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**Orthopride**  
**Belgian Hip and Knee Arthroplasty Registry**  
**Annual Report**  
**2020**

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January 2022



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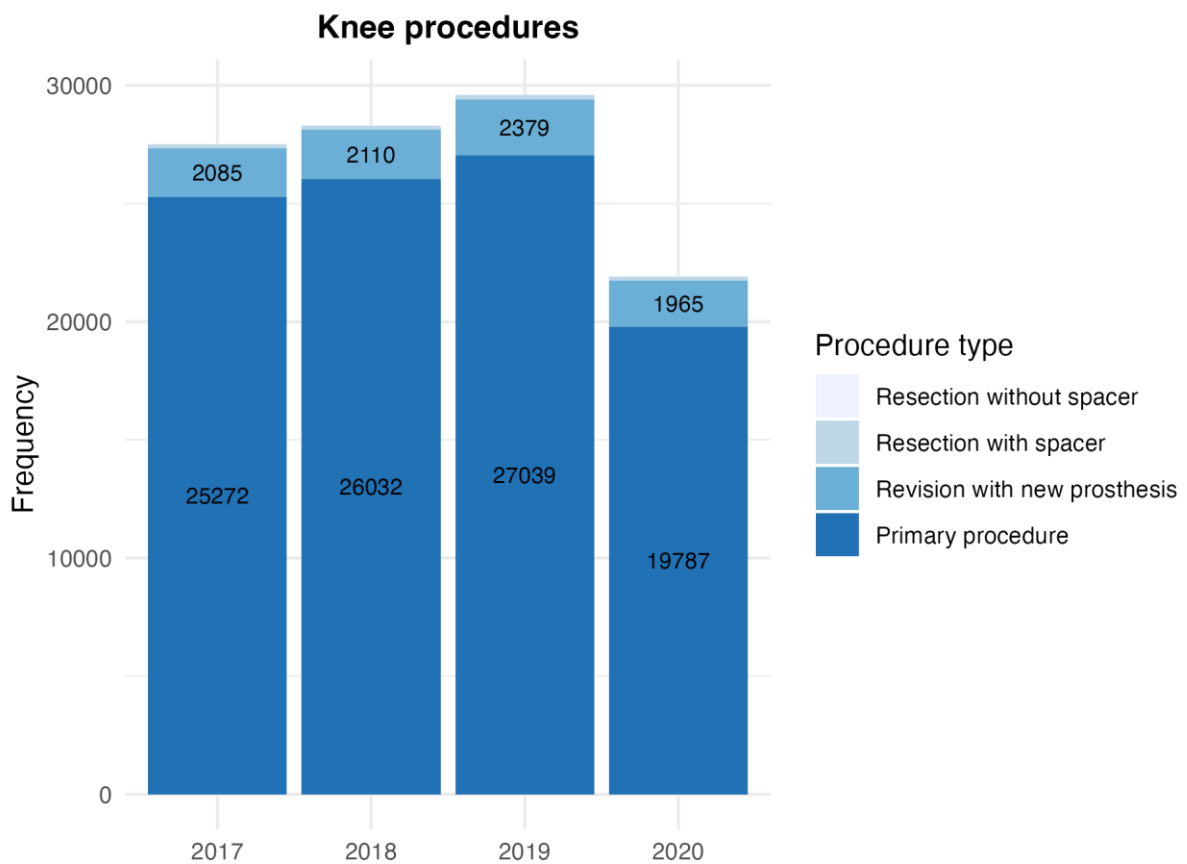
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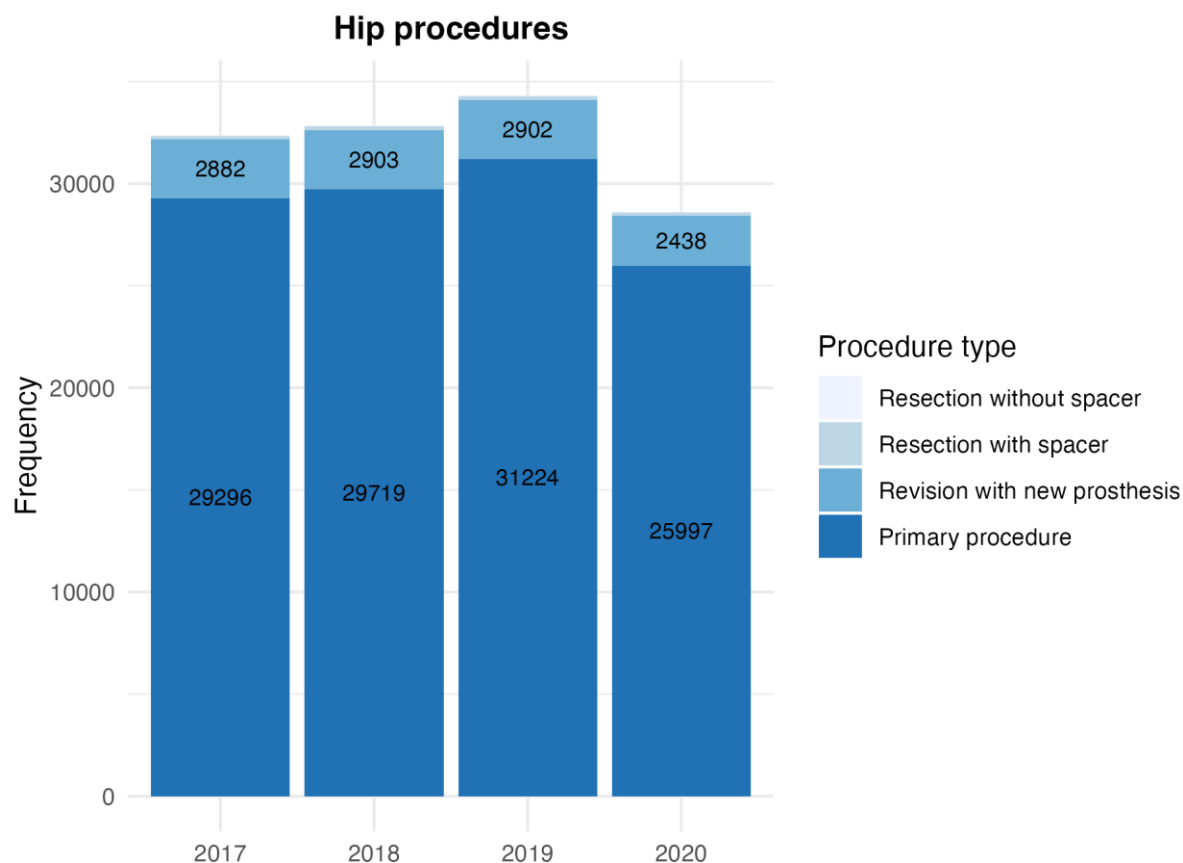
# 1 GENERAL INTRODUCTION

**Table 1.1 Total joint replacement procedures entered in Orthopride during 2020**

	Knee procedures	Hip procedures
Primary procedure	19 787	25 997
Revision with new prosthesis	1 965	2 438
Resection with spacer	162	151
Resection without spacer	3	6
<b>Total per joint</b>	<b>21 917</b>	<b>28 592</b>

**Figure 1.1 Total joint replacement procedures entered in Orthopride in 2017, 2018, 2019 and 2020**





**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*
<b>Antwerp</b>	3405	15.6 %	182	45.2%	24.8%
<b>Limburg</b>	1854	8.5 %	211	48.4%	26.8%
<b>Liège</b>	1738	8 %	157	44.5%	24.3%
<b>Namur</b>	759	3.5 %	153	44.9%	24.3%
<b>Luxembourg</b>	477	2.2 %	165	42.8%	22.3%
<b>Hainaut</b>	2291	10.5 %	170	44.8%	24.2%
<b>West-Flanders</b>	3785	17.3 %	315	50.2%	29.3%
<b>East-Flanders</b>	3542	16.2 %	231	45.8%	25.1%
<b>Flemish Brabant</b>	1849	8.5 %	159	45.4%	24.7%
<b>Walloon Brabant</b>	628	2.9 %	154	45.6%	24.7%
<b>Brussels</b>	1140	5.2 %	93	35.0%	16.7%
<b>Other Country</b>	378	1.7 %			
<b>Total</b>	<b>21846</b>				
<b>[Missing]</b>	<b>[71]</b>				

\* 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)
<b>Antwerp</b>	3119	91.6	67.6 +/- 9.8	286	8.4	66.3 +/- 11.4
<b>Limburg</b>	1679	90.6	67.1 +/- 10	175	9.4	65.1 +/- 11.5
<b>Liège</b>	1585	91.2	66.9 +/- 10.3	153	8.8	66 +/- 10.9
<b>Namur</b>	699	92.1	66.8 +/- 10.4	60	7.9	69.1 +/- 8.7
<b>Luxembourg</b>	423	88.7	65.8 +/- 10.2	54	11.3	67.8 +/- 11.9
<b>Hainaut</b>	2069	90.3	67 +/- 9.6	222	9.7	66.6 +/- 11.1
<b>West-Flanders</b>	3428	90.6	67.7 +/- 10.2	357	9.4	65.6 +/- 11.4
<b>East-Flanders</b>	3119	88.1	66.5 +/- 10.7	423	11.9	64.2 +/- 12.5
<b>Flemish Brabant</b>	1669	90.3	67.9 +/- 9.5	180	9.7	67.4 +/- 11.8
<b>Walloon Brabant</b>	584	93	68.5 +/- 9.6	44	7	67.6 +/- 11.2
<b>Brussels</b>	1020	89.5	67.6 +/- 10.1	120	10.5	68.7 +/- 12.4
<b>Other Country</b>	332	87.8	65.3 +/- 10.4	46	12.2	64.3 +/- 9.3
<b>Total</b>	<b>19726</b>	<b>90.3</b>	<b>67.2 +/- 10.1</b>	<b>2120</b>	<b>9.7</b>	<b>66 +/- 11.6</b>

**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*
<b>Antwerp</b>	4430	15.5 %	236	45.2%	24.8%
<b>Limburg</b>	2291	8 %	260	48.4%	26.8%
<b>Liège</b>	2494	8.7 %	225	44.5%	24.3%
<b>Namur</b>	1169	4.1 %	235	44.9%	24.3%
<b>Luxembourg</b>	673	2.4 %	233	42.8%	22.3%
<b>Hainaut</b>	3107	10.9 %	231	44.8%	24.2%
<b>West-Flanders</b>	4577	16 %	380	50.2%	29.3%
<b>East-Flanders</b>	4087	14.3 %	267	45.8%	25.1%
<b>Flemish Brabant</b>	2670	9.4 %	230	45.4%	24.7%
<b>Walloon Brabant</b>	1007	3.5 %	247	45.6%	24.7%
<b>Brussels</b>	1539	5.4 %	126	35.0%	16.7%
<b>Other Country</b>	490	1.7 %			
<b>Total</b>	<b>28534</b>	<b>100%</b>			
<b>[Missing]</b>	<b>[58]</b>				

\* 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)
<b>Antwerp</b>	4072	91.9	71.1 +/- 13	358	8.1	72.2 +/- 13.5
<b>Limburg</b>	2100	91.7	70.1 +/- 13	191	8.3	70.4 +/- 13.1
<b>Liège</b>	2242	89.9	70.4 +/- 13	252	10.1	72.5 +/- 13.4
<b>Namur</b>	1054	90.2	70.8 +/- 12.1	115	9.8	68.8 +/- 14
<b>Luxembourg</b>	587	87.2	70.6 +/- 12.8	86	12.8	72.8 +/- 11.6
<b>Hainaut</b>	2778	89.4	70 +/- 12.9	329	10.6	70.4 +/- 12.7
<b>West-Flanders</b>	4192	91.6	71.2 +/- 12.5	385	8.4	74.2 +/- 12.4
<b>East-Flanders</b>	3709	90.8	70.7 +/- 13.1	378	9.2	71.8 +/- 12.7
<b>Flemish Brabant</b>	2462	92.2	71.4 +/- 12.9	208	7.8	72.9 +/- 12
<b>Walloon Brabant</b>	913	90.7	71 +/- 12.7	94	9.3	73.2 +/- 14.2
<b>Brussels</b>	1400	91	72.1 +/- 14.2	139	9	70.5 +/- 15
<b>Other Country</b>	441	90	65.4 +/- 13.2	49	10	65.9 +/- 13.5
<b>Total</b>	<b>25950</b>	<b>90.9</b>	<b>70.8 +/- 13</b>	<b>2584</b>	<b>9.1</b>	<b>71.9 +/- 13.1</b>

## 2 KNEE REPLACEMENT

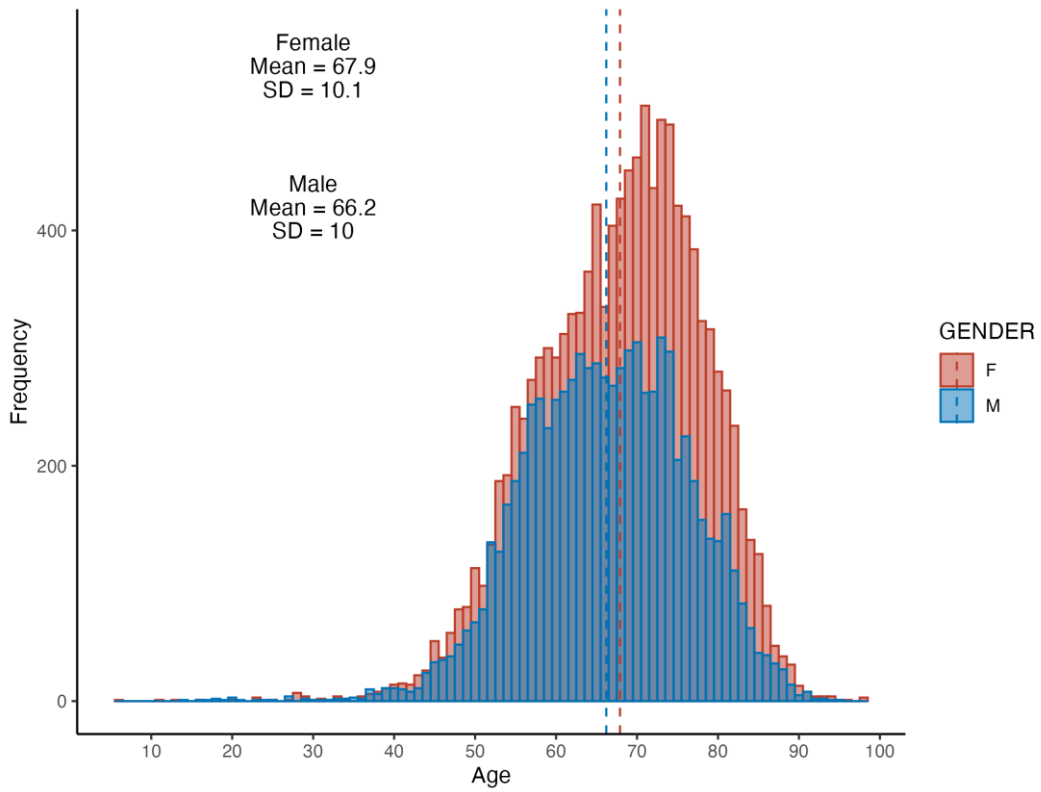
### 2.1 PRIMARY KNEE REPLACEMENT

#### 2.1.1 Demographics

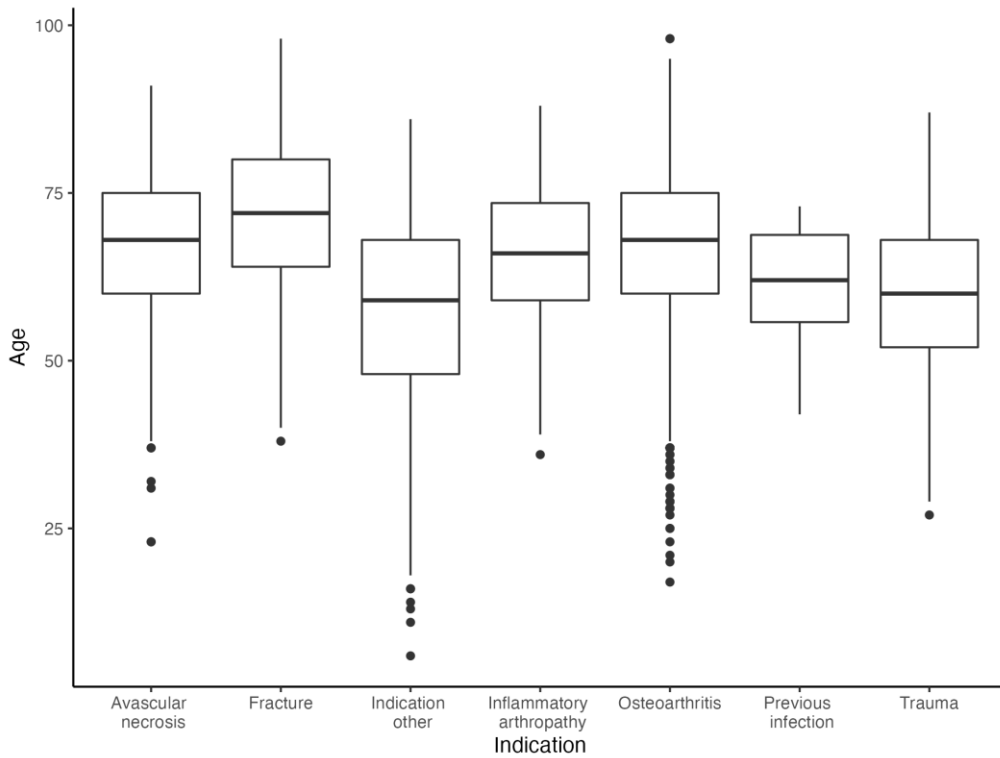
Table 2.1 Age, gender and indications for primary knee replacement patients

N=19787		
	Mean	SD
Age (yrs)	67.2	10.1
	Count	N %
<b>Age categories</b>		
<45	274	1.4%
45-59	4309	21.8%
60-69	6448	32.6%
70-79	6590	33.3%
>=80	2161	10.9%
<b>Gender</b>		
Female	11886	60.1%
Male	7900	39.9%
<b>Indication</b>		
Osteoarthritis	18784	94.9%
Avascular necrosis	289	1.5%
Fracture	81	0.4%
Inflammatory arthropathy	115	0.6%
Trauma	311	1.6%
Previous infection	10	0.1%
Indication other	197	1.0%

**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= 7900	N= 11886
	N (%)	N (%)
<b>Osteoarthritis</b>	7440 (94.2)	11343 (95.4)
<b>Post trauma</b>	170 (2.2)	141 (1.2)
<b>Avascular necrosis</b>	131 (1.7)	158 (1.3)
<b>Fracture</b>	20 (0.3)	61 (0.5)
<b>Inflammatory arthropathy</b>	31 (0.4)	84 (0.7)
<b>Previous infection</b>	6 (0.1)	4 (0.0)
<b>Indication other</b>	102 (1.3)	95 (0.8)

**Table 2.3 Medical history of primary knee replacement patients**

	Count	Percentage of total
<b>No pre-operative surgeries</b>	14 367	72.6 %
<b>Pre-op Osteosynthesis of the tibia</b>	192	1 %
<b>Pre-op Osteosynthesis of the femur</b>	75	0.4 %
<b>Pre-op Osteotomy</b>	230	1.2 %
<b>Pre-op Synovectomy</b>	62	0.3 %
<b>Pre-op Meniscectomy</b>	4 062	20.5 %
<b>Pre-op ACL reconstruction</b>	365	1.8 %
<b>Pre-op Other</b>	937	4.7 %

**Table 2.4 Pre-operative alignment of primary knee replacement patients**

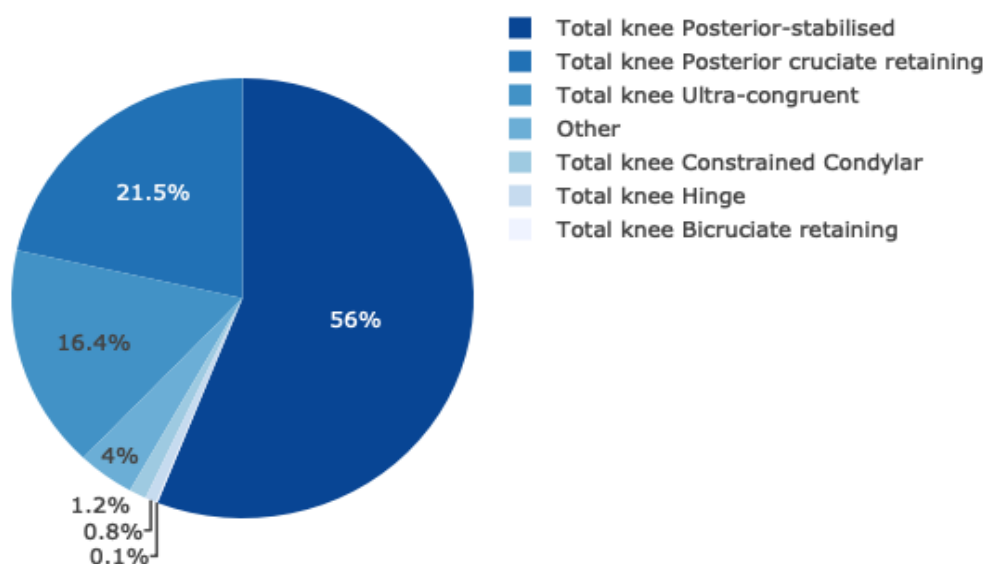
	Count	Percentage of total
<b>Normal</b>	5 531	28.0%
<b>Valgus</b>	3 883	19.6%
<b>Varus</b>	10 373	52.4%

## 2.1.2 Surgical technique and implant characteristics

**Table 2.5 Numbers and percentages of primary knee replacement types**

	Number	Percentage of total
<b>Total knee replacement</b>	16464	83.2 %
<b>Unicompartmental replacement</b>	2699	13.6 %
<b>Bicompartmental replacement</b>	260	1.3 %
<b>Patellofemoral replacement</b>	348	1.8 %
<b>Partial resurfacing femoral condyle</b>	16	0.1 %
<b>Total</b>	<b>19787</b>	<b>100 %</b>

