Performance and Return to Sport After Hip Arthroscopic Surgery in Major League Baseball Players

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Disclosures

- The authors/presenter have no relevant financial disclosures

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Original Research

Performance and Return to Sport After Hip Arthroscopic Surgery in Major League Baseball Players

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Background

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- Femoroacetabular impingement (FAI) syndrome is a common cause of hip pain
  - CAM
  - PINCER
  - Mixed
- FAI can lead to decreased performance

Purposes

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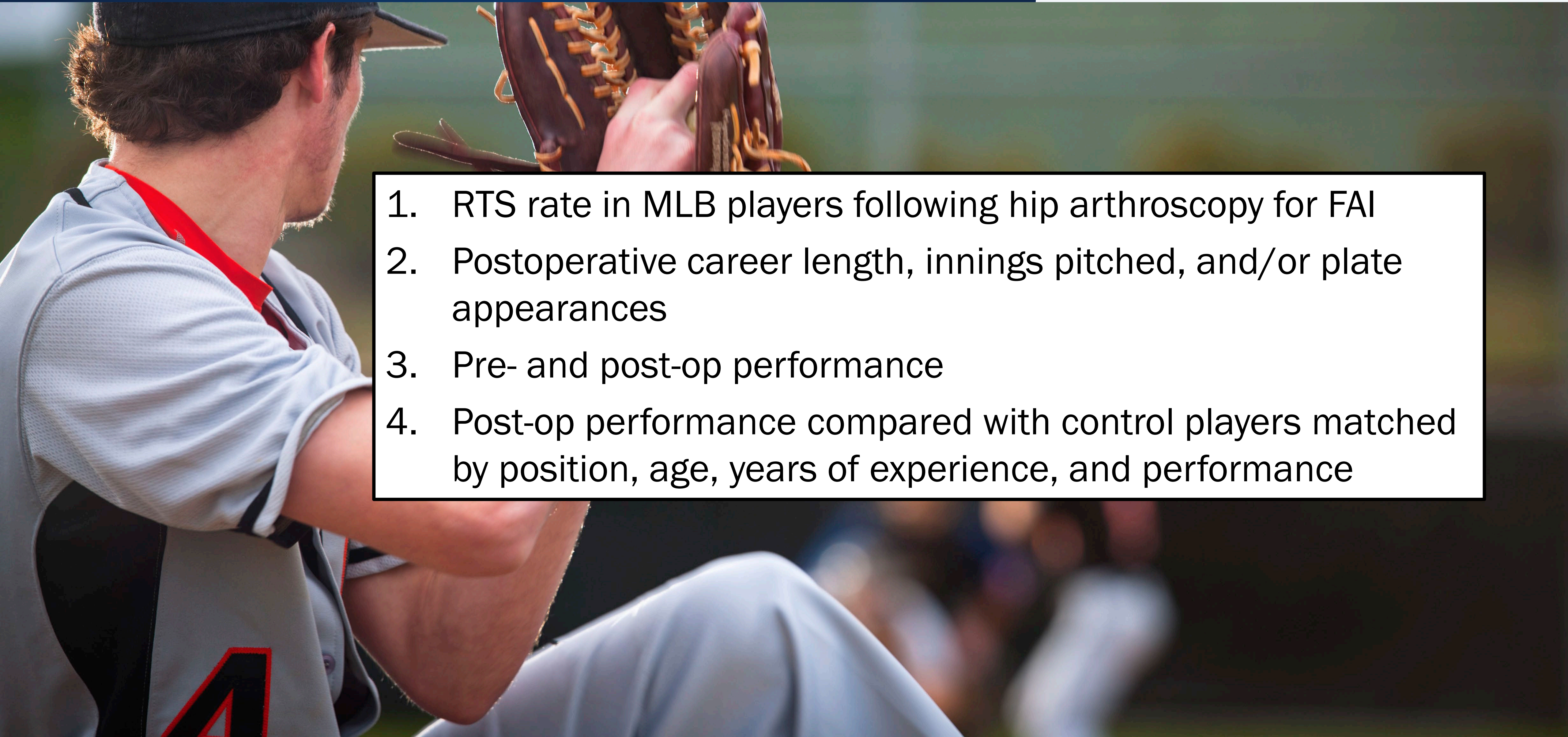

1. RTS rate in MLB players following hip arthroscopy for FAI
2. Postoperative career length, innings pitched, and/or plate appearances
3. Pre- and post-op performance
4. Post-op performance compared with control players matched by position, age, years of experience, and performance

Methods & Results

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- MLB athletes who underwent hip arthroscopic surgery for FAI between 2000-2017
- Return to sport (RTS) = 1 regular-season MLB game after surgery
- 50 players (57 surgeries) were found

