

How Long Do Patients Take to Regain their Baseline Strength Following Arthroscopy for Treating FAI?

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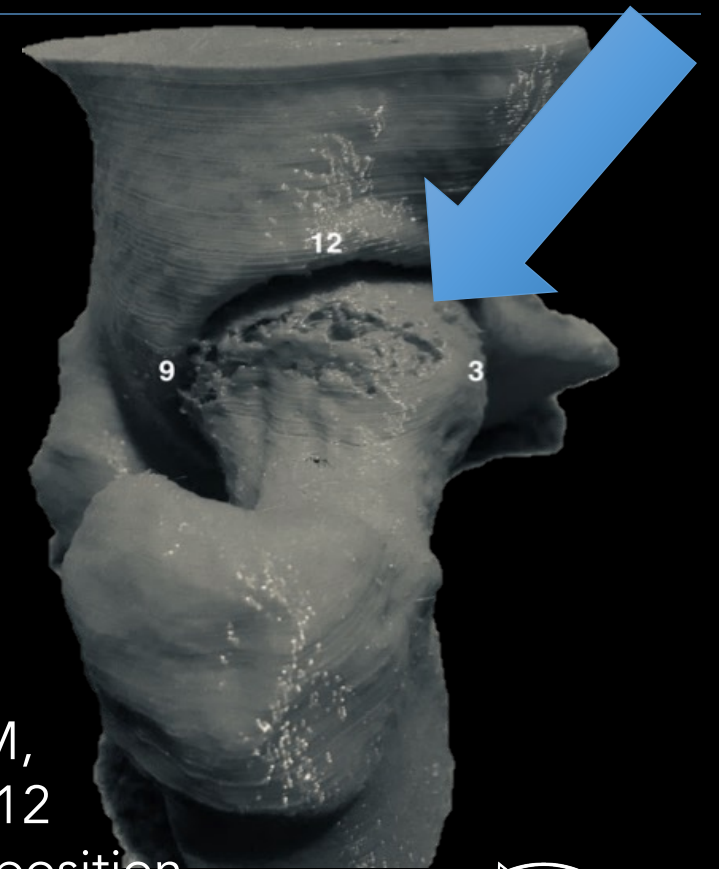
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Hip Arthroscopy for Femoroacetabular Impingement (FAI) yields favorable outcomes compared to conservative treatment¹

- FAI is a condition that is concerned with abnormalities in either or both the femoral head-neck junction, or acetabulum²
- FAI can lead to severe hip and groin pain