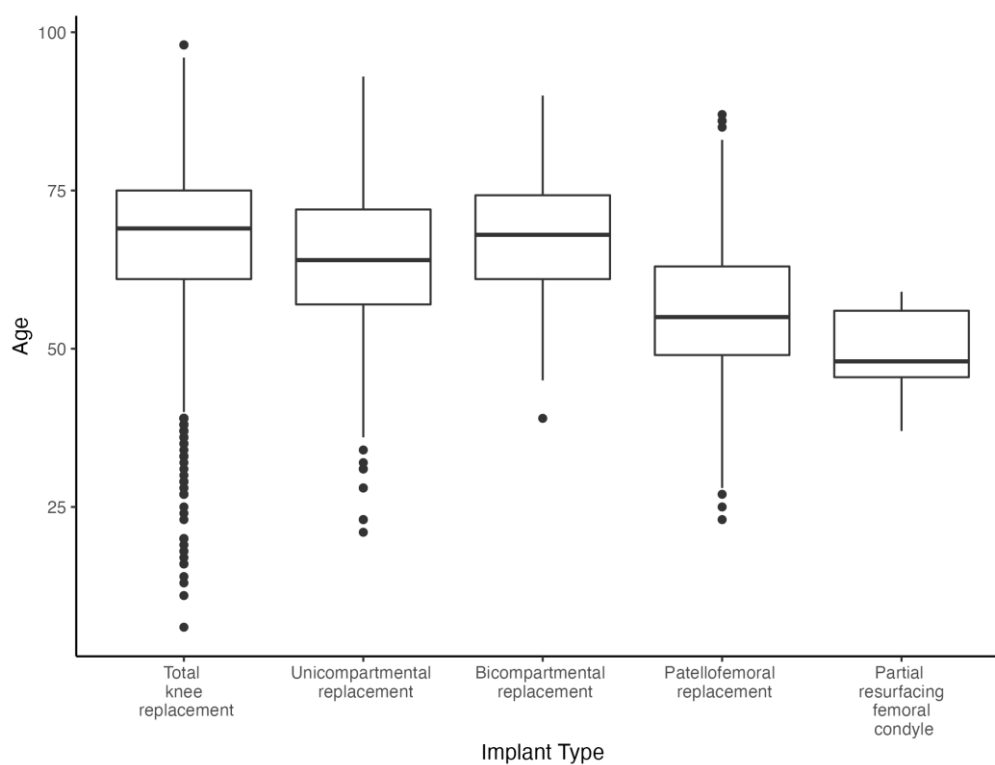
**Figure 2.3 Distribution of primary total knee prosthesis types**



**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
	<b>N=16464</b>	<b>N=2699</b>	<b>N=260</b>	<b>N=348</b>	<b>N=16</b>
<b>Mean age (years) (SD)</b>	68.0 (9.8)	64.3 (10.1)	67.6 (10)	55.8 (11.5)	49.7 (6.1)
<b>Age groups</b>	<b>N (%)</b>	<b>N (%)</b>	<b>N (%)</b>	<b>N (%)</b>	<b>N (%)</b>
<45	164 (1 %)	62 (2.3 %)	1 (0.4 %)	43 (12.4 %)	4 (25 %)
45-59	3182 (19.3 %)	866 (32.1 %)	54 (20.8 %)	195 (56 %)	12 (75 %)
60-69	5402 (32.8 %)	889 (32.9 %)	89 (34.2 %)	68 (19.5 %)	0 (0 %)
70-79	5773 (35.1 %)	702 (26 %)	85 (32.7 %)	30 (8.6 %)	0 (0 %)
>=80	1938 (11.8 %)	180 (6.7 %)	31 (11.9 %)	12 (3.4 %)	0 (0 %)
<b>Gender</b>	<b>N (%)</b>	<b>N (%)</b>	<b>N (%)</b>	<b>N (%)</b>	<b>N (%)</b>
<b>Female</b>	10165 (61.7 %)	1277 (47.3 %)	156 (60 %)	277 (79.6 %)	11 (68.8 %)
<b>Male</b>	6298 (38.3 %)	1422 (52.7 %)	104 (40 %)	71 (20.4 %)	5 (31.2 %)

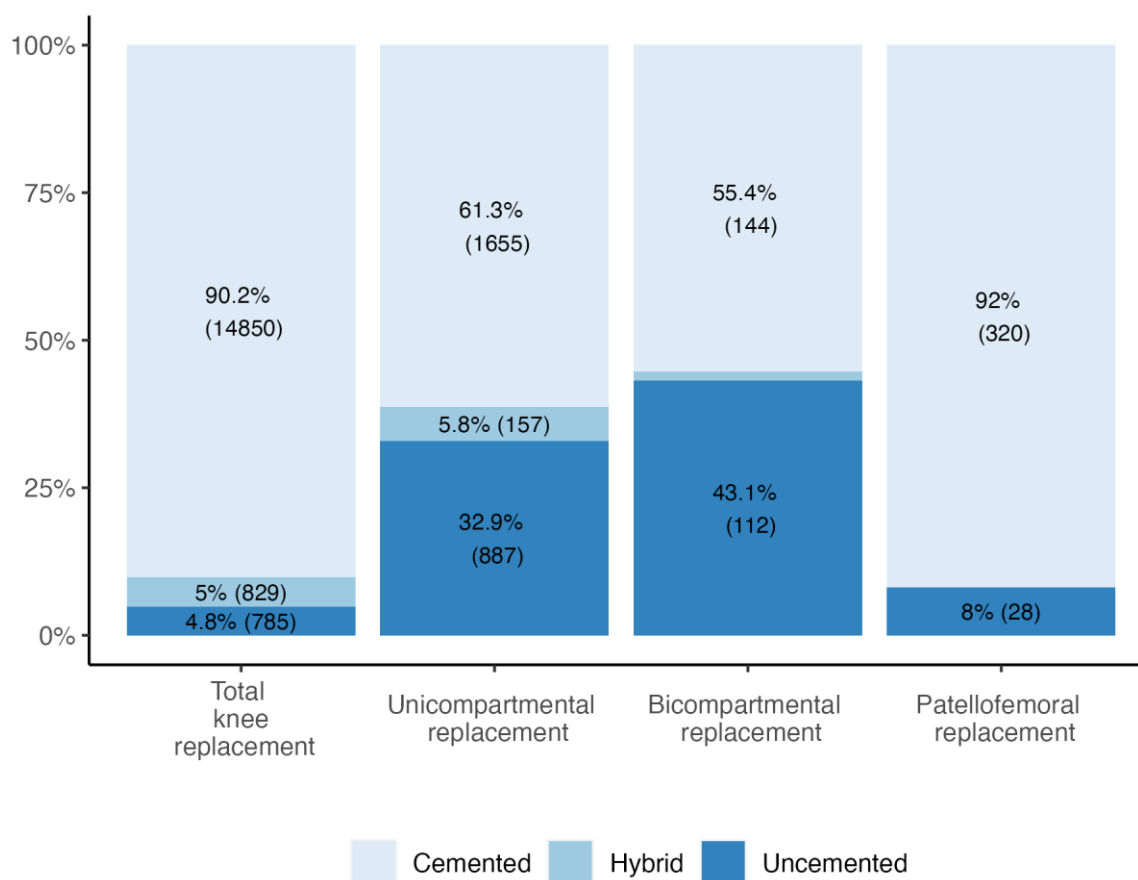
**Figure 2.4 Age distribution by implant type for primary knee replacement patients**



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

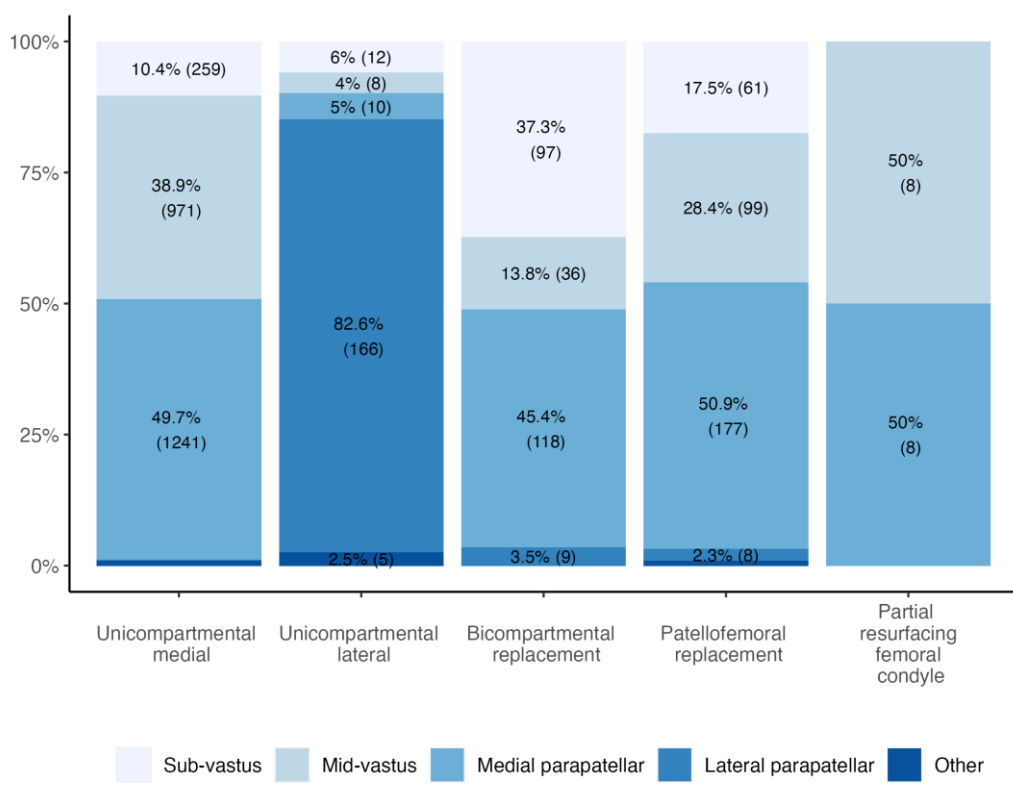
	Total knee replacement	Unicompartmental replacement	Bicompartmental replacement	Patellofemoral replacement
	<b>N=16464</b>	<b>N=2699</b>	<b>N=260</b>	<b>N=348</b>
	<b>N (%)</b>	<b>N (%)</b>	<b>N (%)</b>	<b>N (%)</b>
<b>Cemented</b>	14850 (90.2%)	1655 (61.3%)	144 (55.4%)	320 (92%)
<b>Revers hybrid</b>	34 (0.2%)	23 (0.9%)	0 (0%)	0 (0%)
<b>Hybrid</b>	795 (4.8%)	134 (5%)	4 (1.5%)	0 (0%)
<b>Uncemented</b>	785 (4.8%)	887 (32.9%)	112 (43.1%)	28 (8%)

**Figure 2.5 Method of fixation by primary knee prosthesis type**



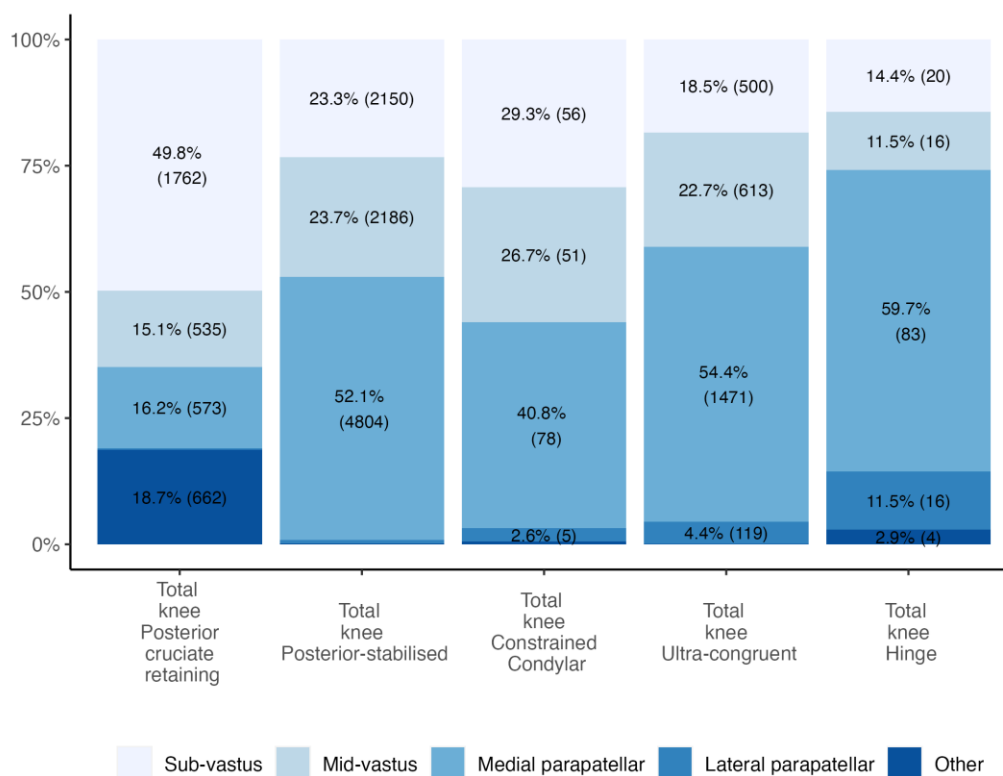


**Figure 2.6 Approach used during primary partial knee replacements**



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**

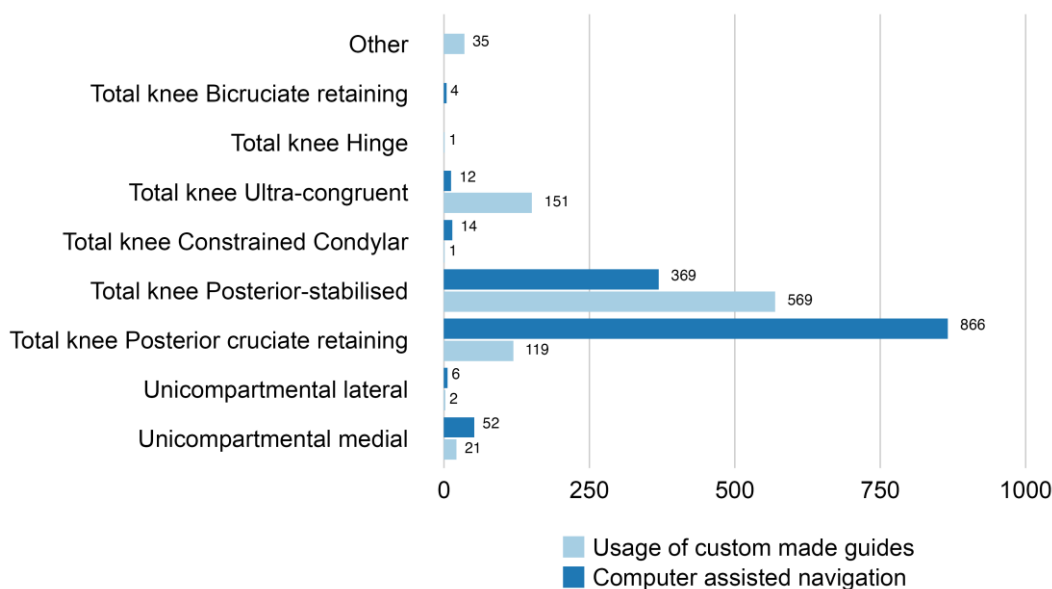


Note: For readability of the figure, labels with percentages smaller than 2% are not displayed.

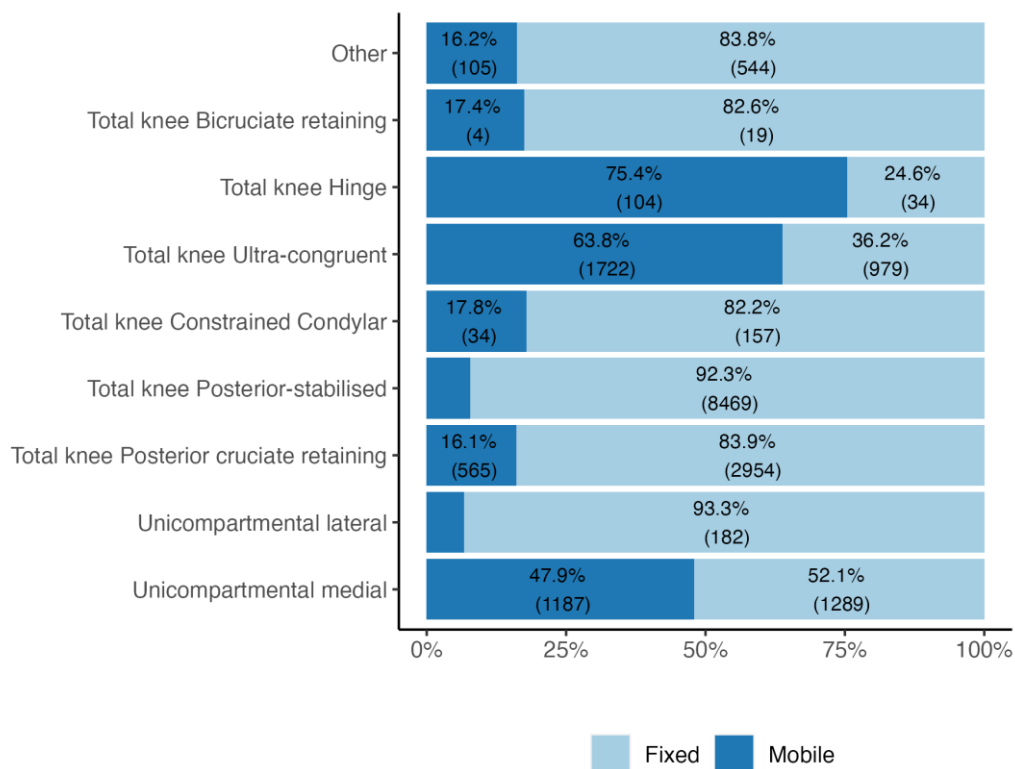
**Table 2.8 Usage of computer assisted navigation and custom made guides**

	Computer assisted navigation	Custom made guides
<b>Count (% of total procedures)</b>	1342 (6.8%)	933 (4.7%)
<b>Amount of hospitals (% of all hospitals)</b>	31/103 (30.1%)	27/103 (26.2%)

**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**



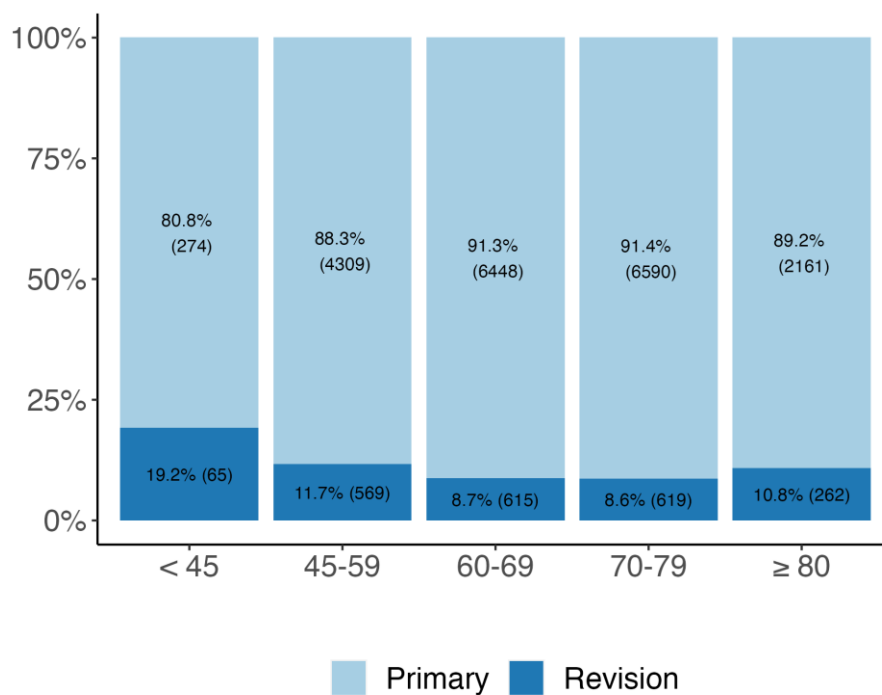
## 2.2 REVISIONS AFTER PRIMARY KNEE REPLACEMENT

### 2.2.1 Demographics

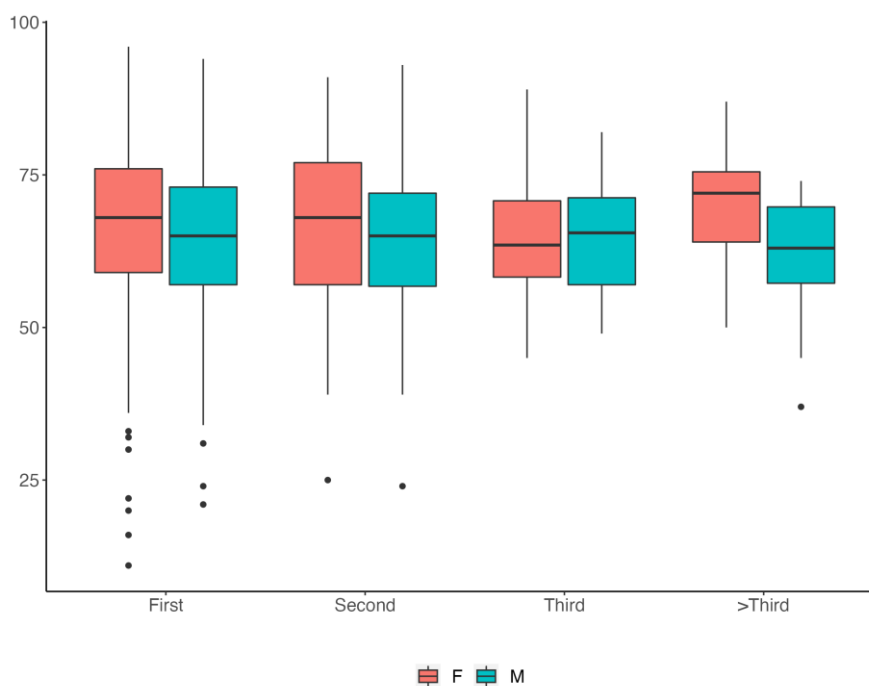
**Table 2.9 Age, gender and indications for knee revision procedures**

