



Achilles Injuries in Major League Soccer: A 10-year Analysis of Injury Rate and Return to Play

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BACKGROUND

- Anterior cruciate ligament (ACL) injuries are significant in Major League Soccer (MLS) athletes, impacting player availability and performance.
- Understanding ACL injury patterns and recovery timelines can help optimize rehabilitation protocols and player management strategies in professional soccer.

PURPOSE

This study analyzes the incidence of ACL injuries and the timelines for return-to-play (RTP).

➔ Examine the incidence of ACL injuries in MLS athletes.

➔ Assess RTP timelines following ACL reconstruction.

➔ Identify factors associated with RTP duration.

➔ Evaluate post-injury performance.

METHODS

- MLS Injury Surveillance database was queried for ACL injuries from 2010-2021.
- ACL injury definition: injury involving ACL, with or without co-ligament involvement, requiring medical attention
- Demographic and injury characteristics were collected for descriptive analysis.
- Matched-cohort design:

- Injured athletes were matched to uninjured controls (1:2 ratio).

- Matching based on position, age, season of injury, and baseline statistics.

- Performance analysis:

- First 4 full seasons post-injury compared to pre-injury baseline

- Statistical analysis:

- Univariate 2-group comparisons performed using independent t-tests.

RESULTS

Table A. Forward Metrics Compared with 1 Year Before Index Year

Player Metrics	Control	Achilles Injury	P-Value
<i>Games Played per Season</i>			
Index Year	0.89 ± 10.23	0.95 ± 9.46	0.334
1 Y After Injury	0.95 ± 11.68	-2.57 ± 9.36	0.065
2 Y After Injury	0.83 ± 7.76	0.36 ± 9.34	0.339
3 Y After Injury	5.45 ± 6.00	-2.90 ± 11.99	0.075
<i>Minutes Played per Season</i>			
Index Year	-63.37 ± 826.46	90.33 ± 882.78	0.566
1 Y After Injury	-76.81 ± 821.66	-202.54 ± 826.76	0.158
2 Y After Injury	-212.83 ± 633.00	-43.7 ± 730.67	0.568
3 Y After Injury	-308.29 ± 1011.29	-158.61 ± 949.35	0.147
<i>Goals per Season</i>			
Index Year	0.63 ± 5.04	0.56 ± 7.04	0.626
1 Y After Injury	-0.42 ± 4.02	-1.29 ± 5.87	0.423
2 Y After Injury	0.51 ± 4.88	-0.01 ± 5.21	0.513
3 Y After Injury	5.38 ± 6.24	-0.95 ± 5.49	0.044
<i>Assists per Season</i>			
Index Year	0.18 ± 3.18	-0.49 ± 2.59	0.154
1 Y After Injury	0.44 ± 2.96	-0.74 ± 3.40	0.094
2 Y After Injury	-1.38 ± 1.81	-0.19 ± 3.82	0.782
3 Y After Injury	-0.76 ± 2.65	-0.19 ± 4.04	0.590

Table C. Defender Metrics Compared with 1 Year Before Index Year

Player Metrics	Control	Achilles Injury	P-Value
<i>Games Played per Season</i>			
Index Year	5.26 ± 7.85	1.29 ± 9.50	0.189
1 Y After Injury	0.56 ± 8.98	-1.35 ± 9.70	0.620
2 Y After Injury	4.79 ± 8.37	-0.96 ± 10.29	0.207
3 Y After Injury	1.66 ± 8.26	-0.63 ± 10.87	0.523
<i>Minutes Played per Season</i>			
Index Year	389.24 ± 731.26	139.82 ± 877.33	0.438
1 Y After Injury	-3.53 ± 807.43	-131.04± 884.49	0.699
2 Y After Injury	397.10 ± 853.91	-102.09 ± 940.37	0.225
3 Y After Injury	187.60 ± 744.71	-51.95 ± 941.52	0.485
<i>Goals per Season</i>			
Index Year	0.61 ± 1.03	0.01 ± 1.11	0.009
1 Y After Injury	-0.05 ± 0.94	0.07 ± 1.26	0.827
2 Y After Injury	0.40 ± 1.25	0.17 ± 1.29	0.425
3 Y After Injury	0.15 ± 0.92	-0.09 ± 0.93	0.384
<i>Assists per Season</i>			
Index Year	-0.04 ± 1.02	0.33 ± 2.08	0.992
1 Y After Injury	-0.36 ± 0.94	0.02 ± 1.65	0.992
2 Y After Injury	-0.61 ± 0.71	-0.36 ± 1.09	0.944
3 Y After Injury	0.14 ± 1.77	-0.10 ± 1.59	0.598

