

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

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INTRODUCTION: Achilles tendon injuries can be debilitating for professional soccer players, leading to prolonged recovery and potential performance declines. This study investigates the incidence, RTP duration, and post-injury performance outcomes of MLS players who sustained Achilles tendon injuries from 2010 to 2021.

METHODS: This retrospective matched-cohort study categorized Achilles tendon injuries as ruptured or non-ruptured (soreness, contusion, inflammation, irritation, sprain, tendinosis, tendonitis) and assessed RTP duration for each group. Uninjured controls were matched 2:1 by age, position, and MLS experience. Multivariate linear regression was performed to identify independent predictors of return-to-play duration, adjusting for age, player position, injury type, mechanism of onset, field type, weather condition, and injury period. Injury incidence, RTP duration, and performance metrics, including games played, minutes played, goals, assists, and defensive contributions, were compared between injured and control cohorts. Statistical analyses set significance at $p < 0.05$.

RESULTS: The mean RTP for ruptured Achilles injuries was 241.1 ± 120.1 days ($N=20$), with no significant difference between 2010–2015 and 2016–2021 ($p = 0.718$). Non-ruptured injuries had a significantly shorter RTP of 14.9 ± 65.9 days ($N=372$). Player age had a significant impact on RTP time, with younger players (≤ 26 years) showing prolonged RTP durations (303.56 ± 112.97 days) compared to older players (>26 years) (168.09 ± 99.66 days; $p = 0.017$). There was no difference in RTP with field type (artificial turf vs. grass). Reinjury rates increased over time but were not statistically significant. Following multivariate analysis, injury type was the only statistically significant factor impacting return-to-play duration, with ruptured Achilles injuries associated with significantly increased time missed compared to non-rupture injuries (95% CI: 171.15–264.11, $p < 0.001$). Forwards with ruptured Achilles injuries exhibited a decline in games played three years post-injury (-9.00 ± 8.49 vs. 3.00 ± 1.73 ; $p = 0.041$). Midfielders with ruptured Achilles injuries scored significantly more goals than controls in the index year (1.00 ± 1.41 vs. -0.43 ± 0.25 ; $p = 0.004$) and significantly less assists than controls (-0.50 ± 2.83 vs. -1.00 ± 2.31 ; $p = 0.024$). Goalkeepers showed significant performance declines in games played in the first-year post-injury (-20.50 ± 16.26 vs. 1.00 ± 1.26 ; $p = 0.050$) and in the second-year post-injury (-31.00 ± 4.24 vs. -3.50 ± 5.85 ; $p = 0.006$) as well as clean sheets post-rupture in the first-year post-injury (-6.01 ± 0.71 vs. -0.75 ± 2.99 ; $p = 0.041$) and second year post-injury (-5.98 ± 0.02 vs. -2.50 ± 2.08 ; $p = 0.024$).

DISCUSSION AND CONCLUSION: Achilles tendon ruptures present a significant recovery burden in MLS players, with notable long-term performance declines, particularly among forwards and goalkeepers. These findings highlight the need for position-specific rehabilitation strategies and structured RTP protocols to optimize recovery and performance retention in professional soccer players.

Professional Soccer Players															
Player Name	Position	Injury Type	RTP Duration (Days)	Player Name	Position	Injury Type	RTP Duration (Days)	Player Name	Position	Injury Type	RTP Duration (Days)	Player Name	Position	Injury Type	RTP Duration (Days)
John Doe	Forward	Ruptured	241.1	John Doe	Forward	Ruptured	241.1	John Doe	Forward	Ruptured	241.1	John Doe	Forward	Ruptured	241.1
John Doe	Forward	Non-ruptured	14.9	John Doe	Forward	Non-ruptured	14.9	John Doe	Forward	Non-ruptured	14.9	John Doe	Forward	Non-ruptured	14.9