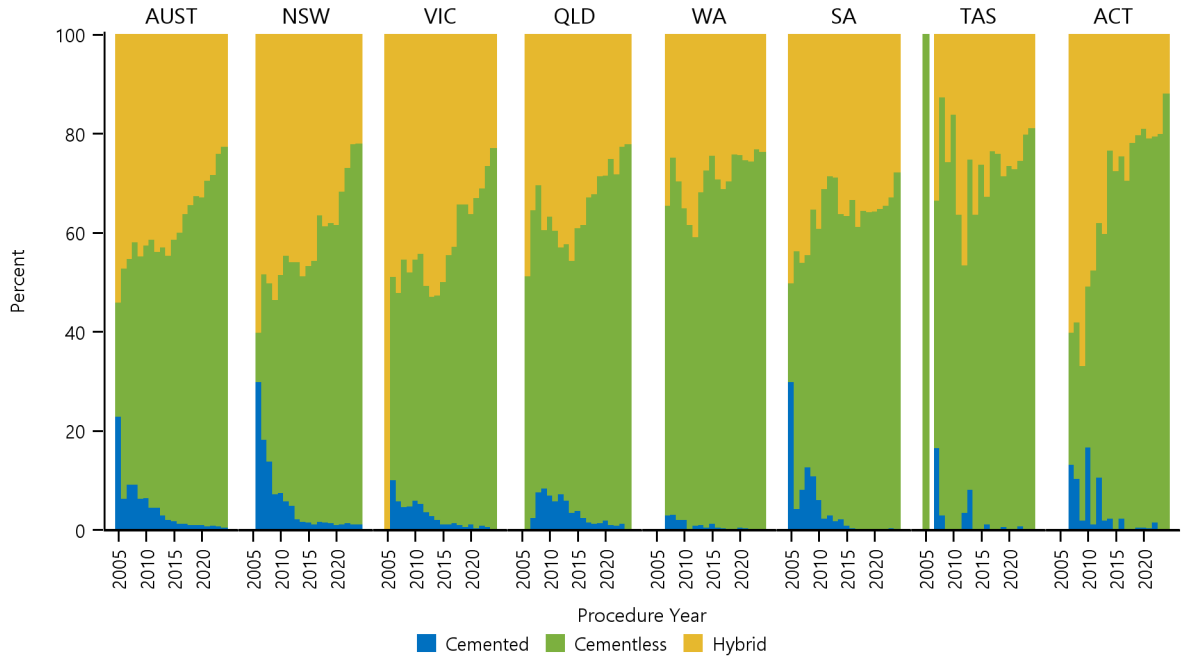


Table SD77 Primary Total Shoulder Replacement by Primary Diagnosis

Primary Diagnosis	Number	Percent
Osteoarthritis	50679	56.5
Rotator Cuff Arthropathy	24923	27.8
Fracture	10055	11.2
Rheumatoid Arthritis	1393	1.6
Osteonecrosis	1139	1.3
Instability	738	0.8
Other Inflammatory Arthritis	470	0.5
Tumour	302	0.3
Other	20	0.0
TOTAL	**89719**	**100.0**

Figure SD85 Trends in Fixation of Primary Total Shoulder Replacement by State/Territory and Year



Note: There were no primary total shoulder replacements undertaken in 2006 in TAS
NT is excluded from this graph due to low procedure numbers

PRIMARY TOTAL RESURFACING ANATOMIC SHOULDER REPLACEMENT

Table SD78 Primary Total Resurfacing Anatomic Shoulder Replacement by Age and Gender

Gender	Number	Percent	Minimum	Maximum	Median	Mean	Std Dev
Female	95	40.4%	46	86	67	67.0	6.7
Male	140	59.6%	35	83	63	62.2	9.8
TOTAL	**235**	**100.0%**	**35**	**86**	**65**	**64.1**	**9.0**

Figure SD86 Primary Total Resurfacing Anatomic Shoulder Replacement by Age and Gender