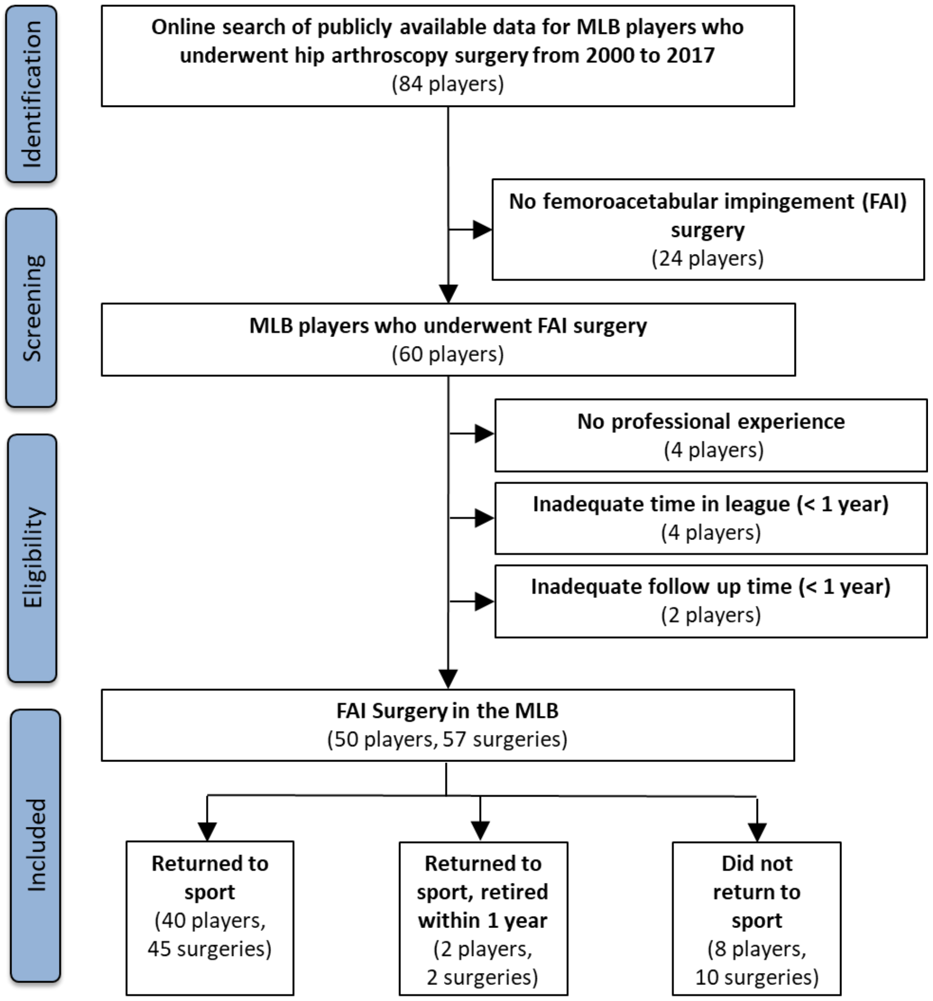


Figure 1. Flowchart illustrating application of exclusion criteria.

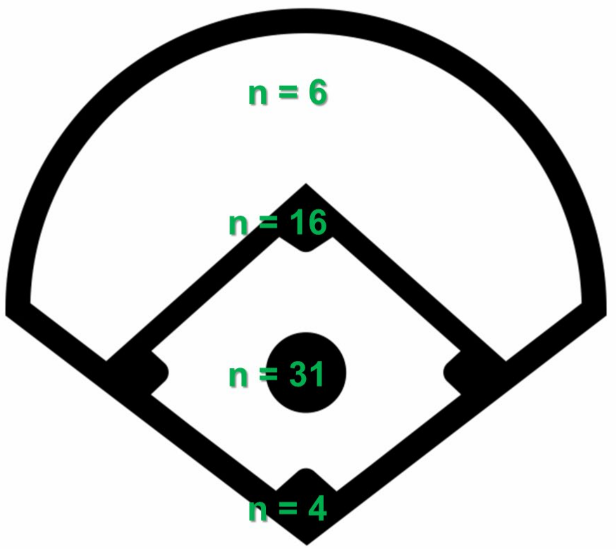
Results: RTS

- Pitchers (31 surgeries; 54.4%) constituted the largest proportion
- Average age 30.4±3.9 yrs old
- Mean MLB experience 7.0±4.6 yrs
- RTS 8.3±4.1 months

- No significant difference in RTS between positions (*P* > 0.007)

Position	n=	RTS Rate, %	Months to RTS
Pitcher	31	77.4	9.5±5.2
Non-Pitchers	26	88.4	7.2±2.2
Catcher	4	75.0	8.2±2.1
Infielder	16	87.5	7.2±2.6
Outfielder	6	100.0	6.6±1.0
Overall	57	82.5	8.3±4.1

Table 1. Time to return to sport (RTS) by position. C = Catcher, IF = infield, OF = outfield.