N=2130		
	Mean	SD
Age (yrs)	66.0	11.6
	Count	N %
<b>Age categories</b>		
<45	65	3.1%
45-59	569	26.7%
60-69	615	28.9%
70-79	619	29.1%
>=80	262	12.3%
<b>Gender</b>		
Female	1312	61.6%
Male	818	38.4%
<b>Indication</b>		
Aseptic loosening	534	25.1%
Wear of polyethylene component	90	4.2%
Instability	421	19.8%
Infection	487	22.9%
Periprosthetic fracture	113	5.3%
Pain	398	18.7%
Stiffness	105	4.9%
Malalignment	98	4.6%
Implant fracture	45	2.1%
Progressive osteoarthritis in non-replaced component	250	11.7%
Indication other	215	10.1%

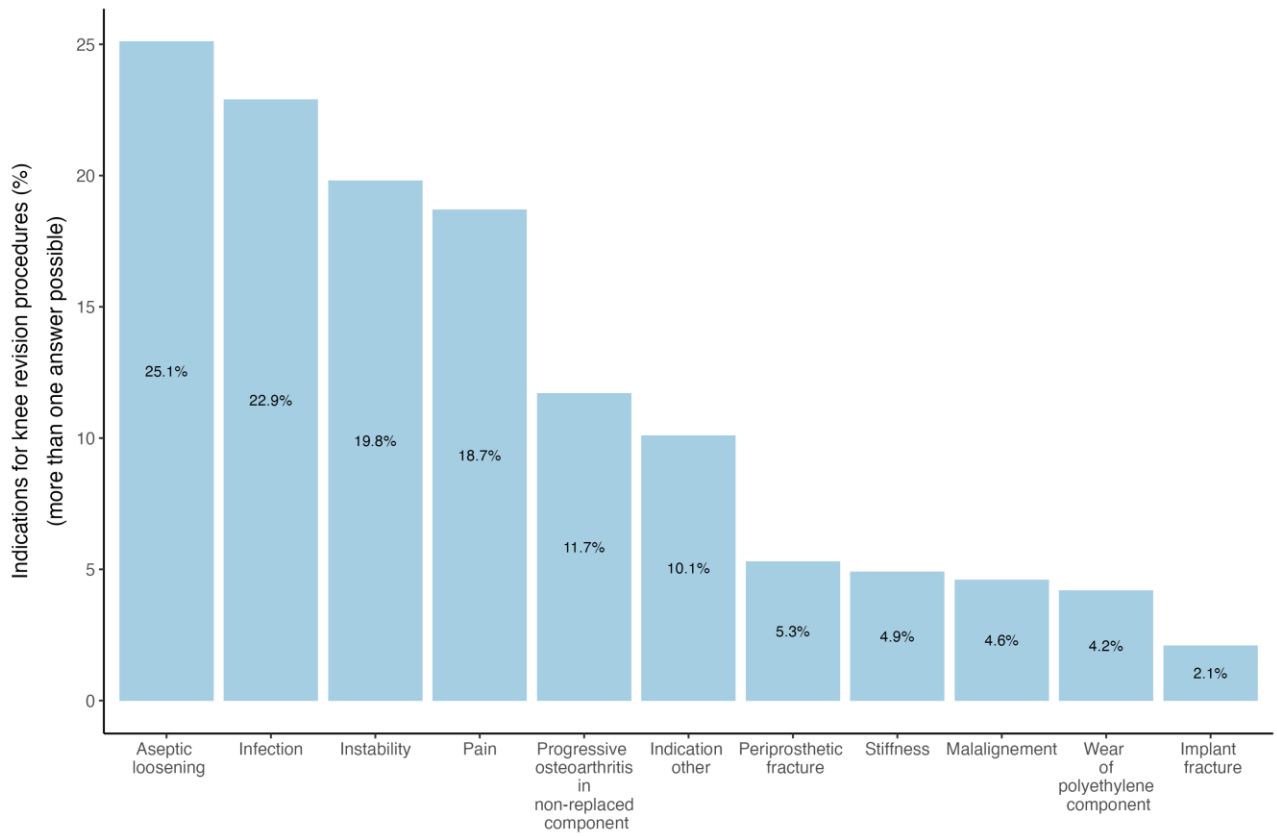
**Figure 2.10 Knee revision burden according to age category**



**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 (%) <sup>1</sup>
<b>Tibia</b>	1290	65.6%
<b>Femur</b>	1241	63.2%
<b>Patella</b>	800	40.7%
<b>Insert</b>	1729	88%
<b>Total number of procedures</b>	<b>1965</b>	

<sup>1</sup>More than one component can be exchanged during a revision procedure.

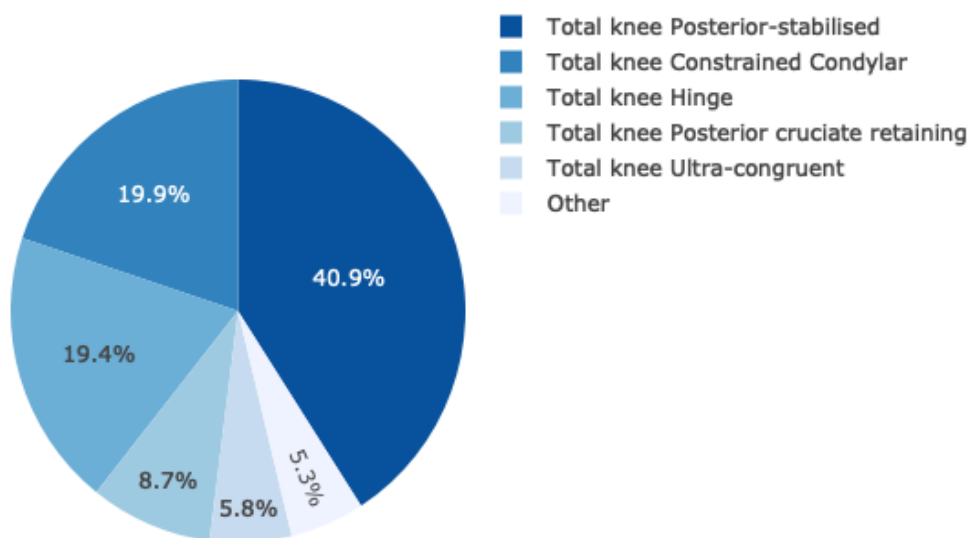
**Table 2.11 Combinations of removed components during knee revision procedures**

	Number	Percentage of total (%)
<b>All components</b>	1191	60.6%
<b>Tibia and Insert</b>	91	4.6%
<b>Patella and insert</b>	31	1.6%
<b>Femur and insert</b>	21	1.1%
<b>Insert only</b>	384	19.5%
<b>Patella only</b>	210	10.7%
<b>Femur only</b>	16	0.8%
<b>Other combination</b>	21	1.1%
<b>Total number of procedures</b>	<b>1965</b>	<b>100%</b>

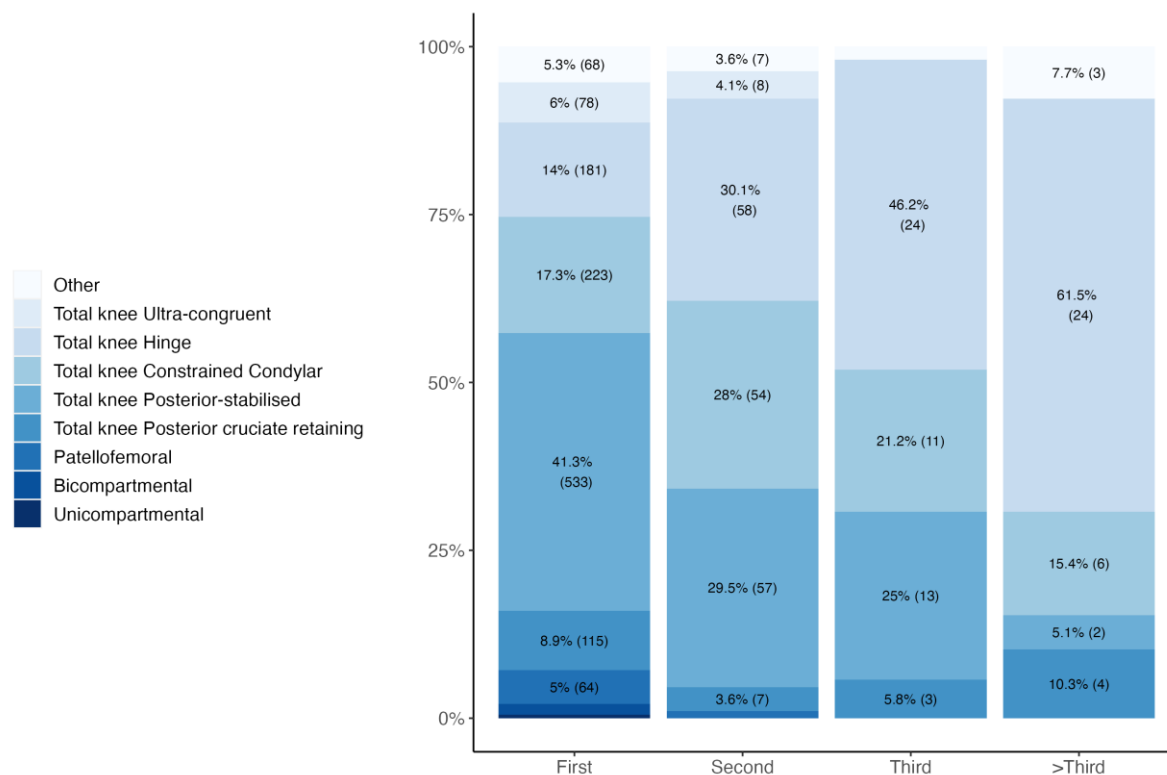
**Table 2.12 Numbers and percentages of implanted knee types during knee revision procedures**

	Number	Percentage of total (%)
<b>Total knee replacement</b>	1487	94.1%
<b>Unicompartmental</b>	7	0.4%
<b>Bicompartmental replacement</b>	21	1.3%
<b>Patellofemoral replacement</b>	66	4.2%
<b>Total number of procedures</b>	<b>1581</b>	<b>100%</b>

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



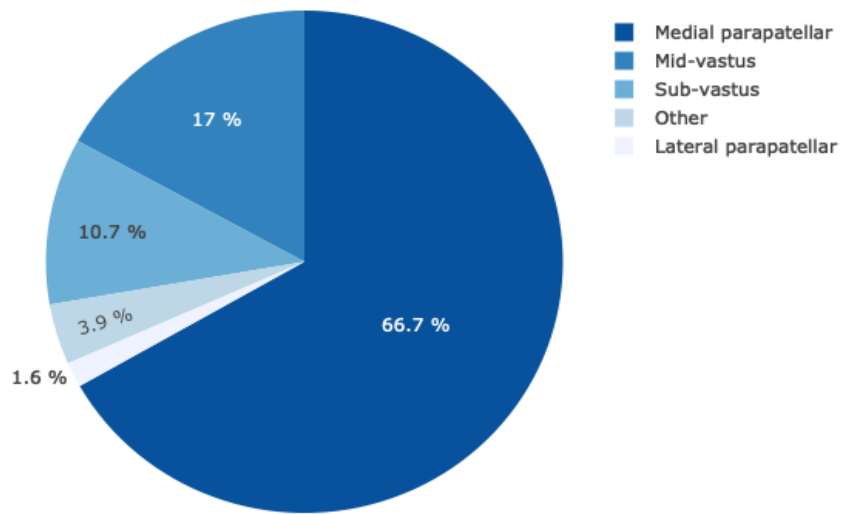
**Figure 2.14 Type of implanted knee prosthesis during revision procedures according to the number of revisions**



	1st revision	2nd revision	3rd revision	>3rd revision
	N (%)	N (%)	N (%)	N (%)
<b>Total knee Other</b>	68 (5.3%)	7 (3.6%)	1 (1.9%)	3 (7.7%)
<b>Total knee Ultra-congruent</b>	78 (6%)	8 (4.1%)	0 (0%)	0 (0%)
<b>Total knee Hinge</b>	181 (14%)	58 (30.1%)	24 (46.2%)	24 (61.5%)
<b>Total knee Constrained condylar</b>	223 (17.3%)	54 (28%)	11 (21.2%)	6 (15.4%)
<b>Total knee Posterior-stabilised</b>	533 (41.3%)	57 (29.5%)	13 (25%)	2 (5.1%)
<b>Total knee Posterior cruciate retaining</b>	115 (8.9%)	7 (3.6%)	3 (5.8%)	4 (10.3%)
<b>Total knee bicruciate retaining</b>	0 (0%)	0 (0%)	0 (0%)	0 (0%)
<b>Patellofemoral replacement</b>	64 (5%)	2 (1%)	0 (0%)	0 (0%)
<b>Bicompartamental replacement</b>	21 (1.6%)	0 (0%)	0 (0%)	0 (0%)
<b>Unicompartmental</b>	7 (0.5%)	0 (0%)	0 (0%)	0 (0%)
<b>Total amount</b>	<b>1290 (100%)</b>	<b>193 (100%)</b>	<b>52 (100%)</b>	<b>39 (100%)</b>



**Figure 2.15 Approach during knee revision procedures**



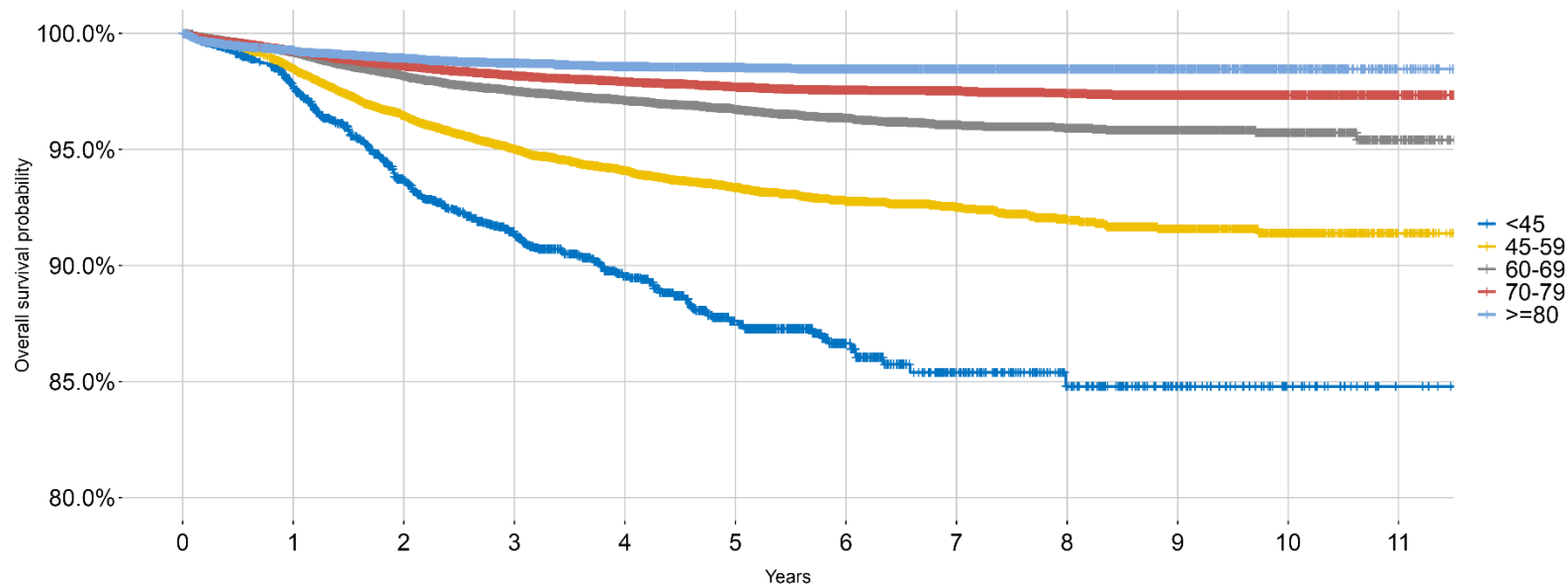
**Table 2.13 Numbers and percentages of knee revisions by fixation**

	Number	Percentage of total
<b>Cemented</b>	1267	95.9%
<b>Reverse hybrid</b>	5	0.4%
<b>Hybrid</b>	21	1.6%
<b>Uncemented</b>	28	2.1%
<b>Total number of procedures</b>	<b>1321</b>	<b>100%</b>

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

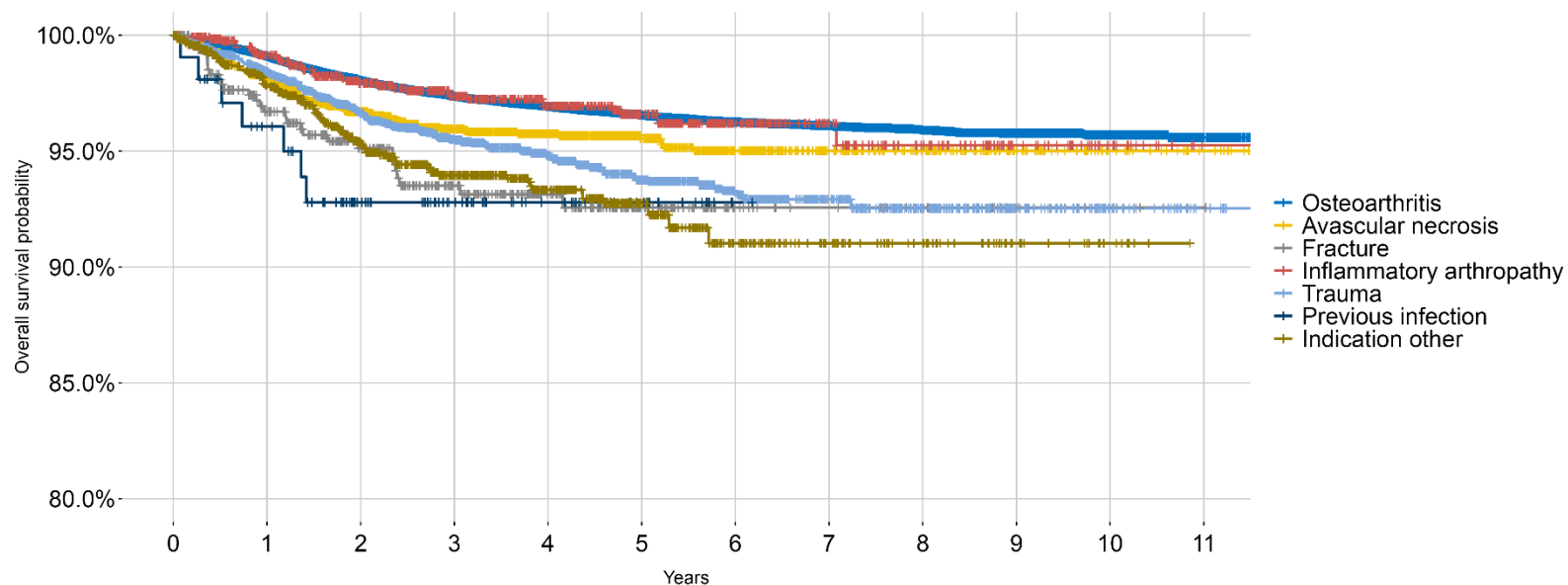
### 2.2.3 Implant survival after primary procedures

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



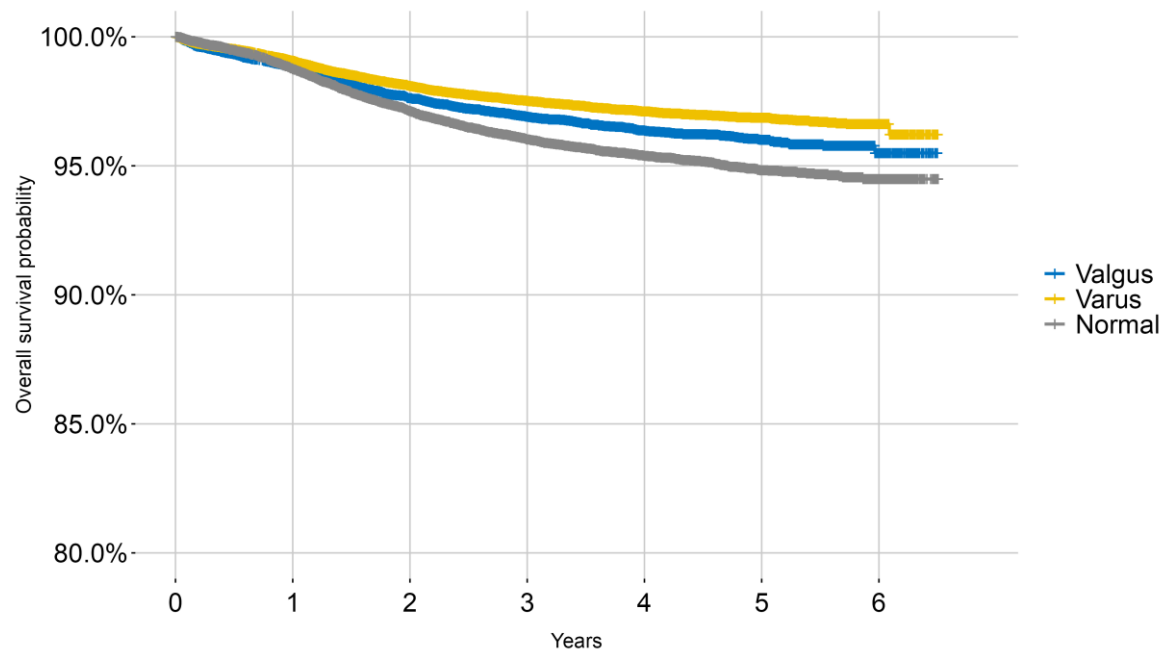
Number of events/Number at risk												
	0	1	2	3	4	5	6	7	8	9	10	11
<b>&lt;45</b>	68/3043	103/2701	49/2229	36/1860	28/1473	10/1086	9/745	2/426	0/276	0/134	0/58	0/12
<b>45-59</b>	567/39560	661/34689	392/28598	205/23054	122/17957	72/13213	18/9388	22/4848	12/3080	2/1624	0/652	0/146
<b>60-69</b>	500/63994	550/57019	286/47684	144/39088	109/30960	77/23169	38/16621	12/8944	4/5712	2/2986	2/1178	0/294
<b>70-79</b>	482/65858	354/58666	191/49168	94/40443	66/32071	30/24285	4/17793	10/10030	4/6572	0/3546	0/1434	0/378
<b>80+</b>	165/23121	64/20644	36/17363	18/14258	5/11416	5/8627	0/6392	0/3472	0/2182	0/1098	0/390	0/94

