

# Biotribology in Arthroplasty: Worn Surfaces Investigation on Ceramic Hip Femoral Heads Considering Wettability

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**Table S1.** Selected patient details. The values are sorted by increasing values of metal transfer classification.

Heads	Years at Surgery	FU (years)	Gender	Implant Side	Material	Failure
#01	54	14.9	F	Right	Bilox <sup>®</sup> Forte	Aseptic Loosening
#02	58	16.7	F	Right	Bilox <sup>®</sup> Forte	Aseptic Loosening
#03	61	6.6	F	Left	Bilox <sup>®</sup> Forte	Aseptic Loosening
#04	53	12.5	F	Right	Bilox <sup>®</sup> Forte	Aseptic Loosening
#05	61	10.2	M	Left	Bilox <sup>®</sup> Forte	Aseptic Loosening
#06	48	10.5	M	Right	Bilox <sup>®</sup> Forte	Aseptic Loosening
#07	35	4	F	Left	Bilox <sup>®</sup> Forte	Aseptic Loosening
#08	61	9.1	M	Left	Bilox <sup>®</sup> Forte	Stem fracture
#09	64	22.1	M	Left	Bilox <sup>®</sup> Forte	Periprosthetic Fracture
#10	67	19.8	F	Right	Bilox <sup>®</sup> Forte	Aseptic Loosening
#11	27	6.7	M	Right	Bilox <sup>®</sup> Forte	Periprosthetic Fracture
#12	59	7.6	F	Right	Bilox <sup>®</sup> Forte	Aseptic Loosening
#13	59	7.6	F	Right	Bilox <sup>®</sup> Forte	Aseptic Loosening
#14	62	2.4	F	Right	Bilox <sup>®</sup> Delta	Aseptic Loosening
#15	56	1.6	M	Right	Bilox <sup>®</sup> Delta	Aseptic Loosening
#16	83	2.3	M	Left	Bilox <sup>®</sup> Delta	Aseptic Loosening
#17	78	2.8	M	Right	Bilox <sup>®</sup> Delta	Aseptic Loosening

#18	49	1.1	M	Right	Bilox <sup>®</sup> Delta	Aseptic Loosening
#19	68	1.2	M	Right	Bilox <sup>®</sup> Delta	Aseptic Loosening
#20	56	1.9	M	Left	Bilox <sup>®</sup> Delta	Aseptic Loosening
#21	68	5.4	F	Right	Bilox <sup>®</sup> Delta	Aseptic Loosening
#22	69	3.7	M	Right	Bilox <sup>®</sup> Delta	Aseptic Loosening
#23	61	2.1	F	Right	Bilox <sup>®</sup> Delta	Aseptic Loosening
#24	77	1.1	F	Left	Bilox <sup>®</sup> Delta	Aseptic Loosening

FU = follow-up

**Table S2.** Roughness measurements results on all femoral heads (explanted from #1 to #24; new from #25 to #33; in vitro from #34 to #53).

