Sharifi eAppendix

TABLE E-1 Independent Robust Variables Used in the Model
See model diagram for corresponding event.

Name	Value
Infectious failure in primary THA[46]	0.013
Infectious failure rate in revised THA hip[46]	0.032
Failure rate in revised THA hip[43]	0.04
Successful 2nd THA revision s/p aseptic failure[43]	0.64
Successful 2nd THA revision s/p septic failure[43]	0.77
Successful HO excision	0.98
Symptomatic HO[45]	0.024
Revision PAO[47]	0.04
Failed PAO revision[49]	0.11
Probability PAO hip failure in Tönnis 1 coxarthrosis[45]	0.01 per annum
Probability PAO hip failure in Tönnis 2 coxarthrosis[45]	0.03 per annum
Probability PAO hip failure in Tönnis 3 coxarthrosis[45]	0.09 per annum

THA = total hip arthroplasty, PAO = periacetabular osteotomy, HO = heterotopic ossification, and s/p = status post.

TABLE E-2 Cost Data
All values are direct medical costs taken from UCSF microcosting accounting. Reported in 2004 American dollars. Our perspective is societal since direct hospital costs may be taken as proxies for societal costs[40].

Name	Value	Low	High
cAseptic_revision	31341	24341	31341
cHO_excision	10000	1000	15000
cInfection_revision	47011.5	37011.5	47011.5
cPAO	24000	20000	26000
cTHA	24000	19170	25000

cAseptic_revision = cost of aseptic revision, cHO = cost of heterotopic ossification, cPAO = cost of periacetabular osteotomy, and cTHA = cost of total hip arthroplasty.

TABLE E-3 Conversion System Between Harris Hip Scores and Quality of Life (HRQOL) According to a System Previously Used by Chang et al., 1996[43]

Outcome	HRQOL[66-68]	Harris hip score[43]
Excellent	1.0	90-100
Good	0.8	70-89
Fair	0.5	40-69
Poor	0.3	<40

The same utility score was given to total hip arthroplasty and periacetabular osteotomy if the same adjectival outcome was achieved based on Harris hip score.

TABLE E-4 Weight of Sensitive Variables for All Tönnis Grades

		Average Lifespan of THA	Probability of Primary Aseptic Failure	Discount Rate	Utility of an Excellent Outcome	Average Lifespan of PAO	Total Contribution of Listed Variables to Model Sensitivity
Overall contribution to the model sensitivity (%)	Tönnis grade 1	34.4	12.75	25.06	1.91	22.24	99.86
	Tönnis grade 2	43.41	33.32	18.81	1.93	0.92	99.43
	Tönnis grade 3	43.99	34.35	18.97	2.04	Not applicable	99.35

Note that, in Tönnis grade 3, 99% of the model's outcome is accounted for by four variables, while in Tönnis grades 1 and 2, five variables account for 99% of the model's outcome. THA = total hip arthroplasty, and PAO = periacetabular osteotomy.