
Orthopride
Belgian Hip and Knee Arthroplasty Registry
Annual Report
2019

January 2021



CONTENT

- 1 General introduction 7**
- 2 Knee replacement 11**
 - 2.1 Primary knee replacement 11**
 - 2.1.1 Demographics..... 11
 - 2.1.2 Surgical technique and implant characteristics 14
 - 2.2 Revisions after primary knee replacement 19**
 - 2.2.1 Demographics..... 19
 - 2.2.2 Surgical technique and implant characteristics 22
 - 2.2.3 Implant survival after primary procedures 26
 - 2.3 Ninety-days mortality after knee replacement procedures (Since 2015) 36**
- 3 Hip replacement..... 38**
 - 3.1 Primary hip replacement 38**
 - 3.1.1 Demographics..... 38
 - 3.1.2 Surgical technique and implant characteristics 41
 - 3.2 Revisions after primary hip replacement 47**
 - 3.2.1 Demographics..... 47
 - 3.2.3 Surgical technique and implant characteristics 50
 - 3.2.4 Implant survival after primary procedures 54
 - 3.3 Ninety-days mortality after hip replacement procedures (Since 2015)..... 64**

LIST OF TABLES

Table 1.1 Total joint replacement procedures entered in Orthopride during 2017	7
Table 1.2 Knee replacements according to patient's residence.....	8
Table 1.3 Knee revision burden and patient's age according to patient's residence	9
Table 1.4 Hip replacements according to patient's residence.....	9
Table 1.5 Hip revision burden and patient's age according to patient's residence	10
Table 2.1 Age, gender and indications for primary knee replacement patients.....	11
Table 2.2 Indications for primary knee replacements based on gender.....	13
Table 2.3 Medical history of primary knee replacement patients	13
Table 2.4 Pre-operative alignment of primary knee replacement patients	13
Table 2.5 Numbers and percentages of primary knee replacement types	14
Table 2.6 Age and gender of primary knee replacement patients by type of replacement.....	15
Table 2.7 Numbers and percentages of primary knee prosthesis fixation by type of prosthesis	16
Table 2.8 Usage of computer assisted navigation and custom made guides.....	18
Table 2.9 Age, gender and indications for knee revision procedures	19
Table 2.10 Components removed during knee revision procedures.....	22
Table 2.11 Combinations of removed components during knee revision procedures	22
Table 2.12 Numbers and percentages of implanted knee types during knee revision procedures	22
Table 2.13 Numbers and percentages of knee revisions by fixation.....	25
Table 2.14 90-days mortality after knee replacement by type of procedure.....	36
Table 2.15 90-days mortality after primary knee replacement by primary knee replacement types	36
Table 2.16 90-days mortality after knee revision procedures by combinations of removed components during knee revision procedures	36
Table 2.17 90-days mortality after knee replacement by age category.....	37
Table 3.1 Age, gender and indications for primary hip replacement patients.....	38
Table 3.2 Indications for primary hip replacements based on gender.....	40
Table 3.3 Numbers and percentages of primary hip replacement types.....	41
Table 3.4 Age and gender of primary hip replacement patients by type of replacement.....	41
Table 3.5 Numbers and percentages of bearing surfaces in primary hip replacements according to type of replacement.....	43
Table 3.6 Usage of custom made guides, computer assisted navigation and bone grafts during primary hip procedures.....	46
Table 3.7 Usage of modular femoral neck according to type of prosthesis during primary hip procedures	46

Table 3.8 Modular femoral neck types during primary hip procedures with modular necks	46
Table 3.9 Age, gender and indications for hip revision procedures	47
Table 3.10 Numbers and percentages of implanted hip types during hip revision procedures...	50
Table 3.11 Numbers and percentages of bearing surfaces in hip revisions according to type of replacement	51
Table 3.12 Usage of custom made guides, computer assisted navigation and bone grafts during hip revision procedures	52
Table 3.13 Usage of modular femoral neck according to type of prosthesis during hip revision procedures	52
Table 3.14 Usage of modular femoral neck types	53
Table 3.15 90-days mortality after hip replacement by type of procedure.....	64
Table 3.16 90-days mortality after hip replacement by age category.....	64

LIST OF FIGURES

Figure 1.1 Total joint replacement procedures entered in Orthopride in 2016, 2017, 2018 and 2019	7
Figure 2.1 Age distribution by gender for primary knee replacement patients	12
Figure 2.2 Age distribution by indication for primary knee replacement patients	12
Figure 2.3 Distribution of primary total knee prosthesis types	14
Figure 2.4 Age distribution by implant type for primary knee replacement patients	15
Figure 2.5 Method of fixation by primary knee prosthesis type	16
Figure 2.6 Approach used during primary partial knee replacements	17
Figure 2.7 Approach used during primary total knee replacements	17
Figure 2.8 Usage of computer assisted navigation and custom made guides according to implant type	18
Figure 2.9 Insert type according to primary knee replacement type	18
Figure 2.10 Knee revision burden according to age category	20
Figure 2.11 Age and gender by number of knee revision procedures	20
Figure 2.12 Indications for knee revision procedures	21
Figure 2.13 Distribution of implanted total knee prosthesis types during revision procedures ...	23
Figure 2.14 Type of implanted knee prosthesis during revision procedures according to the number of revisions	24
Figure 2.15 Approach during knee revision procedures	25
Figure 2.16 Kaplan-Meier curve for age at primary knee replacement	26
Figure 2.17 Kaplan-Meier curve for indication at primary knee replacement	27
Figure 2.18 Kaplan-Meier curve for alignment at primary knee replacement for patients with osteoarthritis as indication for knee replacement	28
Figure 2.19 Kaplan-Meier curve for type of implant at primary knee replacement	29
Figure 2.20 Kaplan-Meier curve for type of implant for total knee prostheses at primary knee replacement	30
Figure 2.21 Kaplan-Meier curves for method of fixation according to primary knee replacement prosthesis type	31
Figure 2.22 Kaplan-Meier curve for usage of custom made guides during primary knee replacement for total knee replacement	33
Figure 2.23 Kaplan-Meier curve for usage of computer assisted navigation during primary knee replacement for total knee replacement	34
Figure 2.24 Kaplan-Meier curve for location where primary knee replacement was performed .	35
Figure 3.1 Age distribution by gender for primary hip replacement patients	39
Figure 3.2 Age distribution by indication for primary hip replacement patients	39

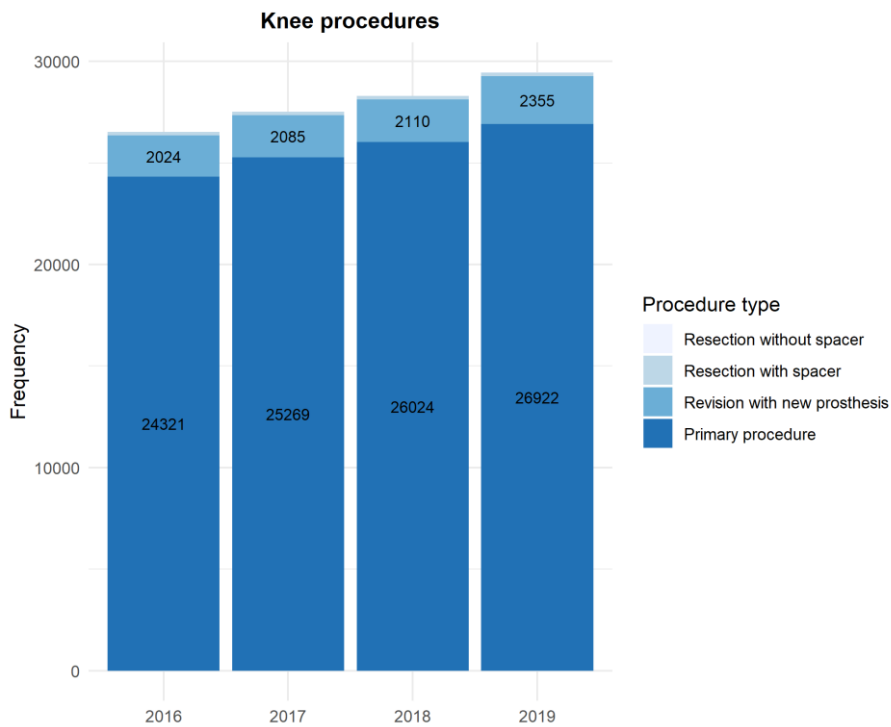
Figure 3.3 Indications for primary hip replacement according to age category	40
Figure 3.4 Age distribution by implant type for primary hip replacement patients	42
Figure 3.5 Type of primary hip replacement procedures by age groups and gender	42
Figure 3.6 Type of primary hip replacement procedures by indication.....	43
Figure 3.7 Fixation of primay hip prosthesis according to type of replacement.....	44
Figure 3.8 Fixation of total primay hip prosthesis according to age category	44
Figure 3.9 Approach used during primary hip replacement according to gender	45
Figure 3.10 Approach used during primary hip replacement according to prosthesis type	45
Figure 3.11 Hip revision burden according to age category.....	48
Figure 3.12 Age and gender by number of hip revision procedures	48
Figure 3.13 Indications for hip revision procedures	49
Figure 3.14 Combinations of revised components during hip revision procedures	50
Figure 3.15 Fixation of hip prosthesis according to type of replacement during hip revision procedures	51
Figure 3.16 Approach used during revision hip replacement according to prosthesis type	52
Figure 3.17 Kaplan-Meier curve for age at primary hip replacement	54
Figure 3.18 Kaplan-Meier curve for indication at primary hip replacement	55
Figure 3.19 Kaplan-Meier curve for type of implant at primary hip replacement	56
Figure 3.20 Kaplan-Meier curve for bearing surface for total hip prostheses at primary hip replacement	57
Figure 3.21 Kaplan-Meier curves for method of fixation according to primary hip replacement prosthesis type	58
Figure 3.22 Kaplan-Meier curve for usage of grafts during primary hip replacement.....	61
Figure 3.23 Kaplan-Meier curve for usage of a modular neck during primary hip replacement..	62
Figure 3.24 Kaplan-Meier curve for location where primary hip replacement was performed	63

1 GENERAL INTRODUCTION

Table 1.1 Total joint replacement procedures entered in Orthopride during 2019

	Knee procedures	Hip procedures
Primary procedure	26 922	31 064
Revision with new prosthesis	2 355	2 860
Resection with spacer	178	171
Resection without spacer	4	8
Total per joint	29 459	34 103

Figure 1.1 Total joint replacement procedures entered in Orthopride in 2016, 2017, 2018 and 2019



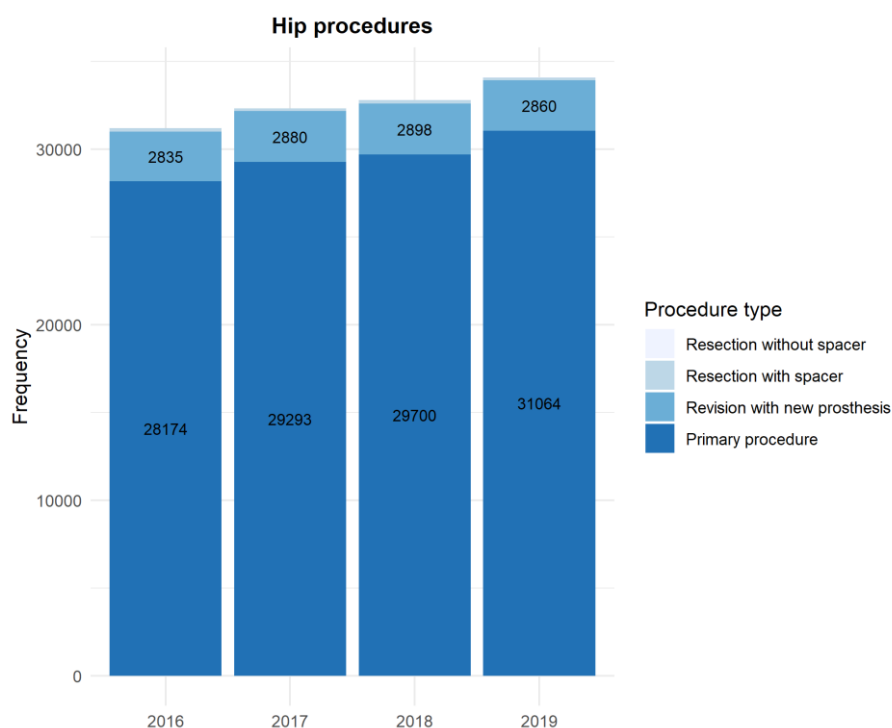


Table 1.2 Knee replacements according to patient's residence

	Frequency knee replacements	Percent on total amount	Procedures per 100.000 inhabitants	Percent of the inhabitants > 45 years*	Percent of the inhabitants >60 years*
Antwerp	4412	15 %	236	46%	26%
Limburg	2485	8.5 %	283	49%	27%
Liège	2389	8.1 %	215	46%	25%
Namur	1109	3.8 %	224	46%	25%
Luxembourg	771	2.6 %	269	44%	23%
Hainaut	3184	10.8 %	236	46%	25%
West-Flanders	4944	16.8 %	428	51%	30%
East-Flanders	4553	15.5 %	299	47%	26%
Flemish Brabant	2488	8.5 %	215	47%	26%
Walloon Brabant	849	2.9 %	209	46%	25%
Brussels	1677	5.7 %	138	36%	18%
Other Country	526	1.8 %			
Total [Missing]	29387 [72]	100 %			

* Based on data provided on <https://bestat.economie.fgov.be>

Table 1.3 Knee revision burden and patient's age according to patient's residence

	Primary procedures			Revisions		
	Frequency	Row Percent	Age (mean \pm SD)	Frequency	Row Percent	Age (mean \pm SD)
Antwerp	4102	93	68.1 +/- 9.8	310	7	66.7 +/- 11.1
Limburg	2277	91.6	67.3 +/- 10	208	8.4	66.2 +/- 11.4
Liège	2155	90.2	67.1 +/- 10	234	9.8	65 +/- 11.3
Namur	1028	92.7	67.7 +/- 9.2	81	7.3	66 +/- 10.2
Luxembourg	708	91.8	67.4 +/- 9.9	63	8.2	64.8 +/- 10.5
Hainaut	2913	91.5	67.4 +/- 9.3	271	8.5	66.8 +/- 9.7
West-Flanders	4551	92.1	67.6 +/- 10.2	393	7.9	67 +/- 11
East-Flanders	4052	89	66.8 +/- 10.9	501	11	64.4 +/- 11.7
Flemish Brabant	2301	92.5	68.3 +/- 10.1	187	7.5	66.7 +/- 10.3
Walloon Brabant	787	92.7	68.2 +/- 9.9	62	7.3	68.5 +/- 12.1
Brussels	1521	90.7	68.4 +/- 10.3	156	9.3	68.5 +/- 11.7
Other Country	467	88.8	65.3 +/- 9.3	59	11.2	64.7 +/- 9.8
Total	26862	91.4	67.5 +/- 10.1	2525	8.6	66.1 +/- 11.1

Table 1.4 Hip replacements according to patient's residence

	Frequency hip replacements	Percent on total amount	Procedures per 100.000 inhabitants	Percent of the inhabitants > 45 years*	Percent of the inhabitants >60 years*
Antwerp	5204	15.3 %	278	46%	26%
Limburg	2891	8.5 %	330	49%	27%
Liège	3059	9 %	276	46%	25%
Namur	1396	4.1 %	282	46%	25%
Luxembourg	934	2.7 %	326	44%	23%
Hainaut	3806	11.2 %	283	46%	25%
West-Flanders	5229	15.4 %	452	51%	30%
East-Flanders	4648	13.7 %	305	47%	26%
Flemish Brabant	3050	9 %	264	47%	26%
Walloon Brabant	1168	3.4 %	288	46%	25%
Brussels	1919	5.6 %	158	36%	18%
Other Country	717	2.1 %			
Total [Missing]	34021 [82]	100 %			

* Based on data provided on <https://bestat.economie.fgov.be>

Table 1.5 Hip revision burden and patient's age according to patient's residence

	Primary procedures			Revisions		
	Frequency	Row Percent	Age (mean ± SD)	Frequency	Row Percent	Age (mean ± SD)
Antwerp	4781	91.9	70.8 +/- 12.7	423	8.1	71.9 +/- 12.2
Limburg	2712	93.8	68.5 +/- 13.1	179	6.2	71.5 +/- 12.9
Liège	2799	91.5	70.2 +/- 12.6	260	8.5	73.5 +/- 12.8
Namur	1234	88.4	69.7 +/- 12.4	162	11.6	68.9 +/- 11.8
Luxembourg	817	87.5	69.7 +/- 13	117	12.5	70.3 +/- 13.1
Hainaut	3439	90.4	69.1 +/- 12.9	367	9.6	69.8 +/- 13
West-Flanders	4737	90.6	70.6 +/- 13	492	9.4	72.6 +/- 12.1
East-Flanders	4192	90.2	70 +/- 13.1	456	9.8	71.4 +/- 13.1
Flemish Brabant	2825	92.6	71.2 +/- 12.6	225	7.4	74.2 +/- 11.6
Walloon Brabant	1085	92.9	71.4 +/- 12.7	83	7.1	72.9 +/- 12.5
Brussels	1728	90	72 +/- 14	191	10	74.9 +/- 12.3
Other Country	647	90.2	65.4 +/- 13	70	9.8	63.8 +/- 16
Total	30996	91.1	70.2 +/- 13	3025	8.9	71.8 +/- 12.7

2 KNEE REPLACEMENT

2.1 PRIMARY KNEE REPLACEMENT

2.1.1 Demographics

Table 2.1 Age, gender and indications for primary knee replacement patients

N=26922		
	Mean	SD
Age (yrs)	67.5	10.1
	Count	N %
Age categories		
<45	375	1.4%
45-59	5509	20.5%
60-69	8803	32.7%
70-79	9089	33.8%
>=80	3145	11.7%
Gender		
Female	16280	60.5%
Male	10640	39.5%
Indication		
Osteoarthritis	25595	95.1%
Avascular necrosis	336	1.2%
Fracture	81	0.3%
Inflammatory arthropathy	135	0.5%
Post trauma	462	1.7%
Previous infection	23	0.1%
Indication other	290	1.1%

Figure 2.1 Age distribution by gender for primary knee replacement patients

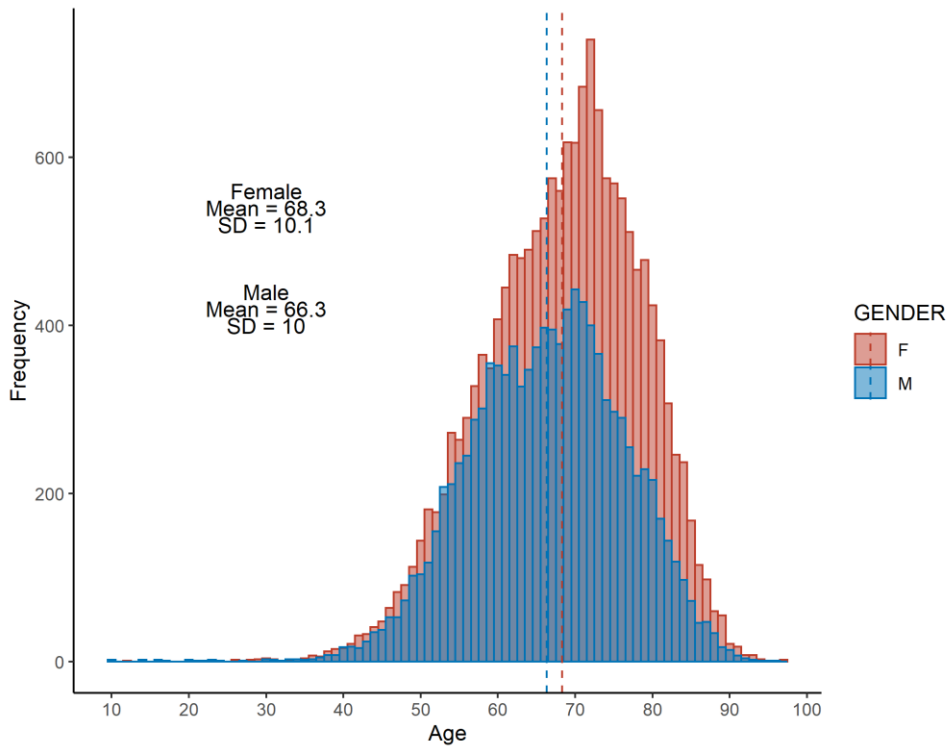


Figure 2.2 Age distribution by indication for primary knee replacement patients

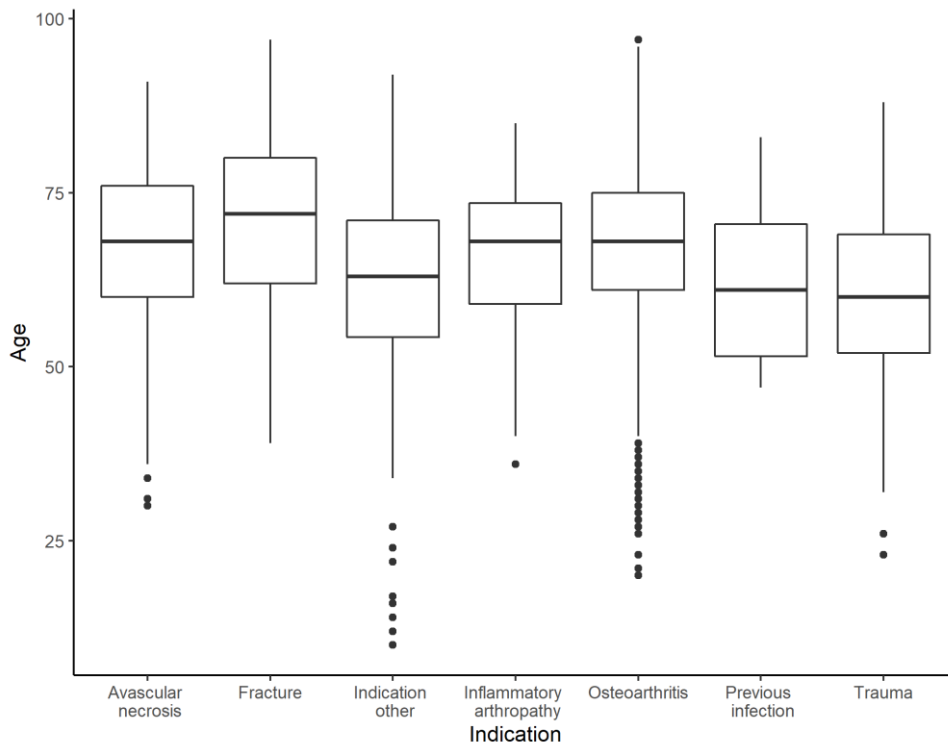


Table 2.2 Indications for primary knee replacements based on gender

	Male	Female
	N= 10640	N= 16280
	N (%)	N (%)
Osteoarthritis	9982 (93.8)	15611 (95.9)
Post trauma	272 (2.6)	190 (1.2)
Avascular necrosis	141 (1.3)	195 (1.2)
Fracture	25 (0.2)	56 (0.3)
Inflammatory arthropathy	48 (0.5)	87 (0.5)
Previous infection	16 (0.2)	7 (0)
Indication other	156 (1.5)	134 (0.8)

