

# Epidemiology of Achilles Tendon Ruptures in Professional American Football Players

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## INTRODUCTION:

Achilles tendon ruptures (ATRs) in American football have gained increased attention in recent years. These injuries are associated with a prolonged recovery and can be associated with a significant amount of lost revenue for both players and teams. There is a paucity of literature addressing the specific causes of ATRs in these athletes, as well as the long-term impact on their careers. Accordingly, the current study investigates the epidemiology of Achilles tendon ruptures (ATRs) in National Football League (NFL) players over the last decade.

## METHODS:

A comprehensive search was conducted to identify ATRs occurring during NFL games between 2015-2025. Injury confirmation required the use of two independent sources, such as news reports or interviews. Videos were analyzed to determine the timing and mechanism of each injury. Additionally, publicly available demographic data and statistics were collected to describe injury characteristics and determine whether players returned to play (RTP). Approximate value (AV), a single number previously developed to characterize the seasonal value of a player at any position, was used to characterize performance quality in players who RTP.

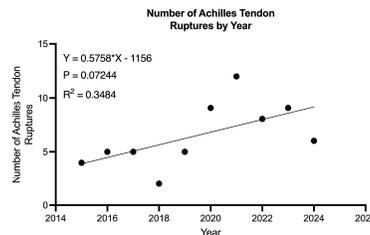
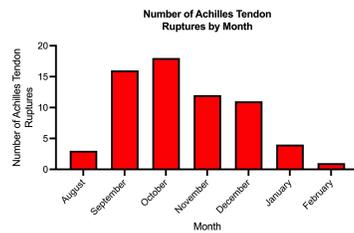
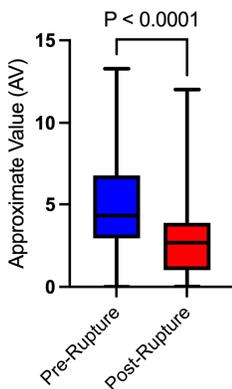
## RESULTS:

A total of 65 ATRs occurred in NFL games between 2015-2025, with 45 injuries available for video analysis (mean age  $27.98 \pm 3.3$  years). Injuries were most common at the beginning of the season, with 27.7% (n=18) of ATRs occurring in October, and 24.6% (n=16) of ATRs occurring in September. Additionally, 55.6% (n=25) of ATRs occurred in the second half of the game. The number of ATRs did not increase significantly throughout the study period ( $R^2=0.35$ ,  $P=.072$ ). Injuries occurred on turf in 55.4% of players (n=36), and 53.1% of teams have turf fields at their home stadium (n=17). Linebackers sustained the greatest proportion of ATRs by position (21.5%; n=14). Of the ATRs available for video review, 55.6% (n=25) occurred via a non-contact mechanism (e.g., rapid change of direction). Players returned to competition at an average of  $10.78 \pm 1.4$  months after injury. However, post-rupture AV was significantly decreased when compared to the players' pre-rupture AV ( $P<0.0001$ ). Of note, 8 (12.3%; mean age 30.1 years) players retired after their injury, with a further 5 (7.6%) pending return after sustaining an ATR in the 2024 NFL season.

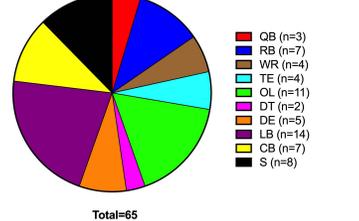
## DISCUSSION AND CONCLUSION:

ATRs in professional American football players are often due to an indirect contact mechanism, and commonly occur early in the season, and in the second half of games. While most players return to NFL-level competition around 11 months after injury, 12% were unable to return after sustaining an ATR. Despite the increased attention paid to ATRs, the trend toward increasing rates was non-significant in NFL athletes. Additionally, the playing surface may not be associated with ATR incidence, as the proportion of injuries on turf fields was almost identical to the proportion of teams playing on turf fields. Planned biomechanical analyses will more discretely characterize injury patterns in these high-level athletes. Further studies are required to determine how athlete-level (e.g., age, position, weight) and scenario-level (e.g., mechanism, timing) affect return-to-play rates and subsequent performance.

**Approximate Value of NFL Players Before and After ATR**



**Achilles Tendon Ruptures by Position**



**Number of Achilles Tendon Ruptures by Mechanism**

