

Table 1. RSA. Migration (rotations and translations) of tibial component up to 3 months with 95% confidence intervals (CI)

	Mean (CI)		Mean difference (CI)
	PSI	CVI	
Rotations, degrees			
Anterior (+)/posterior (-) tilt	-0.06 (-0.30 to 0.18)	-0.07 (-0.16 to -0.02)	0.01 (-0.22 to 0.24)
Internal (+)/external (-) rotation	-0.17 (-0.56 to 0.22)	0.02 (-0.11 to 0.14)	-0.19 (-0.54 to 0.17)
Valgus (+)/varus (-) tilt ^a	-0.08 (-0.21 to 0.07)	0.04 (-0.02 to 0.10)	-0.11 (-0.25 to 0.02)
Translations, mm			
Medial (+)/lateral (-) ^b	0.03 (-0.03 to 0.09)	-0.01 (-0.06 to 0.04)	0.04 (-0.03 to 0.12)
Proximal (+)/distal (-) ^b	-0.03 (-0.08 to 0.02)	0.03 (-0.01 to 0.06)	-0.05 (-0.11 to 0.01)
Anterior (+)/posterior (-) ^b	-0.05 (-0.16 to 0.06)	0.01 (-0.04 to 0.06)	-0.06 (-0.17 to 0.05)
MTPM ^{b,c}	0.70 (0.28 to 1.13)	0.41 (0.33 to 0.48)	0.30 (-0.07 to 0.66)

^a tilt of the joint.^b 3-dimensional translation of the marker in the tibial tray that moved the most.^c Vectorial sum of translations along the 3 coordinate axes.**Table 2.** RSA. Migration of defined points on the tibial component up to 3 months with 95% confidence intervals (CI)

Tibial tray	Mean, mm (CI) or distribution ^a		Mean difference (CI) (if applicable)
	PSI	CVI	
Maximum lift-off			
Location on tibial tray ^a	2/9/11/5	2/17/13/4	-
Proximal (+) translation	0.16 (0.08 to 0.23)	0.13 (0.09 to 0.18)	0.02 (-0.06 to 0.11)
Maximum subsidence			
Location on tibial tray ^a	1/10/12/4	1/12/15/8	-
Distal (-) translation	-0.21 (-0.35 to -0.08)	-0.12 (-0.17 to -0.07)	-0.09 (-0.22 to 0.04)

^a Numbers indicate number of cases with maximum values observed anteriorly, laterally, medially, postero-laterally or postero-medially^b Chi-square test

^c Mann-Whitney test

Table 3. RSA. Migration (rotations and translations) of tibial component 1 to 2 years with 95% confidence intervals (CI)

	Mean (CI)		Mean difference (CI)
	PSI	CVI	
Rotations, degrees			
Anterior (+)/posterior (-) tilt	0.05 (-0.14 to 0.24)	-0.03 (-0.09 to 0.03)	0.08 (-0.09 to 0.25)
Internal (+)/external (-) rotation	0.01 (-0.13 to 0.14)	0.05 (-0.02 to 0.13)	-0.05 (-0.19 to 0.09)
Valgus (+)/varus (-) tilt ^a	-0.01 (-0.04 to 0.02)	0.01 (-0.03 to 0.05)	-0.02 (-0.07 to 0.04)
Translations, mm			
Medial (+)/lateral (-) ^b	0.01 (-0.02 to 0.05)	-0.02 (-0.05 to 0.01)	0.03 (-0.02 to 0.07)
Proximal (+)/distal (-) ^b	-0.03 (-0.07 to 0.02)	-0.03 (-0.05 to 0.00)	0.00 (-0.05 to 0.05)
Anterior (+)/posterior (-) ^b	0.00 (-0.11 to 0.12)	-0.01 (-0.04 to 0.03)	0.01 (-0.09 to 0.12)
MTPM ^{b, c}	0.38 (0.25 to 0.52)	0.25 (0.21 to 0.30)	0.13 (0.01 to 0.25)

^{a, b, c} See Table 1.