Table 2.3 Medical history of primary knee replacement patients

	Count	Percentage of total
No pre-operative surgeries	19 405	72.1 %
Pre-op Osteosynthesis of the tibia	286	1.1 %
Pre-op Osteosynthesis of the femur	103	0.4 %
Pre-op Osteotomy	347	1.3 %
Pre-op Synovectomy	101	0.4 %
Pre-op Meniscectomy	5 715	21.2 %
Pre-op ACL reconstruction	455	1.7 %
Pre-op Other	1 230	4.6 %

Table 2.4 Pre-operative alignment of primary knee replacement patients

	Count	Percentage of total
Normal	7 492	27.8%
Valgus	5 307	19.7%
Varus	14 123	52.5%

2.1.2 Surgical technique and implant characteristics

Table 2.5 Numbers and percentages of primary knee replacement types

	Number	Percentage of total
Total knee replacement	22770	84.6 %
Unicompartmental replacement	3283	12.2 %
Bicompartmental replacement	365	1.4 %
Patellofemoral replacement	487	1.8 %
Partial resurfacing femoral condyle	17	0.1 %
Total	26922	100 %

Figure 2.3 Distribution of primary total knee prosthesis types

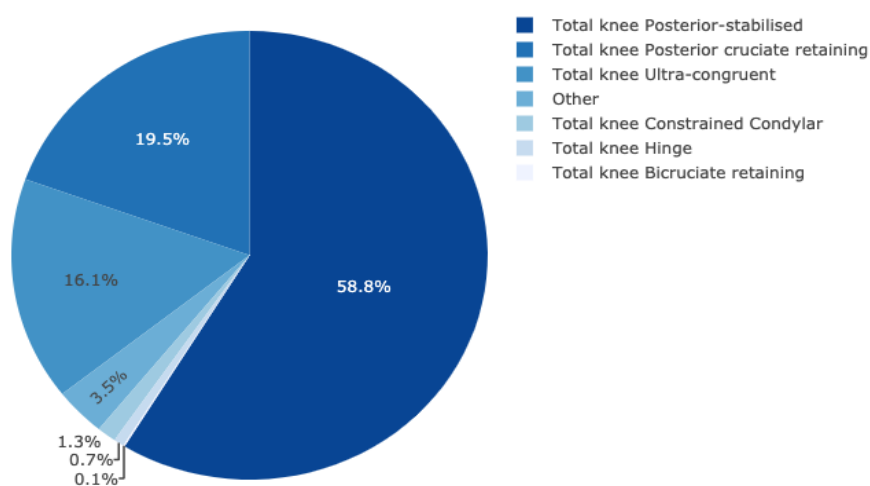


Table 2.6 Age and gender of primary knee replacement patients by type of replacement

	Total knee replacement	Unicompartmental replacement	Bicompartmental replacement	Patellofemoral replacement	Partial Resurfacing femoral condyle
	N=22770	N=3283	N=365	N=487	N=17
Mean age (years) (SD)	68.4 (9.7)	63.8 (10.1)	66.6 (10.4)	54.8 (12.2)	44.1 (5.7)
Age groups	N (%)	N (%)	N (%)	N (%)	N (%)
<45	196 (0.9 %)	67 (2 %)	6 (1.6 %)	96 (19.7 %)	10 (58.8 %)
45-59	4055 (17.8 %)	1130 (34.4 %)	88 (24.1 %)	229 (47 %)	7 (41.2 %)
60-69	7483 (32.9 %)	1106 (33.7 %)	114 (31.2 %)	100 (20.5 %)	0 (0 %)
70-79	8150 (35.8 %)	773 (23.5 %)	119 (32.6 %)	47 (9.7 %)	0 (0 %)
>=80	2885 (12.7 %)	207 (6.3 %)	38 (10.4 %)	15 (3.1 %)	0 (0 %)
Gender	N (%)	N (%)	N (%)	N (%)	N (%)
Female	14139 (62.1 %)	1526 (46.5 %)	215 (58.9 %)	393 (80.7 %)	7 (41.2 %)
Male	8629 (37.9 %)	1757 (53.5 %)	150 (41.1 %)	94 (19.3 %)	10 (58.8 %)

Figure 2.4 Age distribution by implant type for primary knee replacement patients

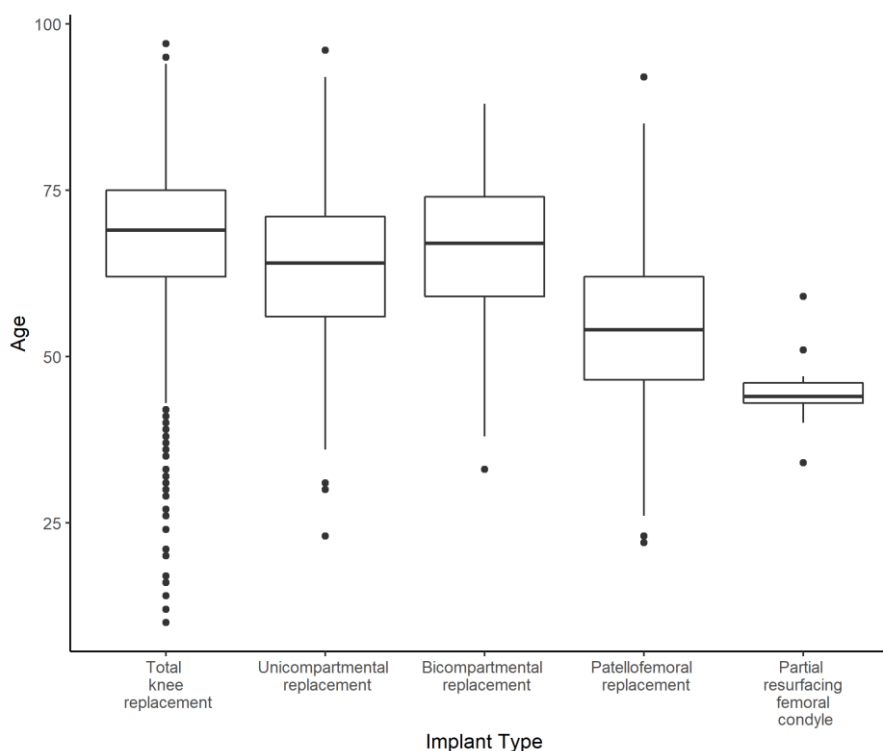


Table 2.7 Numbers and percentages of primary knee prosthesis fixation by type of prosthesis

	Total knee replacement	Unicompartmental replacement	Bicompartmental replacement	Patellofemoral replacement
	N=22770	N=3283	N=365	N=487
	% (N)	% (N)	% (N)	% (N)
Cemented	89.6% (20400)	66.6% (2188)	49.9% (182)	94.5% (460)
Revers hybrid	0.2% (37)	1.2% (41)	1.4% (5)	0% (0)
Hybrid	5.8% (1317)	2.9% (96)	3% (11)	0% (0)
Uncemented	4.5% (1016)	29.2% (958)	45.8% (167)	5.5% (27)

Figure 2.5 Method of fixation by primary knee prosthesis type

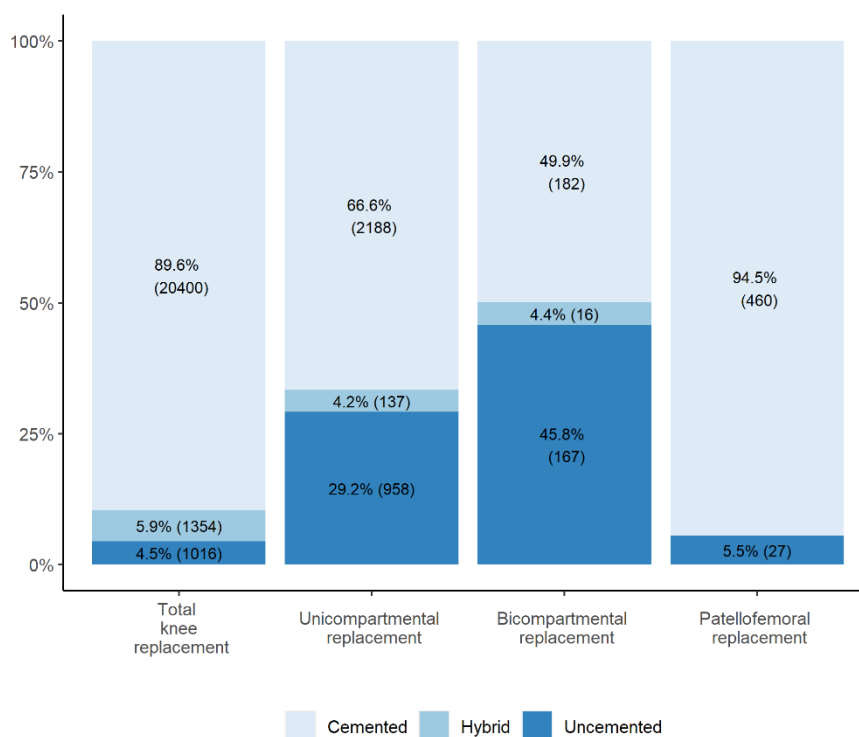
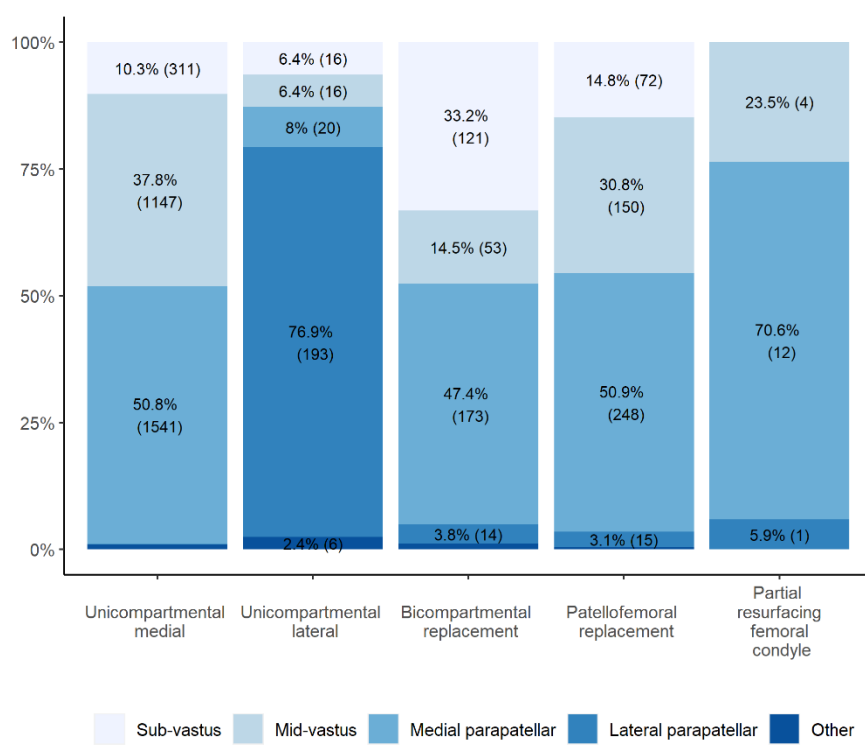
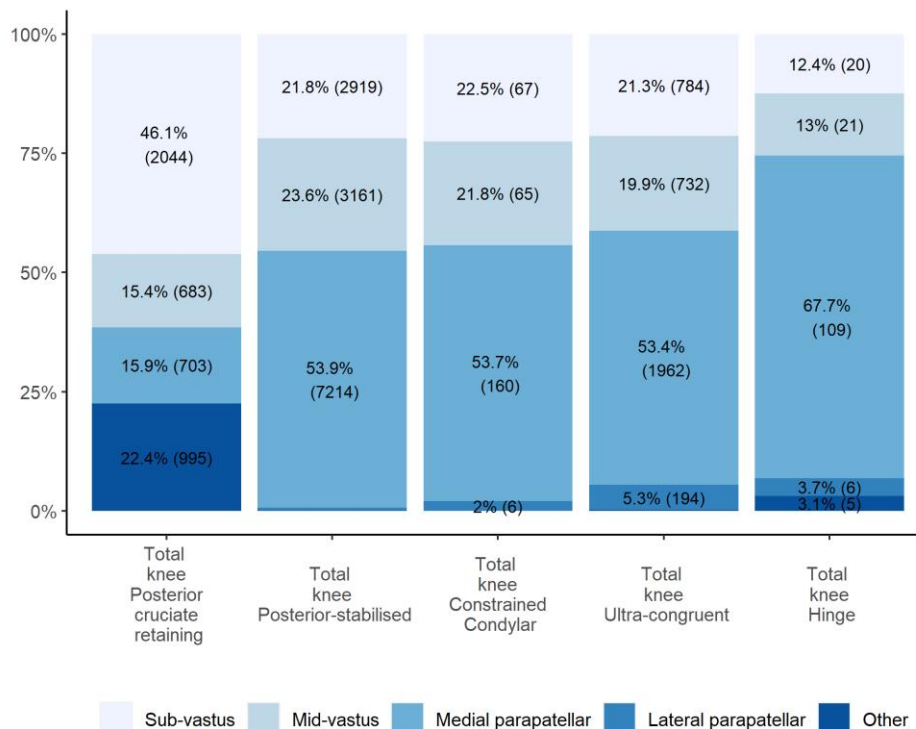


Figure 2.6 Approach used during primary partial knee replacements



Note: For readability of the figure, labels with percentages smaller than 2% are not displayed.

Figure 2.7 Approach used during primary total knee replacements



Note: For readability of the figure, labels with percentages smaller than 2% are not displayed.

Table 2.8 Usage of computer assisted navigation and custom made guides

	Computer assisted navigation	Custom made guides
Count (% of total procedures)	1122 (4.2%)	1217 (4.5%)
Amount of hospitals (% of all hospitals)	27/103 (26.2%)	34/103 (33%)

Figure 2.8 Usage of computer assisted navigation and custom made guides according to implant type

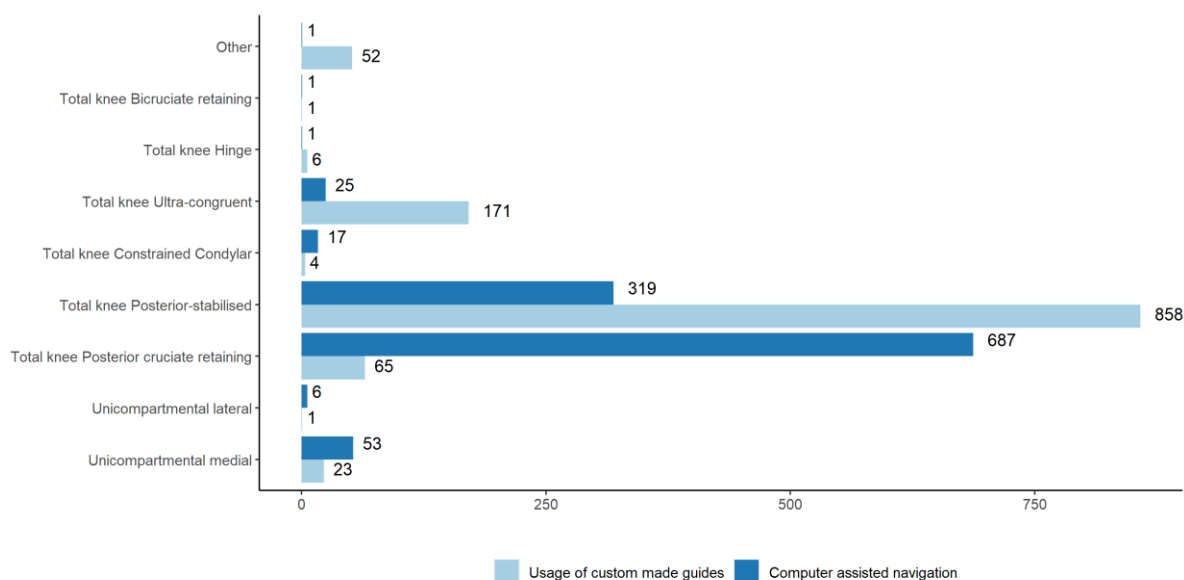
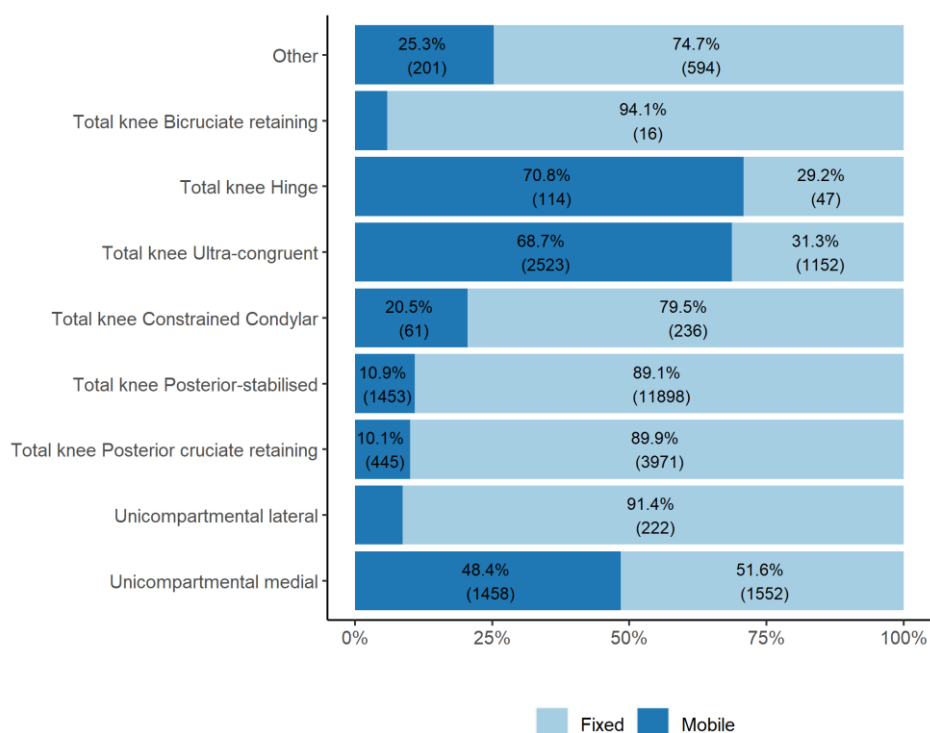


Figure 2.9 Insert type according to primary knee replacement type



2.2 REVISIONS AFTER PRIMARY KNEE REPLACEMENT

2.2.1 Demographics

Table 2.9 Age, gender and indications for knee revision procedures

N=2537		
	Mean	SD
Age (yrs)	66.1	11.1
	Count	N %
Age categories		
<45	74	2.9
45-59	654	25.8
60-69	786	31
70-79	718	28.3
>=80	305	12
Gender		
Female	1556	61.3
Male	981	38.7
Indication		
Aseptic loosening	690	27.2
Wear of polyethylene component	132	5.2
Instability	465	18.3
Infection	516	20.3
Periprosthetic fracture	114	4.5
Pain	539	21.2
Stiffness	129	5.1
Malalignment	145	5.7
Implant fracture	33	1.3
Progressive osteoarthritis in non-replaced component	324	12.8
Indication other	257	10.1