Results: Survival Rate

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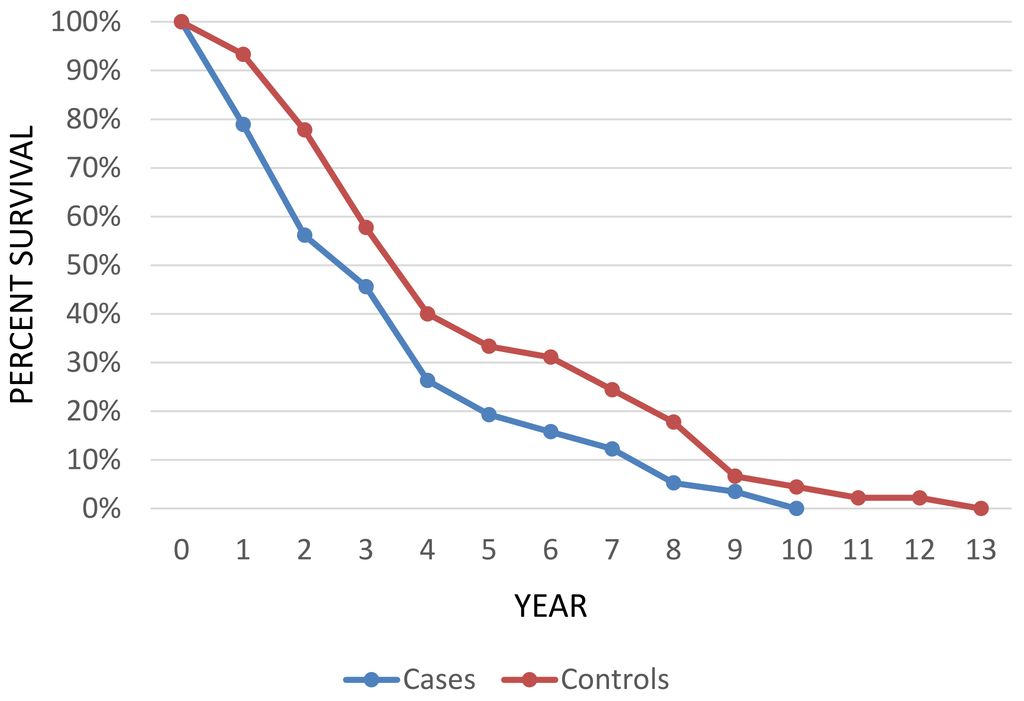
- 78.9% overall 1-year MLB career survival rate for players undergoing FAI surgery
- Control players (4.0±2.9 yr survival) were similar (*P* > 0.007) to players that underwent FAI surgery (3.3±2.4).

Kaplan-Meier survival analysis for cases and controls.



*Zero (0) signifies year of surgery for cases and index year for controls.

Results: Performance

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		Surgery			Control		
Position	Statistic	Pre-op	Post-op	P Value	Pre-index	Post-index	P Value
Pitchers	**IP/s**	76.9±40.4	68.6±44.6	0.413	76.9±47.7	68.2±43.9	0.502
	WHIP	1.38±0.19	1.30±0.35	0.514	1.37±0.19	1.30±0.36	0.945
Non-Pitchers	**PA/s**	382.2±147.7	327.0±168.9	0.100	420.8±145.3	376.8±171.2	0.234
	OPS	.771±.109	.753±.088	0.019	.780±.061	.715±.120	0.003*

Table 2. Statistics for pre-and post-surgery for cases and pre and post-index for controls. P-value as determined by two-tailed paired Student's t-test between pre and post-surgery and pre and post-index. IP/s = innings pitched per season, PA/s = plate appearances per season, WHIP = walks plus hits per innings pitched, and OPS = on base percentage plus slugging percentage. *=statistically significant (p<0.007).

- No significant difference in IP or PA
- No significant performance differences based on RTS time
- Significant decrease (*P*<0.007) of OPS for non-pitcher controls

Results: Positions

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- No significant performance differences (*P > 0.007)*

	Pitchers			Non-Pitchers		
Statistic	Cases	Controls	P Value	Cases	Controls	P Value
No. of Seasons	3.8±2.3	4.8±3.0	0.013	2.9±2.4	3.0±2.5	0.505
IP/s	68.6±44.6	68.2±43.9	0.961			
PA/s				327.0±168.9	376.8±171.2	0.334
WHIP	1.30±0.35	1.30±0.36	0.740			
OPS				.753±.088	.715±.120	0.347

Table 3. Post-surgery and post-index statistics for cases and controls by position. P-value as determined by two-tailed paired Student's t-test. IP/s = innings pitched per season, PA/s = plate appearances per season, WHIP = walks plus hits per innings pitched, and OPS = on base percentage plus slugging percentage.

Limitations

- Publicly available data
- Unable to determine surgeon or exact procedure
  - Rehabilitation characteristics
- Absence of patient-reported outcomes and incomplete follow-up and career length

Conclusions

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- High RTS rate for MLB athletes following hip arthroscopic surgery for FAI
- Similar IP, PA, and career lengths post-op compared to matched controls
- No significant difference in performance for pitchers and non-pitchers compared to pre-op

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