Heads	Material	Ra ( $\mu\text{m}$ )	Rt ( $\mu\text{m}$ )	Rsk
#01	Bilox <sup>®</sup> Forte	0.36 $\pm$ 0.1	57.6 $\pm$ 0.9	-11.5 $\pm$ 0.6
#02	Bilox <sup>®</sup> Forte	0.04 $\pm$ 0.1	0.73 $\pm$ 0.1	-0.41 $\pm$ 0.4
#03	Bilox <sup>®</sup> Forte	0.44 $\pm$ 0.1	32.7 $\pm$ 0.7	-0.76 $\pm$ 0.5
#04	Bilox <sup>®</sup> Forte	0.19 $\pm$ 0.1	27.4 $\pm$ 0.6	-16.4 $\pm$ 0.6
#05	Bilox <sup>®</sup> Forte	0.29 $\pm$ 0.1	43.1 $\pm$ 0.9	-14.0 $\pm$ 0.4
#06	Bilox <sup>®</sup> Forte	0.06 $\pm$ 0.1	29.0 $\pm$ 0.4	36.8 $\pm$ 0.4
#07	Bilox <sup>®</sup> Forte	0.36 $\pm$ 0.1	33.0 $\pm$ 0.2	-11.4 $\pm$ 0.2
#08	Bilox <sup>®</sup> Forte	0.36 $\pm$ 0.1	60.4 $\pm$ 1.2	22.7 $\pm$ 0.2
#09	Bilox <sup>®</sup> Forte	0.48 $\pm$ 0.1	40.2 $\pm$ 0.8	-11.9 $\pm$ 0.7
#10	Bilox <sup>®</sup> Forte	0.21 $\pm$ 0.1	0.9 $\pm$ 0.2	10.2 $\pm$ 0.7
#11	Bilox <sup>®</sup> Forte	0.35 $\pm$ 0.1	45.7 $\pm$ 0.9	-0.93 $\pm$ 0.4
#12	Bilox <sup>®</sup> Forte	0.15 $\pm$ 0.1	27.7 $\pm$ 0.4	0.19 $\pm$ 1.1
#13	Bilox <sup>®</sup> Forte	0.10 $\pm$ 0.1	29.0 $\pm$ 0.7	0.19 $\pm$ 0.9
#14	Bilox <sup>®</sup> Delta	0.11 $\pm$ 0.2	37.1 $\pm$ 0.5	-0.30 $\pm$ 0.2
#15	Bilox <sup>®</sup> Delta	0.12 $\pm$ 0.1	44.0 $\pm$ 0.8	-0.58 $\pm$ 0.2
#16	Bilox <sup>®</sup> Delta	0.12 $\pm$ 0.1	31.2 $\pm$ 0.8	0.31 $\pm$ 0.3
#17	Bilox <sup>®</sup> Delta	0.17 $\pm$ 0.1	31.0 $\pm$ 0.4	-0.16 $\pm$ 0.2
#18	Bilox <sup>®</sup> Delta	0.27 $\pm$ 0.1	37.3 $\pm$ 0.4	-0.41 $\pm$ 0.1
#19	Bilox <sup>®</sup> Delta	0.11 $\pm$ 0.1	43.0 $\pm$ 0.4	-0.47 $\pm$ 0.4
#20	Bilox <sup>®</sup> Delta	0.20 $\pm$ 0.1	37.0 $\pm$ 0.8	-0.19 $\pm$ 0.5
#21	Bilox <sup>®</sup> Delta	0.09 $\pm$ 0.1	31.1 $\pm$ 0.2	0.55 $\pm$ 0.6
#22	Bilox <sup>®</sup> Delta	0.15 $\pm$ 0.1	37.5 $\pm$ 0.6	-0.58 $\pm$ 0.2
#23	Bilox <sup>®</sup> Delta	0.14 $\pm$ 0.1	29.0 $\pm$ 0.7	0.08 $\pm$ 0.2
#24	Bilox <sup>®</sup> Delta	0.32 $\pm$ 0.1	43.0 $\pm$ 0.7	-1.19 $\pm$ 0.6
#25	Bilox <sup>®</sup> Delta	0.01 $\pm$ 0.1	0.02 $\pm$ 0.1	0.23 $\pm$ 0.2
#26	Bilox <sup>®</sup> Delta	0.02 $\pm$ 0.1	0.31 $\pm$ 0.2	7.23 $\pm$ 0.5
#27	Bilox <sup>®</sup> Delta	0.01 $\pm$ 0.1	0.05 $\pm$ 0.1	1.85 $\pm$ 0.4
#28	Bilox <sup>®</sup> Delta	0.01 $\pm$ 0.1	0.03 $\pm$ 0.1	0.25 $\pm$ 0.2
#29	Bilox <sup>®</sup> Delta	0.02 $\pm$ 0.1	0.18 $\pm$ 0.2	4.09 $\pm$ 0.2
#30	Bilox <sup>®</sup> Delta	0.01 $\pm$ 0.1	0.09 $\pm$ 0.1	7.7 $\pm$ 0.2
#31	Bilox <sup>®</sup> Delta	0.01 $\pm$ 0.1	0.07 $\pm$ 0.1	1.69 $\pm$ 0.2

#32	Biolox® Delta	0.01 ±0.1	0.06 ±0.1	1.67 ±0.1
#33	Biolox® Delta	0.01 ±0.1	0.2 ±0.2	2.35 ±0.1
#34	Biolox® Forte	0.02 ±0.1	0.16 ±0.2	2.62 ±0.2
#35	Biolox® Forte	0.01 ±0.1	0.05 ±0.2	6.17 ±0.2
#36	Biolox® Forte	0.01 ±0.1	0.13 ±0.2	10.05 ±0.5
#37	Biolox® Forte	0.01 ±0.1	0.1 ±0.2	6.14 ±0.7
#38	Biolox® Forte	0.02 ±0.1	0.2 ±0.2	5.64 ±0.1
#39	Biolox® Forte	0.06 ±0.1	4.15 ±0.5	2.95 ±0.2
#40	Biolox® Forte	0.01 ±0.1	0.26 ±0.2	2.26 ±0.3
#41	Biolox® Forte	0.01 ±0.1	0.11 ±0.2	3.71 ±0.3
#42	Biolox® Forte	0.27 ±0.1	2.24 ±0.2	5.06 ±0.2
#43	Biolox® Forte	0.47 ±0.1	4.57 ±0.4	5.8 ±0.5
#44	Biolox® Forte	0.03 ±0.1	0.20 ±0.1	-0.05 ±0.1
#45	Biolox® Forte	0.03 ±0.1	0.49 ±0.1	-0.11 ±0.1
#46	Biolox® Forte	0.01 ±0.1	0.06 ±0.1	0.14 ±0.1
#47	Biolox® Forte	0.02 ±0.1	0.1 ±0.2	0.19 ±0.1
#48	Biolox® Forte	0.01 ±0.1	0.03 ±0.1	1.32 ±0.3
#49	Biolox® Forte	0.01 ±0.1	0.04 ±0.2	0.62 ±0.2
#50	Biolox® Forte	0.01 ±0.1	0.05 ±0.1	0.43 ±0.2
#51	Biolox® Forte	0.01 ±0.1	0.11 ±0.3	3.17 ±0.6
#52	Biolox® Forte	0.01 ±0.1	0.04 ±0.1	0.46 ±0.2
#53	Biolox® Forte	0.01 ±0.1	0.1 ±0.1	2.99 ±0.8



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