

TABLE E-1*†

Study	Year	Prosthesis	Number of Knees/ Patients Reported	Notes	Years of Follow-up (Mean [Range])	Patient Demographics		Reported Results/ Symptoms, and Activity	Complications/ Residual Symptoms	Additional Surgery/ Revision Rate (% of implants)
						Mean Age (range)	Sex (F/M)			
Blazina et al. ³	1979	Richards I/II	57/55	30 of orig. 85 patients lost to follow-up	1.8 (0.7-3.5)	39 (19-81)	N/A	78% much improved; 23/54 with severe or moderate pain preop. remained unchanged postop.; 18/32 unable to walk 2-4 blocks preop. did not improve postop.; 18/55 able to resume some sports activity; 11 patients able to climb stairs preop., 19 able postop.	13 of 40 patients had persistent effusions; 13 of 29 patients had persistent giving-way; ROM was <45°-120° in 31 of 57 knees	30 (35%) of 85 orig. patients had revision; 11 (12.9%) had prosthesis-related revision
Arciero et al. ¹⁰	1988	Richards II (14) and CSF Wright (11)	25/22	6 of orig. 28 patients lost to follow-up	5.3 (3-9)	62 (33-86)	15/7	72% excellent or good results, results better in women than in men (87% vs. 36% excellent or good)	7 of 25 knees rated poor because of persistent tibiofemoral arthritis, persistent patellar malalignment, and malposition of components; 3 knees needed manipulation; 19 had 100° ROM postop.	There were no mechanical failures. There were 3 revisions for size or loosening. There were 4 conversions to TKR because of OA progression. There were 3 concomitant unicompartmental replacements
Cartier et al. ¹¹	1990	Richards II 64 knees; Richards III 8 knees	72/65	5 patients deceased and 10 lost to follow-up of orig. 80	4 (2-24)	65 (23-89)	56/9	50% excellent, 35% good; 82% initial poor rating improved to 38% excellent and 47% good postop.; 92% satisfied with pain relief; 60% unlimited walking; ability to climb stairs improved in 70%	14/65 had complications: 7 implant-related, 7 soft-tissue; no infections; 2 with complex regional pain syndrome	1 reoperation for snapping patella; 2 patellar revisions for size, none for loosening; 4 conversions to TKR due to OA progression (6.9%); 36 concomitant unicompartmental replacements
Argenson et al. ⁶	1995	Autocentric (Medinov)	66 knees	13 of orig. 75 patients (79 knees) lost to follow-up	5.5 (5-10)	57 (19-82)	46/29	HSS KS: 94 points (53-100) for patients with trochlear dysplasia; 82 points (22-100) for those with post-traumatic OA; 87 points (69-100) for those with primary PF OA; no pain in 47/66; normal stair-climbing in 51/66; >105° ROM in 48/66	5 postop. manipulations; 3 infections	10 conversions to TKR (4 in noncemented cases); 7 additional lateral releases; 58% survivorship at 16 years
Krajca-Radcliffe et al. ¹²	1996	Bechtol I/II	16/13	12 of orig. 25 patients lost to follow-up	5.8 (2-18)	64 (42-84)	11/2	92% successful, 12/16 arthroplasties rated excellent; no patient reported routine pain at rest or activity; none required anti-inflammatories; 1 patient used a cane	1 reop for persistent PF malalignment; extensor lags common (only 4/13 patients achieved full extension); no effusions	No conversions to TKR
de Winter et al. ¹³	2001	Richards II	26/24	N/A	11 (1-20)	59 (22-90)	19/5	9 excellent, 7 good, 4 improved, 1 unimproved; mean KSS 90 points (65-100)	2 manipulations; 1 reoperation for persistent malalignment	3 patellectomies; 2 conversions to TKR for progressive OA (19% revision rate)
Tauro et al. ¹⁸	2001	Lubinus	62/48	76/59 orig.	7.5 (5-10)	65.5 (50-87)	49/10	45% satisfactory outcomes; postop. pain level: 53% none, 26% mild, 21% moderate; mean BKS improvement from 55 to 72	2 patellar fractures 1 year postop.; 4 diagnostic arthroscopies	28% revision to either TKR or Avon PFA; OA progression in 6.5%; authors discontinued use of prosthesis