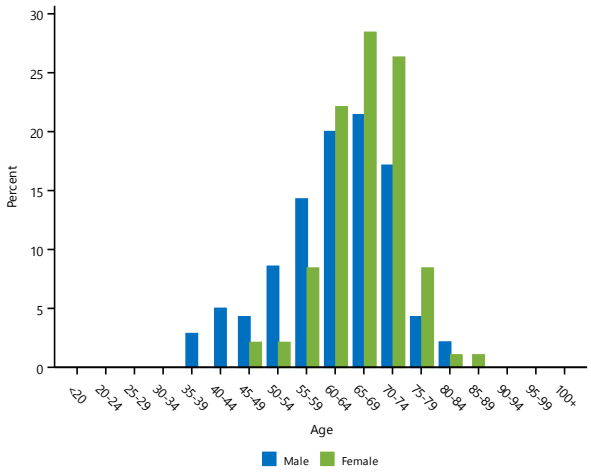


Table SD79 Primary Total Resurfacing Anatomic Shoulder Replacement by Primary Diagnosis

Primary Diagnosis	Number	Percent
Osteoarthritis	226	96.2
Rheumatoid Arthritis	3	1.3
Fracture	2	0.9
Other Inflammatory Arthritis	1	0.4
Instability	1	0.4
Rotator Cuff Arthropathy	1	0.4
Osteonecrosis	1	0.4
TOTAL	**235**	**100.0**

PRIMARY TOTAL STEMMED ANATOMIC SHOULDER REPLACEMENT

Table SD80 Primary Total Stemmed Anatomic Shoulder Replacement by Age and Gender

Gender	Number	Percent	Minimum	Maximum	Median	Mean	Std Dev
Female	9609	56.9%	19	96	71	70.2	8.5
Male	7284	43.1%	21	93	67	66.6	9.0
TOTAL	**16893**	**100.0%**	**19**	**96**	**69**	**68.6**	**8.9**

Figure SD87 Primary Total Stemmed Anatomic Shoulder Replacement by Age and Gender

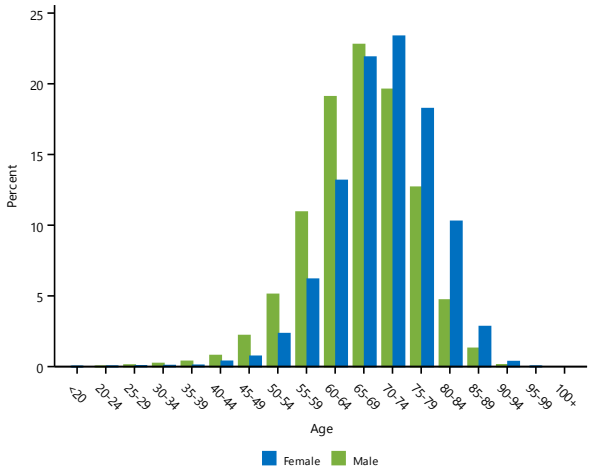
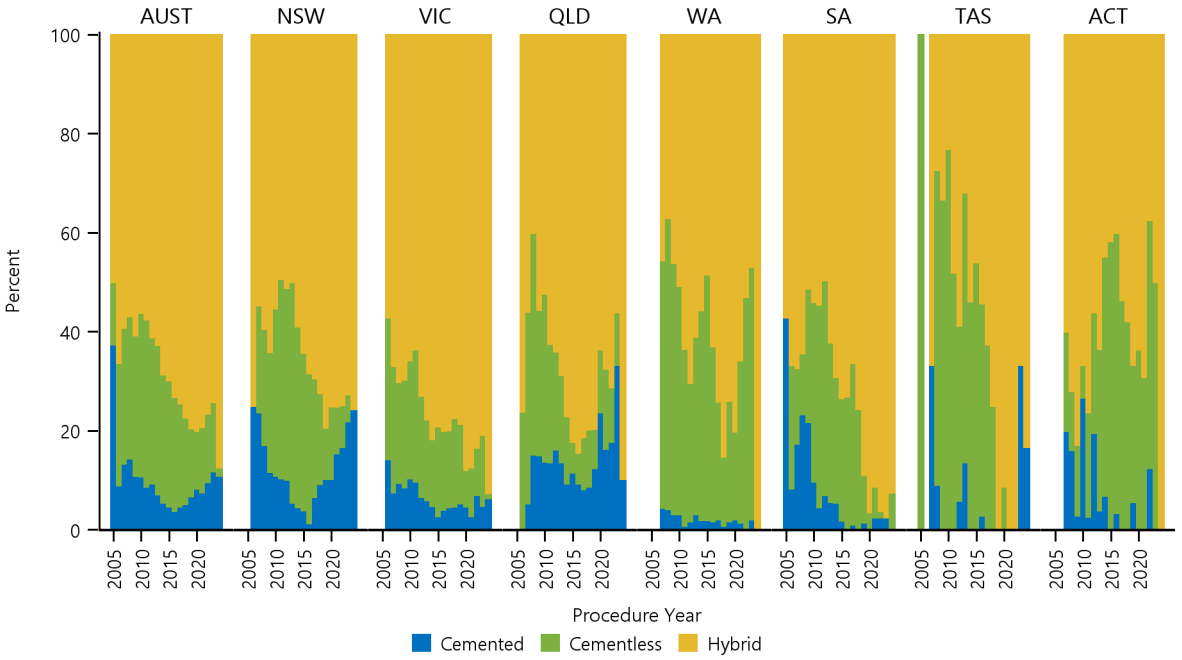