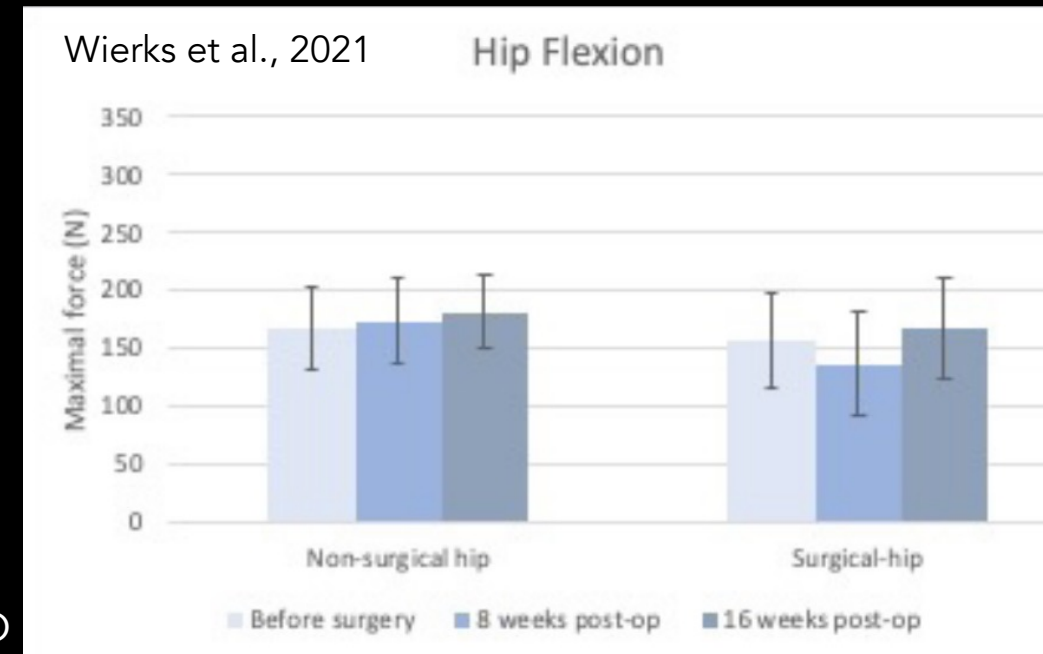


FAI, specifically CAM, presented from the 12 o'clock to 3 o'clock position

Expected hip strength before and after FAI

- Patients with FAI present with muscle weakness, and reduced range of motion compared to healthy controls^{3,4}
- Following a rehabilitation protocol, postoperative strength exceeded preoperative strength in the surgical hip at 8-weeks (adduction) and 16-weeks (abduction, flexion)⁵
- Understanding when patients may return and surpass their baseline hip strength can help with rehabilitation protocols and set appropriate expectations for recovery

Casartelli et al., 2011	Normalized torque (Nm/kg)		P value
	Mean ± SD		
	FAI	Controls	
Hip adduction	1.57 ± 0.82	2.17 ± 0.49	0.003
Hip abduction	1.81 ± 0.43	2.03 ± 0.31	0.028
Hip internal rotation	0.47 ± 0.16	0.55 ± 0.17	0.076
Hip external rotation	0.46 ± 0.21	0.56 ± 0.15	0.040
Hip flexion	0.87 ± 0.46	1.17 ± 0.37	0.004
Hip extension	1.64 ± 1.00	1.66 ± 0.86	0.592



Objective: To assess post-operative improvement in strength in patients who received arthroscopic treatment of femoroacetabular impingement

Methodology

- This study was a retrospective analysis of prospectively collected data

Included if:

- underwent hip arthroscopy for FAI between 2019 and 2021
- 1 year follow up and strength outcomes measured by a registered physiotherapist

Primary Outcome Measure:

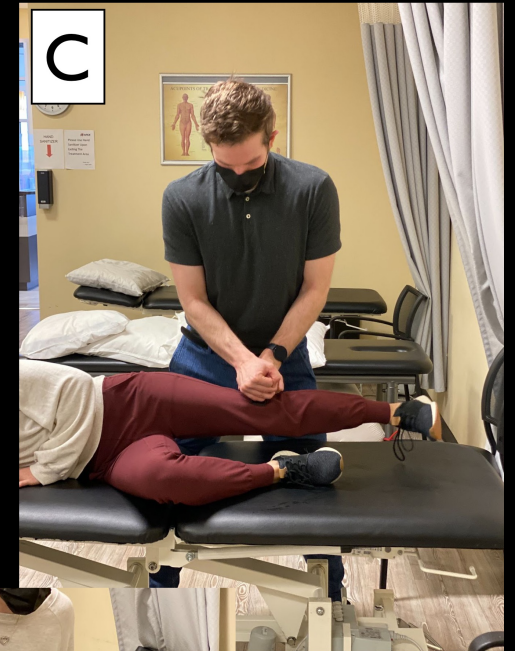
- Strength score (% of baseline) for hip flexion, extension, abduction, internal/external rotation
- Measured using a hand-held dynamometer pre-operatively, 6-months and 1-year post-operatively

Secondary Outcome Measure:

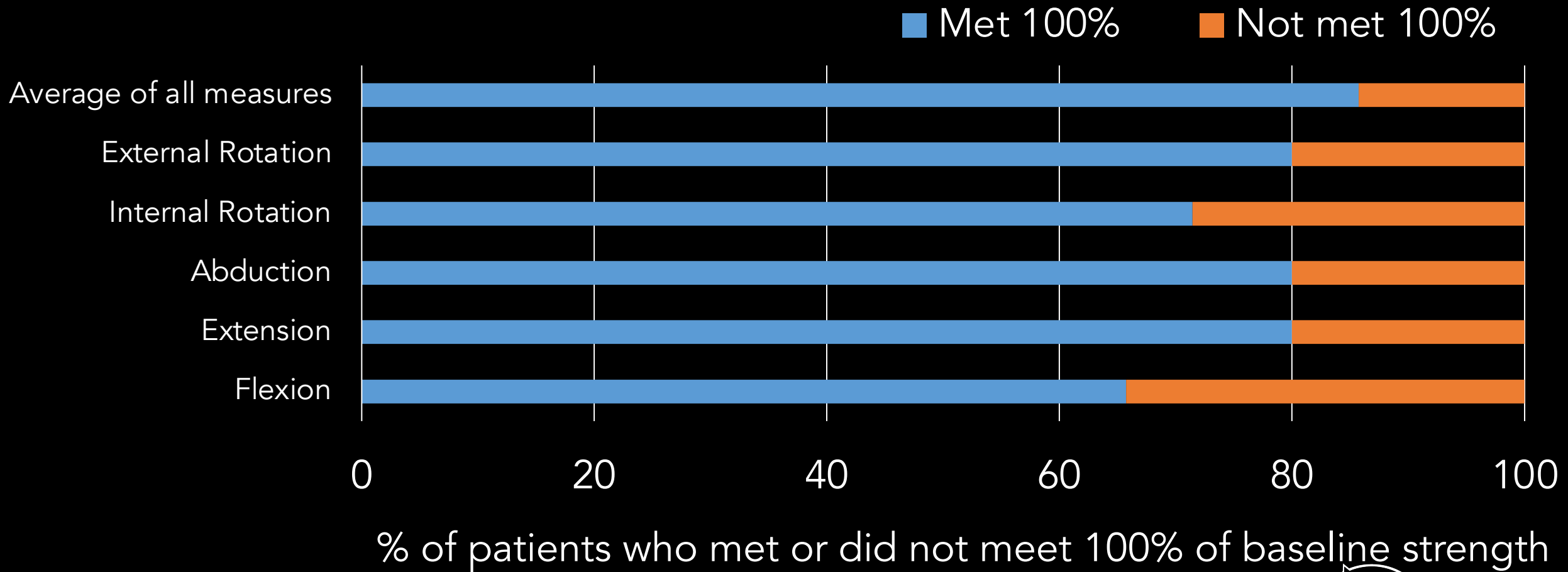
- International Hip Outcome (iHot-33) scores pre-operatively, 6-months, and 1-year post-operatively.

Hip strength measured using a hand-held dynamometer by a registered physiotherapist:

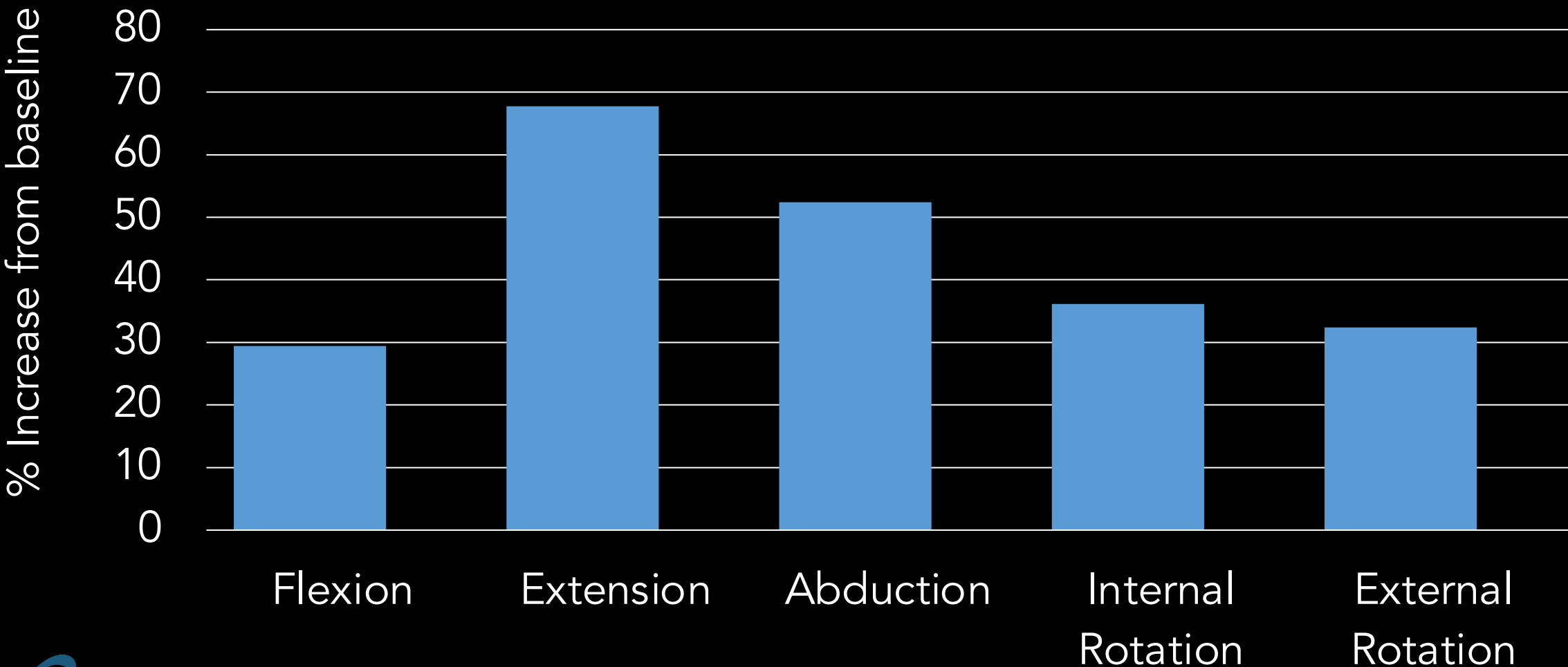
- A) Hip Flexion
- B) Extension
- C) Abduction
- D) Internal Rotation
- E) External Rotation



When all hip strength measures are averaged, as a % of baseline, 85% of the patients surpassed overall baseline strength



At 1-year post-hip arthroscopy for FAI, patients' strength increased from baseline ranging from 30% to 68%



Patient Demographics and iHOT-33 scores

N = 35	All met 100% (N=15)	partially met 100% (N = 19)	Non met 100% (N=1)	P values
Age at surgery	38.56 ± 15.9	36.50 ± 12.4	29.76	0.793
BMI	26.79 ± 3.53	27.28 ± 4.47	28.39	0.897
Follow up	12.84 ± 2.56	12.60 ± 1.43	13.67	0.518
Sex (% Male)	26.7	21.1	0	0.797
Operative Side (% Right)	26.7	42.1	0	0.491

There were no significant differences between patients who met all 5 of their baseline strength measures compared to those who partially met their baseline strength for the strength measures

All patients improved post-operatively with respect to their iHOT-33 scores ($p < 0.001$) patients)

	N	Mean \pm SD	P values
Pre iHOT	13	35.15 \pm 16.14	<0.001
6 Month Score	13	66.95 \pm 20.93	
Pre iHOT	18	35.65 \pm 14.61	<0.001
1 Year Score	18	72.40 \pm 24.96	

No significant correlation between patients who met MCID and those who met their baseline at 6-months, and 1-year, respectively were found ($p > 0.05$)

Discussion

- Similar to our results, it has been reported that increases in hip strength post-operatively range from 23%-89% in professional American football players,³ to 9% - 59% strength increases in recreational athletes⁴
- Recently, research has shown that hip muscle strength does not fully recover in patients with femoroacetabular impingement surgery when they return to sports,⁵ highlighting the importance of post-operative strength training before resuming physical activity.

Discussion

- Improvement in hip muscle strength after hip arthroscopy is a major concern for individuals with FAI who wish to return to work and/or sport at full capacity
- Overall, patients demonstrate an increase in hip strength and patient reported outcomes following hip arthroscopy for FAI at 1-year post-operatively

Conclusion

Overall, patients demonstrate an increase in hip strength and patient reported outcomes following hip arthroscopy for FAI. Further research is required to understand the impacts of patients who do and do not meet their baseline hip strength following FAI surgery.

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