Figure 2.10 Knee revision burden according to age category

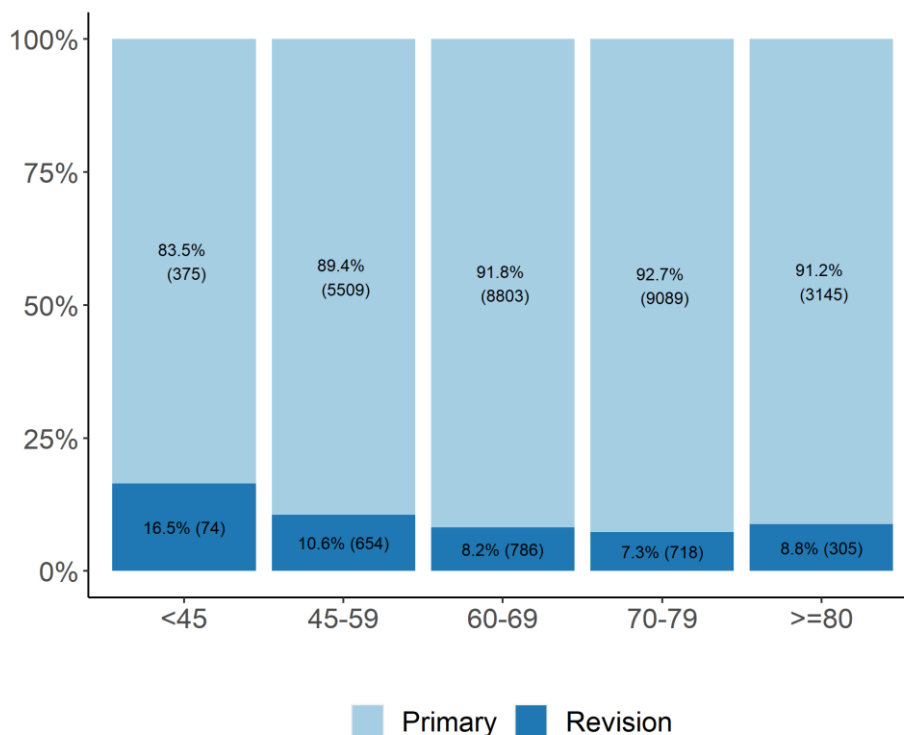


Figure 2.11 Age and gender by number of knee revision procedures

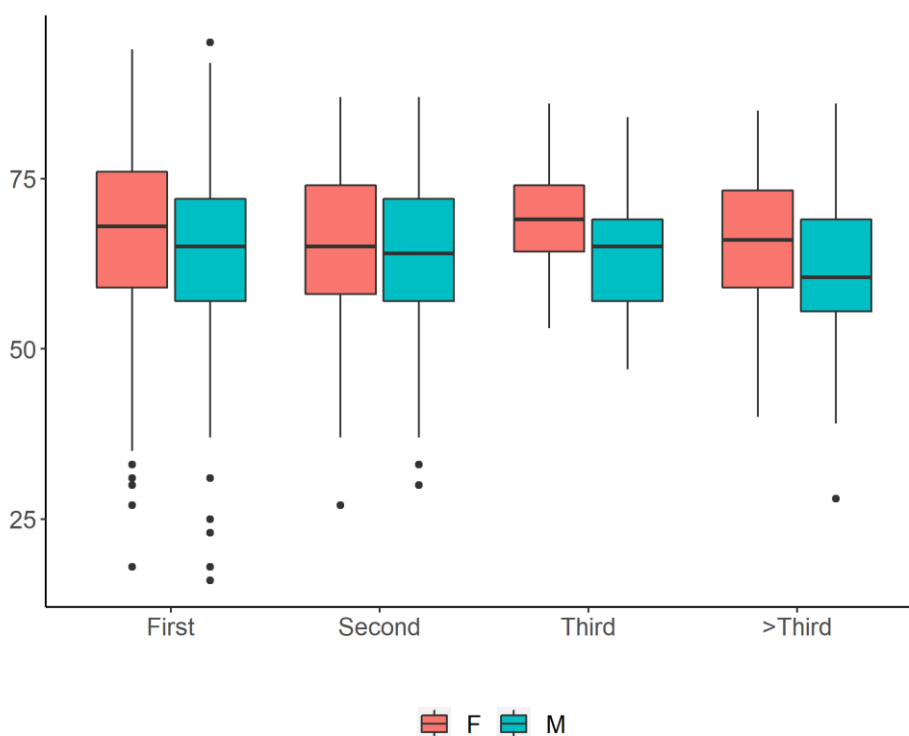
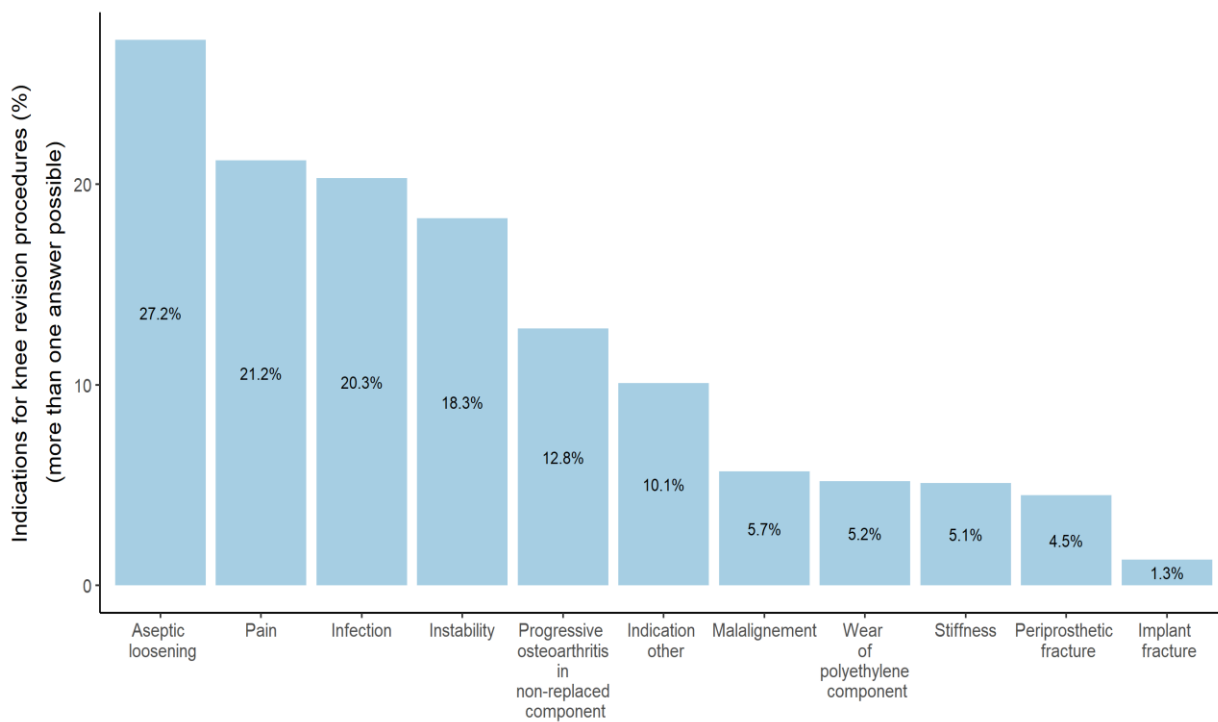


Figure 2.12 Indications for knee revision procedures



2.2.2 Surgical technique and implant characteristics

Table 2.10 Components removed during knee revision procedures

	Number	Proportion (%) ¹
Tibia	1559	66.2
Femur	1517	64.4
Patella	993	42.2
Insert	2024	85.9
Total number of procedures	2355	

¹More than one component can be exchanged during a revision procedure.

Table 2.11 Combinations of removed components during knee revision procedures

	Number	Percentage of total (%)
All components	1428	60.6
Tibia and Insert	113	4.8
Patella and insert	44	1.9
Femur and insert	43	1.8
Insert only	367	15.6
Patella only	296	12.6
Femur only	23	1
Other combination	41	1.7
Total number of procedures	2355	100%

Table 2.12 Numbers and percentages of implanted knee types during knee revision procedures

	Number	Percentage of total (%)
Total knee replacement	1865	93.8
Unicompartmental	9	0.5
Bicompartmental replacement	41	2.1
Patellofemoral replacement	73	3.7
Total number of procedures	1988	100%

Figure 2.13 Distribution of implanted total knee prosthesis types during revision procedures

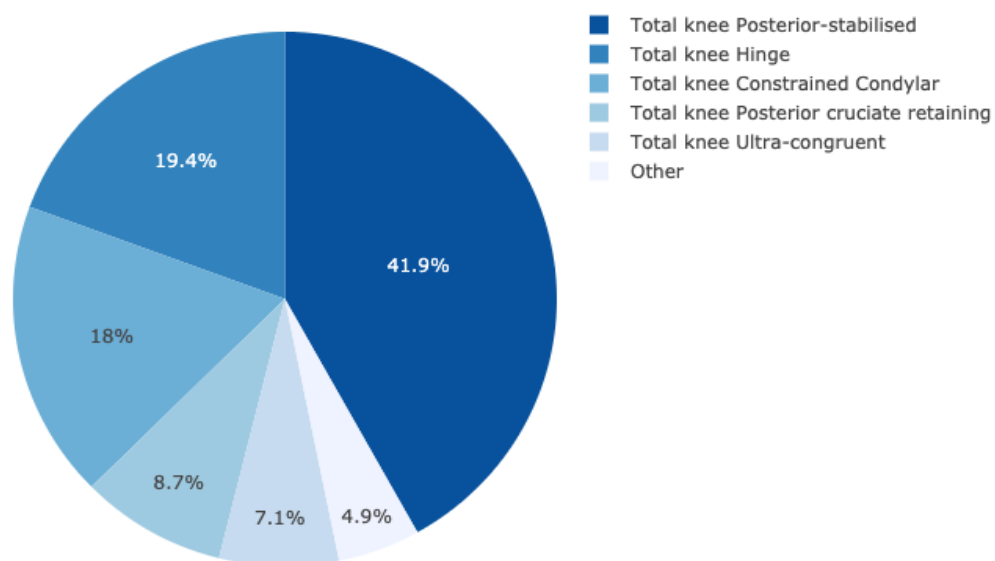
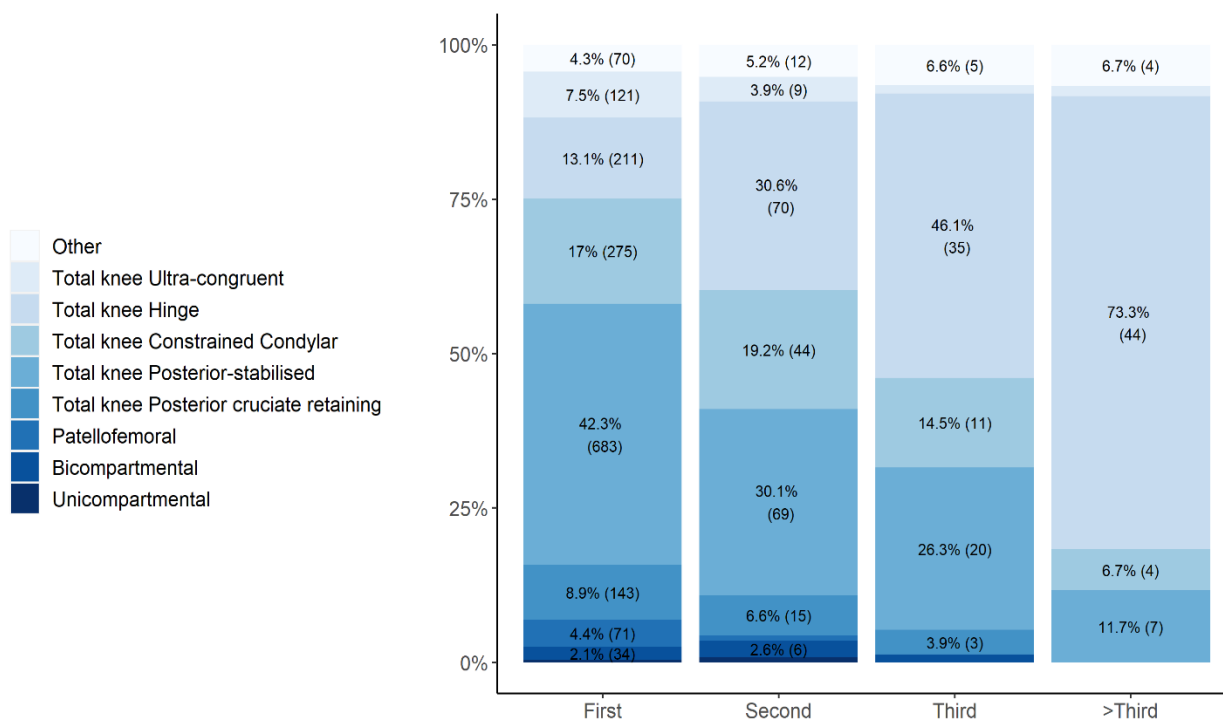


Figure 2.14 Type of implanted knee prosthesis during revision procedures according to the number of revisions



	1st revision	2nd revision	3rd revision	>3rd revision
	N (%)	N (%)	N (%)	N (%)
Total knee Other	70 (4.3%)	12 (5.2%)	5 (6.6%)	4 (6.7%)
Total knee Ultra-congruent	121 (7.5%)	9 (3.9%)	1 (1.3%)	1 (1.7%)
Total knee Hinge	211 (13.1%)	70 (30.6%)	35 (46.1%)	44 (73.3%)
Total knee Constrained condylar	275 (17.0%)	44 (19.2%)	11 (14.5%)	4 (6.7%)
Total knee Posterior-stabilised	683 (42.3%)	69 (30.1%)	20 (26.3%)	7 (11.7%)
Total knee Posterior cruciate retaining	143 (8.9%)	15 (6.6%)	3 (3.9%)	0 (0%)
Total knee bicruciate retaining	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Patellofemoral replacement	71 (4.4%)	2 (0.9%)	0 (0%)	0 (0%)
Bicompartamental replacement	34 (2.1%)	6 (2.6%)	1 (1.3%)	0 (0%)
Unicompartmental	7 (0.4%)	2 (0.9%)	0 (0%)	0 (0%)
Total amount	1615 (100%)	229 (100%)	76 (100%)	60 (100%)

Figure 2.15 Approach during knee revision procedures

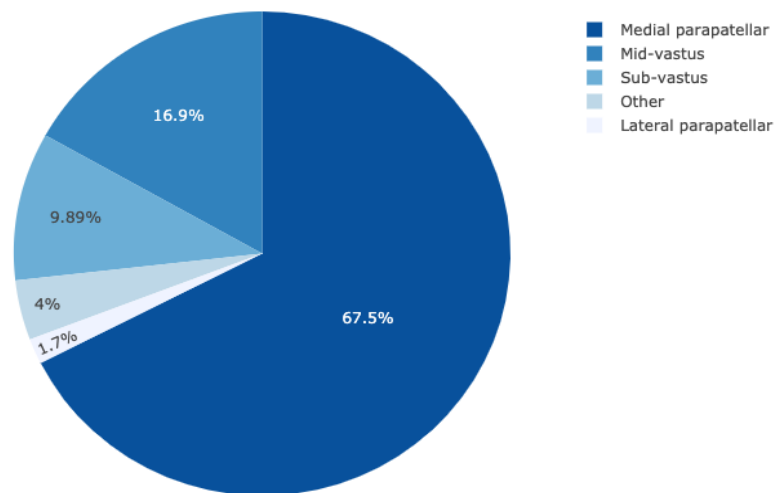


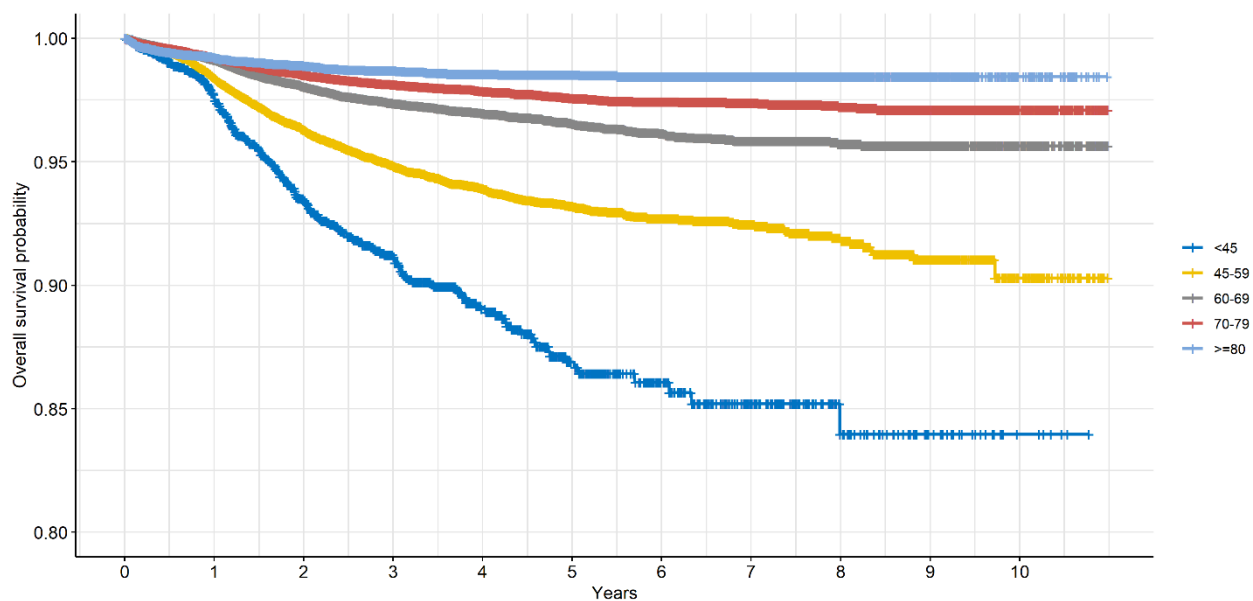
Table 2.13 Numbers and percentages of knee revisions by fixation

	Number	Percentage of total
Cemented	1563	97.1%
Reverse hybrid	3	0.2%
Hybrid	22	1.4%
Uncemented	21	1.3%
Total number of procedures	1609	100%

Note: Only replacements during which the femoral and/or tibial component were replaced were taken into account.

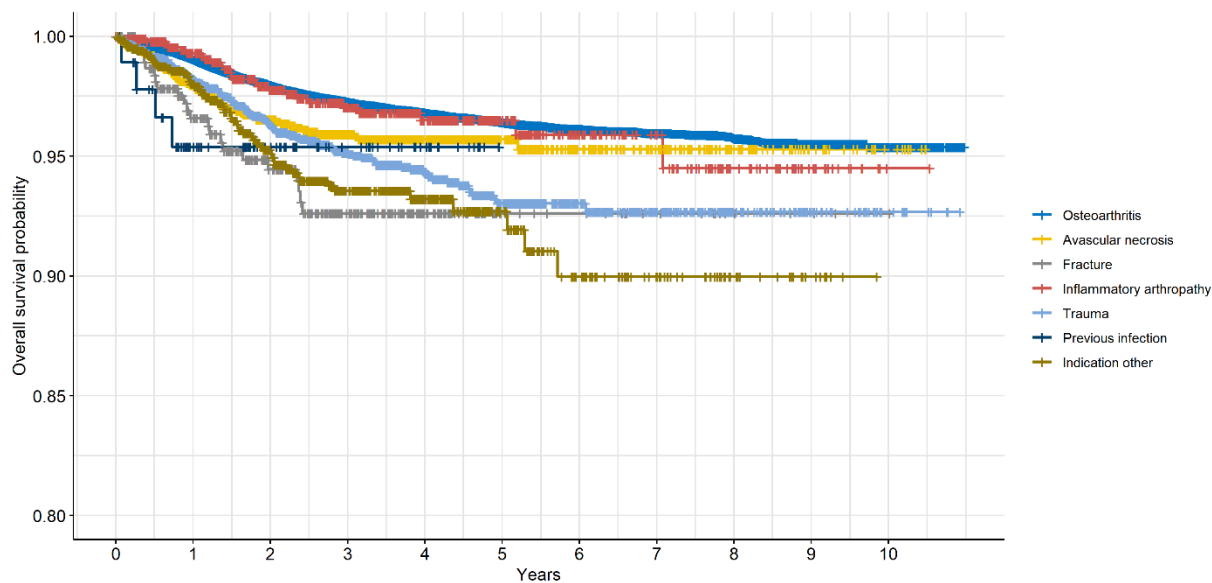
2.2.3 Implant survival after primary procedures

Figure 2.16 Kaplan-Meier curve for age at primary knee replacement



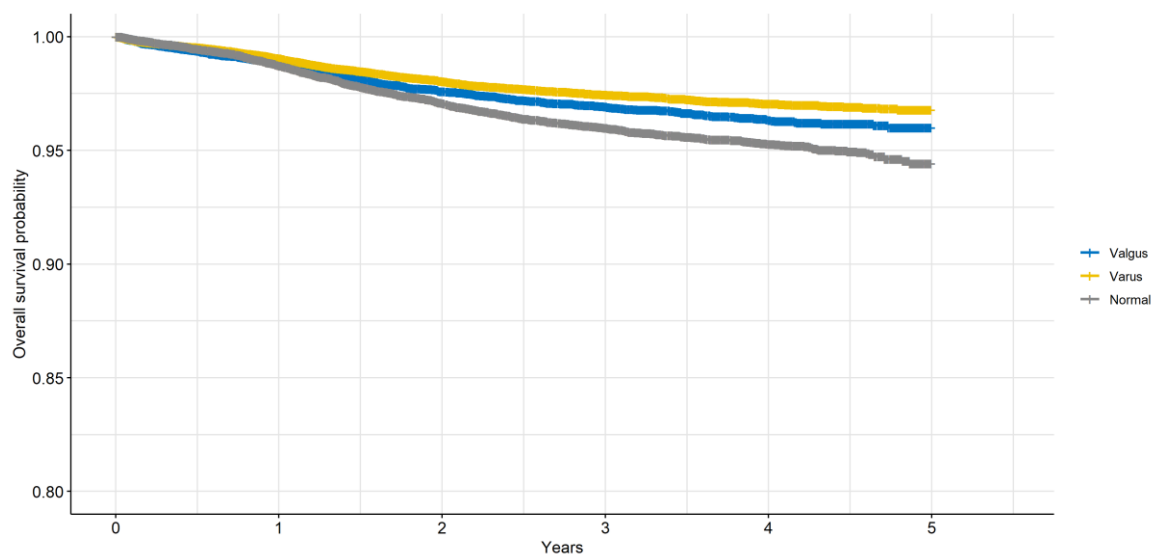
Number of events/Number at risk											
	0	1	2	3	4	5	6	7	8	9	10
<45	49/2321	76/1902	32/1494	23/1101	13/715	3/366	2/215	1/139	0/68	0/29	0/6
45-59	427/30084	467/24152	244/18429	110/13231	52/8458	19/4618	5/2431	7/1549	6/820	1/327	0/73
60-69	386/48752	393/39553	186/30737	78/22492	48/14712	26/8168	12/4488	2/2861	1/1499	0/592	0/147
70-79	360/49974	254/40417	110/31497	52/23030	34/15247	10/8739	2/5019	4/3291	2/1782	0/717	0/189
>=80	128/17637	44/14230	21/11037	10/8169	1/5366	2/3126	0/1736	0/1091	0/549	0/195	0/47