Table SD81 Primary Total Stemmed Anatomic Shoulder Replacement by Primary Diagnosis

Primary Diagnosis	Number	Percent
Osteoarthritis	15923	94.3
Osteonecrosis	301	1.8
Rheumatoid Arthritis	277	1.6
Fracture	138	0.8
Other Inflammatory Arthritis	99	0.6
Rotator Cuff Arthropathy	88	0.5
Instability	49	0.3
Tumour	12	0.1
Other	6	0.0
TOTAL	**16893**	**100.0**

Figure SD88 Trends in Fixation of Primary Total Stemmed Anatomic Shoulder Replacement by State/Territory and Year



Note: There were no primary total stemmed anatomic shoulder replacements undertaken in 2006 in TAS
NT is excluded from this graph due to low procedure numbers

PRIMARY TOTAL STEMMED REVERSE SHOULDER REPLACEMENT

Table SD82 Primary Total Stemmed Reverse Shoulder Replacement by Age and Gender

Gender	Number	Percent	Minimum	Maximum	Median	Mean	Std Dev
Female	40943	61.5%	12	103	75	74.5	7.9
Male	25664	38.5%	14	100	72	71.9	8.3
TOTAL	**66607**	**100.0%**	**12**	**103**	**74**	**73.5**	**8.2**