Table B. Midfielder Metrics Compared with 1 Year Before Index Year

Player Metrics	Control	Achilles Injury	P-Value
<i>Games Played per Season</i>			
Index Year	-0.03 ± 9.46	-0.33 ± 9.31	0.556
1 Y After Injury	0.17 ± 11.24	-2.51 ± 9.78	0.233
2 Y After Injury	-4.06 ± 11.17	2.01 ± 8.76	0.967
3 Y After Injury	-2.00 ± 11.33	-0.23 ± 11.29	0.697
<i>Minutes Played per Season</i>			
Index Year	-84.63 ± 944.39	-84.63 ± 885.19	0.657
1 Y After Injury	27.48 ± 884.1	27.48 ± 847.50	0.166
2 Y After Injury	-355.07 ± 1038.79	-355.07 ± 789.78	0.943
3 Y After Injury	-358.38 ± 1021.16	-358.38 ± 1004.56	0.758
<i>Goals per Season</i>			
Index Year	-0.62 ± 3.25	-0.31 ± 3.33	0.629
1 Y After Injury	-0.11 ± 3.27	-0.73 ± 3.04	0.215
2 Y After Injury	0.55 ± 5.94	-0.77 ± 2.26	0.141
3 Y After Injury	-0.53 ± 3.01	-1.07 ± 2.41	0.278
<i>Assists per Season</i>			
Index Year	-0.03 ± 3.28	0.28 ± 3.80	0.740
1 Y After Injury	0.16 ± 2.97	-0.52 ± 3.09	0.293
2 Y After Injury	-0.06 ± 3.07	0.56 ± 3.52	0.738
3 Y After Injury	-0.59 ± 2.55	-0.01 ± 3.49	0.721

Table D. Goalkeeper Metrics Compared with 1 Year Before Index Year

Player Metrics	Control	Achilles Injury	P-Value
<i>Games Played per Season</i>			
Index Year	-0.46± 12.41	-2.92 ± 14.92	0.634
1 Y After Injury	0.15 ± 12.11	-4.92 ± 14.51	0.420
2 Y After Injury	0.03 ± 12.49	-9.98 ± 12.44	0.121
3 Y After Injury	-2.17 ± 10.33	-11.55 ± 11.42	0.124
<i>Minutes Played per Season</i>			
Index Year	-54.46 ± 1110.56	-265.09 ± 1337.08	0.625
1 Y After Injury	-7.76 ± 1082.60	-449.00 ± 1312.98	0.413
2 Y After Injury	-24.40 ± 1116.71	-887.49 ± 1117.54	0.127
3 Y After Injury	-220.27 ± 925.27	-1043.77 ± 1023.79	0.123
<i>Clean Sheets per Season</i>			
Index Year	-0.43 ± 4.40	-0.59±4.38	0.016
1 Y After Injury	-1.87 ± 3.50	-0.17 ± 6.32	0.842
2 Y After Injury	-1.24 ± 3.49	-2.81 ± 4.23	0.176
3 Y After Injury	-0.61 ± 4.07	-2.87 ± 4.16	0.112
<i>Conceded Goals per Season</i>			
Index Year	1.75 ± 17.79	-3.09 ± 21.43	0.607
1 Y After Injury	3.60 ± 19.32	-6.34 ± 18.48	0.317
2 Y After Injury	4.55 ± 19.88	-13.65 ± 12.33	0.052
3 Y After Injury	-2.18 ± 12.03	-16.02 ± 11.49	0.078

Key findings:

- 185 MLS players sustained Achilles tendon injuries (2010-2021); performance was compared to the year prior to injury
- Forwards had significantly fewer goals 3 years post-injury (5.00 vs. 10.75, p = **0.044**)
- Defenders scored fewer goals in the index year (0.62 vs 1.08, p = **0.009**)
- Goalkeepers had significantly fewer clean sheets in the index year (8.38 vs 8.75, p = **0.016**)
- Midfielders showed no significant performance changes post-injury

DISCUSSION

- Achilles injuries in MLS players exhibit varied impacts on RTP and performance across different positions.

- These findings highlight the **position-specific differences** and long-term effects of Achilles injuries on performance.

- Tailored rehabilitation and RTP strategies are essential to mitigate these impacts and support players in achieving optimal recovery.