Table 4. RSA. Migration of defined points on the tibial component 1 to 2 years with 95% confidence intervals (CI)

Tibial tray	Mean, mm (CI) or distribution ^a		Mean difference (CI) (if applicable)
	PSI	CVI	
Maximum lift-off			
Location on tibial tray ^a	0/13/8/6	7/13/9/7	-
Proximal (+) translation	0.01 (-0.02 to 0.04)	0.02 (-0.02 to 0.06)	-0.01 (-0.06 to 0.05)
Maximum subsidence			
Location on tibial tray ^a	1/9/13/4	0/11/11/14	-
Distal (-) translation	-0.09 (-0.14 to -0.049)	-0.09 (-0.12 to -0.06)	0.00 (-0.05 to 0.05)

^a Numbers indicate number of cases with maximum values observed anteriorly, laterally, medially, postero-laterally or postero-medially

Table 5. RSA. Migration (rotations and translations) of tibial component 2 to 5 years with 95% confidence intervals (CI)

	Mean (CI)		Mean difference (CI)
	PSI	CVI	
Rotations, degrees			
Anterior (+)/posterior (-) tilt	-0.03 (-0.22 to 0.16)	-0.02 (-0.15 to 0.12)	-0.01 (-0.23 to 0.21)
Internal (+)/external (-) rotation	0.09 (-0.10 to 0.29)	0.06 (-0.04 to 0.15)	0.04 (-0.16 to 0.23)
Valgus (+)/varus (-) tilt ^a	-0.01 (-0.11 to 0.09)	-0.03 (-0.08 to 0.02)	0.03 (-0.07 to 0.13)
Translations, mm			
Medial (+)/lateral (-) ^b	0.02 (-0.03 to 0.06)	0.06 (0.02 to 0.09)	-0.04 (-0.10 to 0.02)
Proximal (+)/distal (-) ^b	-0.07 (-0.14 to 0.01)	-0.03 (-0.14 to 0.01)	-0.04 (-0.12 to 0.04)
Anterior (+)/posterior (-) ^b	-0.04 (-0.13 to 0.05)	-0.01 (-0.06 to 0.04)	-0.03 (-0.13 to 0.06)
MTPM ^{b, c}	0.46 (0.34 to 0.58)	0.34 (0.27 to 0.41)	0.12 (-0.01 to 0.24)

^{a, b, c} See Table 1.

Table 6. RSA. Migration of defined points on the tibial component 2 to 5 years with 95% confidence intervals (CI)

Tibial tray	Mean, mm (CI) or distribution ^a		Mean difference (CI) (if applicable)
	PSI	CVI	
Maximum lift-off			
Location on tibial tray ^a	3/9/5/4	4/10/14/2	-
Proximal (+) translation	0.05 (-0.01 to 0.10)	0.04 (-0.01 to 0.08)	-0.01 (-0.06 to -0.08)
Maximum subsidence			
Location on tibial tray ^a	0/7/8/6	0/12/7/11	-
Distal (-) translation	-0.13 (-0.20 to -0.05)	-0.14 (-0.20 to -0.08)	0.01 (-0.08 to 0.10)

^a Numbers indicate number of cases with maximum values observed anteriorly, laterally, medially, postero-laterally or postero-medially

Table 7. Model estimate of mean least square difference of RSA parameters at 3 months. Data for PSI minus data for knees operated on with standard instruments (CVI) with 95% confidence intervals (CI)

	Estimated mean (CI)		Contrast estimate (CI)
	PSI	CVI	
Tibial component rotations			
Anterior (+)/posterior (-) tilt	-0.05 (-0.25 to 0.15)	-0.07 (-0.25 to 0.10)	0.02 (-0.24 to 0.29)
Internal (+)/external (-) rotation	-0.16 (-0.38 to 0.06)	0.01 (-0.18 to 0.20)	-0.17 (-0.46 to 0.12)
Valgus (+)/varus (-) tilt ^a	-0.07 (-0.20 to 0.06)	0.05 (-0.07 to 0.16)	-0.12 (-0.29 to 0.06)
Tibial component translations			
Medial (+)/lateral (-) ^b	0.03 (-0.06 to 0.12)	-0.02 (-0.09 to 0.06)	0.05 (-0.07 to 0.17)
Proximal (+)/distal (-) ^b	-0.02 (-0.10 to 0.05)	0.02 (-0.05 to 0.09)	-0.04 (-0.14 to 0.06)
Anterior (+)/posterior (-) ^b	-0.05 (-0.16 to 0.05)	0.01 (-0.08 to 0.11)	-0.06 (-0.20 to 0.08)
MTPM ^{b, c}	0.71 (0.50 to 0.92)	0.40 (0.22 to 0.59)	0.30 (0.02 to 0.59)
Maximum lift-off			
Proximal (+) translation	0.17 (0.07 to 0.26)	0.13 (0.04 to 0.21)	0.04 (-0.09 to 0.17)
Maximum subsidence			
Distal (-) translation	-0.22 (-0.36 to -0.07)	-0.12 (-0.25 to -0.03)	-0.09 (-0.28 to 0.10)