Figure SD89 Primary Total Stemmed Reverse Shoulder Replacement by Age and Gender

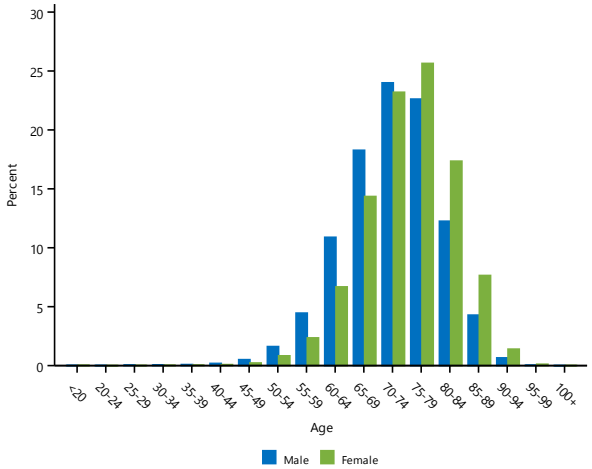
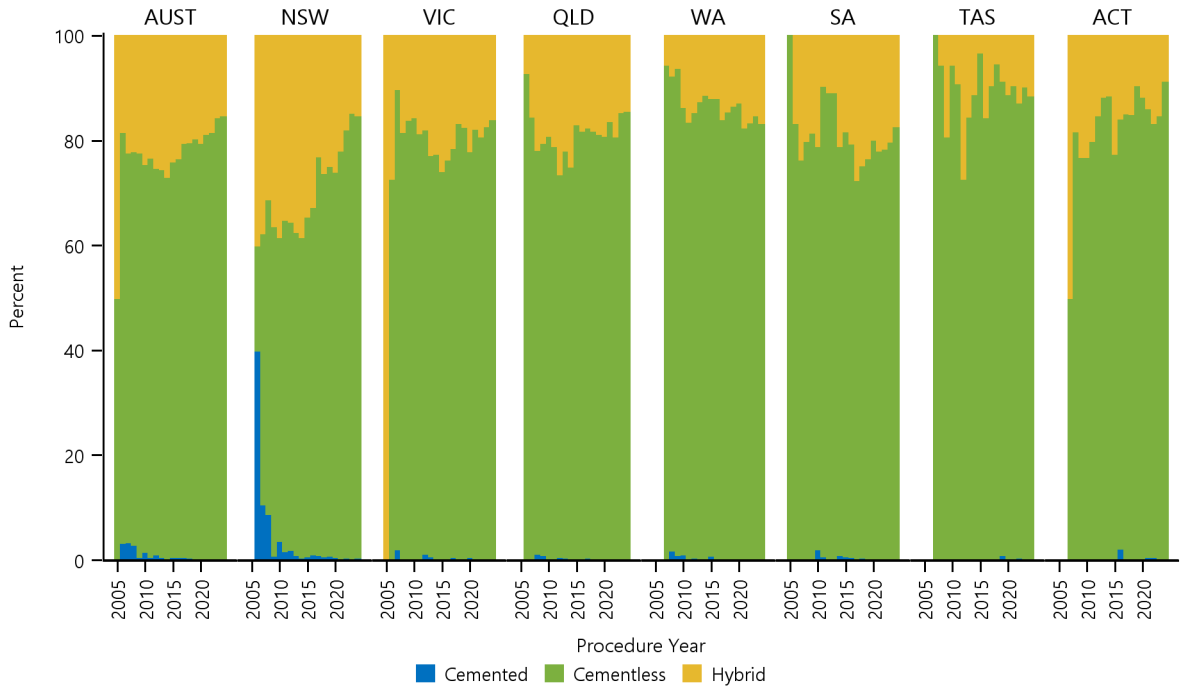


Table SD83 Primary Total Stemmed Reverse Shoulder Replacement by Primary Diagnosis

Primary Diagnosis	Number	Percent
Osteoarthritis	28819	43.3
Rotator Cuff Arthropathy	24779	37.2
Fracture	9904	14.9
Rheumatoid Arthritis	1070	1.6
Osteonecrosis	735	1.1
Instability	655	1.0
Other Inflammatory Arthritis	341	0.5
Tumour	290	0.4
Other	14	0.0
TOTAL	**66607**	**100.0**

Figure SD90 Trends in Fixation of Primary Total Stemmed Reverse Shoulder Replacement by State/Territory and Year



Note: NT is excluded from this graph due to low procedure numbers

Note: NT is excluded from this graph due to low procedure numbers

PRIMARY TOTAL STEMLESS ANATOMIC SHOULDER REPLACEMENT

Table SD84 Primary Total Stemless Anatomic Shoulder Replacement by Age and Gender

Gender	Number	Percent	Minimum	Maximum	Median	Mean	Std Dev
Female	2961	50.1%	32	94	69	68.6	8.4
Male	2955	49.9%	31	95	65	64.1	9.4
TOTAL	**5916**	**100.0%**	**31**	**95**	**67**	**66.3**	**9.2**

Figure SD91 Primary Total Stemless Anatomic Shoulder Replacement by Age and Gender

