

## **Economic and Performance Analysis of Achilles Tendon Rupture in the National Basketball Association**

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### **ABSTRACT**

Achilles tendon ruptures are common and potentially career-ending injuries for National Basketball Association (NBA) players. Many studies review the impact of Achilles tendon ruptures on return to play (RTP) and performance, but there are no studies on their economic significance. **PURPOSE:** This study aimed to analyze the economic and performance consequences of Achilles tendon ruptures. The financial burden for NBA teams was represented by the cost of recovery (COR) as well as preinjury salary and career success. We hypothesized that players with higher pre-injury salaries or performance would have an increased cost of recovery, higher rates of RTP, and more career success following their injury.

**METHODS:** We analyzed publicly available data of NBA players who suffered an Achilles tendon rupture from 1990 to 2023. Data were retrospectively gathered by R software code to include players' ages, positions, salaries, pre- and post-injury PER, time missed following injury, and RTP. Performance impact was measured by advanced statistics: player efficiency rating (PER), Win Shares per 48 Minutes (WS/48), and Value Over Replacement Player (VORP). Two groups of three cohorts were created: All-Star, Starter, and Reserve versus Group A (<\$3,999,999), Group B (≥\$3,999,999 to ≤\$8,999,999), and Group C (>\$8,999,999). **RESULTS:** 37 players met the inclusion criteria. The mean COR that NBA teams faced was \$4,054,443 per player. The cumulative economic loss from Achilles tendon ruptures in the NBA from 1992-2019 was \$117,578,851. Overall RTP was 78.38%, and 48.88% of players were out of the NBA in 3 years. RTP to the highest playing level was highest in Group B (45.5%), followed by Group A (40%), then Group C (12.5%). The COR of All-Stars, Starters, and Reserves averaged \$5.7 million, \$3.4 million, and \$3 million, respectively. **CONCLUSION:** This study investigated the financial and performance implications of Achilles tendon ruptures among NBA athletes. Most players struggled to restore their pre-injury performance, except for Reserve players who maintained their prior levels. Our findings provide valuable insights into the complexities of Cost of Recovery and post-injury performance.