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



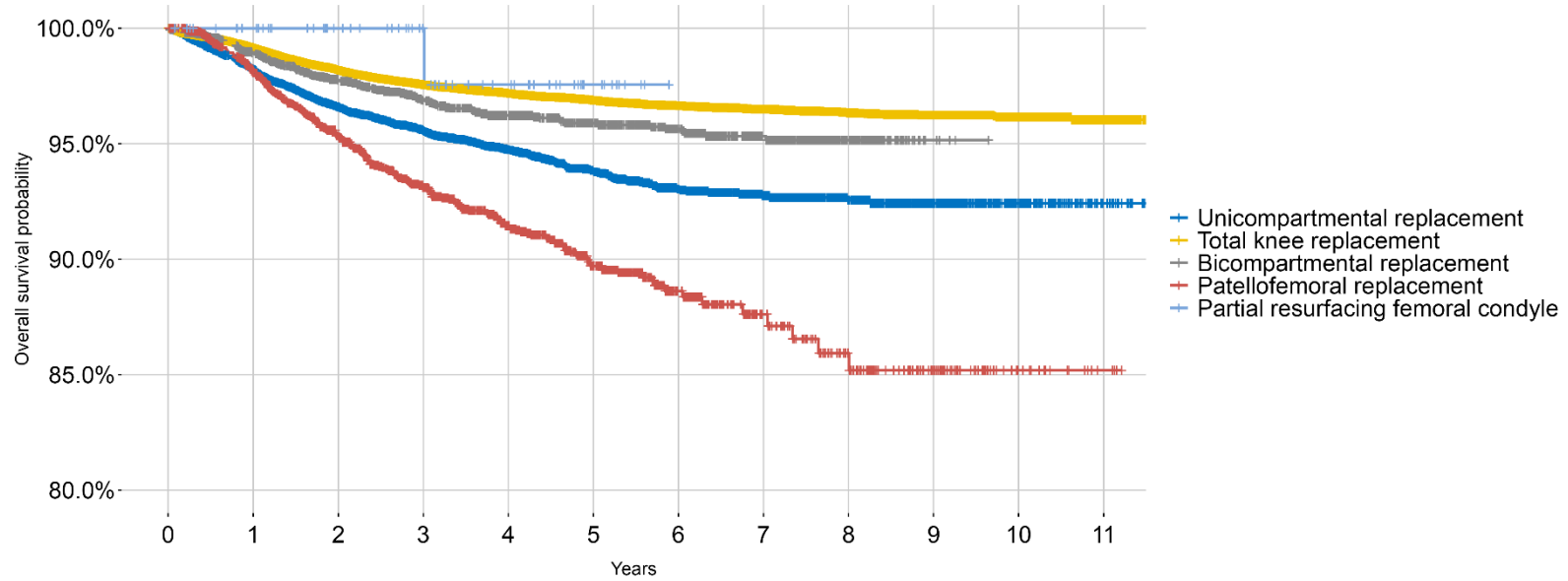
Number of events/Number at risk												
	0	1	2	3	4	5	6	7	8	9	10	11
<b>Osteo-arthritis</b>	1619/185793	1587/165133	888/137930	470/112948	303/89422	174/67165	65/48717	42/26522	20/17062	4/9020	2/3542	0/878
<b>Avascular necrosis</b>	44/2545	31/2205	13/1835	3/1493	2/1157	4/815	0/539	0/306	0/204	0/116	0/46	0/18
<b>Fracture</b>	15/512	6/404	5/318	1/253	1/176	0/97	0/46	0/34	0/22	0/10	0/6	0/2
<b>Inflammatory arthropathy</b>	10/1243	13/1117	5/967	3/794	2/643	2/497	0/367	2/214	0/140	0/74	0/32	0/2
<b>Post trauma</b>	59/3889	60/3512	32/2988	16/2462	19/1928	6/1440	4/1050	2/540	0/352	0/170	0/76	0/24
<b>Previous infection</b>	4/105	3/91	0/66	0/49	0/30	0/18	0/1	0/0	0/0	0/0	0/0	0/0
<b>Other indication</b>	31/1548	30/1311	13/993	4/743	3/553	6/376	0/246	0/150	0/94	0/44	0/18	0/0

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



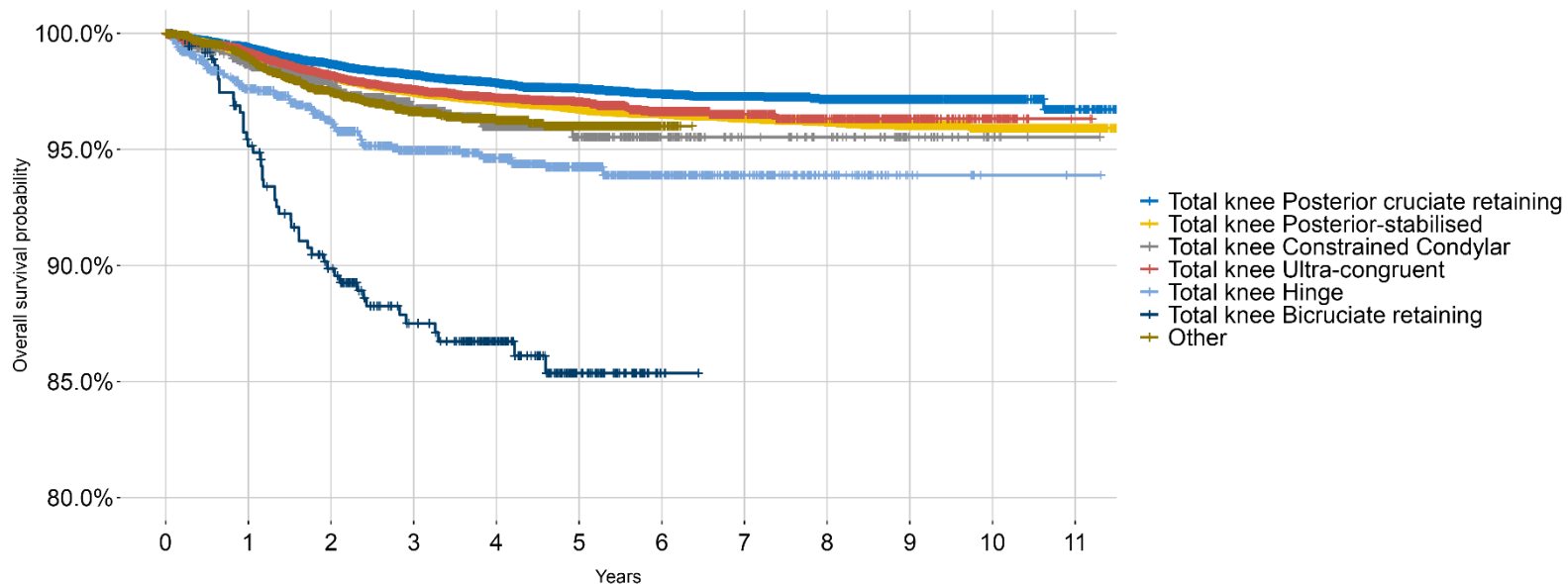
Number of events/Number at risk							
	0	1	2	3	4	5	6
<b>Valgus</b>	286/26730	232/22756	113/17519	59/12671	22/8159	6/3840	0/219
<b>Varus</b>	596/70895	526/60189	241/46091	118/33293	39/21250	14/9821	1/397
<b>Normal</b>	429/39036	479/33367	248/25847	103/18798	50/12017	10/5699	0/463

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



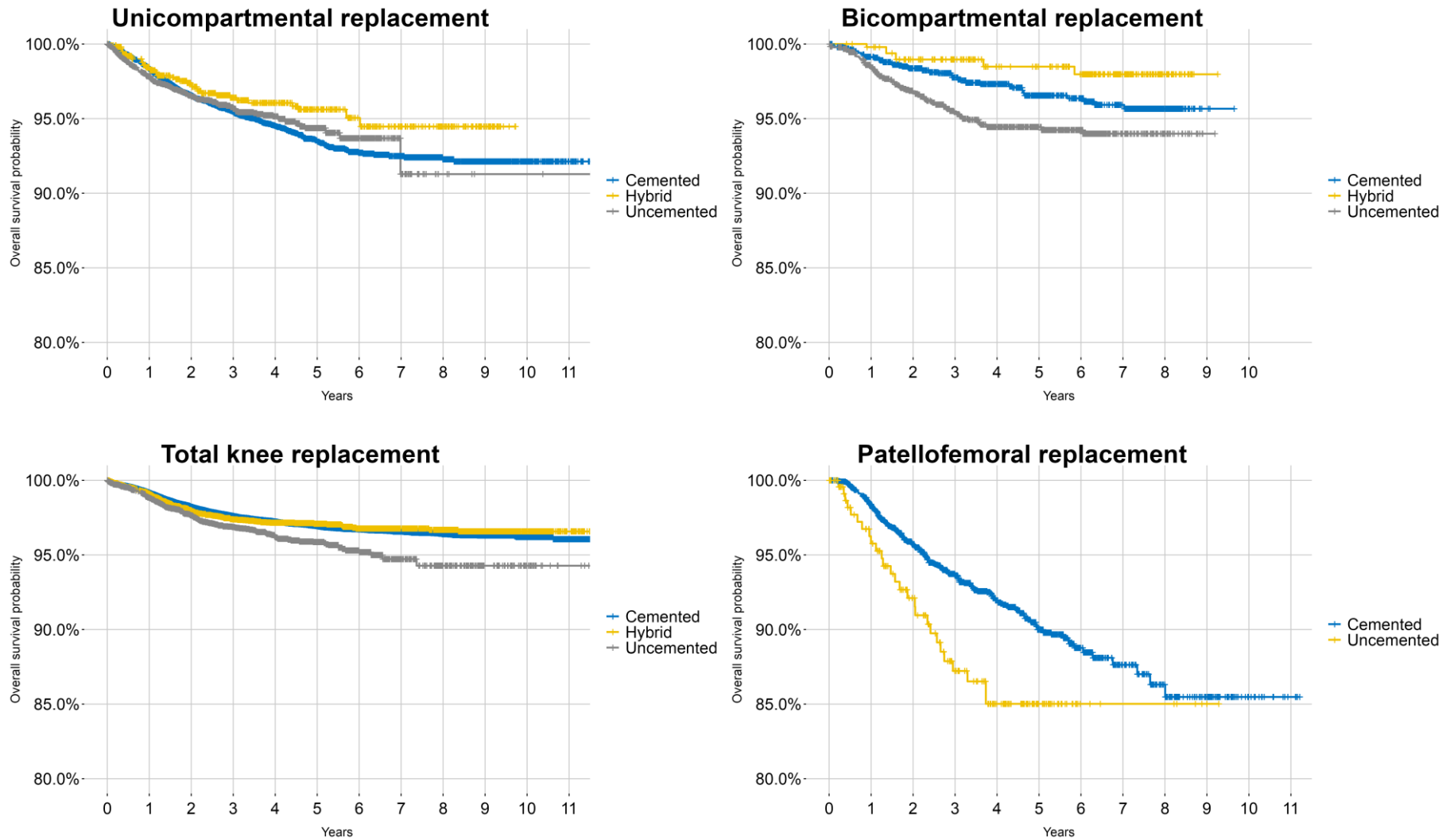
	Number of events/Number at risk											
	0	1	2	3	4	5	6	7	8	9	10	11
<b>Unicompartmental replacement</b>	318/19177	245/16169	119/12712	75/9674	63/7388	41/5520	10/4154	4/2446	2/1624	0/834	0/296	0/68
<b>Total knee replacement</b>	1349/167029	1348/148918	739/124696	353/102308	219/80645	129/59826	47/42389	32/22800	12/15046	4/8138	2/3264	0/842
<b>Bicompartmental replacement</b>	44/4245	45/3939	30/3533	20/3124	9/2750	6/2397	6/2093	2/1124	0/378	0/12	0/0	0/0
<b>Patello-femoral replacement</b>	59/3373	78/2964	52/2404	30/1915	23/1438	10/1009	6/690	6/354	2/234	0/122	0/34	0/8
<b>Partial resurfacing femoral condyle</b>	0/89	0/73	0/56	1/41	0/26	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	11
<b>Total knee Posterior cruciate retaining</b>	203/34911	208/31134	119/26480	72/22214	41/18106	31/14296	8/10751	6/5884	0/3852	0/2034	2/884	0/196
<b>Total knee Posterior-stabilised</b>	858/101541	859/91292	478/77007	225/63678	156/50642	74/37757	37/27353	24/15410	12/10316	4/5696	0/2284	0/638
<b>Total knee Constrained Condylar</b>	22/1759	12/1540	12/1220	6/946	2/656	0/393	0/210	0/128	0/100	0/44	0/10	0/2
<b>Total knee Ultra-congruent</b>	175/22776	186/19849	90/15954	39/12452	13/9165	22/6239	2/3631	2/1190	0/704	0/348	0/82	0/4
<b>Total knee Hinge</b>	35/1543	18/1344	14/1159	3/961	3/796	2/596	0/417	0/188	0/74	0/16	0/4	0/2
<b>Total knee Bicruciate retaining</b>	17/368	18/329	7/295	2/230	2/169	0/72	0/3	0/0	0/0	0/0	0/0	0/0
<b>Other</b>	39/4131	47/3430	19/2581	6/1827	2/1111	0/473	0/24	0/0	0/0	0/0	0/0	0/0

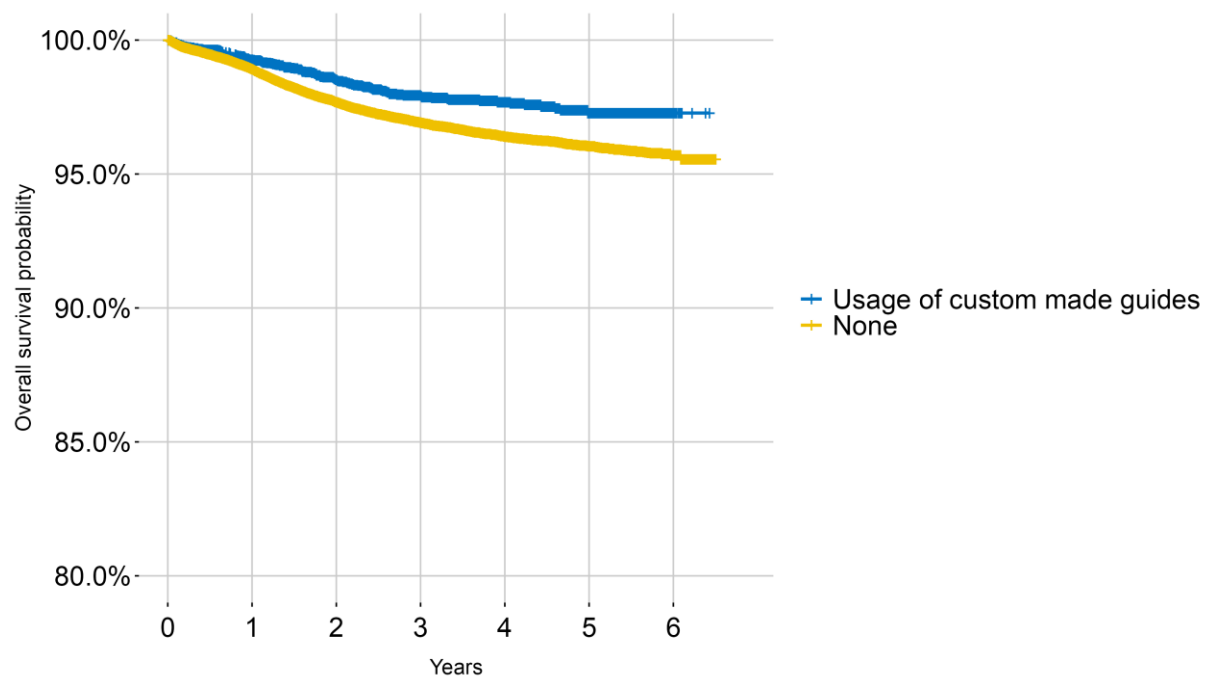
Figure 2.21 Kaplan-Meier curves for method of fixation according to primary knee replacement prosthesis type



Number of events/Number at risk													
		0	1	2	3	4	5	6	7	8	9	10	11
Unicompartmental replacement	Cemented	210/13427	191/11564	95/9233	64/7188	53/5607	33/4322	6/3279	4/2054	2/1434	0/776	0/292	0/66
	Hybrid	16/1053	8/881	7/735	2/584	2/482	2/373	2/327	0/234	0/164	0/54	0/0	0/0
	Un-cemented	90/4545	44/3574	17/2596	9/1754	8/1151	4/677	2/402	0/74	0/12	0/4	0/4	0/2
Total knee replacement	Cemented	1184/150087	1181/133782	655/112144	314/91767	204/71901	104/52882	41/37232	28/19620	10/12638	4/6764	2/2716	0/672
	Hybrid	78/9105	86/8188	39/6722	12/5805	3/4989	12/4148	0/3410	2/2564	2/2000	0/1214	0/486	0/154
	Un-cemented	85/7665	75/6778	43/5666	27/4574	12/3593	13/2634	6/1585	2/502	0/330	0/134	0/56	0/12
Bicompartmental replacement	Cemented	16/1917	13/1756	9/1564	6/1380	9/1225	2/1055	4/950	2/740	0/260	0/8	0/0	0/0
	Hybrid	1/487	4/482	0/463	2/438	0/407	2/400	0/380	0/216	0/64	0/2	0/0	0/0
	Un-cemented	27/1841	28/1701	21/1506	12/1306	0/1118	2/942	2/763	0/168	0/54	0/2	0/0	0/0
Patellofemoral replacement	Cemented	48/3081	67/2712	44/2191	27/1731	23/1285	10/897	6/607	4/318	2/208	0/110	0/32	0/8
	Un-cemented	9/234	7/196	8/161	3/132	0/101	0/60	0/31	0/12	0/12	0/2	0/0	0/0

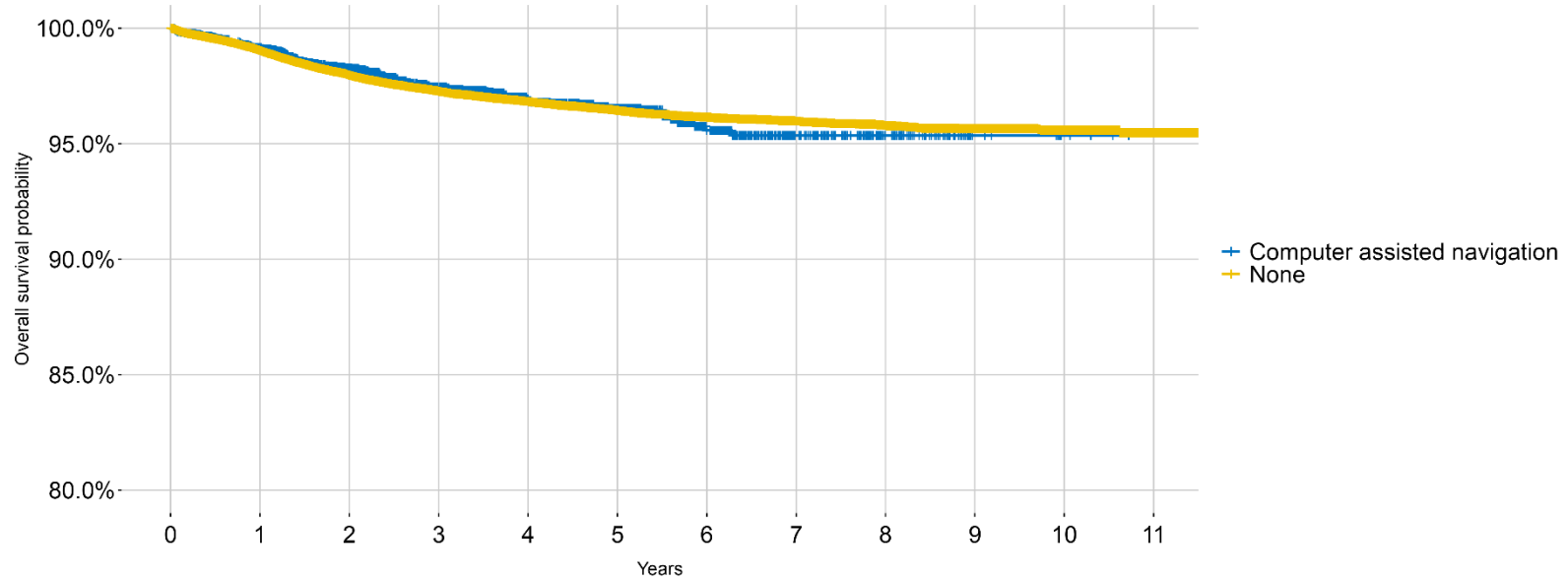


**Figure 2.22 Kaplan-Meier curve for usage of custom made guides during primary knee replacement for total knee replacement**