Figure 2.17 Kaplan-Meier curve for indication at primary knee replacement



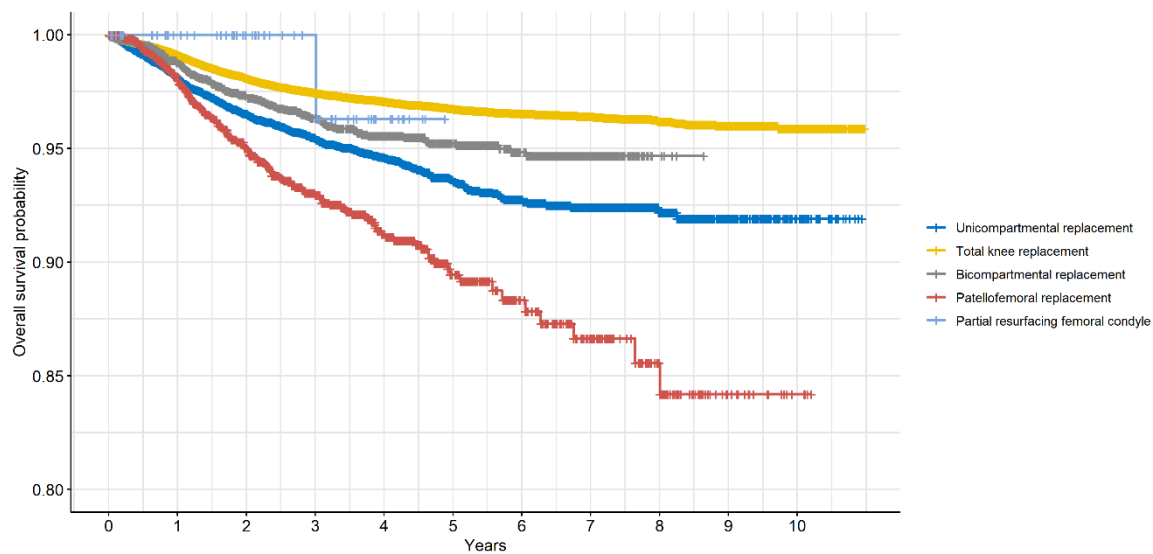
Number of events/Number at risk											
	0	1	2	3	4	5	6	7	8	9	10
Osteo-arthriti	1222/141190	1128/114160	549/88535	258/64693	137/42401	54/23914	20/13289	13/8549	9/4534	1/1775	0/439
Avascular necrosis	36/1964	22/1585	7/1228	2/886	0/543	1/267	0/153	0/102	0/58	0/23	0/9
Fracture	12/406	6/303	4/233	0/151	0/73	0/21	0/17	0/11	0/5	0/3	0/1
Inflammator y arthropathy	6/933	11/791	4/609	2/457	0/312	1/182	0/107	1/71	0/37	0/16	0/1
Post trauma	49/3009	44/2493	20/1942	10/1399	10/917	0/521	1/271	0/177	0/85	0/38	0/12
Previous infection	4/93	0/67	0/48	0/29	0/17	0/0	0/0	0/0	0/0	0/0	0/0
Other indication	21/1212	22/893	10/626	1/427	1/250	3/124	0/75	0/47	0/22	0/9	0/0

Figure 2.18 Kaplan-Meier curve for alignment at primary knee replacement for patients with osteoarthritis as indication for knee replacement



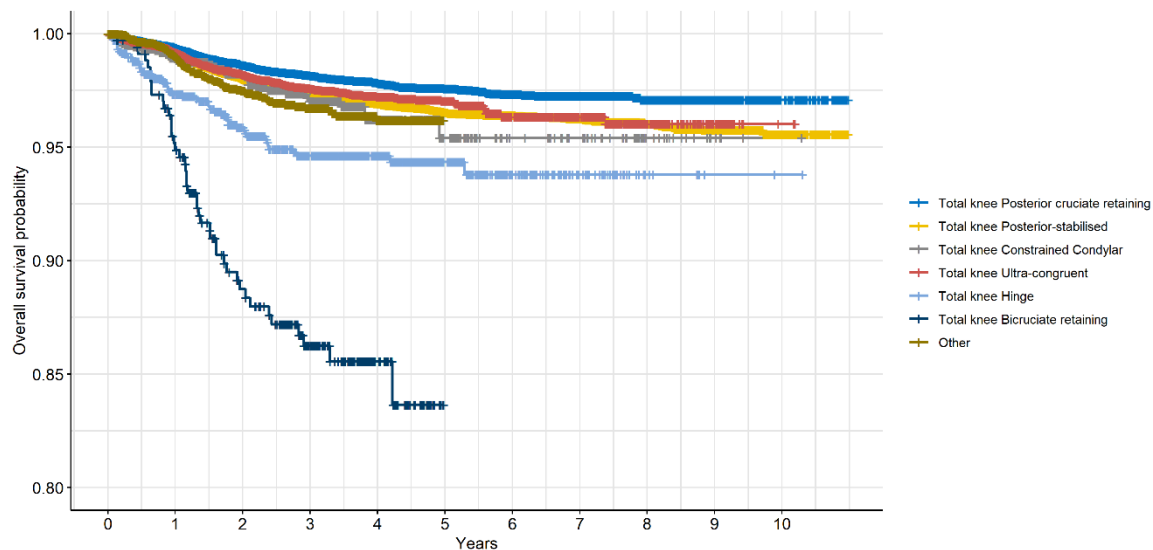
Number of events/Number at risk					
	0	1	2	3	4
Valgus	227/22838	184/17571	72/12553	35/7986	7/3642
Varus	493/60452	411/46296	169/33159	63/20961	13/9464
Normal	355/33334	360/25874	167/18577	64/11641	22/5286

Figure 2.19 Kaplan-Meier curve for type of implant at primary knee replacement



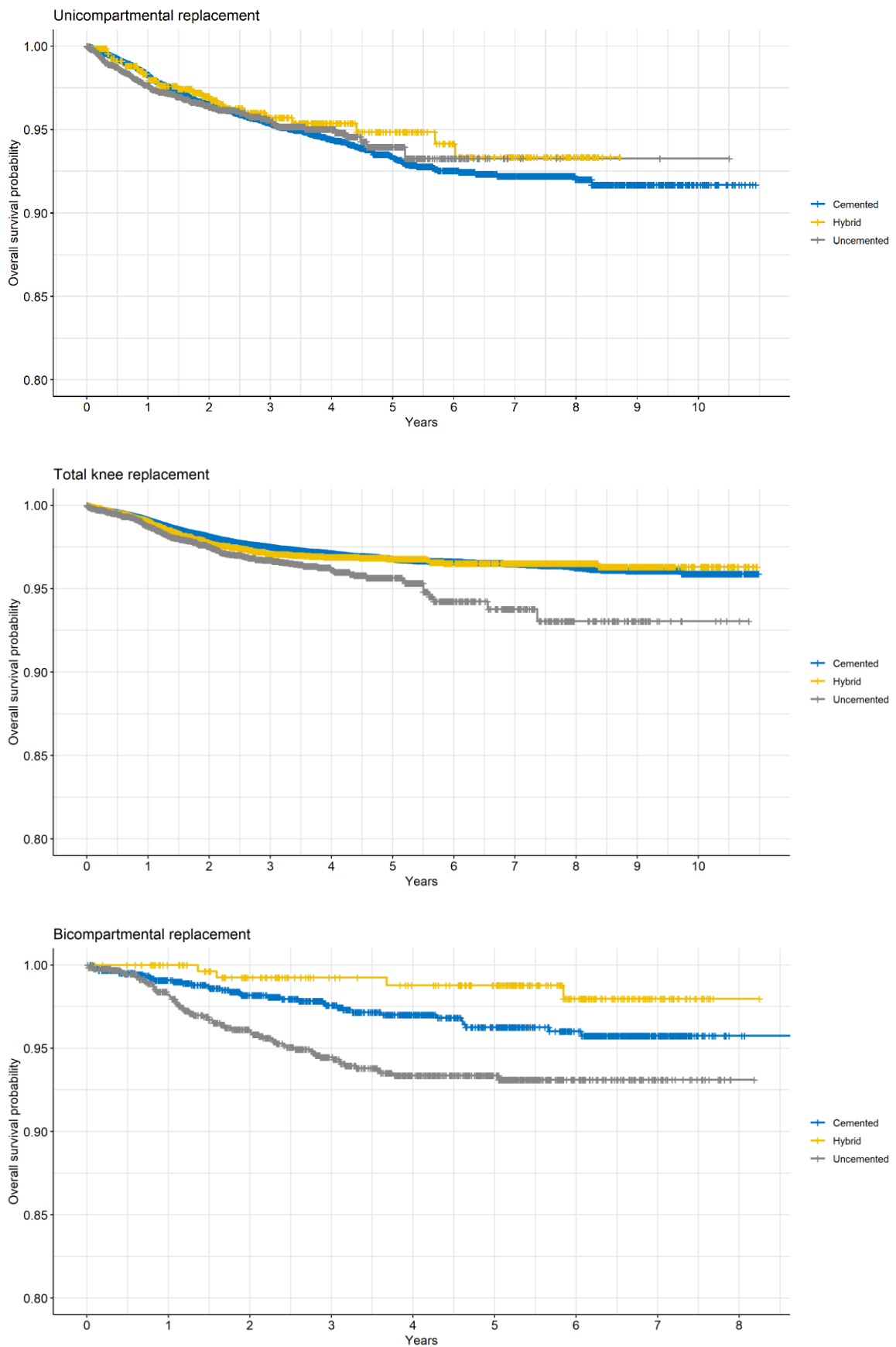
Number of events/Number at risk											
	0	1	2	3	4	5	6	7	8	9	10
Unicompartmental replacement	233/1420 2	155/107 03	71/757 9	40/527 3	28/34 13	16/20 50	4/122 8	1/814	1/42 0	0/14 8	0/3 4
Total knee replacement	1033/128 158	978/104 100	466/81 103	194/59 116	99/38 254	35/20 781	13/11 420	12/75 40	6/40 86	1/16 36	0/4 21
Bicompartmental replacement	33/2897	35/2497	19/207 8	13/170 4	4/134 7	3/104 2	1/563	0/189	0/6	0/0	0/0
Patello-femoral replacement	45/2616	58/2081	30/157 2	16/108 2	9/658	3/333	3/180	1/118	1/63	0/17	0/4
Partial resurfacing femoral condyle	0/73	0/56	0/41	1/27	0/10	0/0	0/0	0/0	0/0	0/0	0/0

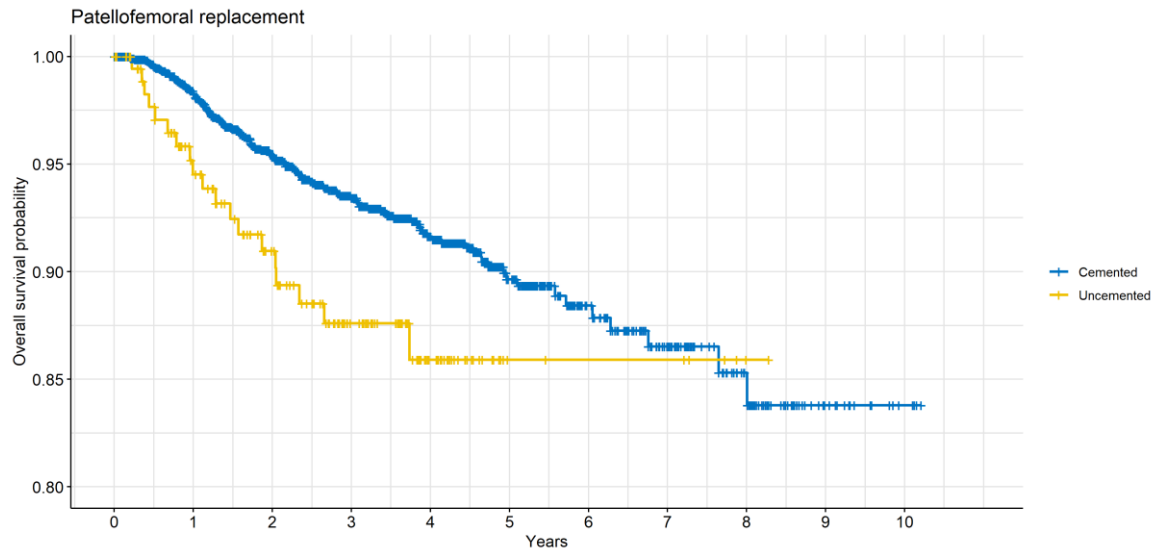
Figure 2.20 Kaplan-Meier curve for type of implant for total knee prostheses at primary knee replacement



	Number of events/Number at risk										
	0	1	2	3	4	5	6	7	8	9	10
Total knee Posterior cruciate retaining	145/25790	150/2166	71/16801	37/12659	19/8843	10/5299	2/2944	2/1929	0/1020	0/442	0/98
Total knee Posterior-stabilised	663/77847	628/63667	302/49974	127/36746	71/23839	17/13395	11/7723	9/5171	6/2862	1/1146	0/319
Total knee Constrained Condylar	14/1439	7/1123	9/849	3/553	1/288	0/104	0/64	0/50	0/22	0/5	0/1
Total knee Ultra-congruent	136/18115	126/14262	57/10661	22/7310	6/4371	7/1776	0/595	1/353	0/174	0/41	0/2
Total knee Hinge	29/1177	13/966	9/759	0/585	1/386	1/207	0/94	0/37	0/8	0/2	0/1
Total knee Bicruciate retaining	17/340	18/307	6/233	1/164	1/68	0/0	0/0	0/0	0/0	0/0	0/0
Other	29/3450	36/2609	12/1826	4/1099	0/459	0/0	0/0	0/0	0/0	0/0	0/0

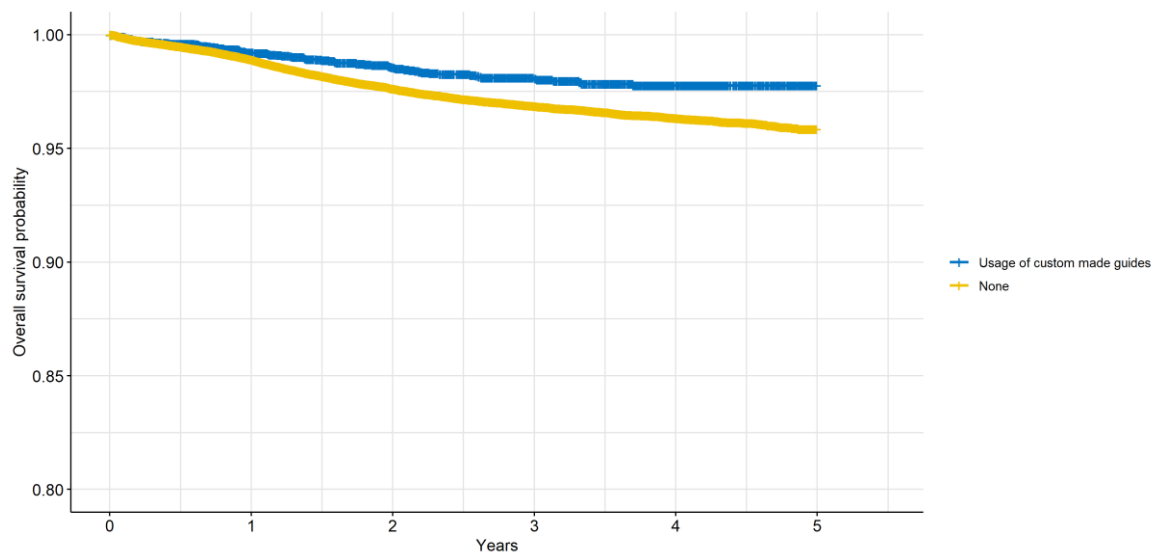
Figure 2.21 Kaplan-Meier curves for method of fixation according to primary knee replacement prosthesis type





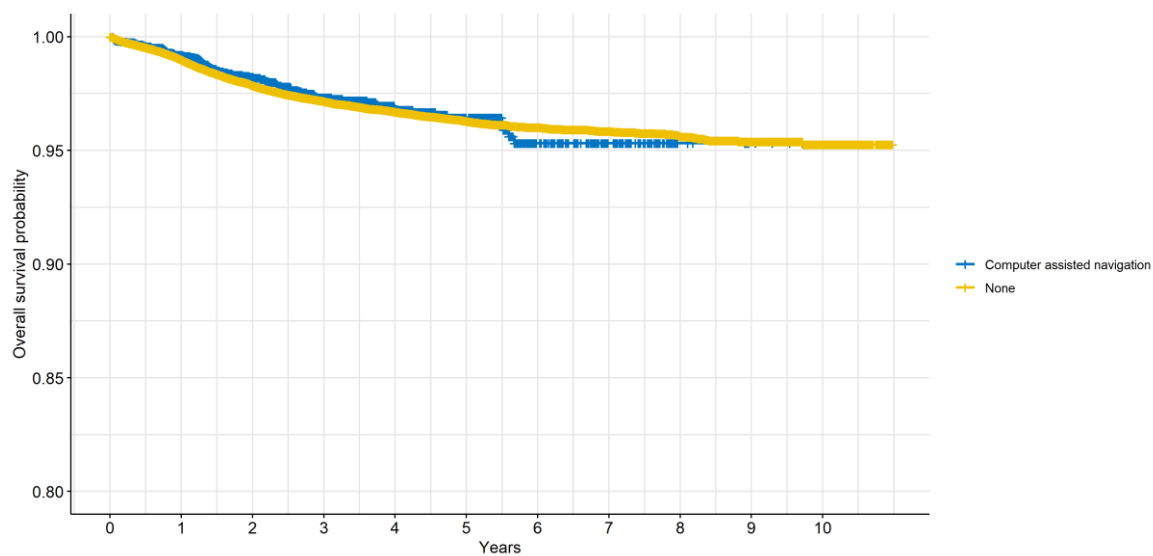
		Number of events/Number at risk											
		0	1	2	3	4	5	6	7	8	9	10	
Unicompartmental replacement	Cemented	150/9967	121/7638	56/5532	34/3938	23/2662	13/1620	3/1030	1/719	1/391	0/146	0/33	
	Hybrid	12/725	6/577	5/423	1/317	1/208	1/163	1/118	0/82	0/27	0/0	0/0	
	Un-cemented	70/3434	27/2313	10/1550	5/944	4/469	1/193	0/38	0/6	0/2	0/2	0/1	
Total knee replacement	Cemented	910/115564	858/94035	410/73129	176/52987	89/33930	25/18240	12/9829	11/6334	5/3396	1/1362	0/336	
	Hybrid	54/6502	62/5081	26/4118	5/3277	2/2436	4/1700	0/1282	0/1001	1/610	0/243	0/77	
	Un-cemented	68/6006	55/4899	29/3774	13/2771	8/1807	6/760	1/252	1/166	0/67	0/28	0/6	
Bicompartmental replacement	Cemented	11/1277	9/1084	5/899	4/745	4/580	1/472	1/371	0/130	0/4	0/0	0/0	
	Hybrid	0/289	2/273	0/246	1/217	0/209	1/191	0/108	0/32	0/1	0/0	0/0	
	Un-cemented	22/1331	24/1140	14/933	8/742	0/558	1/379	0/84	0/27	0/1	0/0	0/0	
Patellofemoral replacement	Cemented	35/2407	51/1909	26/1431	15/978	9/596	3/300	3/162	1/105	1/56	0/16	0/4	
	Un-cemented	9/180	5/144	4/115	1/78	0/36	0/7	0/6	0/6	0/2	0/0	0/0	

Figure 2.22 Kaplan-Meier curve for usage of custom made guides during primary knee replacement for total knee replacement