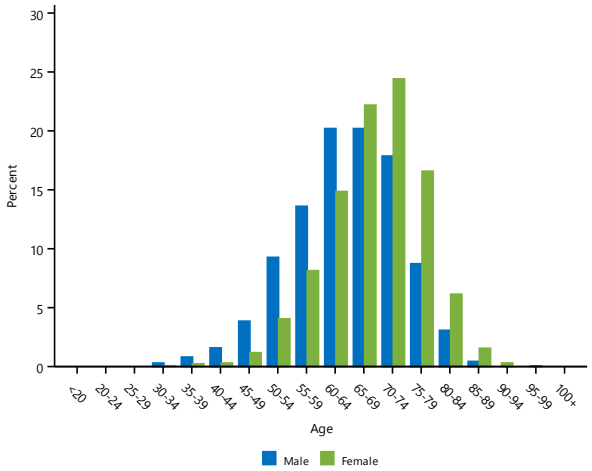


Table SD85 Primary Total Stemless Anatomic Shoulder Replacement by Primary Diagnosis

Primary Diagnosis	Number	Percent
Osteoarthritis	5675	95.9
Osteonecrosis	102	1.7
Rheumatoid Arthritis	42	0.7
Instability	33	0.6
Other Inflammatory Arthritis	29	0.5
Rotator Cuff Arthropathy	25	0.4
Fracture	10	0.2
TOTAL	**5916**	**100.0**

PRIMARY TOTAL STEMLESS REVERSE SHOULDER REPLACEMENT

Table SD86 Primary Total Stemless Reverse Shoulder Replacement by Age and Gender

Gender	Number	Percent	Minimum	Maximum	Median	Mean	Std Dev
Female	21	30.9%	52	82	70	70.0	6.3
Male	47	69.1%	44	79	69	68.3	6.0
TOTAL	**68**	**100.0%**	**44**	**82**	**69**	**68.8**	**6.1**

Figure SD92 Primary Total Stemless Reverse Shoulder Replacement by Age and Gender

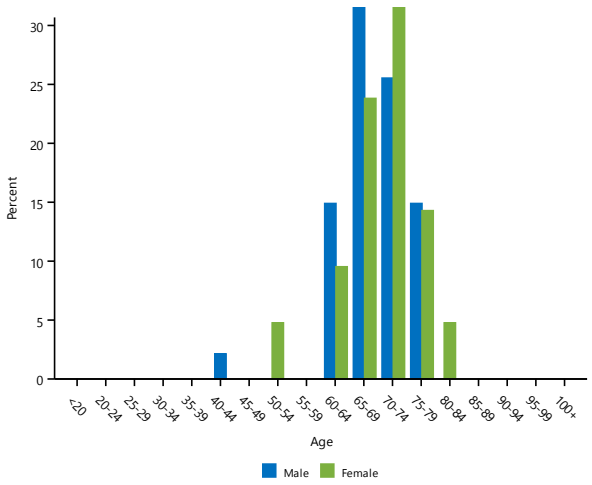


Table SD87 Primary Total Stemless Reverse Shoulder Replacement by Primary Diagnosis

Primary Diagnosis	Number	Percent
Osteoarthritis	36	52.9
Rotator Cuff Arthropathy	30	44.1
Fracture	1	1.5
Rheumatoid Arthritis	1	1.5
TOTAL	**68**	**100.0**

ALL REVISION SHOULDER REPLACEMENT

Table SD88 Age and Gender of All Revision Shoulder Replacement

Gender	Number	Percent	Minimum	Maximum	Median	Mean	Std Dev
Male	4578	48.4%	19	96	70	68.5	10.3
Female	4880	51.6%	15	98	73	71.4	10.1
TOTAL	**9458**	**100.0%**	**15**	**98**	**71**	**70.0**	**10.3**

