

High Rates of Return to Football following Hip Arthroscopy for Femoroacetabular Impingement: Analysis of Competitive Athletes with Minimum 2-Year Follow Up

Louis Kang, Emmett Cleary, Yining Lu, Sanathan Iyer, Sandeep Yanamala, Rana Anil Ahmad, Jacob D Mikula, Bruce A Levy, Mario Hevesi, Kelechi Okoroha, Aaron John Krych

INTRODUCTION:

Femoroacetabular impingement (FAI) is a common cause of hip pain in young, active athletes. Football players place high demands on the hip due to the sport's requirements for pivoting, cutting, and loading in deep flexion. While arthroscopic treatment of FAI in professional National Football League (NFL) players has shown favorable outcomes, football-specific outcomes remain limited especially at the high school or college level. The purpose of this study was to report the return-to-sport (RTS) rates and functional outcomes at a minimum 2-year follow-up for active football players competing at multiple levels after primary hip arthroscopy for FAI.

METHODS: An institutional database was queried to identify all active football players who underwent primary hip arthroscopy with labral repair for FAI from 2010-2023. Demographics, radiographic parameters, and perioperative data including procedure details and reoperations were collected. Follow-up was completed at a minimum of 2 years to obtain updated patient-reported outcome measures (PROMs) as well as football-specific data, including current participation and return-to-play status. PROMs collected included Modified Harris Hip Score (mHHS), Hip Outcome Score (HOS), Tegner Activity Scores, Visual Analogue Scale (VAS) for pain, and a 10-point scale for surgical satisfaction.

RESULTS:

Forty-nine hips in 38 male football players (mean age: 18.1 years, range: 14-26) were included. Most athletes played at the high school (74%) or college level (21%). Notably, 51% of athletes played as linemen, with an even higher proportion among high school players (57% linemen). The mean lateral center edge angle was $31.9^\circ \pm 7.1$, the mean Tönnis angle was $4.3^\circ \pm 4.2$, and the mean alpha angle was $59.8^\circ \pm 12.1$. Labral repair was performed in all 49 cases (100%). Interportal capsulotomy (59%) was more common than T-capsulotomy (41%). Femoroplasty was performed in 49 hips (100%), and acetabuloplasty was performed in 42 hips (86%). Forty-six cases (94%) had primary capsular repair.

At an average follow-up period of 7.6 ± 3.9 years, there was significant improvement in all PROMs from baseline to postoperative ($p \leq 0.002$, **Figure 1**). Final follow-up scores averaged 90.2 (mHHS), 94.5 (HOS-ADL), and 88.7 (HOS-Sport), with surgery satisfaction at 8.7/10 (**Table 1**). Twenty-three (88%) players successfully returned to football. Among them, all resumed play at the same or a higher level compared to their preoperative participation. In total, 15 athletes did not return, however 12 (32%) of these athletes did not return for other non-medical reasons and were excluded from RTS analysis. Other reasons included time constraints or changing priorities, graduating, shifting focus to another sport, and financial limitations (**Figure 2**). Of the 3 athletes who tried to return but couldn't, 2 (8%) did not return due to other injuries and 1 (4%) continued to have hip limitations.

Four hips (8%) underwent reoperation at a mean 4.9 years (range 0.8-12.5 years) postoperative. There were 2 revision hip arthroscopies (4%). One patient underwent revision labral repair for residual cam lesion and heterotopic ossification (HO) excision. The other patient underwent revision labral debridement, pincer resection, and concomitant periacetabular osteotomy (PAO). The remaining 2 reoperations included subsequent PAO and isolated HO excision.

DISCUSSION AND CONCLUSION: Football players undergoing primary hip arthroscopy with labral repair for femoroacetabular impingement demonstrate excellent patient-reported outcomes and a high RTS rate of 88% at a mean 7.6-year follow-up. Notable positional differences are observed across multiple levels of play. While outcomes are favorable, high school and college athletes often face additional non-medical factors that may limit their RTS, despite successful surgical interventions.

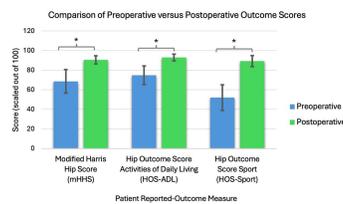


Figure 1. Preoperative versus Postoperative Outcome Scores in Football Players Undergoing Primary Hip Arthroscopy for Femoroacetabular Impingement

Primary Reason for Not Returning to Football After Hip Arthroscopy

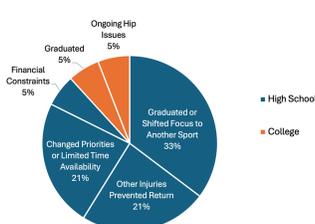


Figure 2. Reasons for Not Returning to Football After Primary Hip Arthroscopy for Femoroacetabular Impingement

Variable	Value*	95% CI
Mean Follow Up (years)	7.6 ± 3.9	
Modified Harris Hip Score (mHHS)	90.2 ± 12.6	[85.2 - 95.1]
Hip Outcome Score (HOS)		
Activities of Daily Living (ADL)	94.5 ± 6.8	[91.8 - 97.2]
Sport	88.7 ± 17.0	[82.0 - 95.4]
Tegner activity level prior to surgery	8.4 ± 1.6	[7.8 - 9.1]
Tegner activity level following surgery	6.0 ± 2.3	[5.9 - 7.8]
VAS pain at rest	1.2 ± 1.7	[0.5 - 1.8]
VAS pain with use	2.2 ± 2.7	[1.1 - 3.2]
VAS pain five-point scale*		
Much worse than before surgery	0	
Slightly worse than before surgery	0	
No change	1	
Slightly better than before surgery	8	
Much better than before surgery	16	
Surgery satisfaction	8.7 ± 1.7	[8.0 - 9.4]

*Values displayed as mean ± standard deviation unless otherwise specified

*Values displayed as number count