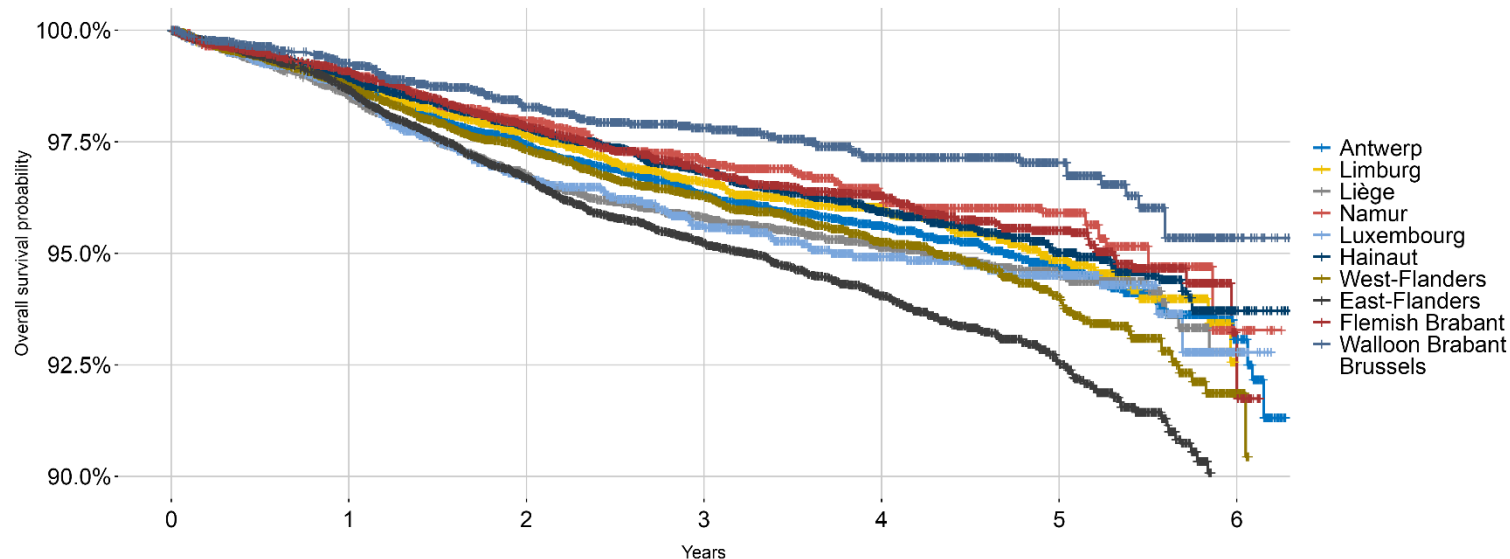
Number of events/Number at risk							
	0	1	2	3	4	5	6
<b>Usage of custom made guides</b>	42/6399	34/5463	24/4265	5/3024	6/1965	0/896	0/18
<b>None</b>	1080/118100	1022/101154	501/78421	221/57488	87/37009	27/17387	1/949

**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	11
<b>Computer assisted navigation</b>	46/5861	35/4543	25/3457	9/2700	8/2107	13/1584	2/1047	0/436	0/230	0/26	0/10	0/0
<b>None</b>	1300/161168	1313/144380	714/121243	345/99612	213/78539	116/58243	45/41362	32/22384	12/14846	4/8150	2/3280	0/842

**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	5	6
<b>Antwerp</b>	226/22007	247/18618	143/14270	64/10438	50/6794	25/3248	17/385
<b>Limburg</b>	133/12576	120/10740	78/8341	31/5942	34/3835	16/1859	8/35
<b>Liège</b>	171/12253	167/10451	73/8085	34/5858	18/3709	12/1700	2/76
<b>Namur</b>	55/5706	45/4919	32/3826	16/2776	7/1757	9/829	2/28
<b>Luxembourg</b>	47/3659	58/3179	22/2412	11/1811	4/1147	5/579	0/18
<b>Hainaut</b>	173/16572	139/14275	98/11187	62/8142	34/5103	14/2317	0/49
<b>West-Flanders</b>	270/22976	246/19247	139/14477	87/10310	59/6587	38/3021	14/171
<b>East-Flanders</b>	274/22031	336/18609	188/14248	104/10288	73/6515	47/2961	18/252
<b>Flemish Brabant</b>	107/12399	120/10606	72/8193	29/5919	25/3799	15/1773	6/126
<b>Walloon Brabant</b>	31/4465	34/3837	13/3017	12/2207	1/1430	7/677	0/21
<b>Brussels</b>	105/8263	76/7106	45/5486	28/4010	12/2620	4/1281	2/46

## 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	142854	99.9%	213	0.1%
Revision with new prosthesis	12125	99.4%	78	0.6%
Resection with spacer	915	97.8%	21	2.2%
Resection without spacer	33	100%	0	0.0%
<b>Total</b>	<b>155927</b>	<b>99.8%</b>	<b>312</b>	<b>0.2%</b>

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	123344	99.8%	201	0.2%
Unicompartmental replacement	14738	100%	7	<0.1%
Bicompartmental replacement	2083	99.9%	2	0.1%
Patellofemoral replacement	2600	99.9%	3	0.1%
Partial resurfacing femoral condyle	89	100%	0	0.0%
<b>Total</b>	<b>142854</b>	<b>99.9%</b>	<b>213</b>	<b>0.1%</b>

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	7309	99.3%	55	0.7%
Tibia and Insert	605	99.8%	1	0.2%
Patella and insert	261	100%	0	0.0%
Femur and insert	178	99.4%	1	0.6%
Insert only	1941	98.9%	21	1.1%
Patella only	1546	100%	0	0.0%
Femur only	102	100%	0	0.0%
Other combination	184	100%	0	0.0%
<b>Total</b>	<b>12126</b>	<b>99.4%</b>	<b>78</b>	<b>0.6%</b>

**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 %
<b>&lt;45</b>	2625	100%	1	< 0.01%
<b>45-59</b>	33010	100%	14	< 0.01%
<b>60-69</b>	50789	99.9%	44	0.1%
<b>70-79</b>	51400	99.8%	115	0.2%
<b>&gt;=80</b>	18067	99.2%	138	0.8%
<b>Total</b>	<b>155891</b>	<b>99.8%</b>	<b>312</b>	<b>0.2%</b>

### 3 HIP REPLACEMENT

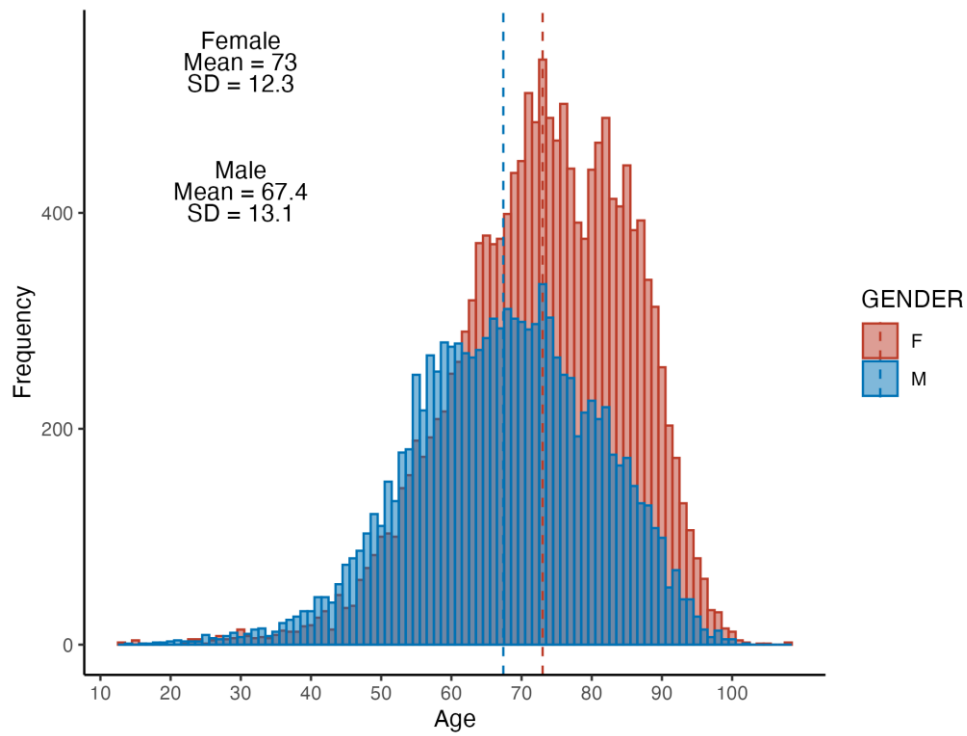
#### 3.1 PRIMARY HIP REPLACEMENT

##### 3.1.1 Demographics

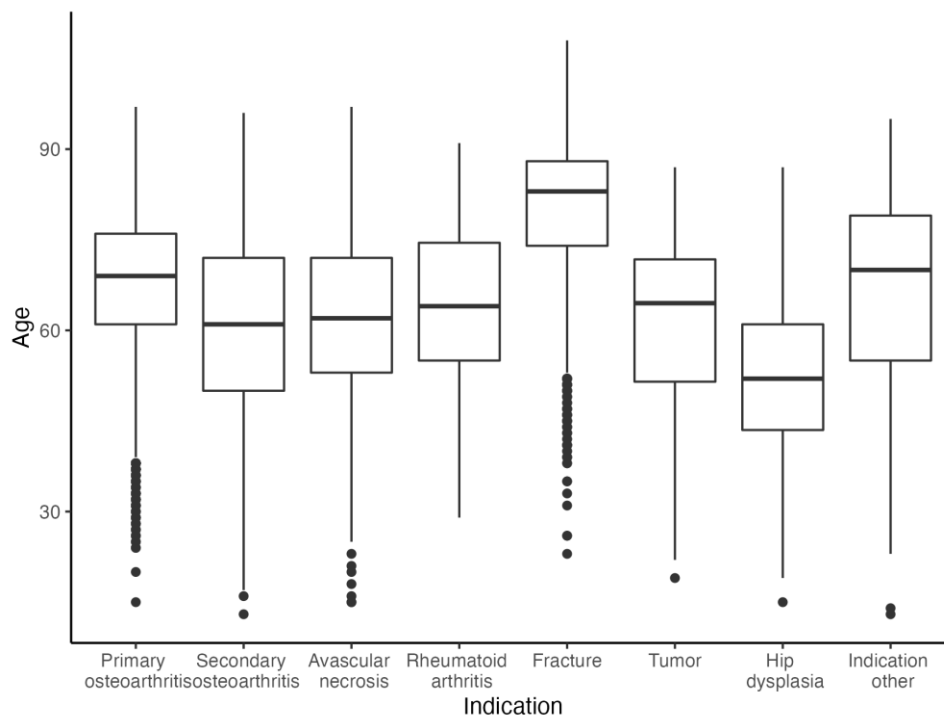
Table 3.1 Age, gender and indications for primary hip replacement patients

N=25997		
	Mean	SD
Age (yrs)	70.7	13.0
	Count	N %
<b>Age categories</b>		
<45	723	2.8%
45-59	4357	16.8%
60-69	6312	24.3%
70-79	7346	28.3%
>=80	7255	27.9%
<b>Gender</b>		
Female	15453	59.4%
Male	10541	40.6%
<b>Indication</b>		
Primary osteoarthritis	16538	63.6%
Secondary osteoarthritis	463	1.8%
Avascular necrosis	1184	4.6%
Rheumatoid arthritis	51	0.2%
Fracture	7238	27.8%
Tumor	70	0.3%
Hip dysplasia	288	1.1%
Indication other	165	0.6%

**Figure 3.1 Age distribution by gender for primary hip replacement patients**



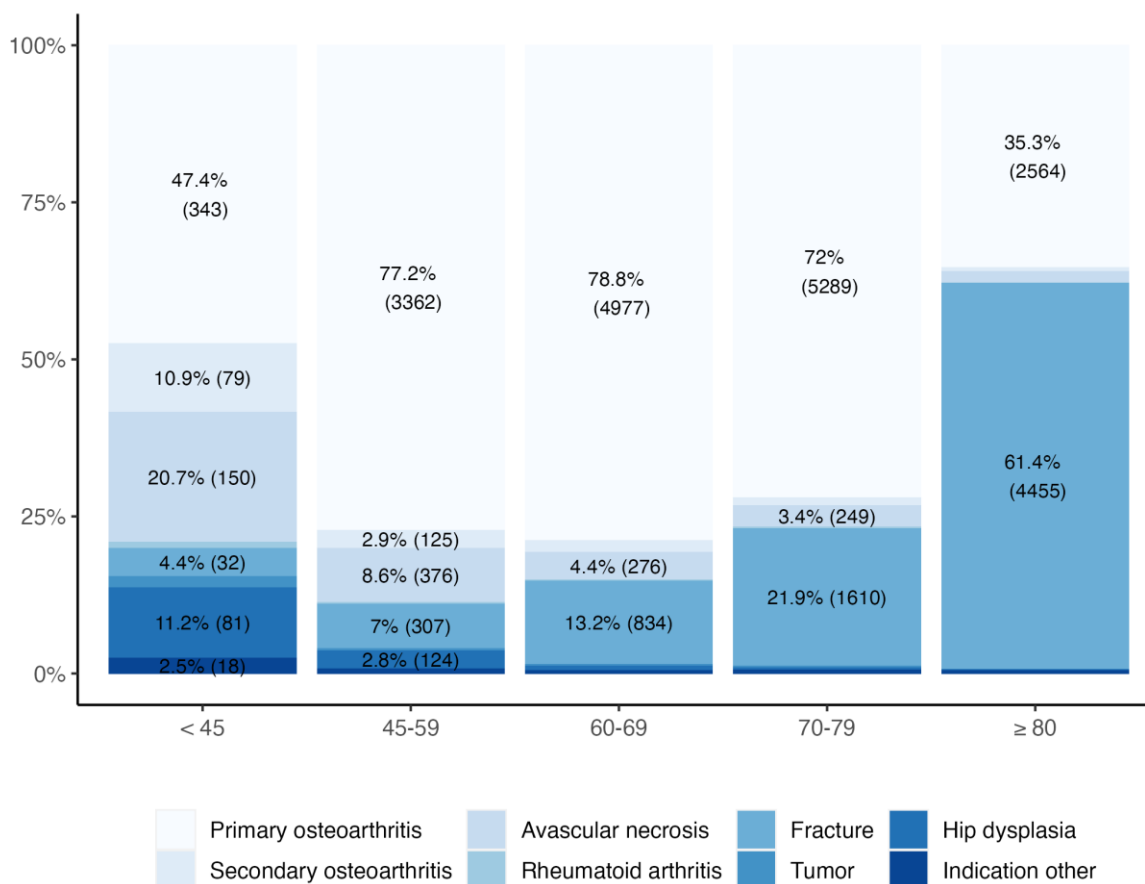
**Figure 3.2 Age distribution by indication for primary hip replacement patients**



**Table 3.2 Indications for primary hip replacements based on gender**

	Male	Female
	N=10541	N=15453
	N (%)	N (%)
<b>Primary osteoarthritis</b>	7184 (68.2%)	9352 (60.5%)
<b>Secondary osteoarthritis</b>	236 (2.2%)	227 (1.5%)
<b>Avascular necrosis</b>	696 (6.6%)	488 (3.2%)
<b>Rheumatoid arthritis</b>	7 (0.1%)	44 (0.3%)
<b>Fracture</b>	2251 (21.4%)	4986 (32.3%)
<b>Tumor</b>	28 (0.3%)	42 (0.3%)
<b>Hip dysplasia</b>	71 (0.7%)	217 (1.4%)
<b>Indication other</b>	68 (0.6%)	97 (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 2% are not displayed.



### 3.1.2 Surgical technique and implant characteristics

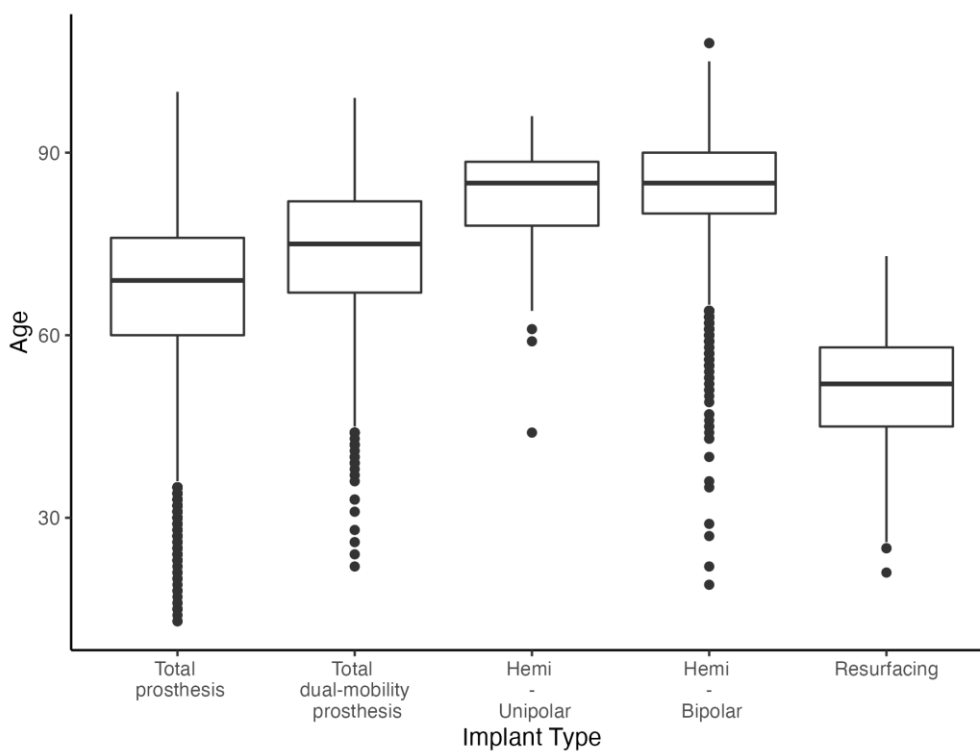
**Table 3.3 Numbers and percentages of primary hip replacement types**

	Number	Percentage of total
<b>Total prosthesis</b>	19547	75.2%
<b>Total dual-mobility prosthesis</b>	1624	6.2%
<b>Hemi - Bipolar</b>	4549	17.5%
<b>Hemi Modular</b>	29	0.1%
<b>Hemi Monoblock</b>	14	0.1%
<b>Resurfacing Femoral (Hemi)</b>	3	< 0.1%
<b>Resurfacing Femoral + Cup</b>	231	0.9%
<b>Resurfacing Partial (Punaise)</b>	0	0%
<b>Total</b>	<b>25997</b>	<b>100%</b>

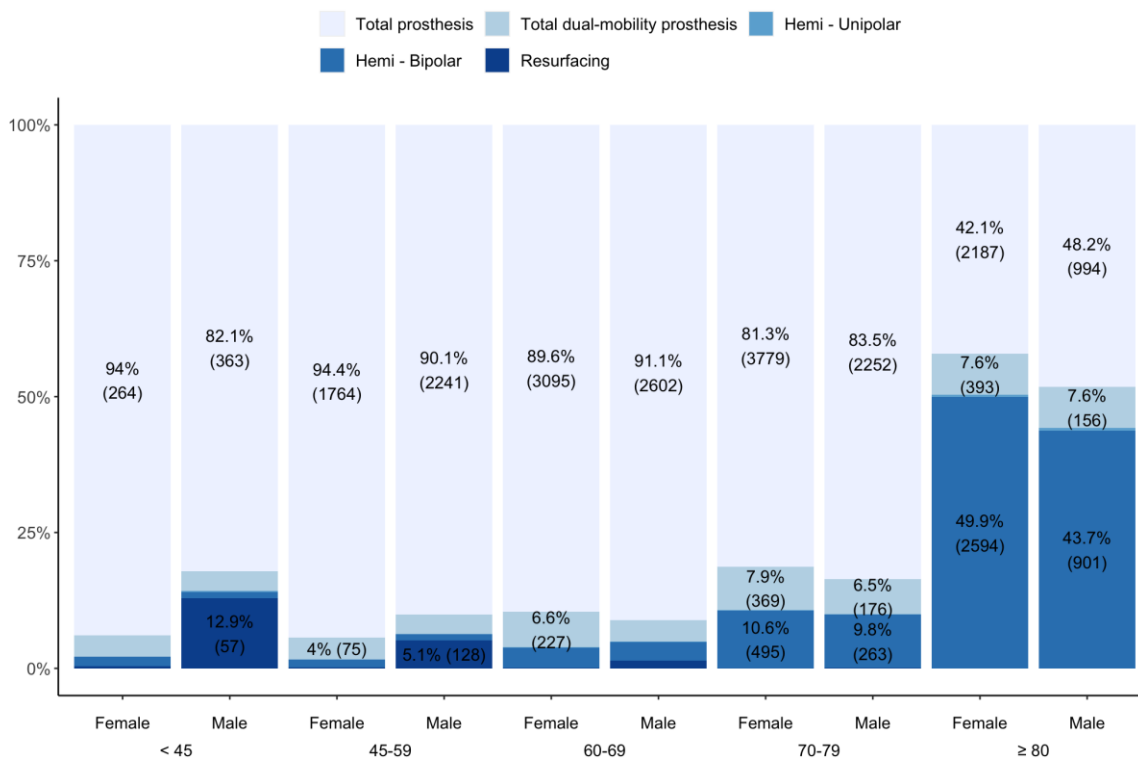
**Table 3.4 Age and gender of primary hip replacement patients by type of replacement**

	Total hip replacement	Total dual-mobility prosthesis	Hemi - Unipolar	Hemi - Bipolar	Resurfacing
	N=19547	N=1624	N=43	N=4549	N=234
<b>Mean age (years) (SD)</b>	67.7 (11.8)	73.5 (11.6)	81.7 (10.9)	83.9 (8.6)	50.8 (10.1)
<b>Age groups</b>	<b>% (N)</b>	<b>% (N)</b>	<b>% (N)</b>	<b>% (N)</b>	<b>% (N)</b>
<b>&lt;45</b>	3.2% (627)	1.7 % (27)	2.3 % (1)	0.2 % (10)	24.8 % (58)
<b>45-59</b>	20.5% (4007)	10 % (163)	2.3 % (1)	1.2 % (55)	56 % (131)
<b>60-69</b>	29.2% (5697)	20.9 % (340)	9.3 % (4)	5.1 % (230)	17.5 % (41)
<b>70-79</b>	30.9% (6031)	33.6 % (545)	16.3 % (7)	16.7 % (759)	1.7 % (4)
<b>&gt;=80</b>	16.3% (3181)	33.8 % (549)	69.8 % (30)	76.8 % (3495)	0 % (0)
<b>Gender</b>	<b>% (N)</b>	<b>% (N)</b>	<b>% (N)</b>	<b>% (N)</b>	<b>% (N)</b>
<b>Male</b>	43.2% (8452)	33.8% (549)	39.5% (17)	28.5% (1295)	97.4% (228)
<b>Female</b>	56.8% (11093)	66.2% (1075)	60.5% (26)	71.5% (3253)	2.6% (6)