^{a, b, c} See Table 1.

Table 8. Model estimate of mean least square difference of RSA parameters at 1 year. Data for PSI minus data for knees operated with standard instruments (CVI) with 95% confidence intervals (CI)

	Estimated mean (CI)		Contrast estimate (CI)
	PSI	CVI	
Tibial component rotations			
Anterior (+)/posterior (-) tilt	-0.23 (-0.44 to -0.03)	-0.19 (-0.36 to -0.01)	-0.05 (-0.32 to 0.22)
Internal (+)/external (-) rotation	-0.05 (-0.28 to 0.17)	0.00 (-0.19 to 0.19)	-0.05 (-0.35 to 0.24)
Valgus (+)/varus (-) tilt ^a	-0.10 (-0.24 to 0.03)	-0.01 (-0.14 to 0.10)	-0.08 (-0.26 to 0.10)
Tibial component translations			
Medial (+)/lateral (-) ^b	0.03 (-0.06 to 0.12)	0.00 (-0.08 to 0.08)	0.02 (-0.10 to 0.14)
Proximal (+)/distal (-) ^b	-0.04 (-0.12 to 0.04)	0.00 (-0.07 to 0.07)	-0.04 (-0.14 to 0.07)
Anterior (+)/posterior (-) ^b	-0.10 (-0.20 to 0.01)	-0.09 (-0.18 to -0.00)	-0.01 (-0.15 to 0.14)
MTPM ^{b, c}	0.71 (0.50 to 0.92)	0.54 (0.36 to 0.73)	0.16 (-0.12 to 0.45)
Maximum lift-off			
Proximal (+) translation	0.11 (0.01 to 0.20)	0.11 (-0.03 to 0.19)	0.00 (-0.13 to 0.13)
Maximum subsidence			
Distal (-) translation	-0.32 (-0.47 to -0.18)	-0.22 (-0.34 to -0.09)	-0.11 (-0.30 to 0.09)

^{a, b, c} See Table 1.

Table 9. Model estimate of mean least square difference of RSA parameters at 2 years. Data for PSI minus data for knees operated on with standard instruments (CVI) with 95% confidence intervals (CI)

	Estimated mean (CI)		Contrast estimate (CI)
	PSI	CVI	
Tibial component rotations			
Anterior (+)/posterior (-) tilt	-0.26 (-0.46 to -0.05)	-0.20 (-0.38 to -0.03)	-0.06 (-0.32 to 0.22)
Internal (+)/external (-) rotation	-0.02 (-0.25 to 0.20)	0.09 (-0.11 to 0.28)	-0.11 (-0.41 to 0.19)
Valgus (+)/varus (-) tilt ^a	-0.15 (-0.28 to -0.13)	0.02 (-0.06 to 0.10)	-0.17 (-0.34 to 0.13)
Tibial component translations			
Medial (+)/lateral (-) ^b	-0.11 (-0.10 to 0.08)	-0.06 (-0.13 to 0.03)	0.04 (-0.08 to 0.17)
Proximal (+)/distal (-) ^b	-0.06 (-0.14 to 0.01)	-0.03 (-0.10 to 0.04)	-0.03 (-0.14 to 0.07)
Anterior (+)/posterior (-) ^b	-0.12 (-0.23 to -0.01)	-0.08 (-0.17 to -0.02)	-0.05 (-0.19 to 0.10)
MTPM ^{b, c}	0.72 (0.50 to 0.93)	0.62 (0.43 to 0.81)	0.10 (-0.19 to 0.38)
Maximum lift-off			
Proximal (+) translation	0.14 (0.04 to 0.23)	0.10 (0.02 to 0.23)	0.03 (-0.10 to 0.16)
Maximum subsidence			
Distal (-) translation	-0.36 (-0.50 to -0.21)	-0.24 (-0.37 to -0.12)	-0.11 (-0.31 to 0.08)

^{a, b, c} See Table 1.