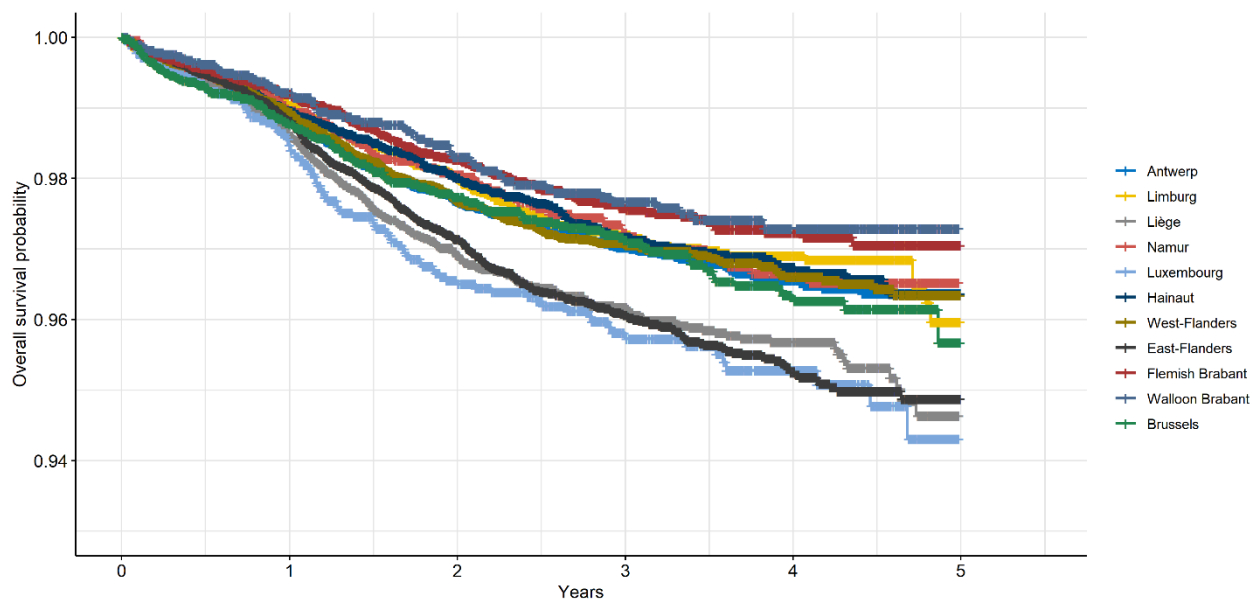
Number of events/Number at risk					
	0	1	2	3	4
Usage of custom made guides	38/5496	23/4293	13/3030	4/1958	0/884
None	887/101397	811/78650	348/57060	126/36250	36/16526

Figure 2.23 Kaplan-Meier curve for usage of computer assisted navigation during primary knee replacement for total knee replacement



Number of events/Number at risk											
	0	1	2	3	4	5	6	7	8	9	10
Computer assisted navigation	29/4036	25/294 8	18/218 4	4/1575	4/105 5	4/523	0/218	0/11 5	0/13	0/5	0/0
None	1004/12 4122	953/10 1152	448/78 919	190/57 541	95/37 199	31/20 258	13/11 202	12/7 425	6/40 73	1/16 31	0/4 21

Figure 2.24 Kaplan-Meier curve for location where primary knee replacement was performed



	Number of events/Number at risk				
	0	1	2	3	4
Antwerp	182/18258	150/13949	55/10040	23/6378	4/2850
Limburg	91/10753	77/8361	42/5936	10/3793	5/1830
Liège	128/10457	125/8141	38/5810	15/3637	8/1626
Namur	46/4930	31/3831	19/2759	8/1724	1/795
Luxembourg	42/3200	44/2441	11/1805	5/1133	3/562
Hainaut	133/14316	98/11218	57/8122	21/5052	6/2268
West-Flanders	178/19101	157/14343	54/10096	21/6370	4/2827
East-Flanders	192/18374	209/14098	95/10030	37/6230	7/2689
Flemish Brabant	76/10482	66/8096	34/5799	10/3653	2/1640
Walloon Brabant	27/3839	24/3016	12/2193	4/1410	0/653
Brussels	79/7128	51/5493	21/3988	16/2589	3/1239

2.3 NINETY-DAYS MORTALITY AFTER KNEE REPLACEMENT PROCEDURES (SINCE 2015)

Table 2.14 90-days mortality after knee replacement by type of procedure

	Alive 90 days post-procedure		Died before 90 days post-procedure	
	Count	N %	Count	N %
Primary procedure	122962	99.9%	181	0.1%
Revision with new prosthesis	10153	99.4%	61	0.6%
Resection with spacer	745	98.2%	14	1.8%
Resection without spacer	30	100%	0	0.0%
Total	133890	99.8%	256	0.2%

Table 2.15 90-days mortality after primary knee replacement by primary knee replacement types

	Alive 90 days post-procedure		Died before 90 days post-procedure	
	Count	N %	Count	N %
Total knee replacement	106790	99.8%	171	0.2%
Unicompartmental replacement	12031	99.96%	5	0.04%
Bicompartmental replacement	1823	99.9%	2	0.1%
Patellofemoral replacement	2245	99.9%	3	0.1%
Partial resurfacing femoral condyle	73	100%	0	0.0%
Total	122962	99.9%	181	0.1%

Table 2.16 90-days mortality after knee revision procedures by combinations of removed components during knee revision procedures

	Alive 90 days post-procedure		Died before 90 days post-procedure	
	Count	N %	Count	N %
All components	6116	99.3%	45	0.7%
Tibia and Insert	515	100%	0	0.0%
Patella and insert	230	100%	0	0.0%
Femur and insert	157	99.4%	1	0.6%
Insert only	1556	99%	15	1%
Patella only	1331	100%	0	0.0%
Femur only	86	100%	0	0.0%
Other combination	163	100%	0	0.0%
Total	10154	99.4%	61	0.6%

Table 2.17 90-days mortality after knee replacement by age category

	Alive 90 days post-procedure		Died before 90 days post-procedure	
	Count	N %	Count	N %
<45	2276	100%	1	< 0.01%
45-59	28089	100%	12	< 0.01%
60-69	43681	99.9%	34	0.1%
70-79	44154	99.8%	101	0.2%
>=80	15661	99.3%	108	0.7%
Total	133861	99.8%	256	0.2%

3 HIP REPLACEMENT

3.1 PRIMARY HIP REPLACEMENT

3.1.1 Demographics

Table 3.1 Age, gender and indications for primary hip replacement patients

N=31064		
	Mean	SD
Age (yrs)	70.2	13.0
	Count	N %
Age categories		
<45	954	3.1%
45-59	5294	17%
60-69	7880	25.4%
70-79	8859	28.5%
>=80	8071	26%
Gender		
Female	18613	59.9%
Male	12450	40.1%
Indication		
Primary osteoarthritis	20848	67.1%
Secondary osteoarthritis	648	2.1%
Avascular necrosis	1386	4.5%
Rheumatoid arthritis	88	0.3%
Fracture	7432	23.9%
Tumor	84	0.3%
Hip dysplasia	407	1.3%
Indication other	171	0.6%

Figure 3.1 Age distribution by gender for primary hip replacement patients

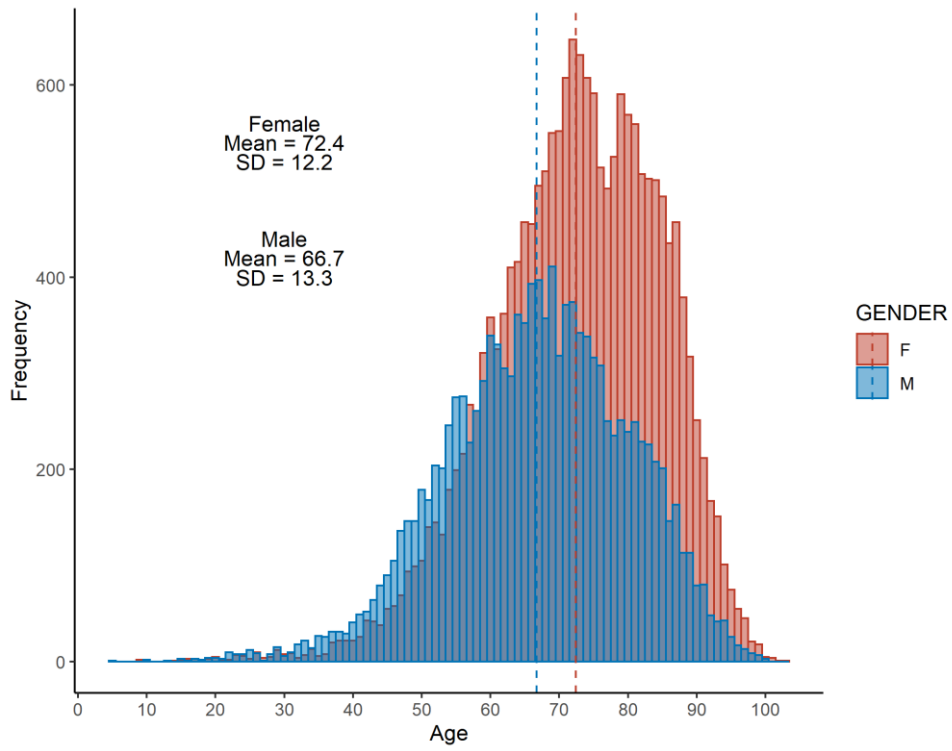


Figure 3.2 Age distribution by indication for primary hip replacement patients

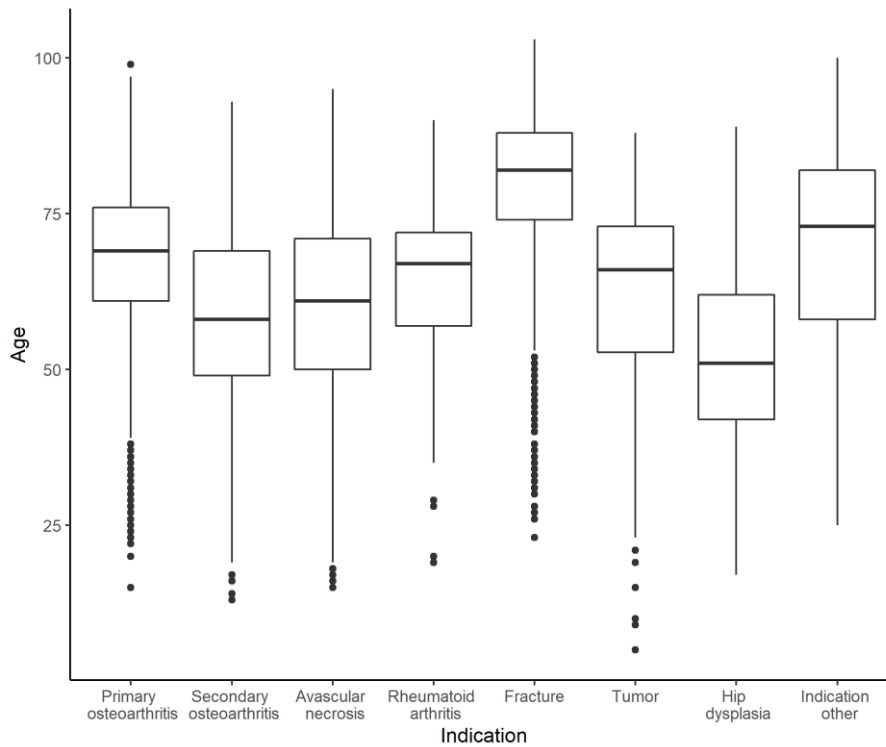
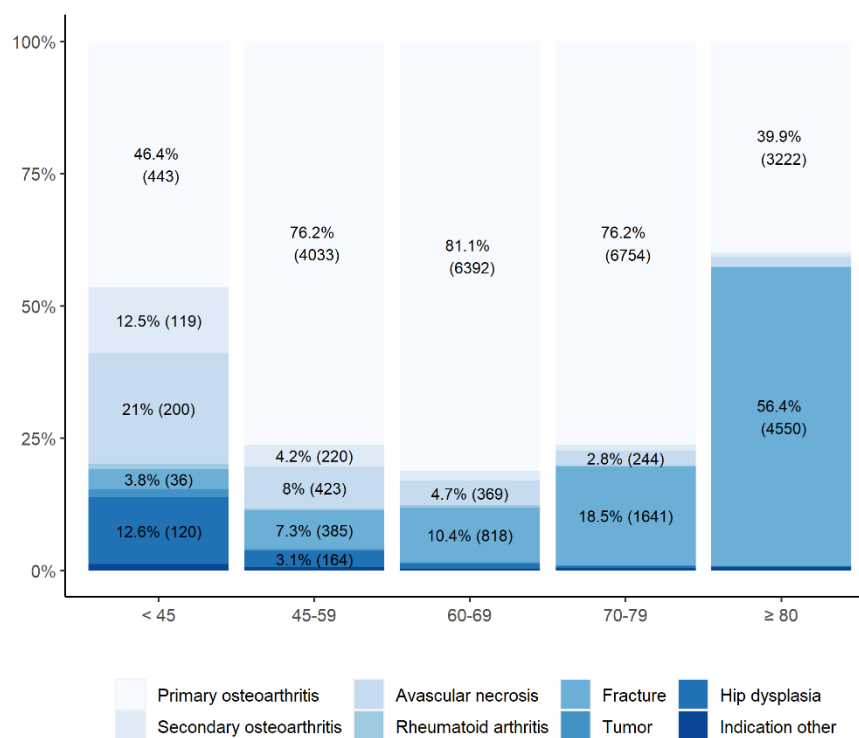


Table 3.2 Indications for primary hip replacements based on gender

	Male	Female
	N=12450	N=18613
	N (%)	N (%)
Primary osteoarthritis	8749 (70.3%)	12099 (65%)
Secondary osteoarthritis	374 (3%)	274 (1.5%)
Avascular necrosis	840 (6.7%)	545 (2.9%)
Rheumatoid arthritis	21 (0.2%)	67 (0.4%)
Fracture	2231 (17.9%)	5201 (27.9%)
Tumor	43 (0.3%)	41 (0.2%)
Hip dysplasia	124 (1%)	283 (1.5%)
Indication other	68 (0.5%)	103 (0.6%)

Figure 3.3 Indications for primary hip replacement according to age category



Note: For readability of the figure, labels with values and percentages smaller than 3% are not displayed.

3.1.2 Surgical technique and implant characteristics

Table 3.3 Numbers and percentages of primary hip replacement types

	Number	Percentage of total
Total prosthesis	24094	77.6%
Total dual-mobility prosthesis	2031	6.5%
Hemi - Bipolar	4633	14.9%
Hemi Modular	28	0.1%
Hemi Monoblock	19	0.1%
Resurfacing Femoral (Hemi)	8	< 0.1%
Resurfacing Femoral + Cup	251	0.8%
Resurfacing Partial (Punaise)	0	0%
Total	31064	100%

Table 3.4 Age and gender of primary hip replacement patients by type of replacement

	Total hip replacement	Total dual-mobility prosthesis	Hemi - Unipolar	Hemi - Bipolar	Resurfacing
	N=24094	N=2031	N=47	N=4633	N=259
Mean age (years) (SD)	67.5 (11.9)	73.6 (11.6)	80.1 (14.3)	83.7 (8.6)	50.7 (10.2)
Age groups	% (N)	% (N)	% (N)	% (N)	% (N)
<45	3.5% (847)	1.6% (32)	2.1% (1)	0.2% (11)	24.3% (63)
45-59	20.3% (4880)	9.8% (199)	4.3% (2)	1.3% (60)	59.1% (153)
60-69	30% (7216)	20.1% (409)	6.4% (3)	4.6% (215)	14.3% (37)
70-79	30.5% (7335)	34% (690)	17% (8)	17.7% (820)	2.3% (6)
>=80	15.8% (3810)	34.5% (701)	70.2% (33)	76.1% (3527)	0% (0)
Gender	% (N)	% (N)	% (N)	% (N)	% (N)
Male	42.2% (10158)	34.6% (702)	27.7% (13)	28.5% (1321)	98.8% (256)
Female	57.8% (13935)	65.4% (1329)	72.3% (34)	71.5% (3312)	1.2% (3)

Figure 3.4 Age distribution by implant type for primary hip replacement patients

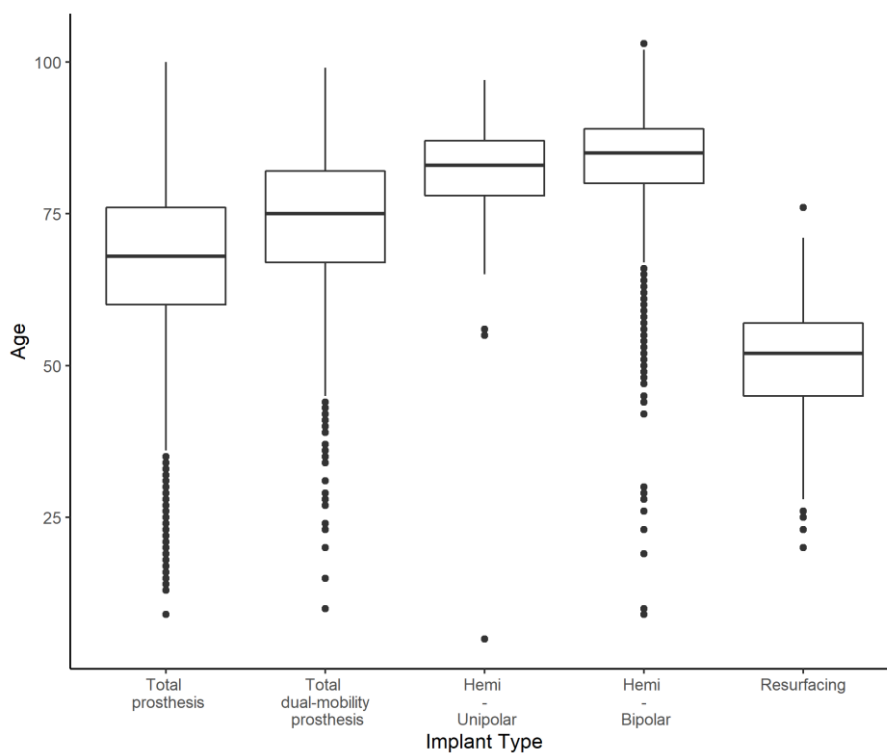
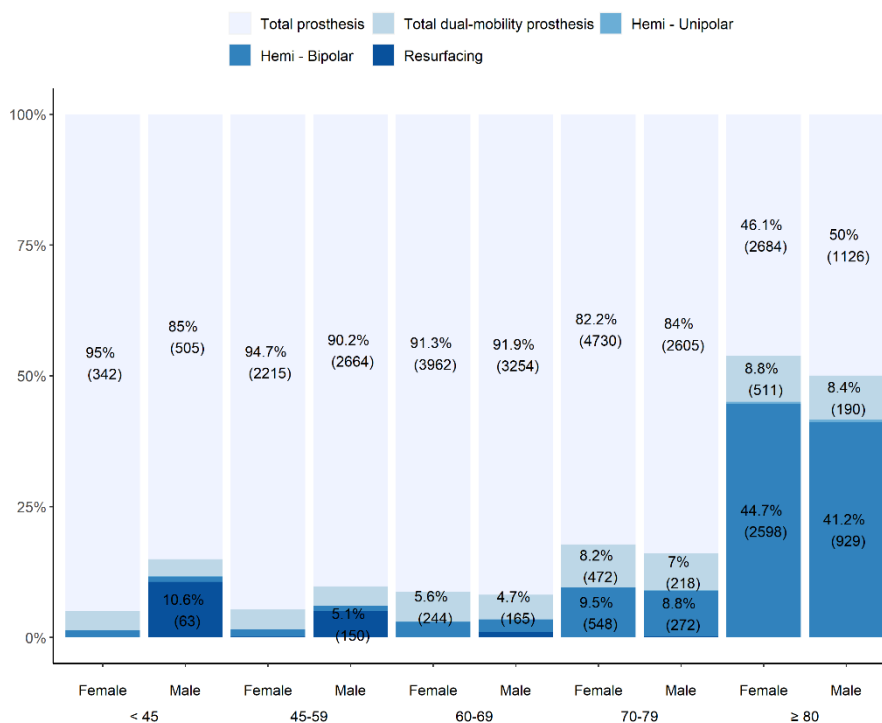
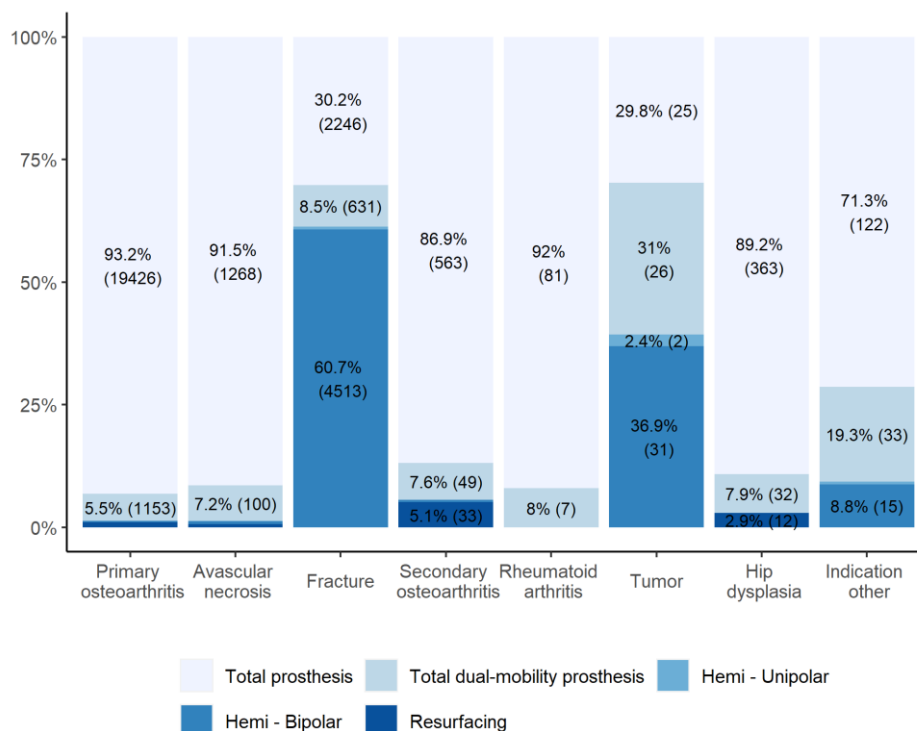


Figure 3.5 Type of primary hip replacement procedures by age groups and gender



Note: For readability of the figure, labels with values and percentages smaller than 4% are not displayed.