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

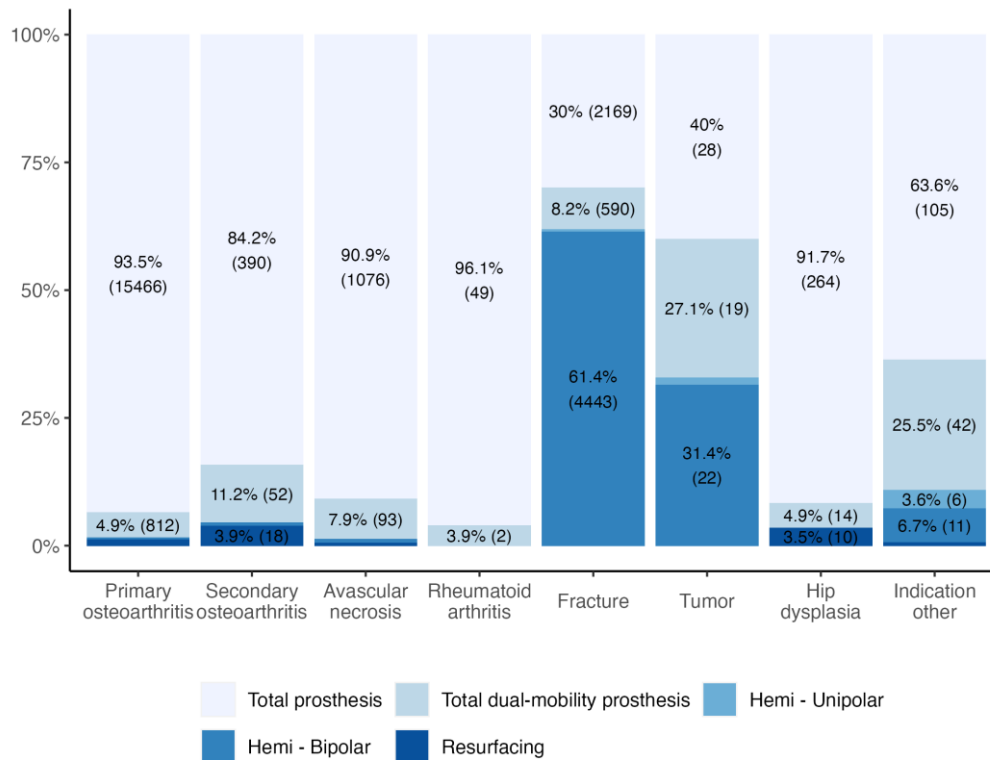


**Figure 3.5 Type of primary hip replacement procedures by age groups and gender**



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**

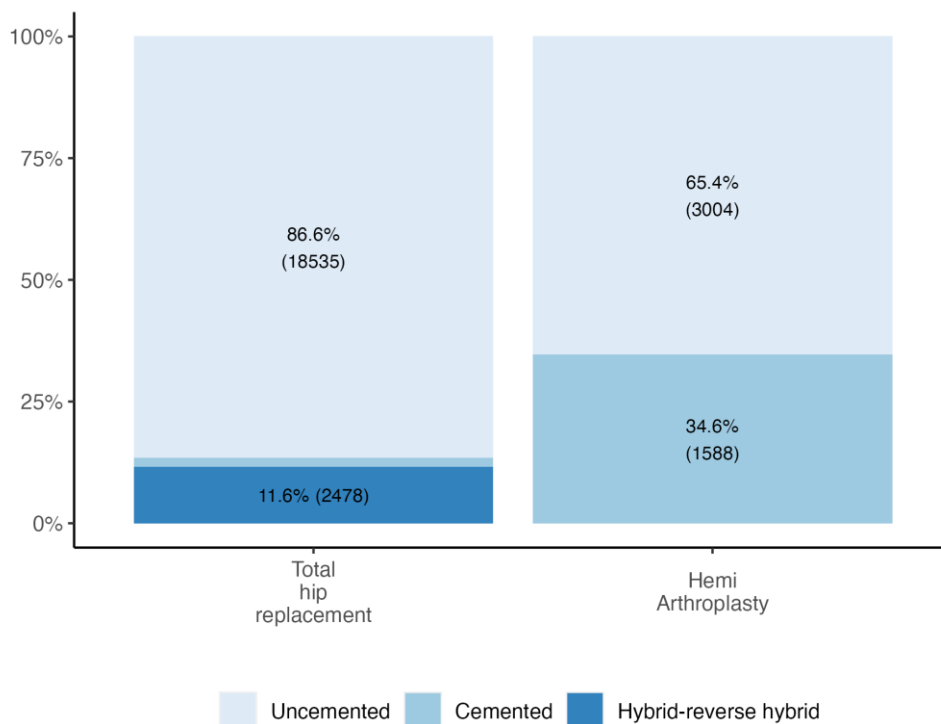


Note: For readability of the figure, labels with values and percentages smaller than 3% are not displayed.

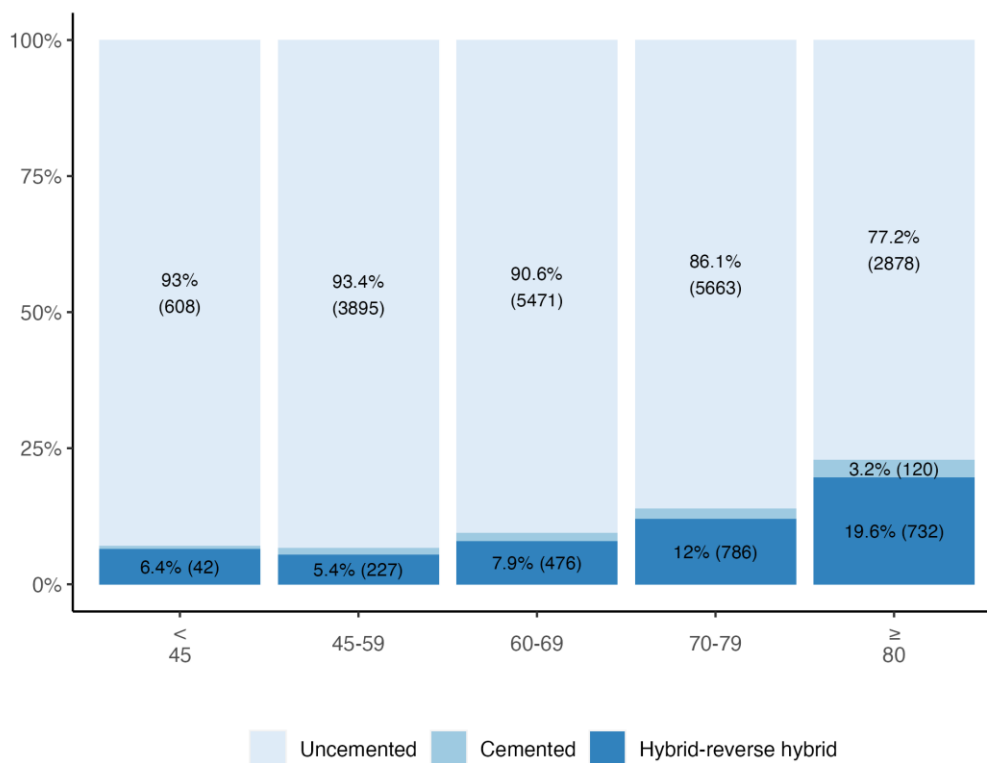
**Table 3.5 Numbers and percentages of bearing surfaces in primary hip replacements according to type of replacement**

	Total hip replacement	Total dual-mobility prosthesis (head)	Total dual-mobility prosthesis (cup)	Hemi - Bipolar	Resurfacing
	N=19547	N=1624	N=1624	N=4549	N=231
	% (N)	% (N)	% (N)	% (N)	% (N)
<b>Metal - Polyethylene</b>	4.1 (803)	40.3 (655)	94.2 (1530)	58.2 (2648)	0.4 (1)
<b>Ceramic - Polyethylene</b>	39.9 (7804)	58.6 (952)	0 (0)	39.3 (1789)	0 (0)
<b>Metal - Metal</b>	0.1 (25)	0 (0)	0 (0)	1 (44)	99.1 (229)
<b>Ceramic - Ceramic</b>	55.4 (10835)	0 (0)	0 (0)	0.9 (40)	0.4 (1)
<b>Other</b>	0.4 (80)	1 (17)	5.8 (94)	0.6 (28)	0 (0)

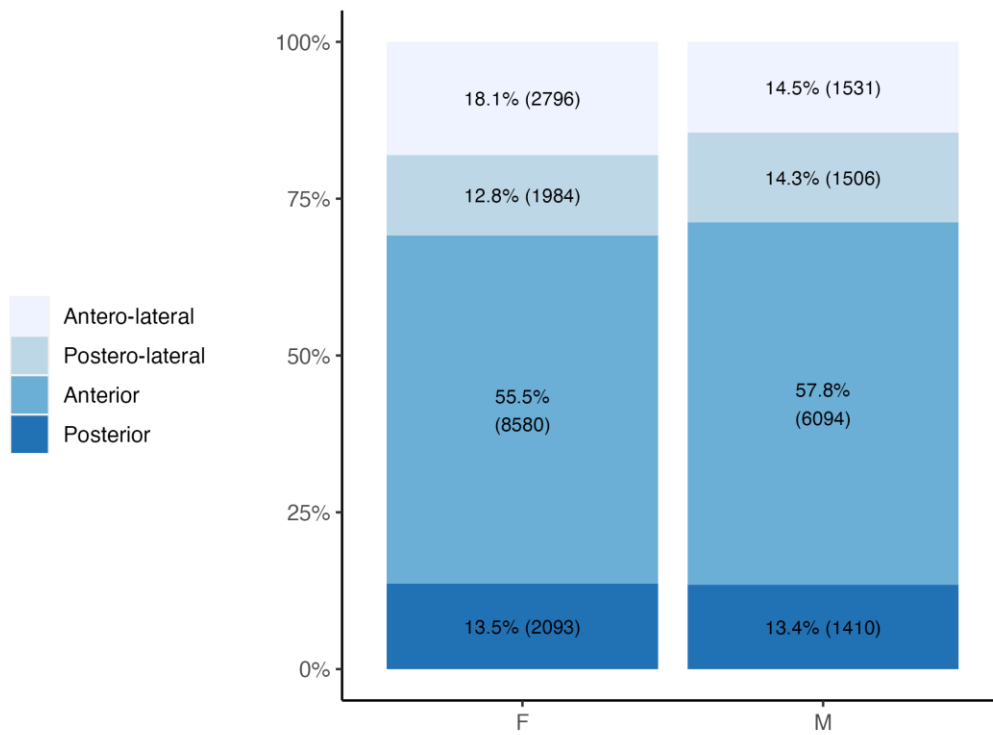
**Figure 3.7 Fixation of primay hip prosthesis according to type of replacement**



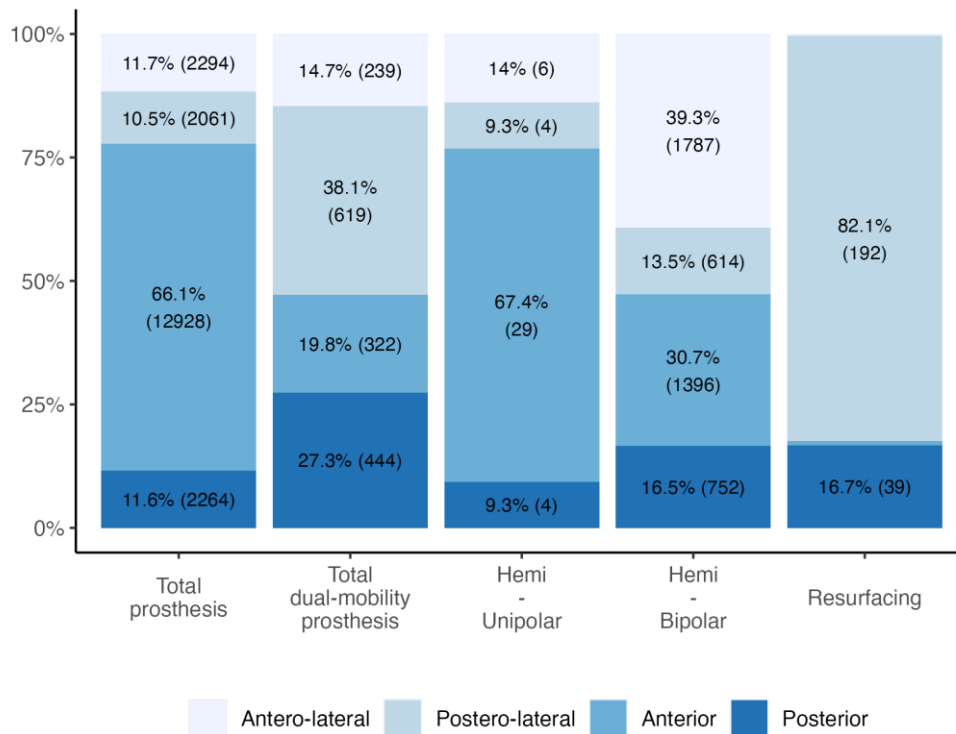
**Figure 3.8 Fixation of total primay hip prosthesis according to age category**



**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	77	0.3%
Computer assisted navigation	113	0.4%
Bone grafts	343	1.4%
Autografts	285	1.1%
Allografts	42	0.2%
Auto and allografts	16	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	1 545	7.9%
Total dual-mobility prosthesis	249	15.3%
Hemi - Bipolar	411	9.0%
<b>Total</b>	<b>2 205</b>	<b>8.6%</b>

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

		Count	Percentage of total modular necks used
Frontal	Valgus	62	2.8%
	Varus	264	12.0%
	Neutral	1 879	85.2%
Lateral	Anteversión	539	24.4%
	Retroversion	24	1.1%
	Neutral	1 642	74.5%
Offset	Extended	607	27.5%
	Standard	1 598	72.4%

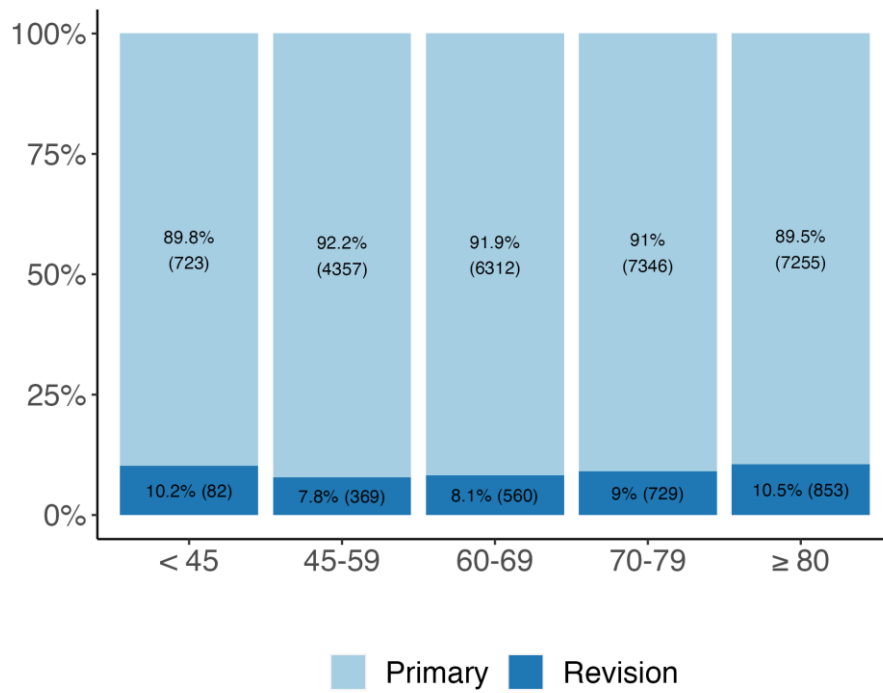
## 3.2 REVISIONS AFTER PRIMARY HIP REPLACEMENT

### 3.2.1 Demographics

Table 3.9 Age, gender and indications for hip revision procedures

N=2595		
	Mean	SD
Age (yrs)	71.9	13.1
	Count	N %
<b>Age categories</b>		
<45	82	3.2%
45-59	369	14.2%
60-69	560	21.6%
70-79	729	28.1%
>=80	853	32.9%
<b>Gender</b>		
Female	1506	58.1%
Male	1088	41.9%
<b>Indication</b>		
Aseptic loosening	774	29.8%
Infection	448	17.3%
Instability	412	15.9%
Periprosthetic fracture	707	27.2%
Pain	267	10.3%
Wear	168	6.5%
Other indication	258	9.9%

**Figure 3.11 Hip revision burden according to age category**



**Figure 3.12 Age and gender by number of hip revision procedures**

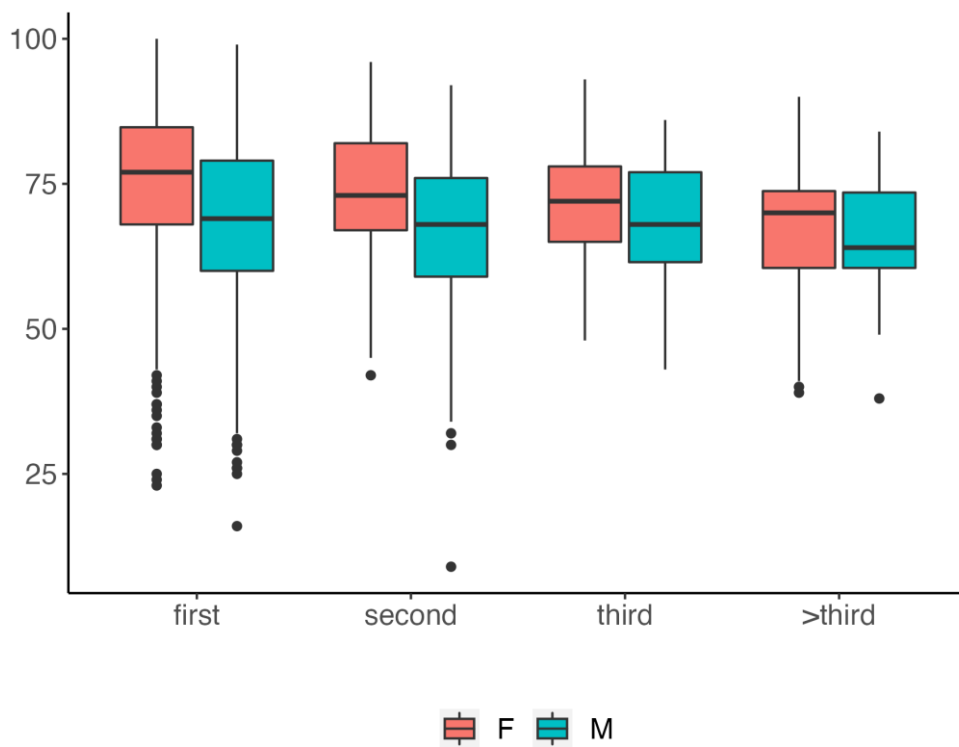
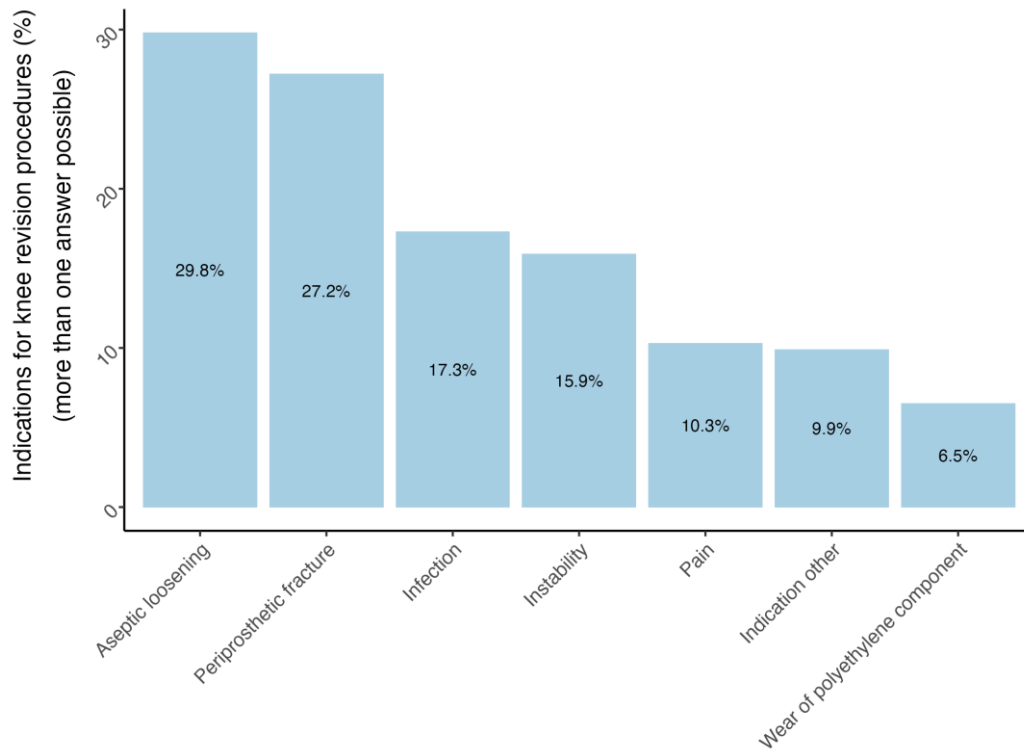




