

1 **Supplementary Table 1: Hips fulfilling a FAIS criterion at baseline (n=1386 hips) and its absolute risk of developing hip OA**

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Exposure	Incident hip OA (KL \geq 2 or THR)			Incident end-stage hip OA (KL \geq 3 or THR)		
	Present (n=221)	Absent (n=363)	Absolute risk	Present (n=15)	Absent (n=569)	Absolute risk
Hip pain Present (n=547) Absent (n=839)	264 350	283 489	48.3%	46 25	501 814	8.4%
Internal hip rotation \leq 25° Present (n=18) Absent (n=1367)	16 597	2 770	88.9%	6 64	12 1303	33.3%
Cam morphology alpha angle $>$ 60° Present (n=124) Absent (n=1262)	87 527	37 735	70.2%	20 51	104 1211	16.1%
Cam morphology alpha angle $>$ 78° Present (n=67) Absent (n=1319)	47 567	20 752	70.1%	15 56	52 1263	22.4%

3 KL = Kellgren-Lawrence grade; THR = total hip replacement

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11 **Supplementary Table 2: Sensitivity analysis using an alternative definition for hip pain.**

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Exposure	Total N = 567**		Incident hip OA (KL 2-4 or THR)		Incident end-stage hip OA (KL 3-4 or THR)	
	N with condition	N without condition [†]	OR (95% CI)	aOR* (95% CI)	OR (95% CI)	aOR* (95% CI)
FAIS (hip pain, internal hip rotation $\leq 25^\circ$, cam morphology with alpha angle $> 60^\circ$)	18 (3.2%)	549 (96.8%)	12.5 (3 – 53)	11.5 (3 – 52)	30.0 (9 – 98)	33.6 (9 – 126)
FAIS (hip pain, internal hip rotation $\leq 25^\circ$, large cam morphology with alpha angle $> 78^\circ$)	13 (2.3%)	549 (96.8%)	8.6 (2 – 38)	7.8 (2 – 37)	37.4 (10 – 137)	52.9 (11 – 265)

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14 * Adjusted odds ratios are adjusted for age, sex, and BMI

15 ** values on hip pain were missing in 17 hips

16 [†]: The reference group for the predictor categories in this table consists of hips that did not have any of the stated conditions (e.g. the reference group for
17 FAI syndrome are hips without cam, without hip pain, and without decreased internal rotation).

18 aOR = adjusted odds ratio; KL = Kellgren-Lawrence grade; THR = total hip replacement; FAIS = femoroacetabular impingement syndrome

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20 **Supplementary Table 3: Sensitivity analysis using a threshold of $\leq 20^\circ$ instead of $\leq 25^\circ$ internal hip rotation to define FAIS**

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Exposure	Total N = 694		Incident hip OA (KL 2-4 or THR)		Incident end-stage hip OA (KL 3-4 or THR)	
	N with condition	N without condition [†]	OR (95% CI)	aOR* (95% CI)	OR (95% CI)	aOR* (95% CI)
FAIS (hip pain, internal hip rotation $\leq 20^\circ$, cam morphology with alpha angle $>60^\circ$)	13 (1.9%)	681 (98.1%)	4.7 (1 – 16)	4.3 (1 – 16)	24.7 (6 – 96)	36.8 (9 – 153)
FAIS (hip pain, internal hip rotation $\leq 20^\circ$, large cam morphology with alpha angle $>78^\circ$)	9 (1.3%)	681 (98.1%)	5.0 (1 – 20)	4.4 (1 – 20)	44.5 (11 – 187)	133.1 (13 – 1322)

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23 * Adjusted odds ratios are adjusted for age, sex, and BMI

24 †: The reference group for the predictor categories in this table consists of hips that did not have any of the stated conditions (e.g. the reference group for
25 FAI syndrome are hips without cam, without hip pain, and with internal hip rotation $>20^\circ$).

26 aOR = adjusted odds ratio; KL = Kellgren-Lawrence grade; THR = total hip replacement; FAIS = femoroacetabular impingement syndrome

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29 **Supplementary Table 4: Associations between femoroacetabular impingement syndrome and the development of incident radiographic hip**
 30 **osteoarthritis and incident end-stage radiographic hip osteoarthritis within 10 years follow-up with all hips other than those fulfilling the FAIS criteria as**
 31 **the reference group.**

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Exposure	Total n = 1386		Incident hip OA (KL 2-4 or THA) n = 614		Incident end-stage hip OA (KL 3-4 or THR) n=71	
	N with condition	N without condition [†]	OR (95% CI)	aOR* (95% CI)	OR (95% CI)	aOR* (95% CI)
FAIS (hip pain, internal hip rotation $\leq 25^\circ$, cam morphology with alpha angle $> 60^\circ$)	21 (1.5%)	1365 (98.5%)	3.9 (2 – 10)	3.5 (1 – 10)	8.5 (3 – 25)	8.1 (3 – 25)
FAIS with large cam morphology (hip pain, internal hip rotation $\leq 25^\circ$, large cam morphology with alpha angle $> 78^\circ$)	14 (1.0%)	563 (99.0%)	3.3 (1 – 8)	2.9 (1 – 8)	13.8 (5 – 40)	12.9 (4 – 41)

33 * Adjusted odds ratios are adjusted for age, sex, and BMI

34 [†]: The reference group for the predictor categories in this table consists of hips that did not have all three criteria of FAIS (e.g. the reference group for FAI
 35 syndrome could be hips with cam morphology and hip pain, but without decreased internal rotation).

36 aOR = adjusted odds ratio; KL = Kellgren-Lawrence grade; THR = total hip replacement; FAIS = femoroacetabular impingement syndrome