Figure 3.6 Type of primary hip replacement procedures by indication



Note: For readability of the figure, labels with values and percentages smaller than 3% are not displayed.

Table 3.5 Numbers and percentages of bearing surfaces in primary hip replacements according to type of replacement

	Total hip replacement	Total dual-mobility prosthesis (head)	Total dual-mobility prosthesis (cup)	Hemi - Bipolar	Resurfacing
	N=24094	N=2031	N=2031	N=4633	N=251
	% (N)	% (N)	% (N)	% (N)	% (N)
Metal - Polyethylene	4.2 (1006)	41 (833)	94.2 (1914)	61.5 (2847)	2 (5)
Ceramic - Polyethylene	36.9 (8881)	57.2 (1161)	0 (0)	36.2 (1675)	0 (0)
Metal - Metal	0.1 (18)	0 (0)	0 (0)	0.4 (18)	97.6 (245)
Ceramic - Ceramic	57.7 (13898)	0 (0)	0 (0)	1.1 (50)	0.4 (1)
Other	1.2 (291)	1.8 (37)	5.8 (117)	0.9 (43)	0 (0)

Figure 3.7 Fixation of primay hip prosthesis according to type of replacement

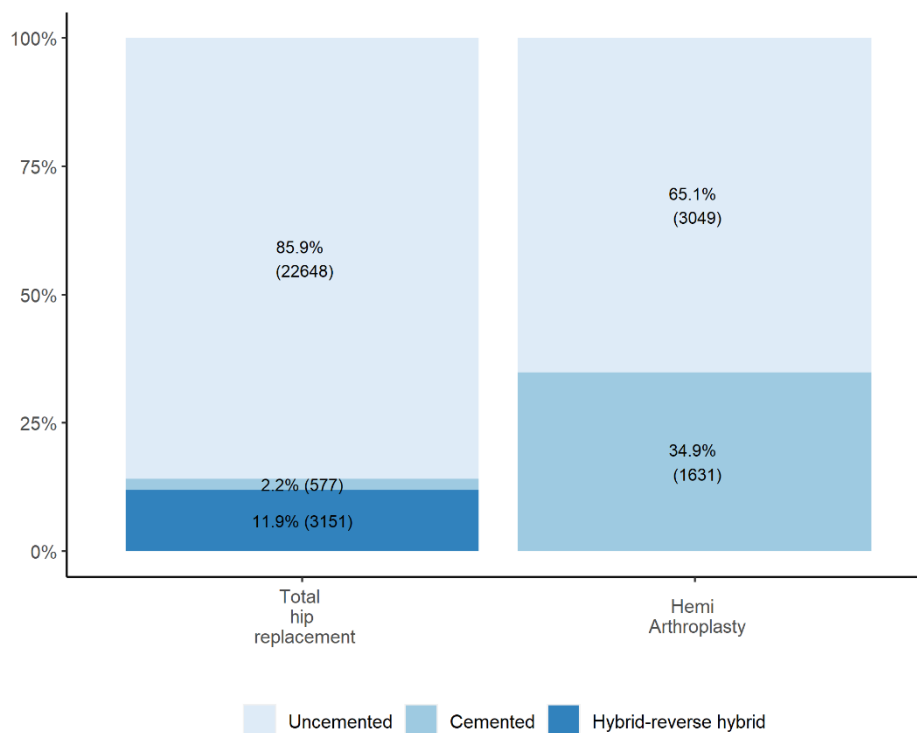


Figure 3.8 Fixation of total primay hip prosthesis according to age category

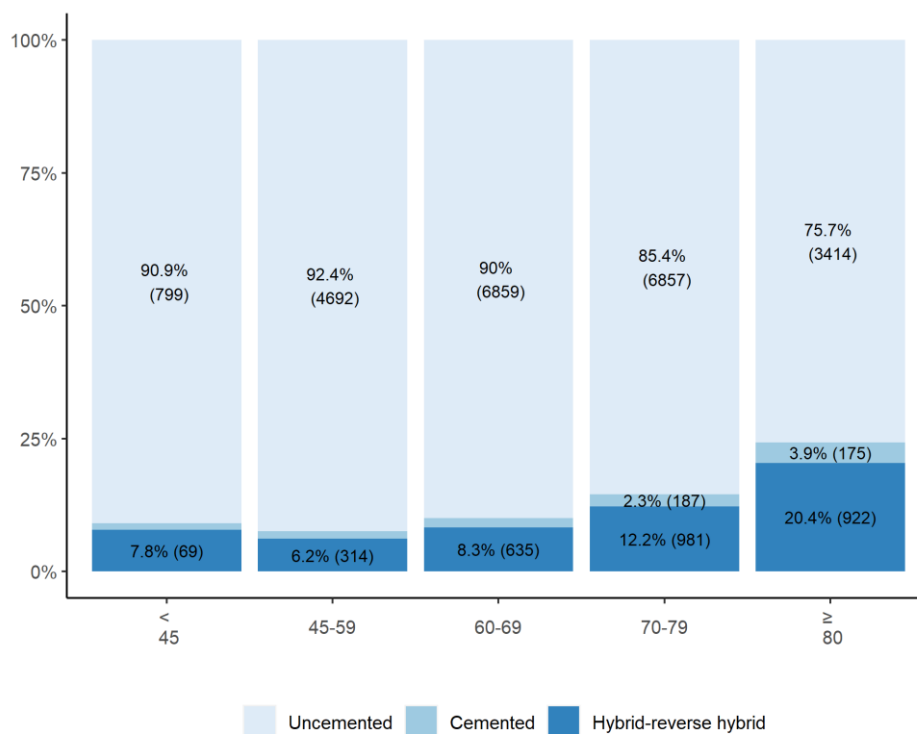


Figure 3.9 Approach used during primary hip replacement according to gender

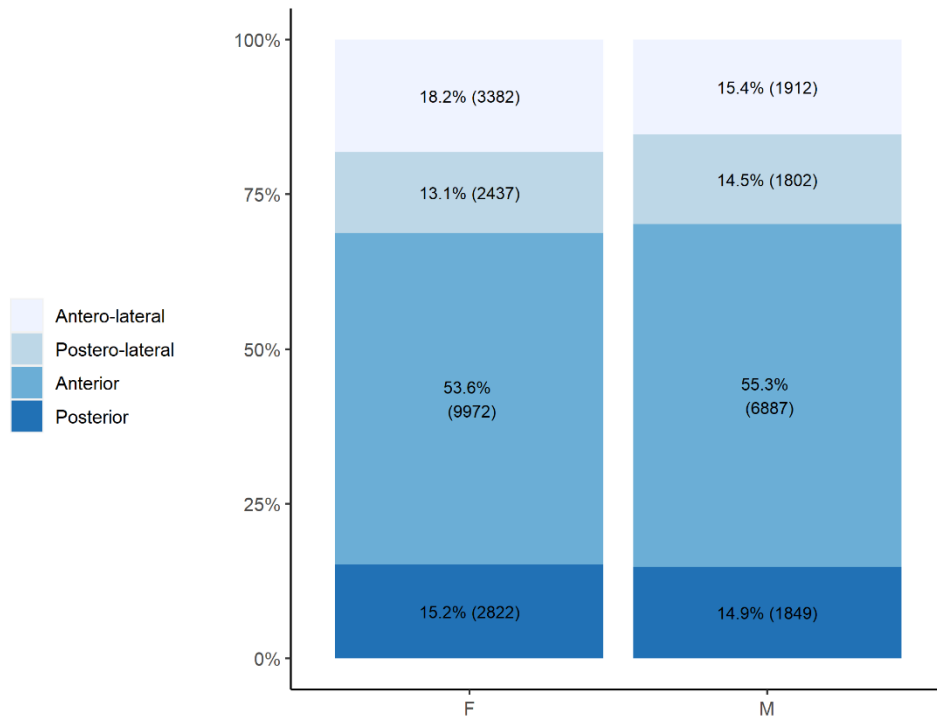


Figure 3.10 Approach used during primary hip replacement according to prosthesis type

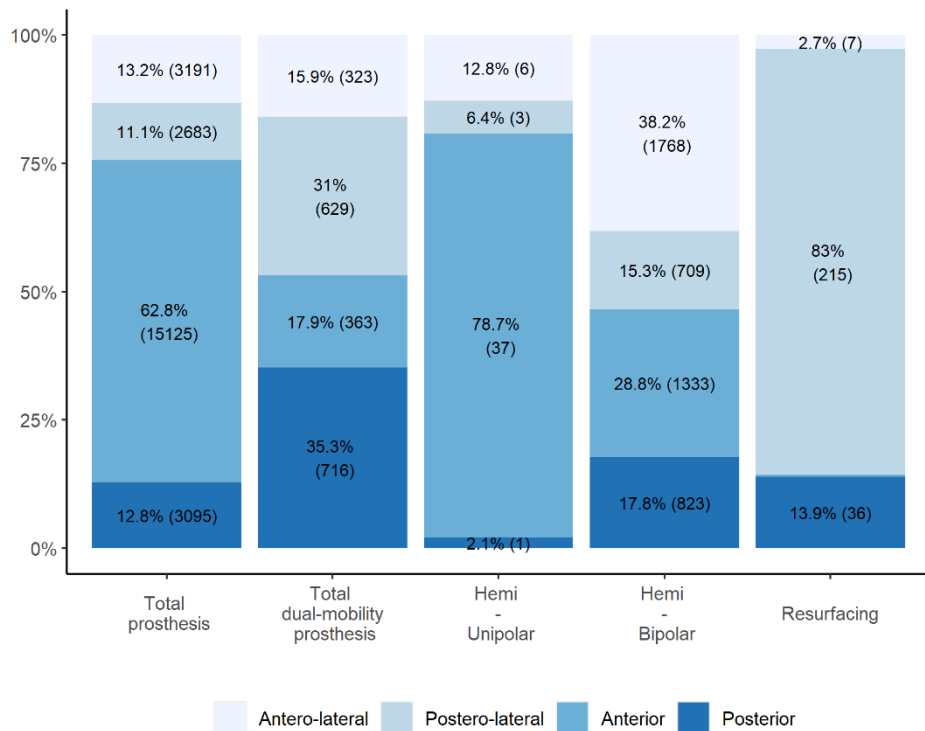


Table 3.6 Usage of custom made guides, computer assisted navigation and bone grafts during primary hip procedures

	Count	Percentage of total
Custom made guides	174	0.6%
Computer assisted navigation	9	< 0.01%
Bone grafts	408	1.3%
Autografts	355	1.1%
Allografts	33	0.1%
Auto and allografts	20	0.1%

Table 3.7 Usage of modular femoral neck according to type of prosthesis during primary hip procedures

	Count	Percentage of total
Total prosthesis	2 040	8.5%
Total dual-mobility prosthesis	324	16.0%
Hemi - Bipolar	486	10.5%
Total	2 850	9.3%

Table 3.8 Modular femoral neck types during primary hip procedures with modular necks

		Count	Percentage of total modular necks used
Frontal	Valgus	37	1.3%
	Varus	391	13.7%
	Neutral	2 422	85.0%
Lateral	Anteversión	614	21.5%
	Retroversion	108	3.8%
	Neutral	2 128	74.7%
Offset	Extended	758	26.6%
	Standard	2 092	73.4%

3.2 REVISIONS AFTER PRIMARY HIP REPLACEMENT

3.2.1 Demographics

Table 3.9 Age, gender and indications for hip revision procedures

N=3039		
	Mean	SD
Age (yrs)	71.7	12.7
	Count	N %
Age categories		
<45	92	3.0%
45-59	434	14.3%
60-69	643	21.2%
70-79	923	30.4%
>=80	947	31.2%
Gender		
Female	1815	59.7
Male	1223	40.3
Indication		
Aseptic loosening	932	30.7
Infection	472	15.5
Instability	479	15.8
Periprosthetic fracture	752	24.7
Pain	348	11.5
Wear	280	9.2
Other indication	356	11.7

Figure 3.11 Hip revision burden according to age category

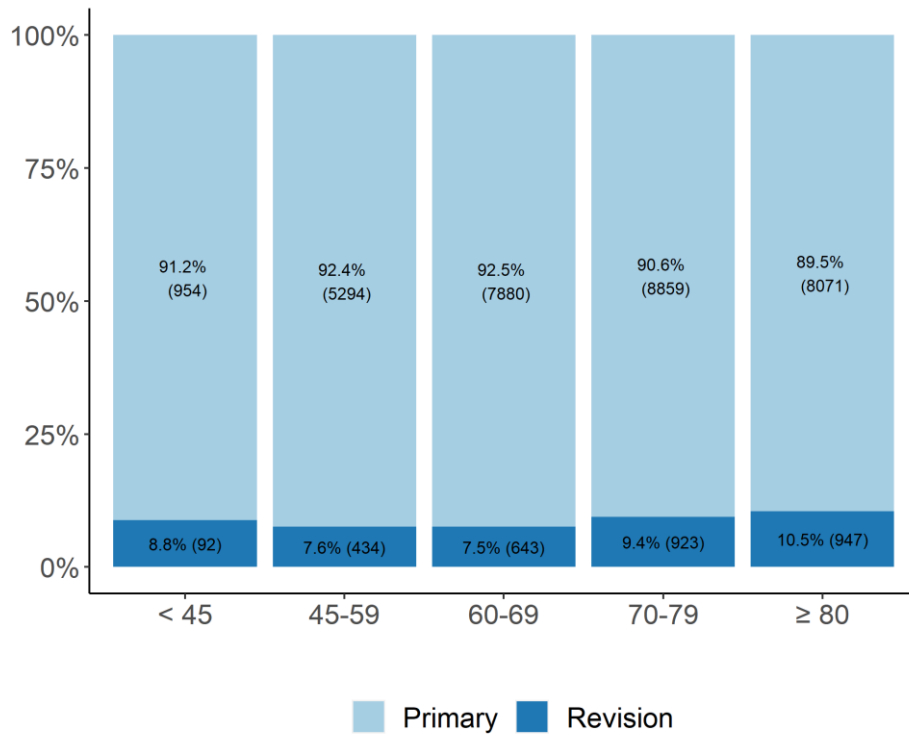


Figure 3.12 Age and gender by number of hip revision procedures

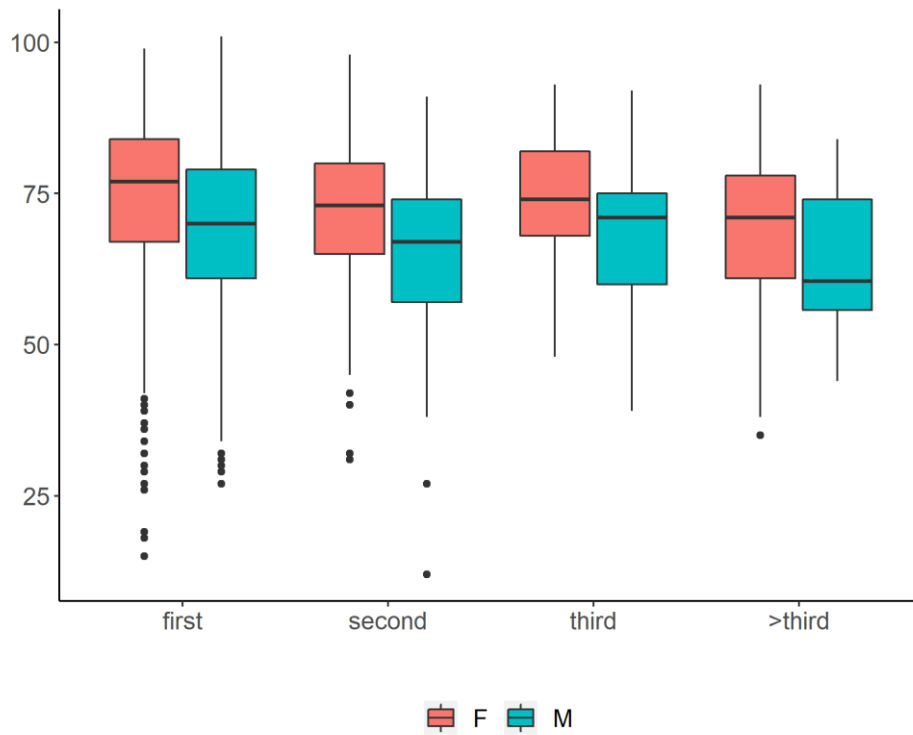
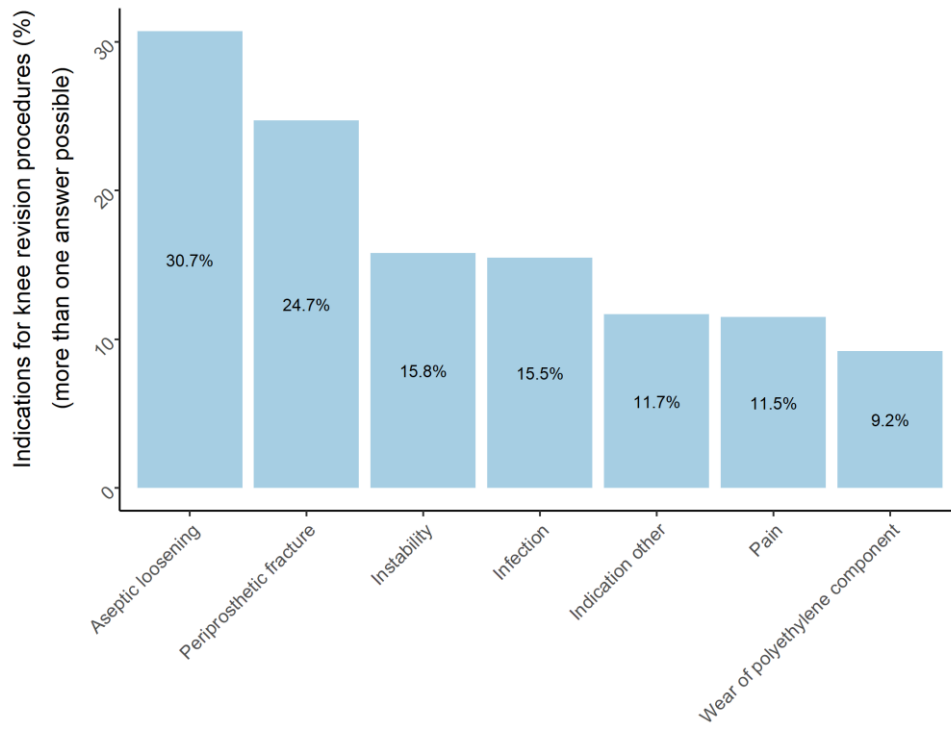


Figure 3.13 Indications for hip revision procedures



3.2.3 Surgical technique and implant characteristics

Figure 3.14 Combinations of revised components during hip revision procedures

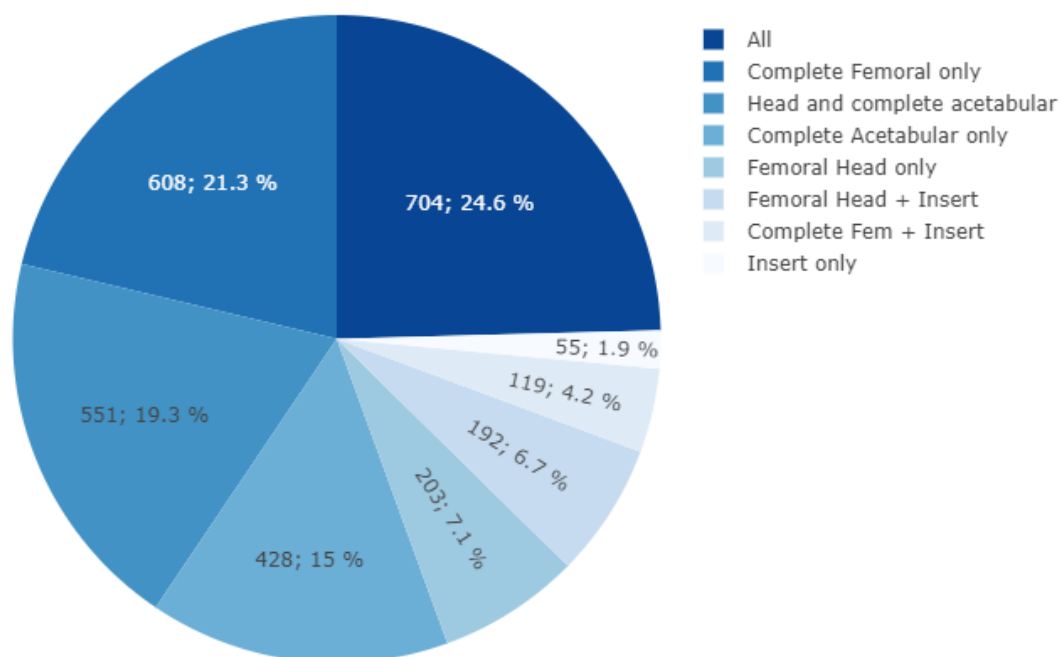


Table 3.10 Numbers and percentages of implanted hip types during hip revision procedures