Figure 3.13 Indications for hip revision procedures



### 3.2.3 Surgical technique and implant characteristics

Figure 3.14 Combinations of revised components during hip revision procedures

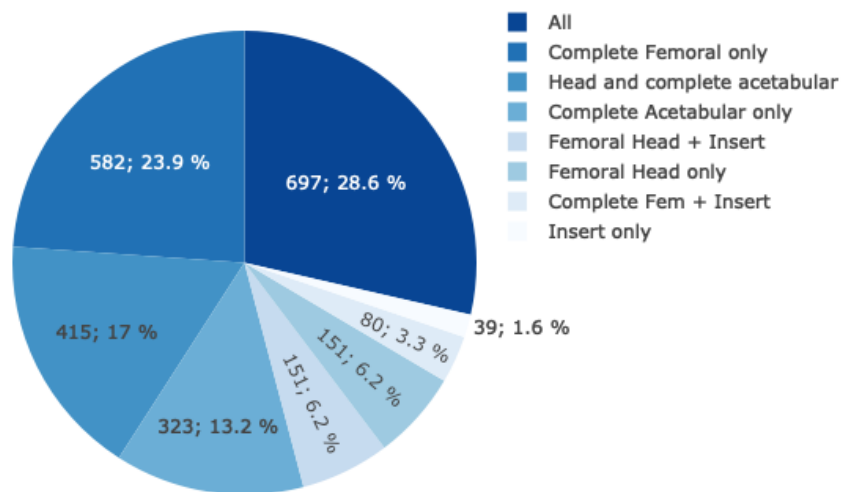


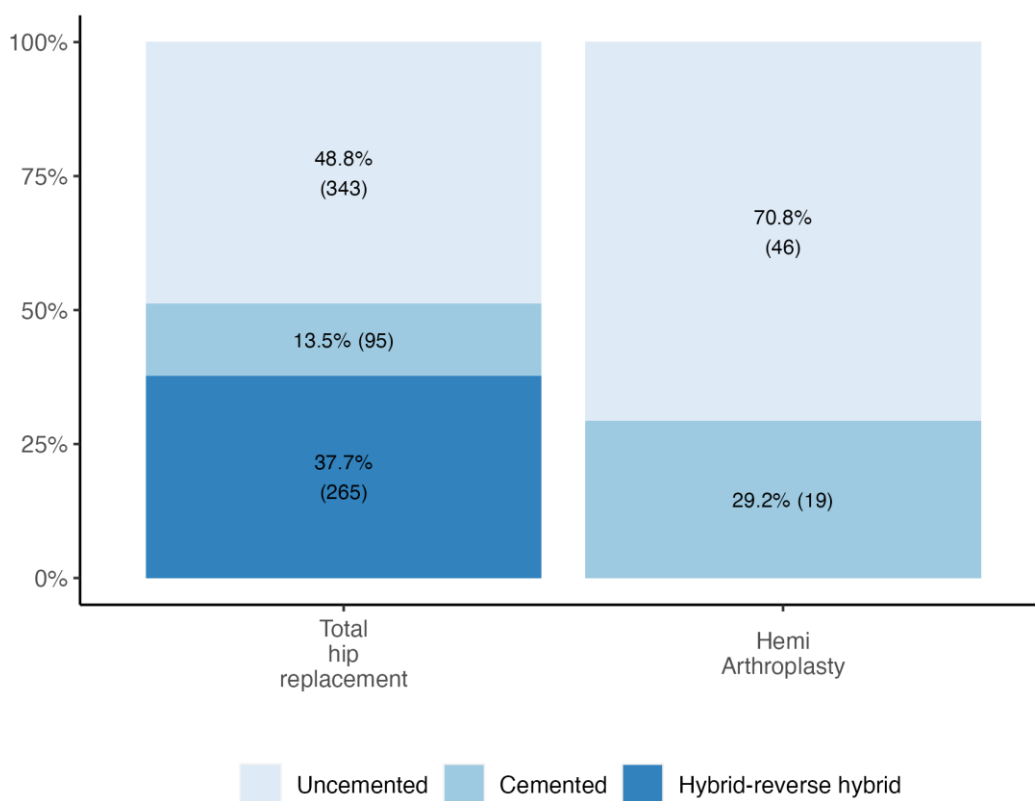
Table 3.10 Numbers and percentages of implanted hip types during hip revision procedures

	Number	Percentage of total
<b>Total prosthesis</b>	1521	62.4%
<b>Total dual-mobility prosthesis</b>	793	32.5%
<b>Hemi - Unipolar</b>	1	<0.1%
<b>Hemi - Bipolar</b>	82	3.4%
<b>Insert only</b>	39	1.6%
<b>Resurfacing</b>	2	0.1%
<b>Total number of procedures</b>	<b>2438</b>	<b>100%</b>

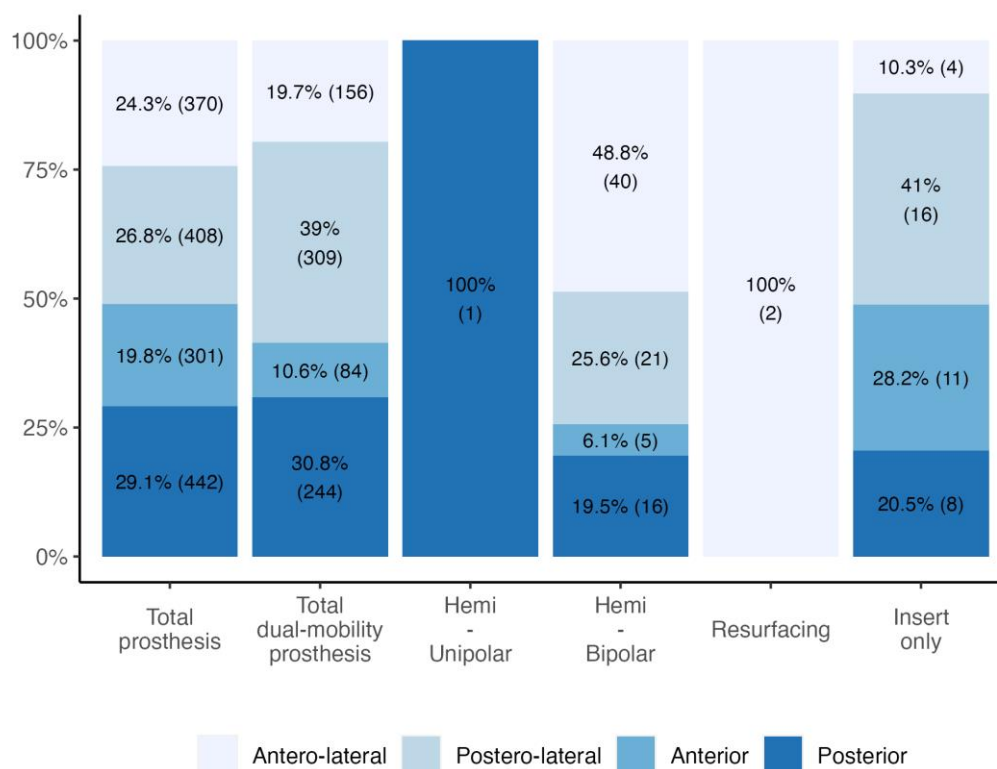
Table 3.11 Numbers and percentages of bearing surfaces in hip revisions according to type of replacement

	Total hip replacement	Total dual-mobility prosthesis (head)	Total dual-mobility prosthesis (cup)	Hemi - Bipolar
	N=1521	N=792	N=792	N=82
	% (N)	% (N)	% (N)	% (N)
<b>Metal - Polyethylene</b>	16.6 (252)	47.7 (378)	93.8 (743)	46.3 (38)
<b>Ceramic - Polyethylene</b>	50.6 (770)	50.5 (400)	0 (0)	53.7 (44)
<b>Metal - Metal</b>	1 (15)	0 (0)	0 (0)	0 (0)
<b>Ceramic - Ceramic</b>	30.6 (465)	0 (0)	0 (0)	0 (0)
<b>Other</b>	1.2 (19)	1.8 (14)	6.2 (49)	0 (0)

**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	22	0.9%
Computer assisted navigation	4	0.2%
Bone grafts	455	18.7%
Autografts	62	2.5%
Allografts	377	15.5%
Auto and allografts	16	0.7%

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

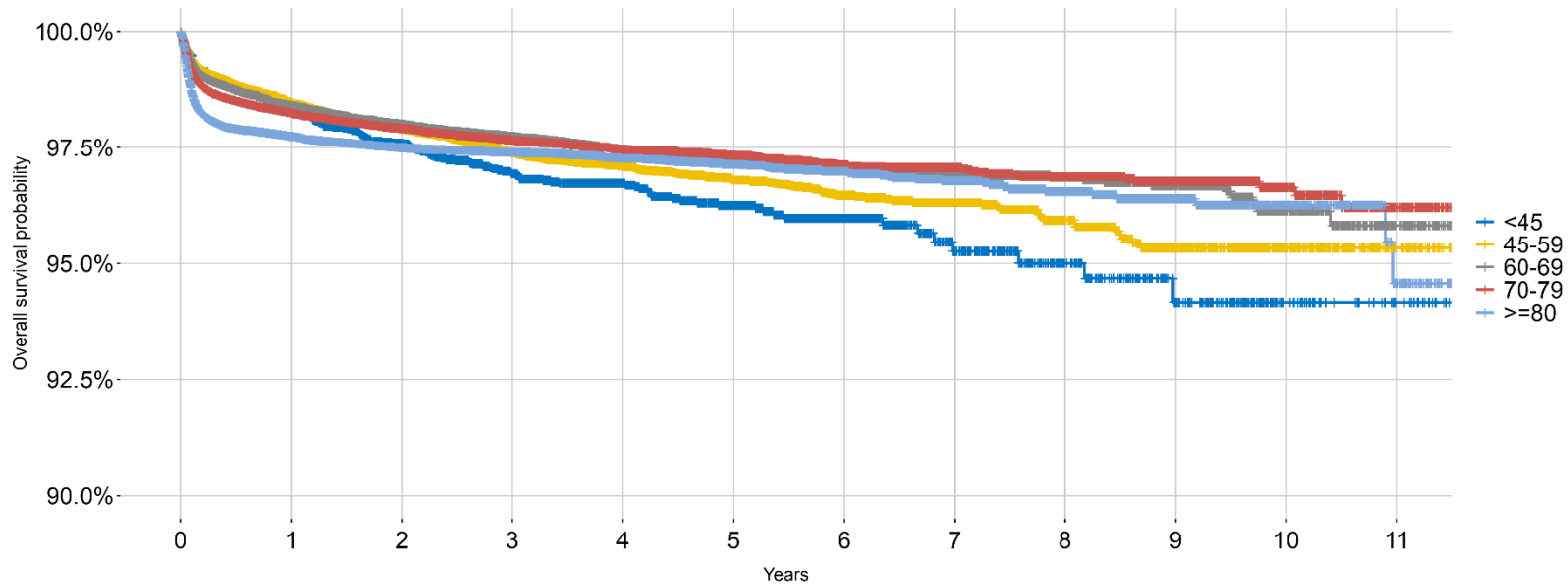
	Count	Percentage of total
Total prosthesis	234	16.9%
Total dual-mobility prosthesis	111	17.4%
Hemi - Bipolar	14	17.1%
<b>Total</b>	<b>359</b>	<b>17.1%</b>

**Table 3.14 Usage of modular femoral neck types**

		Count	Percentage of total modular necks used
Frontal	Valgus	11	3.1%
	Varus	50	13.9%
	Neutral	299	83.1%
Lateral	Anteversión	153	42.5%
	Retroversion	12	3.3%
	Neutral	195	54.2%
Offset	Extended	123	34.2%
	Standard	236	65.6%

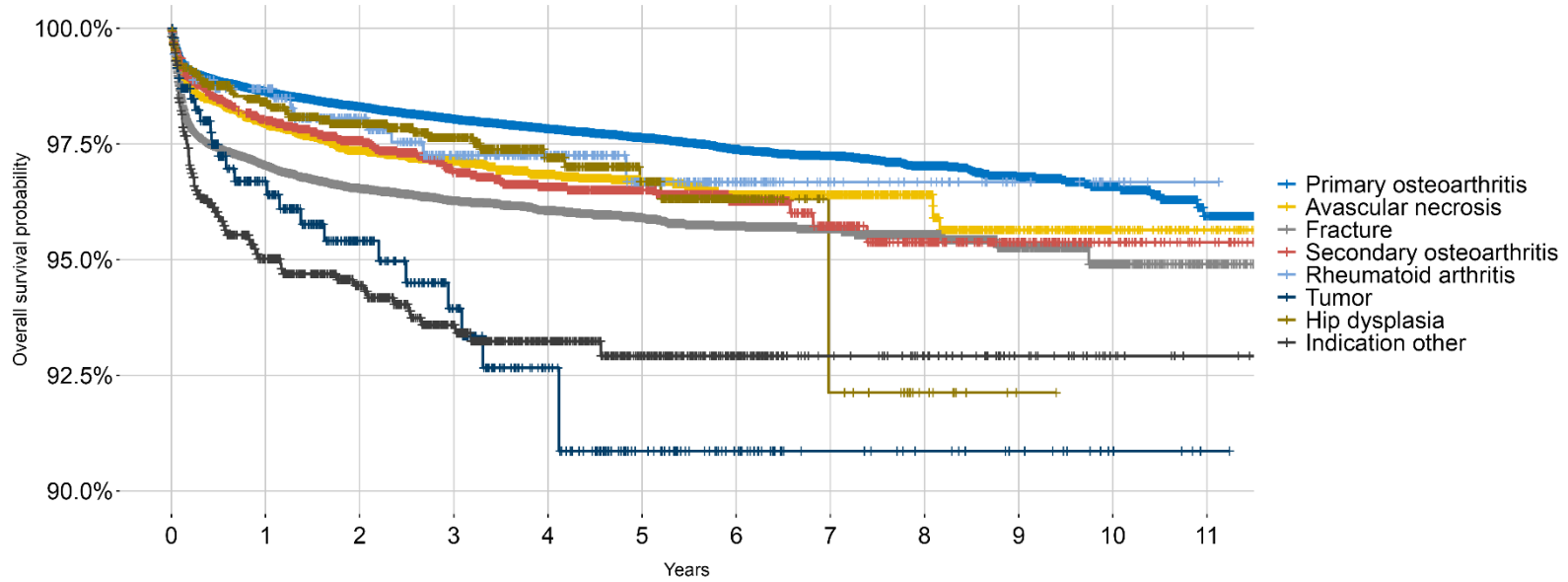
### 3.2.4 Implant survival after primary procedures

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



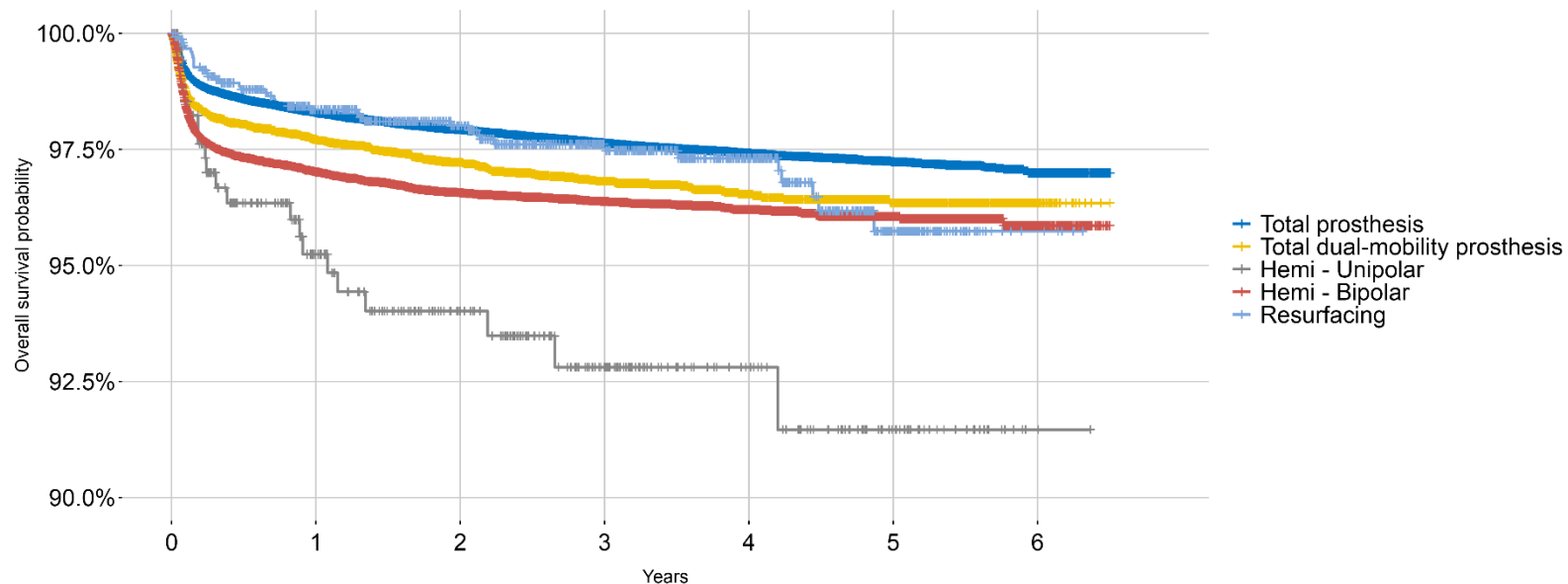
Number of events/Number at risk												
	0	1	2	3	4	5	6	7	8	9	10	11
<b>&lt;45</b>	104/6322	36/5491	28/4514	7/3527	11/2575	4/1679	4/898	1/458	2/312	0/180	0/60	0/21
<b>45-59</b>	482/32642	145/27745	103/22376	46/17352	31/12396	20/7997	5/4289	7/2210	7/1420	0/740	0/304	0/94
<b>60-69</b>	747/48309	151/41021	81/33041	63/25893	32/18804	25/12095	5/6622	1/3336	3/2077	4/1088	1/462	1/170
<b>70-79</b>	952/55814	143/46777	87/37719	52/29167	20/21101	23/13656	4/7730	7/4019	2/2453	1/1375	2/586	0/202
<b>80+</b>	1071/50088	86/38245	29/29798	23/22446	17/15734	12/9766	8/5489	5/2608	2/1567	1/791	2/319	0/100

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



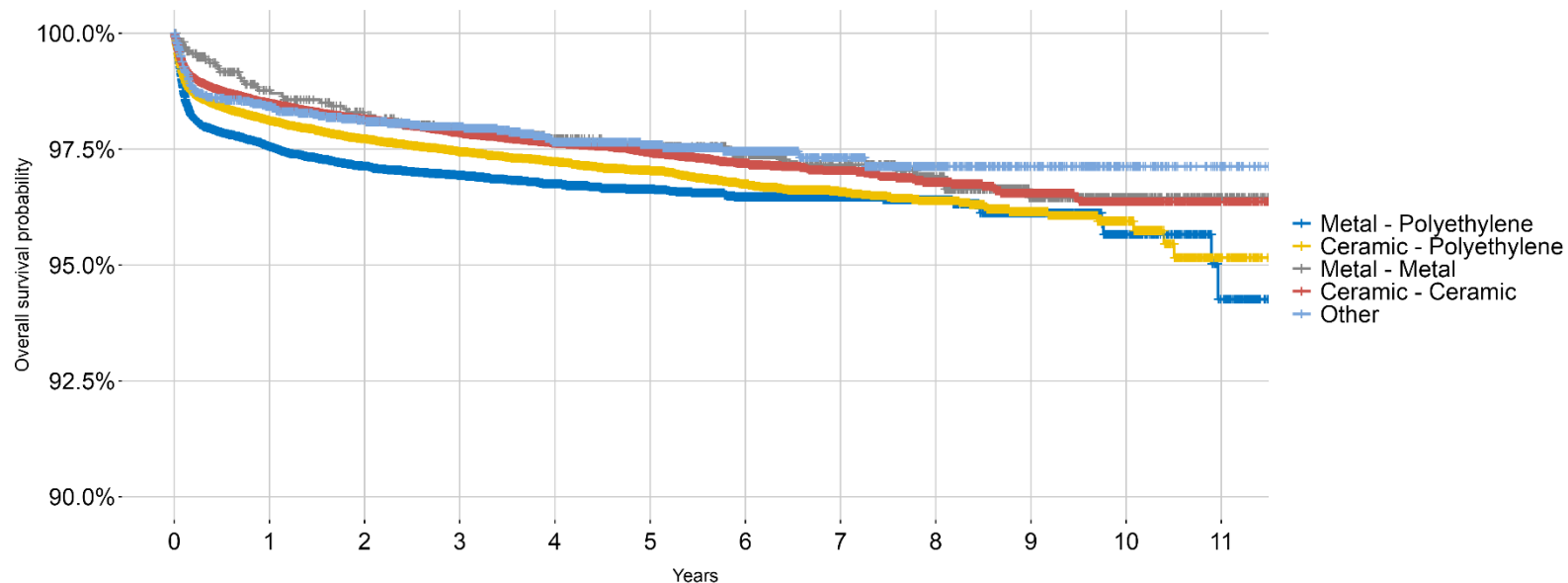
	Number of events/Number at risk											
	0	1	2	3	4	5	6	7	8	9	10	11
<b>Primary osteoarthritis</b>	1733/129845	330/111262	222/90132	131/70452	83/51359	64/33418	21/18823	18/9859	11/6107	5/3367	5/1399	1/476
<b>Avascular necrosis</b>	187/9384	43/7947	14/6506	13/5145	5/3759	5/2395	0/1256	0/617	3/410	0/200	0/73	0/28
<b>Fracture</b>	1256/45995	155/33433	60/25576	34/18884	16/12751	12/7612	2/4030	2/1729	2/1017	1/460	0/194	0/64
<b>Secondary osteoarthritis</b>	77/3991	14/3439	17/2790	6/2123	1/1549	2/1078	2/637	1/317	0/215	0/109	0/46	0/16
<b>Rheumatoid arthritis</b>	7/542	3/484	3/395	0/311	1/232	0/152	0/84	0/46	0/36	0/19	0/7	0/1
<b>Tumor</b>	14/476	4/329	3/237	2/164	2/107	0/67	0/42	0/23	0/18	0/13	0/6	0/1
<b>Hip dysplasia</b>	29/1893	7/1579	3/1172	3/832	2/538	1/296	1/85	0/22	0/9	0/1	0/0	0/0
<b>Other indication</b>	54/1147	5/897	6/724	2/549	1/380	0/232	0/122	0/65	0/50	0/26	0/10	0/3