Table 10. Model estimate of mean least square difference of RSA parameters at 5 years. Data for PSI minus data for knees operated on with standard instruments (CVI) with 95% confidence intervals (CI)

	Estimated mean (CI)		Contrast estimate (CI)
	PSI	CVI	
Tibial component rotations			
Anterior (+)/posterior (-) tilt	-0.20 (-0.38 to -0.03)	-0.41 (-0.60 to -0.22)	0.31 (0.02 to 0.61)
Internal (+)/external (-) rotation	0.22 (-0.03 to 0.47)	0.14 (-0.07 to 0.35)	0.08 (-0.24 to 0.40)
Valgus (+)/varus (-) tilt ^a	-0.23 (-0.38 to -0.09)	0.04 (-0.08 to 0.16)	-0.27 (-0.46 to -0.08)
Tibial component translations			
Medial (+)/lateral (-) ^b	0.13 (0.03 to 0.23)	-0.01 (-0.09 to 0.07)	0.14 (0.01 to 0.27)
Proximal (+)/distal (-) ^b	-0.12 (-0.20 to -0.03)	-0.15 (-0.22 to 0.08)	0.03 (-0.08 to 0.14)
Anterior (+)/posterior (-) ^b	-0.08 (-0.20 to -0.04)	-0.20 (-0.30 to -0.10)	0.12 (-0.03 to 0.28)
MTPM ^{b, c}	0.88 (0.65 to 1.11)	0.71 (0.52 to 0.91)	0.16 (-0.14 to 0.461)
Maximum lift-off			
Proximal (+) translation	0.13 (0.04 to 0.23)	0.06 (-0.03 to 0.15)	0.07 (-0.07 to 0.21)
Maximum subsidence			
Distal (-) translation	-0.49 (-0.65 to -0.34)	-0.44 (-0.58 to -0.31)	-0.05 (-0.26 to 0.15)

^{a, b, c} See Table 1.

Table 11. Loss to follow up (LTF) demographics

Factor	Baseline		LTF 2 year				LTF 5 years			
	PSI (n=30)	CVI (n=38)	PSI		CVI		PSI (n=5)		CVI (n=4)	
	Mean (SD)/N	Mean/N	Mean/N	SD/N	Mean/N	SD/N	Mean/N	SD/N	Mean/N	SD/N
Age, years	65 (8)	65 (6)	59		63		62	5	70	5
Weight, kg	86 (13)	83 (12)	95		62		90	15	80	17
Height, cm	170 (8.5)	171 (9.7)	178		164		173	4	173	12
BMI	29.7 (3.4)	28.7 (3.4)	30		23,1		30	4,5	26,3	2,5
Male/female	13/17	16/22		0/1		0/1		3/2		2/2
ASA										
I	7	6						1		1
II	17	27						3		2
III	3	3						0		1
missing	3	2		1		2		1		0
Varus/valgus	29/1	33/5		1/0		1/0		5/0		3/1
OA Grade. Ahlbäck 1-2/3-4	18/12	20/18		1/0		1/0		4/1		3/1
HKA angle	173.8 (4.7)	173.8 (5.1)	172		168		174	5	170,1	5
Preop OKS/Last OKS (LTF)	19.0 (5.8)	19.9 (6.2)	15/40 (3mo)		19/9 (1yr)		19,8/32	6,5/8,6	20,5/35,3	5,2/13,6
Length of stay, days	3.2 (1.1)	2.9 (1.2)	5		2		3,6	1,3	1,75	0,5
Bleeding, mL	224 (98)	222 (99)	300		350		280	148	263	75
Surgical time, minutes	104 (17)	102 (20)	113		118		112	6	102	19