	Number	Percentage of total
Total prosthesis	1873	65.5%
Total dual-mobility prosthesis	842	29.4%
Hemi - Unipolar	1	< 0,1%
Hemi - Bipolar	85	3.0%
Insert only	55	1.9%
Resurfacing	4	0.1%
Total number of procedures	2860	100%

Table 3.11 Numbers and percentages of bearing surfaces in hip revisions according to type of replacement

	Total hip replacement	Total dual-mobility prosthesis (head)	Total dual-mobility prosthesis (cup)	Hemi - Bipolar
	N=1872	N=842	N=842	N=85
	% (N)	% (N)	% (N)	% (N)
Metal - Polyethylene	15 (281)	54.3 (457)	92.9 (782)	49.4 (42)
Ceramic - Polyethylene	51.4 (962)	43.8 (369)	0 (0)	49.4 (42)
Metal - Metal	0.3 (6)	0 (0)	0 (0)	0 (0)
Ceramic - Ceramic	31.6 (591)	0 (0)	0 (0)	0 (0)
Other	1.7 (32)	1.9 (16)	7.1 (60)	1.2 (1)

Figure 3.15 Fixation of hip prosthesis according to type of replacement during hip revision procedures

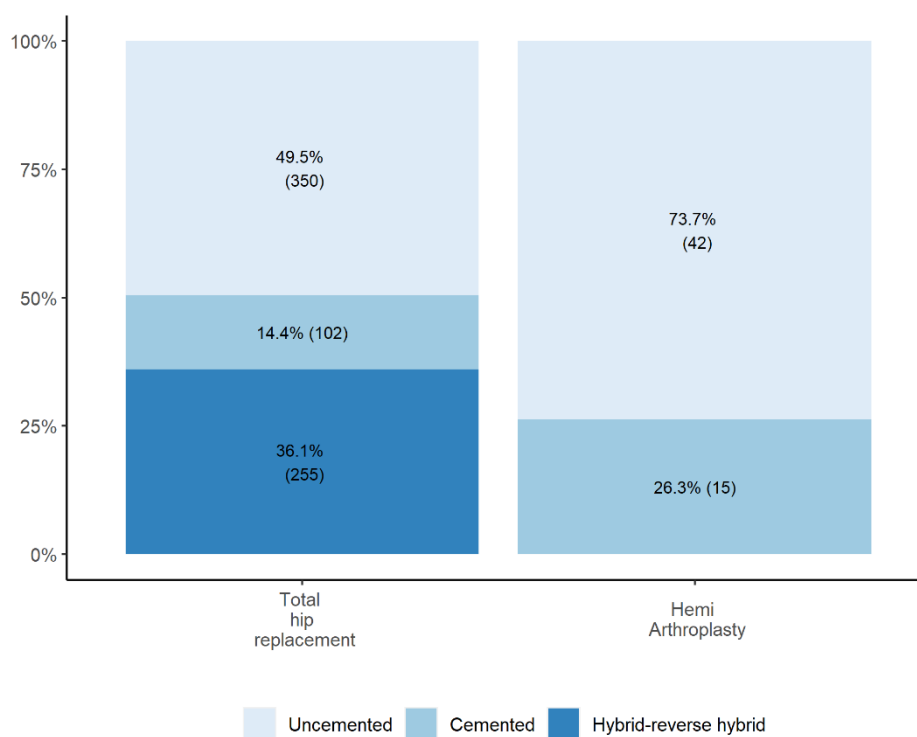


Figure 3.16 Approach used during revision hip replacement according to prosthesis type

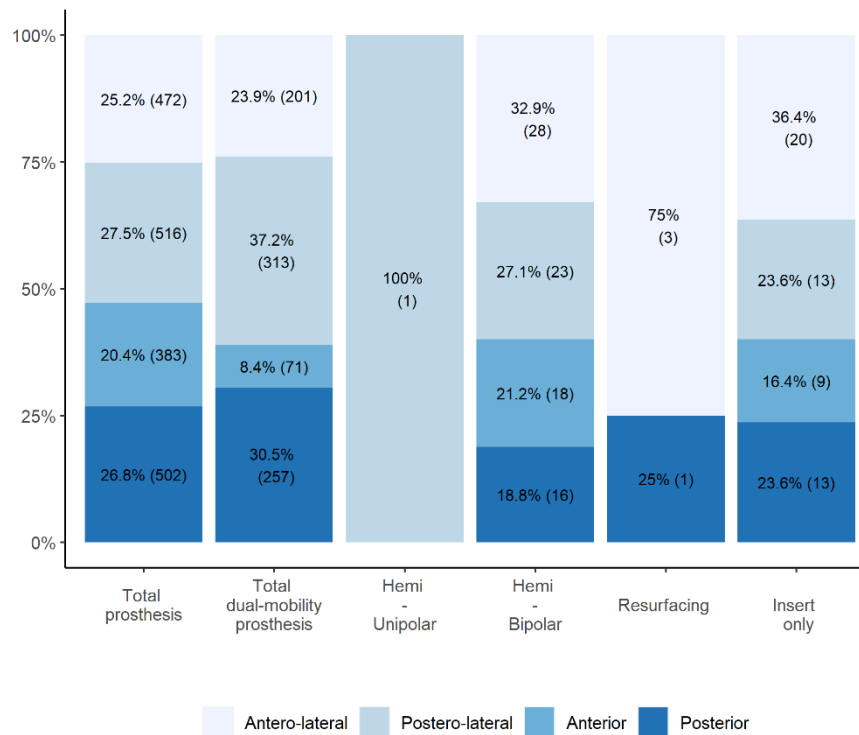


Table 3.12 Usage of custom made guides, computer assisted navigation and bone grafts during hip revision procedures

	Count	Percentage of total
Custom made guides	33	1.2%
Computer assisted navigation	10	0.3%
Bone grafts	563	20.1%
Autografts	89	3.2%
Allografts	449	16.0%
Auto and allografts	25	0.9%

Table 3.13 Usage of modular femoral neck according to type of prosthesis during hip revision procedures

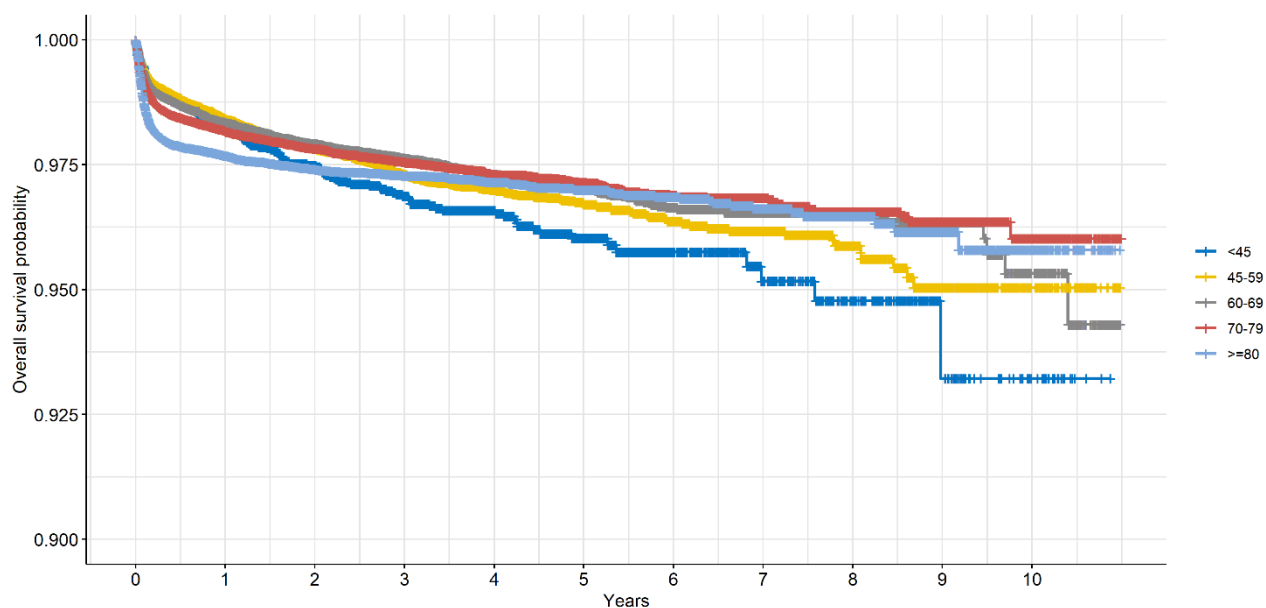
	Count	Percentage of total
Total prosthesis	277	16.3%
Total dual-mobility prosthesis	127	19.4%
Hemi - Bipolar	14	16.5%
Total	418	17.2%

Table 3.14 Usage of modular femoral neck types

		Count	Percentage of total modular necks used
Frontal	Valgus	7	1.7%
	Varus	62	14.8%
	Neutral	349	83.5%
Lateral	Anteversio	135	32.3%
	Retroversio	7	1.7%
	Neutral	276	66.0%
Offset	Extended	128	30.6%
	Standard	290	69.4%

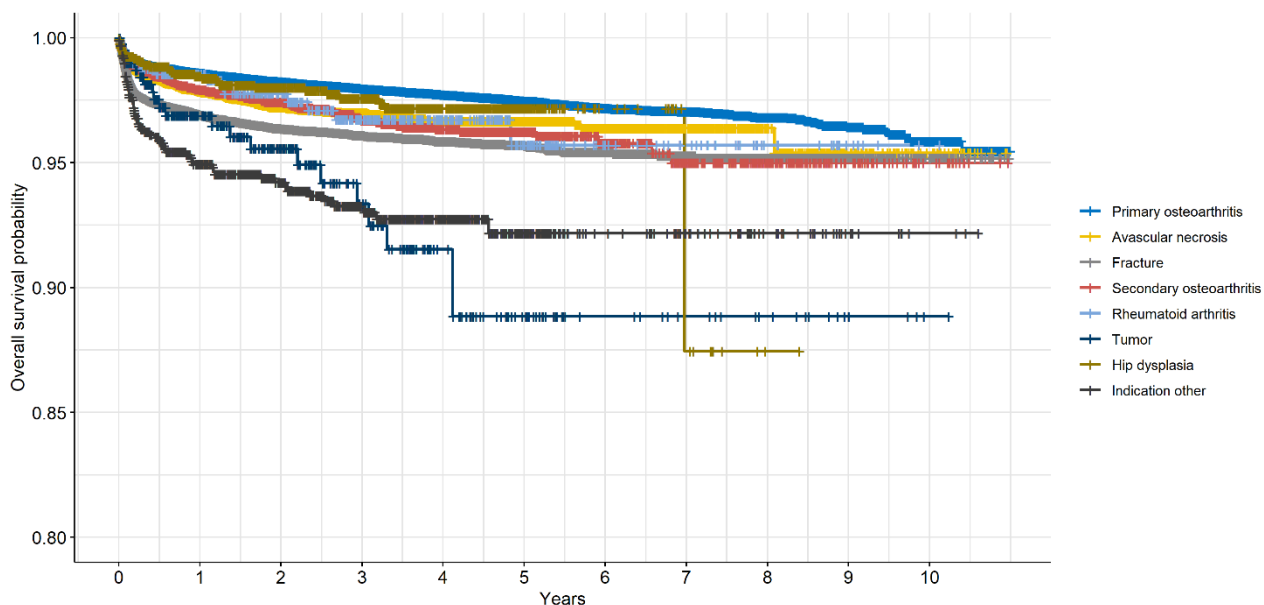
3.2.4 Implant survival after primary procedures

Figure 3.17 Kaplan-Meier curve for age at primary hip replacement



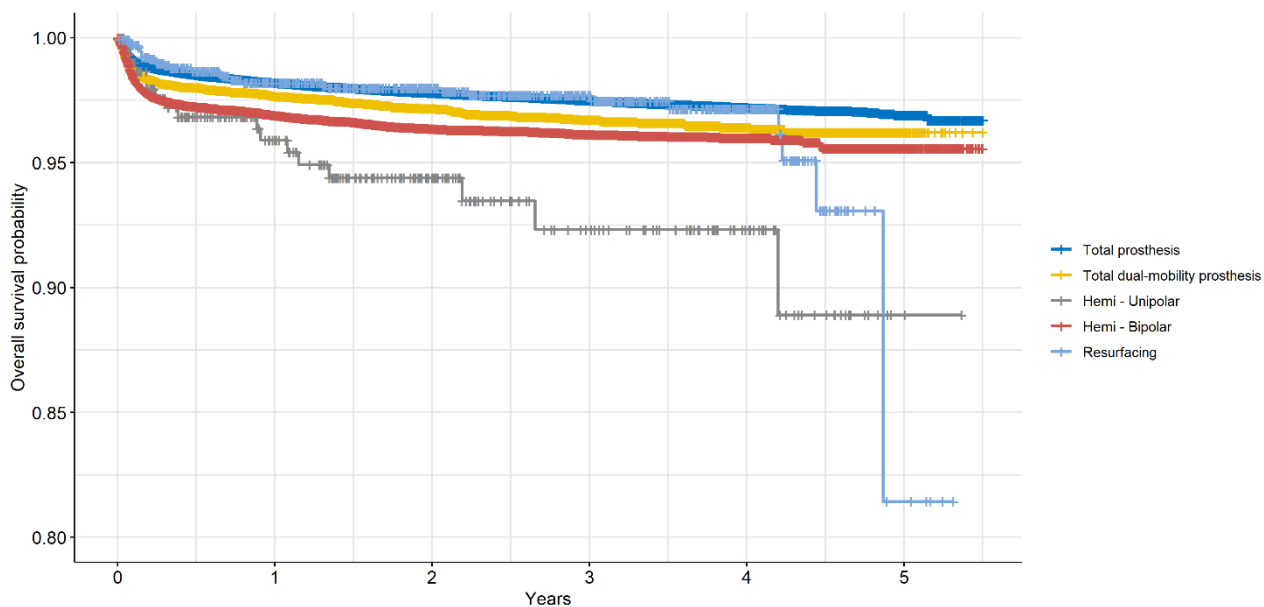
Number of events/Number at risk												
	0	1	2	3	4	5	6	7	8	9	10	11
<45	94/5596	31/4553	20/3551	7/2582	8/1688	2/902	2/463	1/314	1/183	0/60	0/21	0/0
45-59	421/28281	123/22546	78/17448	34/12433	17/8019	11/4314	4/2221	3/1425	5/748	0/304	0/94	0/0
60-69	660/41992	130/33299	66/25991	52/18868	25/12124	19/6651	3/3344	1/2079	1/1096	3/467	1/171	0/0
70-79	846/48470	124/38113	70/29318	43/21167	16/13679	15/7759	2/4029	6/2461	2/1383	1/590	0/202	0/1
>=80	930/42826	76/30589	25/22640	17/15777	12/9791	5/5499	5/2613	2/1571	2/797	1/322	0/103	0/0

Figure 3.18 Kaplan-Meier curve for indication at primary hip replacement



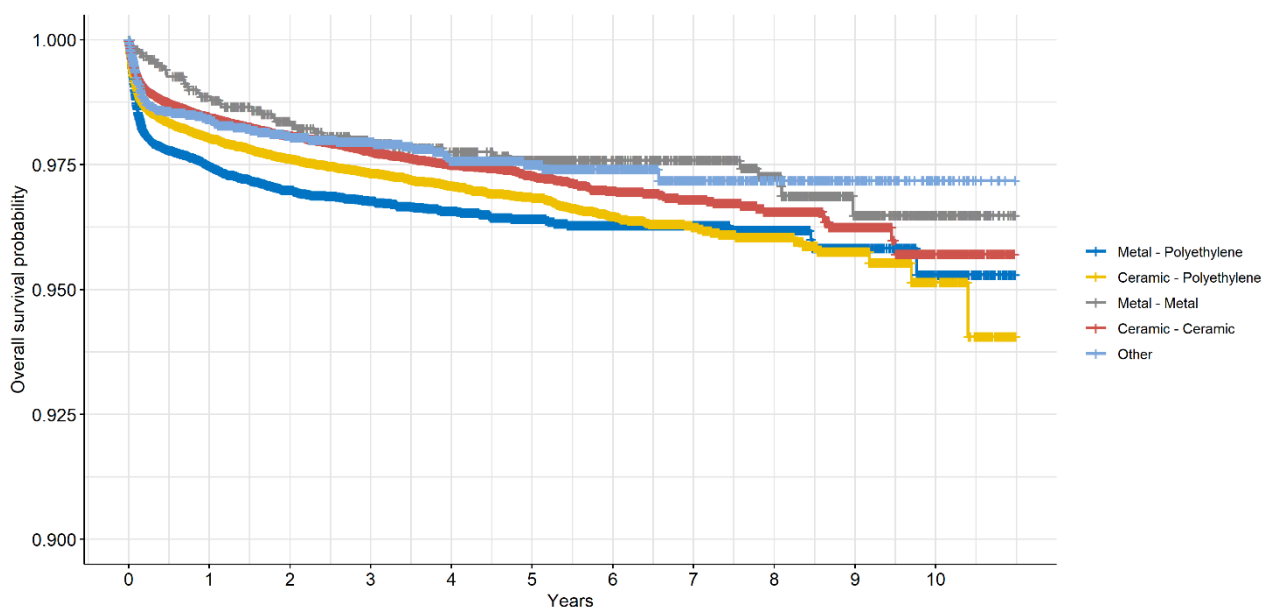
	Number of events/Number at risk											
	0	1	2	3	4	5	6	7	8	9	10	11
Primary osteoarthritis	1538/113292	284/90709	174/70742	107/51493	64/33495	39/18892	11/9888	12/6125	9/3392	5/1409	1/479	0/11
Avascular necrosis	170/8200	38/6595	10/5166	11/3770	0/2397	2/1260	0/617	0/412	2/205	0/73	0/28	0/0
Fracture	1086/38762	134/26507	47/19098	24/12812	9/7638	9/4056	2/1737	1/1018	0/462	0/196	0/65	0/0
Secondary osteoarthritis	70/3531	12/2813	14/2146	5/1556	1/1079	2/638	2/320	0/215	0/110	0/46	0/16	0/0
Rheumatoid arthritis	7/492	3/398	3/314	0/232	1/153	0/84	0/46	0/36	0/19	0/7	0/1	0/0
Tumor	11/405	3/252	3/170	2/109	2/69	0/42	0/23	0/18	0/13	0/6	0/1	0/0
Hip dysplasia	23/1604	5/1179	3/835	2/541	0/297	0/85	1/23	0/9	0/1	0/0	0/0	0/0
Other indication	47/987	5/738	5/556	2/382	1/233	0/122	0/65	0/50	0/26	0/10	0/3	0/0

Figure 3.19 Kaplan-Meier curve for type of implant at primary hip replacement



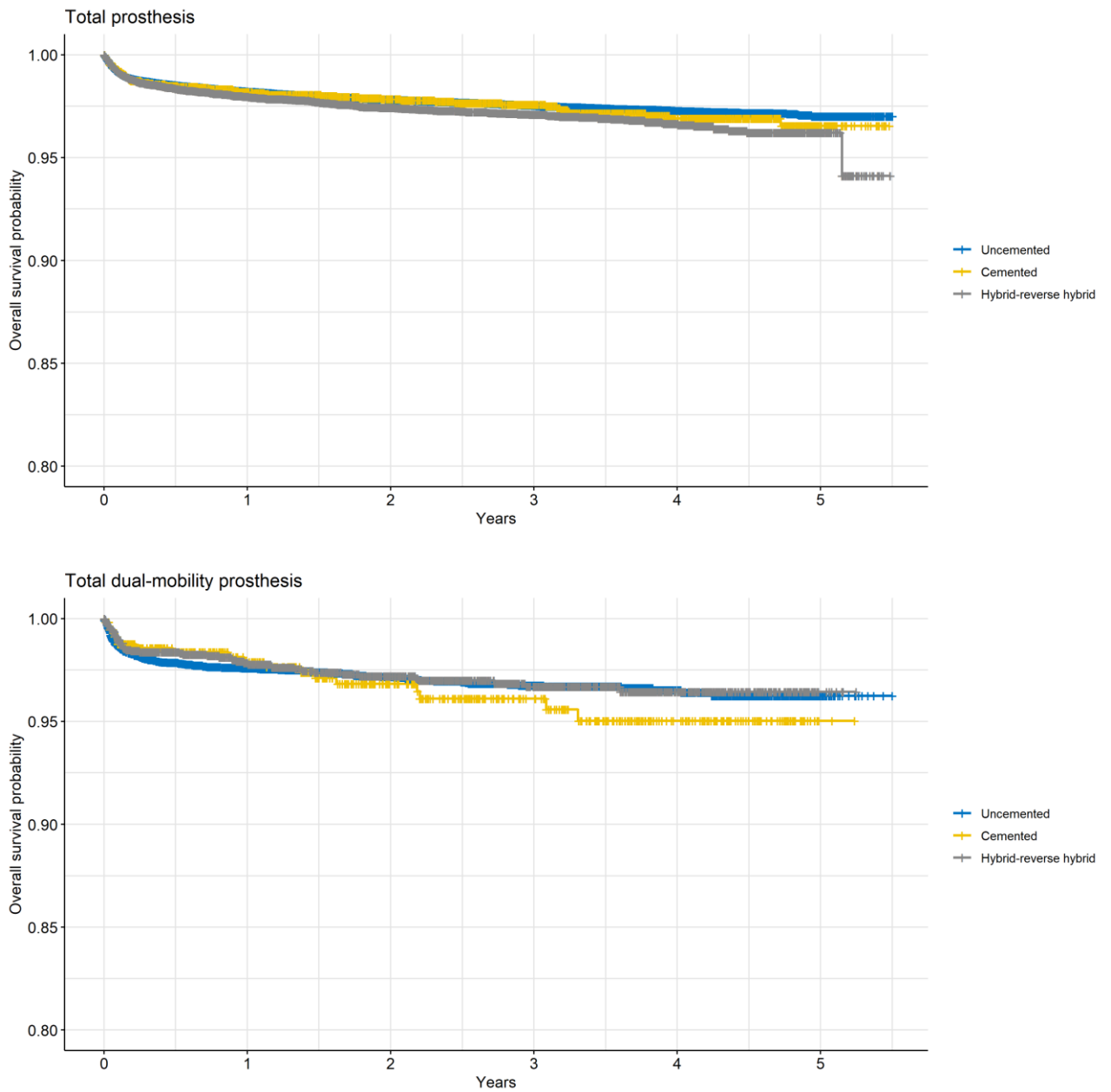
	Number of events/Number at risk					
	0	1	2	3	4	5
Total prosthesis	1874/109793	301/83257	152/60028	83/37946	24/17614	1/992
Total dual-mobility prosthesis	194/8867	28/6307	18/4477	6/2778	2/1174	0/45
Hemi - Unipolar	11/320	3/202	2/124	0/75	1/39	0/4
Hemi - Bipolar	628/22598	66/14232	18/9592	6/5636	6/2399	0/211
Resurfacing	22/1303	2/1024	2/721	2/442	4/173	0/6