**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	6
<b>Total prosthesis</b>	2133/129341	357/106887	210/82518	110/59715	53/37834	18/17570	0/965
<b>Total dual-mobility prosthesis</b>	228/10477	37/8278	23/6162	10/4429	4/2758	0/1170	0/44
<b>Hemi - Unipolar</b>	15/363	3/245	2/182	0/119	1/74	0/37	0/4
<b>Hemi - Bipolar</b>	734/27163	76/18513	22/13564	13/9460	7/5607	2/2383	0/203
<b>Resurfacing</b>	24/1537	4/1278	4/1021	2/719	5/440	0/169	0/6

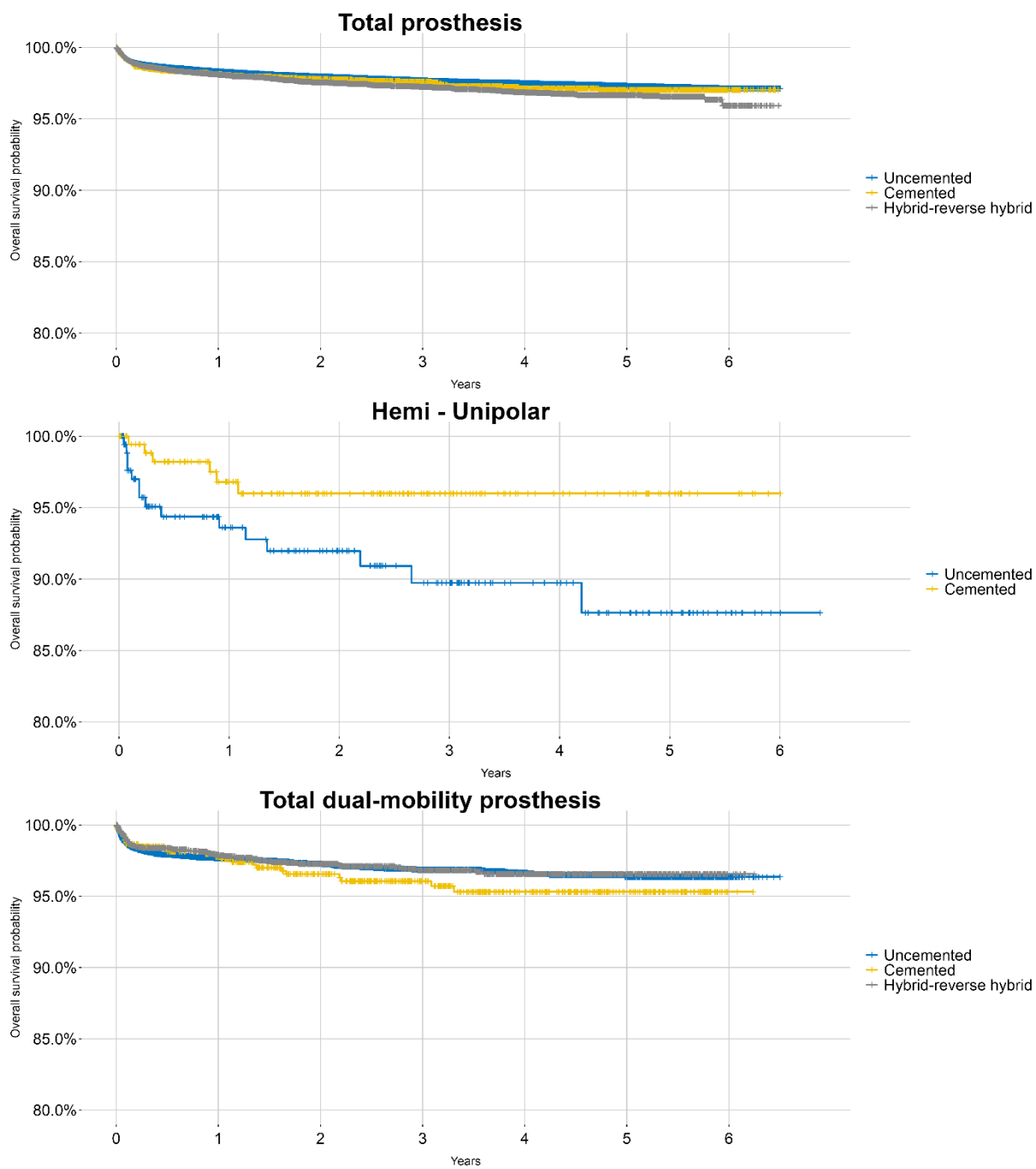
**Figure 3.20 Kaplan-Meier curve for bearing surface for total hip prostheses at primary hip replacement**

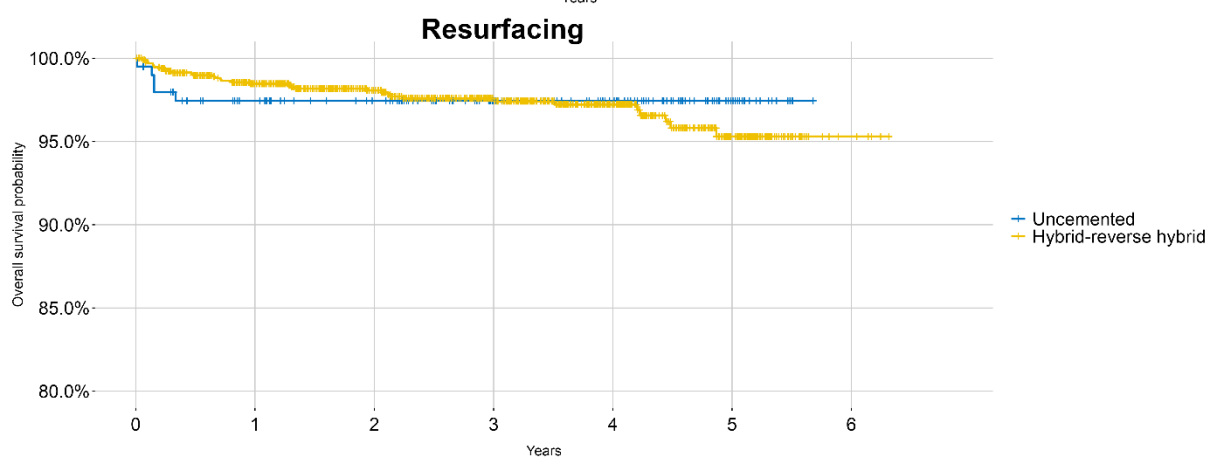
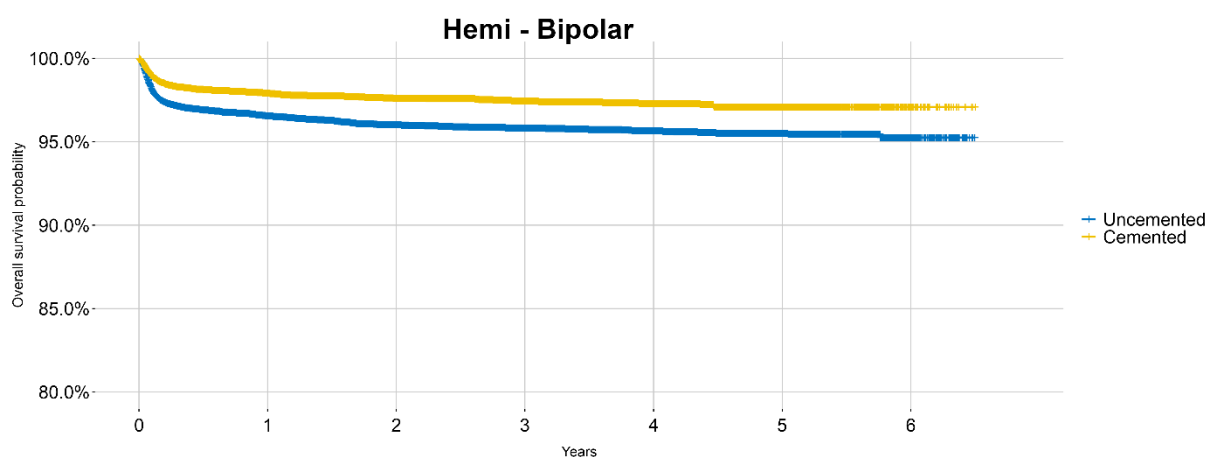


	Number of events/Number at risk												
	0	1	2	3	4	5	6	7	8	9	10	11	
<b>Metal – Poly-ethylene</b>	652/28638	88/21954	33/17793	23/13940	10/10035	9/6509	0/3754	1/1803	3/1239	2/703	2/297	0/119	
<b>Ceramic – Poly-ethylene</b>	1118/61868	179/50092	100/39410	56/29875	37/21684	35/14527	12/8896	8/4922	5/2887	2/1359	3/494	0/161	
<b>Metal - Metal</b>	19/1602	8/1474	5/1427	2/1345	2/1257	2/1182	2/1035	2/828	3/724	0/518	0/242	1/86	
<b>Ceramic - Ceramic</b>	1243/85054	232/72616	157/58474	90/45415	51/32286	36/20014	11/10204	9/4519	5/2683	2/1418	0/605	0/196	
<b>Other</b>	58/3737	10/3435	4/3065	8/2619	1/2142	2/1642	1/1136	1/606	0/329	0/197	0/97	0/27	



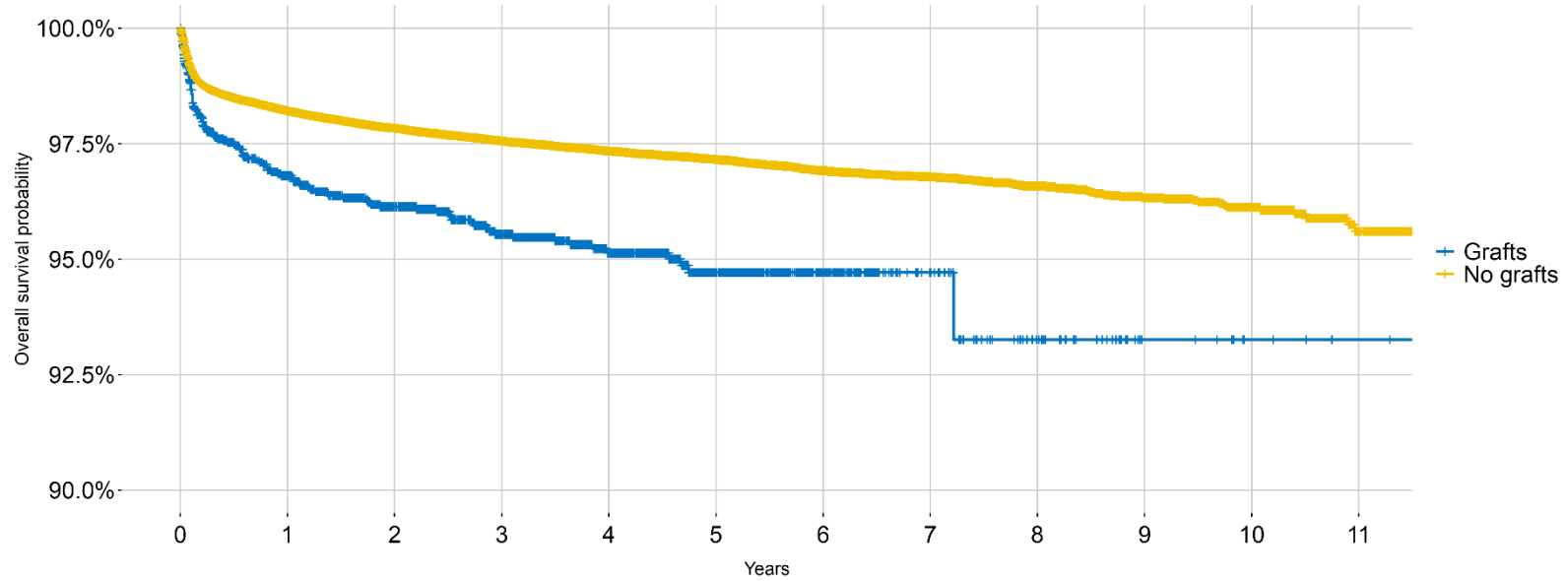
**Figure 3.21 Kaplan-Meier curves for method of fixation according to primary hip replacement prosthesis type**





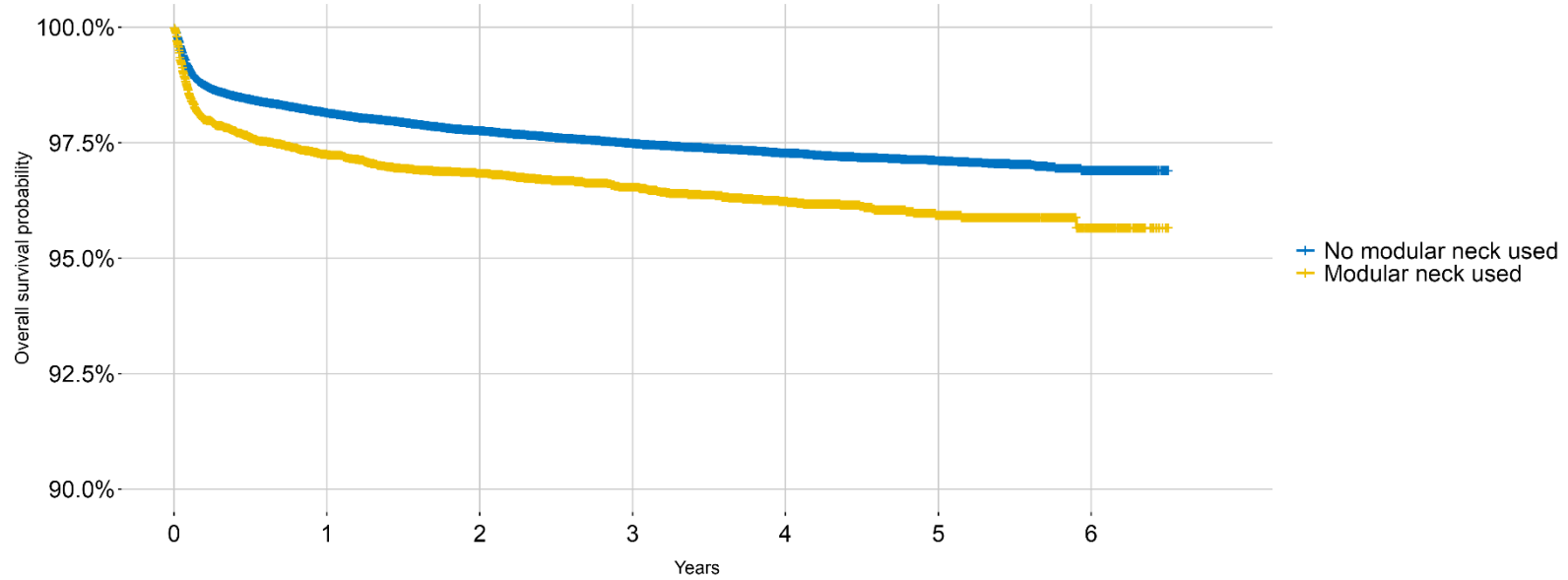
		Number of events/Number at risk							
		0	1	2	3	4	5	6	
Total prosthesis	Uncemented	1823/112426	292/92715	181/71320	81/51342	45/32355	14/14956	0/818	
	Cemented	56/3048	8/2644	4/2177	7/1702	1/1211	0/682	0/55	
	Hybrid	254/13867	57/11528	25/9021	22/6671	7/4268	4/1932	0/92	
Total dual-mobility prosthesis	Uncemented	168/7467	20/5910	16/4407	6/3190	4/1985	0/812	0/35	
	Cemented	14/671	6/530	2/400	2/281	0/191	0/95	0/2	
	Hybrid	46/2339	11/1838	5/1355	2/958	0/582	0/263	0/7	
Hemi - Unipolar	Uncemented	10/181	2/118	2/93	0/69	1/46	0/25	0/3	
	Cemented	5/182	1/127	0/89	0/50	0/28	0/12	0/1	
Hemi - Bipolar	Uncemented	558/17887	59/12109	16/8875	9/6232	4/3674	2/1620	0/160	
	Cemented	176/9276	17/6404	6/4689	4/3228	3/1933	0/763	0/43	
Resurfacing	Uncemented	5/199	0/178	0/157	0/121	0/83	0/22	0/0	
	Hybrid	19/1320	4/1085	4/857	2/592	5/353	0/144	0/6	

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



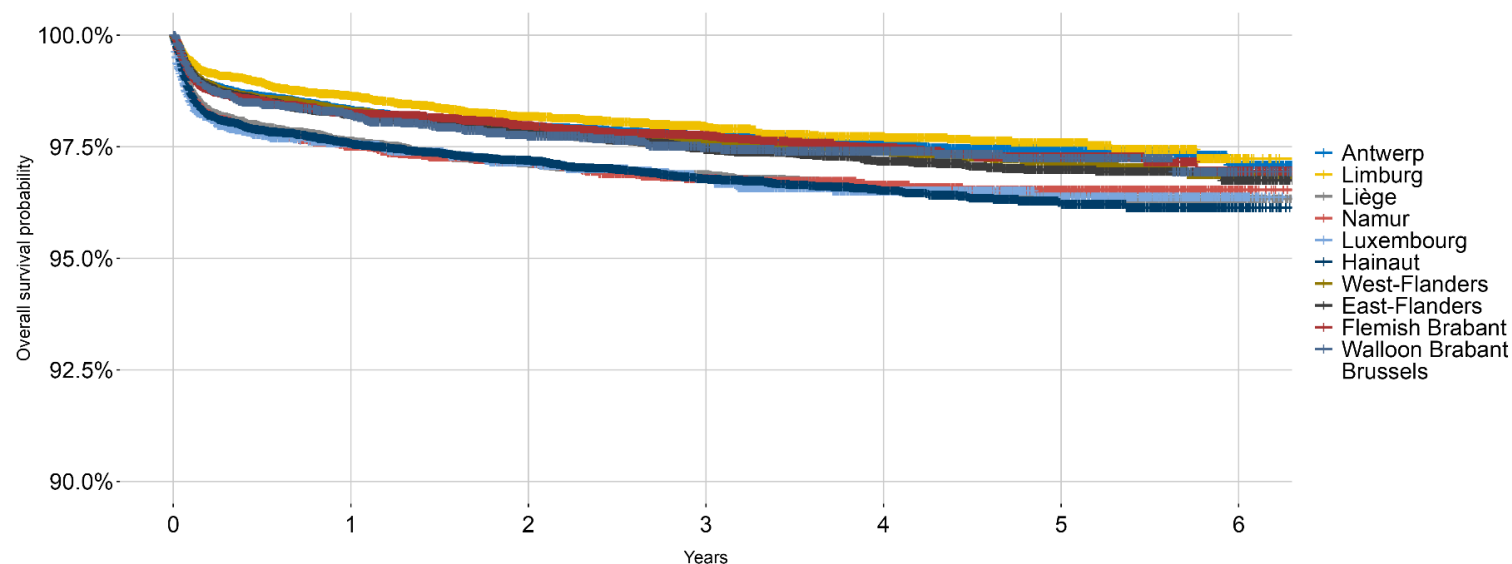
	Number of events/Number at risk											
	0	1	2	3	4	5	6	7	8	9	10	11
<b>No grafts used</b>	3271/190462	546/157067	318/125651	186/97017	108/69660	84/44735	26/24879	20/12603	16/7820	6/4183	5/1729	1/586
<b>Grafts used</b>	86/2811	15/2303	10/1881	5/1443	3/1015	0/515	0/200	1/75	0/42	0/12	0/6	0/3

**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	6
<b>No modular neck used</b>	2673/151020	421/120870	228/92336	113/66205	53/41302	18/18875	0/992
<b>Modular neck used</b>	422/15966	49/12812	27/9910	20/7400	11/4898	2/2248	0/220

**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	6
<b>Antwerp</b>	420/26400	71/21140	30/16262	19/11666	7/7106	3/3215	0/250
<b>Limburg</b>	179/13788	47/11248	17/8480	12/6067	4/3799	3/1713	0/29
<b>Liège</b>	355/15669	59/12548	22/9621	16/7002	6/4532	2/2118	0/131
<b>Namur</b>	171/7177	19/5729	15/4455	4/3302	2/2125	0/980	0/40
<b>Luxembourg</b>	102/4307	13/3503	9/2662	5/1971	1/1268	0/612	0/37
<b>Hainaut</b>	452/19425	55/15643	45/12082	19/8763	11/5449	2/2367	0/77
<b>West-Flanders</b>	401/24661	75/19635	33/14797	19/10429	15/6608	3/3090	0/163
<b>East-Flanders</b>	389/22980	62/18237	49/13953	21/9979	9/6250	2/2878	0/227
<b>Flemish Brabant</b>	254/15205	28/12040	19/9186	15/6516	7/4036	2/1780	0/118
<b>Walloon Brabant</b>	101/5934	21/4765	8/3629	2/2658	2/1671	1/801	0/37
<b>Brussels</b>	261/10037	23/7914	12/6172	3/4556	5/2889	1/1332	0/91

### 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	163987	97.9%	3580	2.1%
Revision with new prosthesis	15957	97.3%	436	2.7%
Resection with spacer	944	94.7%	53	5.3%
Resection without spacer	45	84.9%	8	15.1%
<b>Total</b>	<b>180933</b>	<b>97.8%</b>	<b>4077</b>	<b>2.2%</b>

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	5966	99.9%	4	0.1%
45-59	30761	99.8%	66	0.2%
60-69	45117	99.5%	213	0.5%
70-79	52423	98.7%	669	1.3%
>=80	46614	93.7%	3125	6.3%
<b>Total [Missing]</b>	<b>180881</b>	<b>97.8%</b>	<b>4077</b>	<b>2.2%</b>