Smith et al. ¹⁴	2002	Lubinus	45/33	1 of orig. 34 patients lost to follow-up	4 (0.5-7.5)	72 (42-86)	N/A	64% good or excellent; 21 patients felt better	1 tibial tubercle transfer	19% revisions: 5 to TKR, 2 to other PFA for progressive OA or patellar instability
Kooijman et al. ⁹	2003	Richards II	56/51	N/A	17 (15-21)	50 (30-77)	24/27	86% good or excellent; 22/35 surviving PFAs caused no further problems	Early in series 18% needed manipulation or débridement for stiffness	27 reoperations in 25 knees; 17.8% with revision to TKR at 15.6 years for progressive OA; 2% with loosening
Board et al. ¹⁵	2004	Lubinus	17/12	N/A	1.5 (0.16-4.6)	66 (37-82)	10/2	53% satisfactory with an overall unpredictable outcome	1 deep infection and 4 cases with loss of extension	12% with revision to TKR and 18% of patients had patellar click or subluxation; authors discontinued use of prosthesis
Merchant ¹⁶	2004	LCS	15/15	N/A	3.75 (2.25-5.5)	48.8 (30-81)	13/2	93% good or excellent; 1 of 15 continued to have anterior knee pain; preop. scores available for only 8 of 15 patients, with 42% improvement	One patient continued to have unexplained anterior knee pain. There were no major complications	1 of 15 patients continued to have anterior knee pain; there were no implant failures
Ackroyd ¹⁹	2005	Avon	306/240	N/A	0.6 years for 170 knees, 2.0 years for 124 knees, 5.0 years for 33 knees	62 (34-92)	203/37	Only 33 knees studied to 5 years: Bristol Score improved to 36 (normal = 40); Oxford Knee Score improved to 39 of 48; Bartlett Score 30 of 30; patients younger than 55 years did slightly better than older patients	No major complications	Only 33 implants followed for 5 years; no implant failures; 5% had revision for disease progression
Sisto and Sarin ¹⁷	2005	KineMatch Kinamed	25/22	N/A	6 (2.6-9.9)	45 (23-51)	16/6	82% had increased function; 75% had increase in KSS	No complications	No revisions
Cartier et al. ²¹ ‡	2005	Richards II/III	59/50	N/A	10 (6-16)	60 (36-81)	41/9	77% excellent outcomes, 47 of 59 knees pain-free and 12 knees causing moderate or worse pain; average of 123° of flexion and in no case flexion <100°	One case of substantial wear and five cases of moderate wear causing occasional swelling	No infections, eight knees required conversion to TKR
Lonner ⁵	2004	Avon trochlear/ NexGen Patella	25	N/A	0.6 (0.1-1)	44 (28-59)	N/A	96% good or excellent outcomes	No patellar subluxation or catching; 4% of the cases had mild anterior knee pain from soft-tissue crepitus or inflammation	No mechanical failures
Argenson et al. ²⁰ ‡	2005	Autocentric (Medinov)	66/66	N/A	16.2 (12-20)	57 (21-82)	31/26	KSS improved from 40 points preop. to 81 points, twenty patients had a ROM of >105°, 10 had a ROM between 90° and 105°, and two had a ROM of <90°	Five patients required a secondary lateral release with resection of the lateral patellar facet, manipulation under anesthesia	Revision required in 14 patients for femorotibial OA, in 11 for loosening, and in 4 for stiffness

*Reproduced, with modification, from: Leadbetter WB, Ragland PS, Mont MA. The appropriate use of patellofemoral arthroplasty. An analysis of reported indications, contraindications, and failures. Clin Orthop Relat Res. 2005;436:94-5. Reprinted with permission. †N/A = not available; ROM = range of motion; TKR = total knee replacement; HSSKS = Hospital for Special Surgery Knee Score; OA = osteoarthritis, PFA = patellofemoral arthroplasty; PF = patellofemoral; KSS = Knee Society Score; BKS = Bristol Knee Score. ‡Updated review of previously published series.