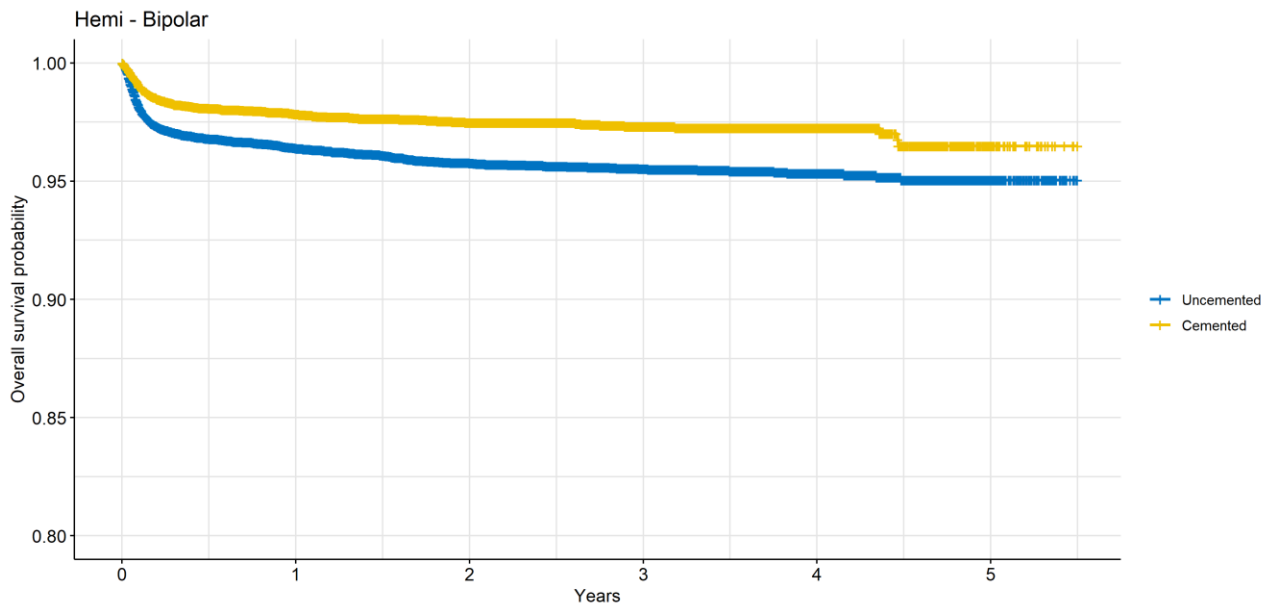
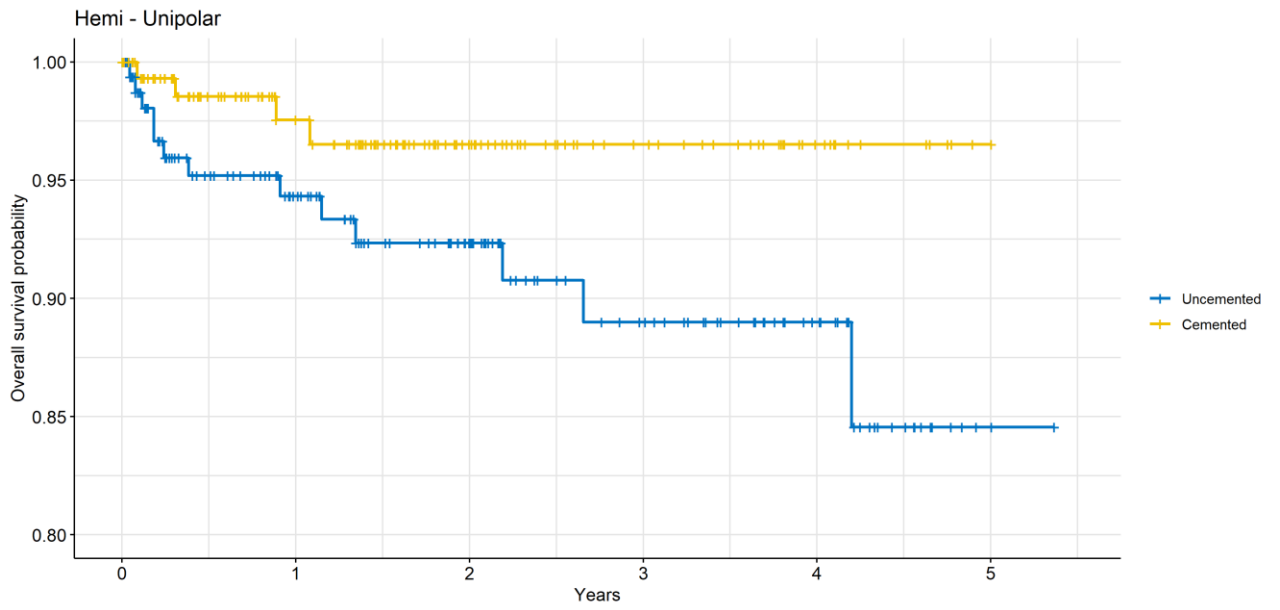
Figure 3.20 Kaplan-Meier curve for bearing surface for total hip prostheses at primary hip replacement

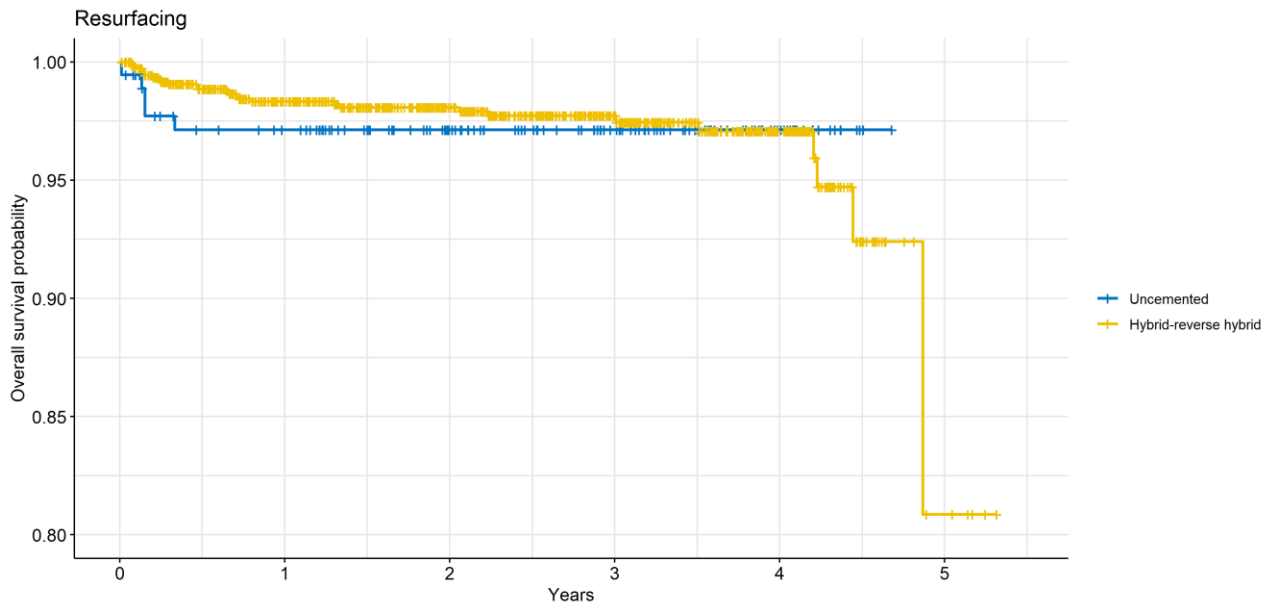


	Number of events/Number at risk											
	0	1	2	3	4	5	6	7	8	9	10	11
Metal – Polyethylene	147/9305	33/7994	17/6762	13/5419	5/4196	3/2964	0/1584	1/1081	2/619	1/254	0/108	0/0
Ceramic – Polyethylene	781/45212	135/35335	68/26938	44/19783	27/13391	23/8239	9/4712	3/2829	3/1357	2/489	1/161	0/1
Metal - Metal	14/1341	8/1306	5/1247	2/1200	2/1151	0/1023	0/822	2/719	3/520	0/240	0/85	0/0
Ceramic - Ceramic	1091/73690	197/58532	124/45308	72/32126	29/19859	20/10096	6/4459	5/2654	3/1425	2/604	0/195	0/0
Other	26/2592	5/2252	2/1858	6/1439	1/984	0/597	1/318	0/150	0/93	0/46	0/4	0/0

Figure 3.21 Kaplan-Meier curves for method of fixation according to primary hip replacement prosthesis type

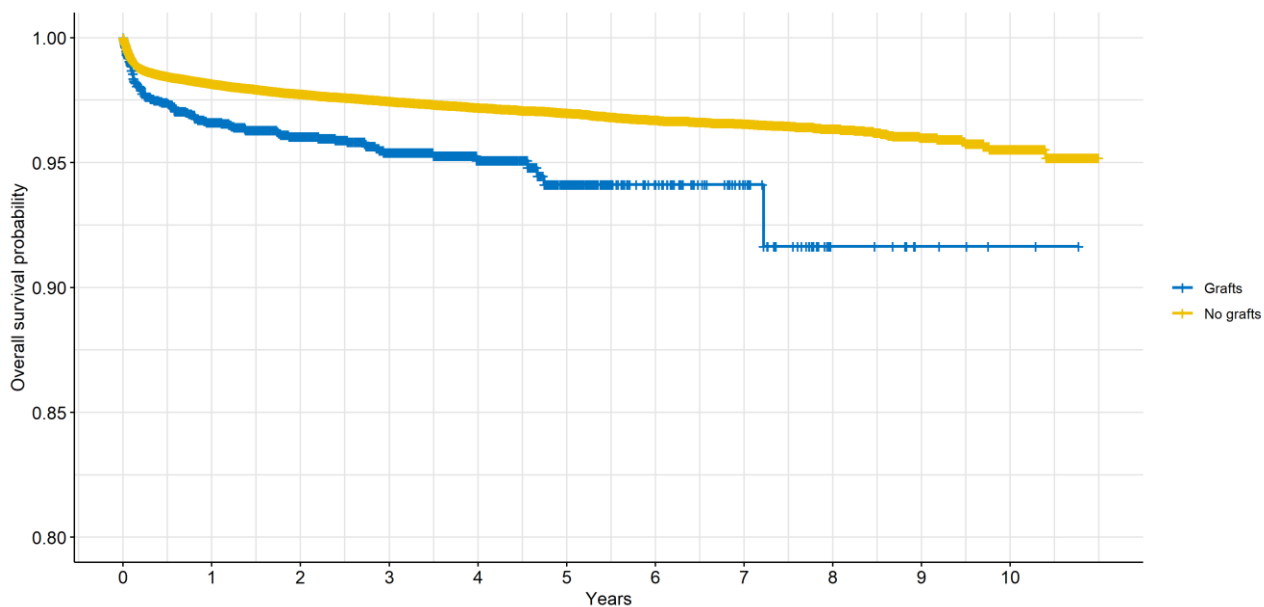






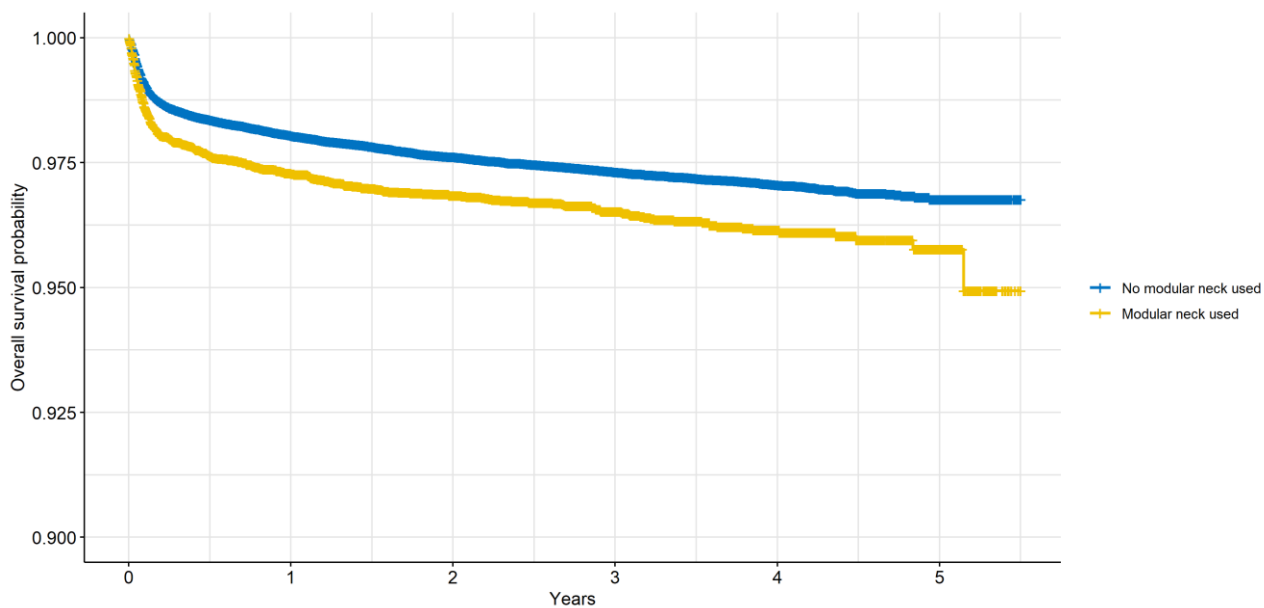
		Number of events/Number at risk					
		0	1	2	3	4	5
Total prosthesis	Uncemented	1598/95074	250/71921	129/51600	62/32483	17/14992	0/842
	Cemented	47/2753	7/2200	4/1713	7/1222	1/684	0/56
	Hybrid	229/11966	44/9136	19/6715	14/4286	6/1938	1/94
Total dual- mobility prosthesis	Uncemented	144/6299	16/4511	12/3217	3/1996	2/815	0/36
	Cemented	11/580	4/411	2/286	2/195	0/95	0/2
	Hybrid	39/1988	8/1385	4/974	1/587	0/264	0/7
Hemi - Unipolar	Uncemented	8/166	2/105	2/73	0/47	1/27	0/3
	Cemented	3/154	13/97	0/51	0/28	0/12	0/1
Hemi - Bipolar	Uncemented	480/14898	51/9320	14/6319	5/3692	3/1628	0/165
	Cemented	148/7700	15/4912	4/3273	1/1944	3/773771	0/46
Resurfa- cing	Uncemented	5/183	0/157	0/121	0/83	0/22	0/0
	Hybrid	17/1105	2/860	2/594	2/355	4/148	0/6

Figure 3.22 Kaplan-Meier curve for usage of grafts during primary hip replacement



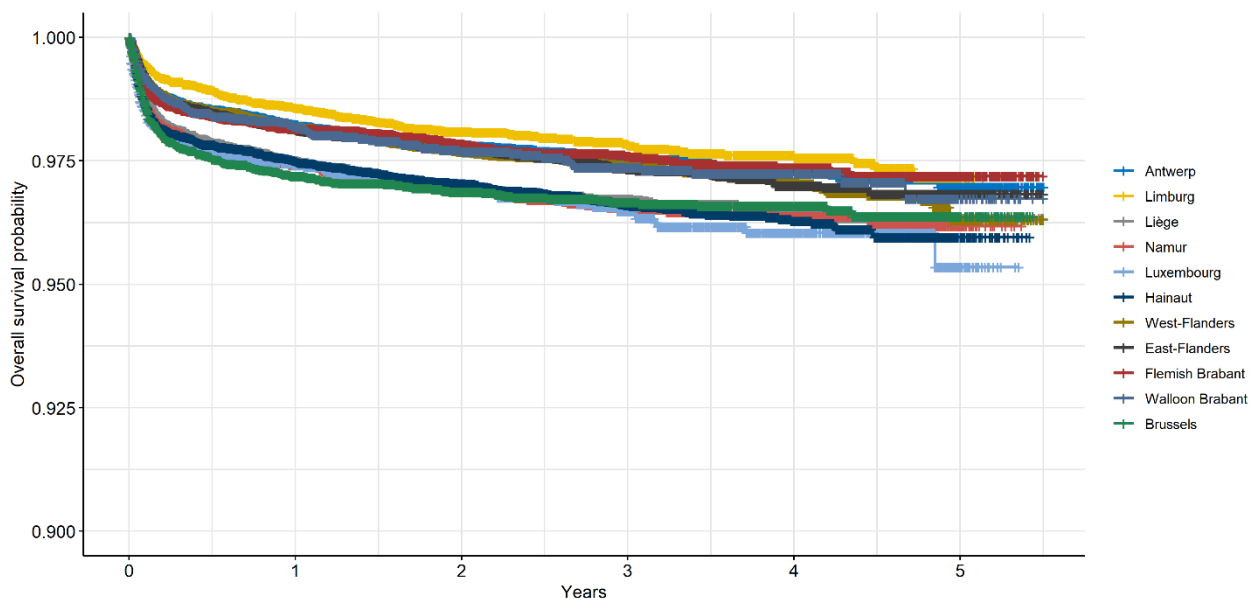
Number of events/Number at risk												
	0	1	2	3	4	5	6	7	8	9	10	11
No grafts used	2873/164801	474/127277	251/97568	151/69876	75/44843	52/24980	16/12644	12/7840	11/4216	5/1741	1/590	0/11
Grafts used	79/2472	10/1914	8/1459	2/1019	3/518	0/199	0/75	1/43	0/12	0/6	0/3	0/0

Figure 3.23 Kaplan-Meier curve for usage of a modular neck during primary hip replacement



Number of events/Number at risk						
	0	1	2	3	4	5
No modular neck used	2344/127519	353/93713	168/66650	80/41442	28/18930	0/1025
Modular neck used	352/13743	42/10085	20/7448	15/4919	4/2257	1/223

Figure 3.24 Kaplan-Meier curve for location where primary hip replacement was performed



Number of events/Number at risk						
	0	1	2	3	4	5
Antwerp	369/22336	60/16502	24/11724	15/7125	5/3216	0/255
Limburg	154/11691	37/8589	12/6090	8/3810	4/1719	1/33
Liège	313/13393	46/9802	16/7050	10/4553	2/2126	0/135
Namur	150/6126	17/4524	13/3328	3/2128	1/982	0/42
Luxembourg	92/3723	11/2707	8/1987	5/1274	1/613	0/37
Hainaut	394/16597	50/12270	32/8828	13/5473	5/2377	0/77
West-Flanders	346/20486	67/15001	23/10500	17/6628	10/3106	0/175
East-Flanders	335/19300	50/14178	34/10059	14/6277	3/2893	0/233
Flemish Brabant	222/12748	24/9315	14/6569	8/4052	2/1784	0/119
Walloon Brabant	85/5022	17/3701	7/2680	2/1672	2/799	0/37
Brussels	228/8622	18/6282	8/4593	2/2906	2/1339	0/93

3.3 NINETY-DAYS MORTALITY AFTER HIP REPLACEMENT PROCEDURES (SINCE 2015)

Table 3.15 90-days mortality after hip replacement by type of procedure

	Alive 90 days post-procedure		Died before 90 days post-procedure	
	Count	N %	Count	N %
Primary procedure	138294	97.8%	3087	2.2%
Revision with new prosthesis	13529	97.3%	376	2.7%
Resection with spacer	795	94.8%	44	5.2%
Resection without spacer	40	85.1%	7	14.9%
Total	152658	97.7%	3514	2.3%

Table 3.16 90-days mortality after hip replacement by age category

	Alive 90 days post-procedure		Died before 90 days post-procedure	
	Count	N %	Count	N %
<45	5159	99.9%	4	0.1%
45-59	26009	99.8%	59	0.2%
60-69	38225	99.5%	181	0.5%
70-79	44384	98.7%	577	1.3%
>=80	38838	93.5%	2693	6.5%
Total [Missing]	152615 [43]	97.7%	3514	2.3%