

## Supplementary article data

# Implant survival and radiographic outcome of total hip replacement in patients less than 20 years old

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Table 3. Diagnosis at primary surgery

Diagnosis	Number of hips n = 132
Pediatric diseases	54 (41%)
Developmental dysplasia of the hip	25
Perthes' disease	10
SCFE	9
Perthes' disease/SCFE	1
Necrosis of femoral head (unknown etiology)	6
Cerebral palsy	1
Arthrogryposis	1
MPS type 1	1
Systemic inflammatory diseases	45 (34%)
Juvenile idiopathic arthritis	33
Ankylosing spondylitis	7
Psoriatic arthritis	1
Avascular necrosis with SLE	4
Sequelae of trauma	11 (8%)
Femoral neck fracture	6
Acetabular fracture	3
Dislocation	2
Sequelae of infection	7 (5%)
Septic arthritis	5
Tuberculosis	2
Others	15 (12%)
Tumor	6
Avascular necrosis after chemotherapy	3
Habitual dislocation	1
Unknown	5

Table 4. Primary implant types

Acetabular component		Femoral stem	
TRILOGY	34	CORAIL	60
TROPIC	30	HACTIV	24
ATOLL	12	SCP/UNIQUE	15
MARATHON	7	FILLER	5
IGLOO	6	BIO-FIT	3
HARRIS/GALANTE	5	CHARNLEY	3
PINNACLE SPIROFIT	5	HARRIS/GALANTE	3
REFLECTION uncemented	4	AML	2
GEMINI	3	KOTZ	2
TI-FIT	3	OMNIFIT	2
TITAN	3	SP	2
Others (less than 3 of each)	19	TITAN	2
Unknown	1	Others (less than 2 of each)	5
		Unknown	4
No. of different types	24	No. of different types	17

Table 5. Primary implants

Acetabular component		Femoral stem	
Uncemented	117 (89%)	Uncemented	125 (95%)
Cemented	14 (11%)	Cemented	6 (5%)
Unknown	1 (1%)	Unknown	1 (1%)
<b>Bearing</b>		<b>Head diameter</b>	
Combination			
Ceramic-on-polyethylene	72	22 mm	9
Metal-on-polyethylene	45	28 mm	88
Ceramic-on-ceramic	4	32 mm	29
Meta-on-metal	3	38 mm	1
Unknown	8	58 mm	1
Type of polyethylene		Unknown	
UHMWPE	84		4
Highly cross-linked poly.	33		

Table 6. Locations of osteolysis and atrophy

	Hips	Charnley zone			Gruen zone				
		1	2	3	3	4	5	6	7
Acetabulum, total n	93								
Osteolysis	18	7	8	7					
Atrophy	25	20	20	3					
Femur, total n	90								
Osteolysis	19	19							7
Atrophy	56	49	5				23	25	
Cortical atrophy	11		4			3	6	1	

Table 8. Leg-length discrepancy (LLD). Values are n (%)

	LLD ≤ 5 mm	5 mm < LLD ≤ 10 mm	LLD > 10 mm
Opposite hip			
No deformity	20 (49)	12 (29)	9 (22)
THR	16 (44)	8 (22)	12 (33)
Deformity	0	1 (33)	2 (66)
Total	36 (45)	21 (26)	23 (29)
Acetabular bone defect			
Paprosky 1, 2A	33 (49)	16 (24)	19 (28)
Paprosky 2B, 2C, 3A	3 (25)	5 (42)	4 (33)
Total	36 (45)	21 (26)	23 (29)

Table 7. Bone quality in the latest radiograph

		Number of implant change			Total hips
		0	1	2 or more	
<b>Acetabulum</b>					
Paprosky	1	60/74	10/15	1/5	71/94
	2A	7/74	1/15	0/5	8/94
	2B	3/74	3/15	3/5	9/94
	2C	3/74	1/15	0/5	4/94
	3A	1/74	0/15	1/5	2/94
Osteolysis <sup>a</sup>		15/73	1/15	2/5	18/93
Atrophy <sup>a</sup>		23/73	2/15	0/5	25/93
<b>Femur</b>					
Paprosky <sup>b</sup>	1	66/83	3/6	0/2	69/91
	2	9/83	2/6	2/2	13/91
	3A	8/83	1/6	0/2	9/91
Osteolysis <sup>c</sup>		17/82	1/6	1/2	19/90
Atrophy <sup>c</sup>		50/82	1/6	0/2	56/90
Cortical atrophy <sup>c</sup>		10/82	0/6	1/2	11/90

<sup>a</sup> excluded: an acetabulum without implant.

<sup>b</sup> excluded: 3 femurs with tumor prosthesis.

<sup>c</sup> excluded: a femur without implant and 3 femurs with tumor prosthesis.