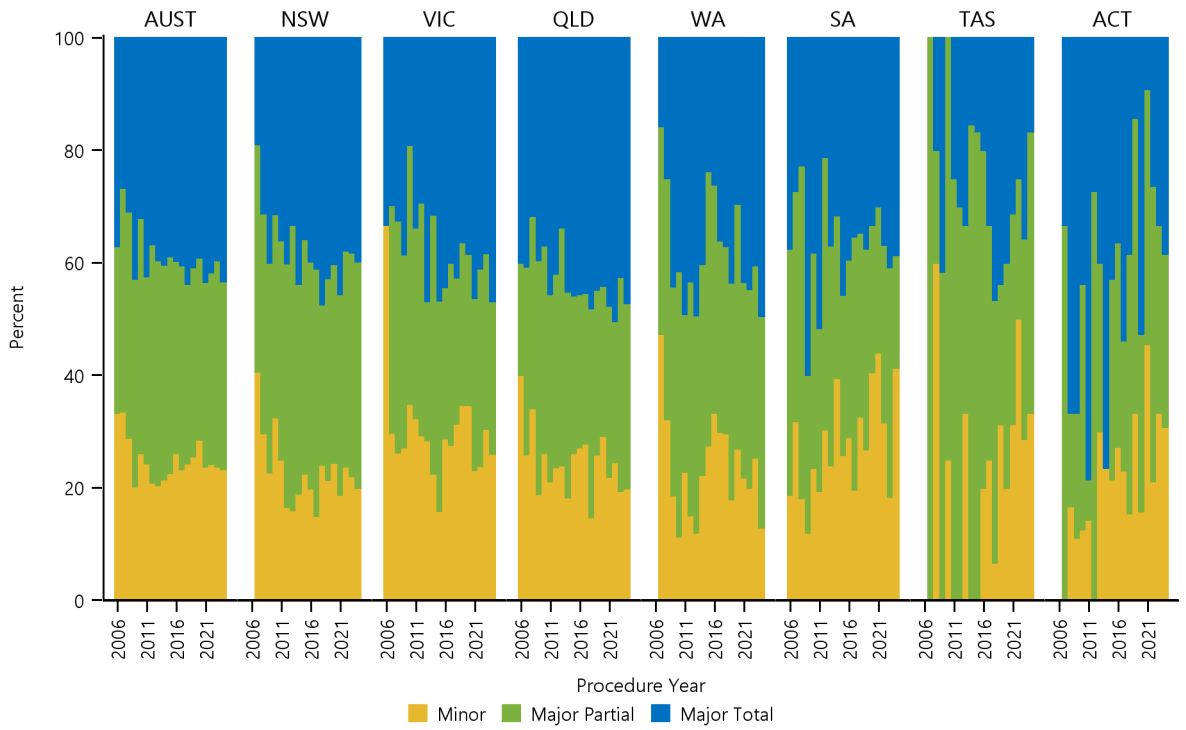
Table SD89 Reason for Revision of All Shoulder Replacement

Reason for Revision	Number	Percent
Instability/Dislocation	2215	23.4
Infection	2028	21.4
Loosening	1710	18.1
Rotator Cuff Insufficiency	930	9.8
Fracture	681	7.2
Pain	365	3.9
Glenoid Erosion	301	3.2
Dissociation	226	2.4
Lysis	154	1.6
Implant Breakage Glenoid Insert	134	1.4
Arthrofibrosis	81	0.9
Implant Breakage Glenoid	79	0.8
Metal Related Pathology	72	0.8
Malposition	67	0.7
Incorrect Sizing	58	0.6
Wear Glenoid Insert	55	0.6
Wear Glenoid	39	0.4
Implant Breakage Humeral	26	0.3
Implant Breakage Head	24	0.3
Progression Of Disease	24	0.3
Wear Humeral Cup	22	0.2
Heterotopic Bone	19	0.2
Tumour	15	0.2
Osteonecrosis	12	0.1
Synovitis	2	0.0
Other	119	1.3
TOTAL	**9458**	**100.0**

Table SD90 Type of Revision of All Shoulder Replacement

Type of Revision	Number	Percent
Humeral/Glenoid	3432	36.3
Humeral Component	2440	25.8
Cup/Head	678	7.2
Cement Spacer	674	7.1
Head Only	657	6.9
Glenoid Component	623	6.6
Cup Only	567	6.0
Removal of Prostheses	171	1.8
Head/Insert	62	0.7
Minor Components	53	0.6
Reoperation	39	0.4
Cement Only	38	0.4
Reinsertion of Components	14	0.1
Insert Only	6	0.1
Partial Resurfacing	4	0.0
TOTAL	**9458**	**100.0**

Figure SD93 Trends in Usage of All Revision Shoulder Replacement by State/Territory and Year



Note: NT is excluded from this graph due to low procedure numbers

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