

The Effects of Anterior Cruciate Ligament Tears on Athletic Performance in the Women's National Basketball Association (2009-2019)



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BACKGROUND

When it comes to research on the impact of injuries in sports at the professional level, studies have mainly focused on male athletes. While these studies provide valuable information, it is uncertain whether the results can be translated to professional female athletes due to the lack of research in this population.

Anterior cruciate ligament (ACL) tears are one of the most common injuries seen in the Women's National Basketball Association (WNBA), however there is little data from this past decade investigating the impact of ACL tears on this population. Between 2015 and 2019, ACL tears was reported to be the third most common injury in WNBA athletes (18/195 or 9%) after lateral ankle sprain and concussion.¹

OBJECTIVE

The purpose of this study is to characterize the epidemiology, return to play (RTP) rate and RTP performance in WNBA athletes who sustained an ACL tear between the 2009 and 2019 seasons.

METHODS

Publicly available WNBA injury reports and reputable sports publications were used to find WNBA athletes who sustained ACL tears over the last decade. To be included in analysis, each injury was confirmed by at least two separate, reliable sources. Return to play performance was determined in athletes who participated in at least one full season before and after their injury. The performance statistics analyzed include number of seasons played, number of games played, number of games started, minutes played, field goal percentage, 2-point percentage, 3-point percentage, free throw percentage, total rebounds, assists, steals, blocks, turnovers, and player efficiency rating (PER) .

RESULTS

We identified 26 ACL tears suffered by 26 WNBA players in the eleven seasons spanning 2009-2019. 20 of these players returned to play, resulting in a RTP rate of 77%. Of those who returned to play after recovering from their ACL tear, steals per game, turnovers per game and player efficiency rating all significantly decreased post-injury as compared to their pre-injury performance. All other performance statistics did not significantly change post-injury.

Table 1. Demographic Data of Players Sustaining ACL Tears*

Age, y	26.2 (22-36, 3.7)
Height, in	71.9 (66-77, 3.0)
Weight, lbs	168.7 (136-200, 19.2)
BMI, kg/m ²	22.9 (20.7-26.4, 1.5)

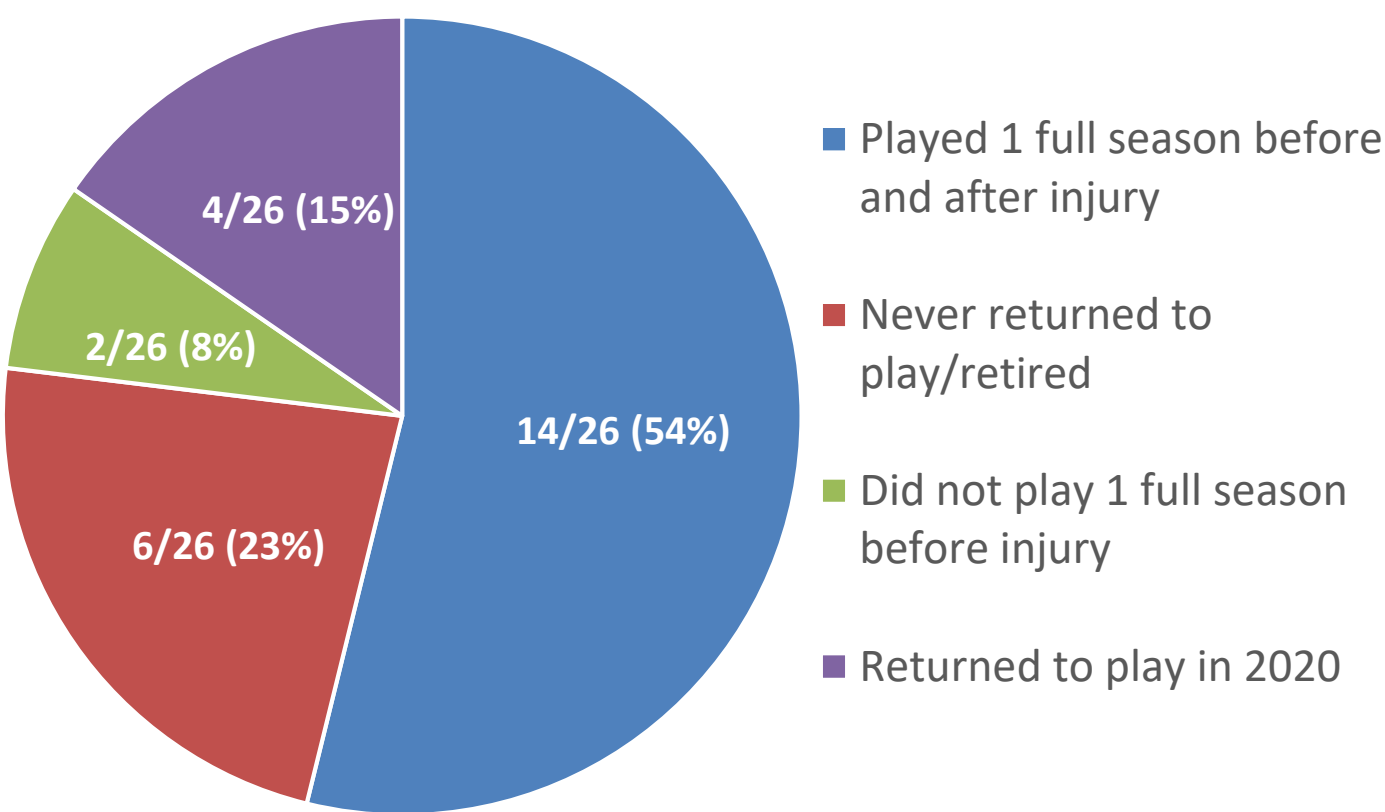
*Values presented as mean (range, SD)

Table 2. Player Performance Statistics

	Before ACL Tear	After Return
Seasons	5.7 ± 4.3	3.1 ± 2.8
Games (per season)	31.7 ± 2.4	29.5 ± 4.2
Starts (per season)	19.0 ± 12.1	19.6 ± 10.6
Minutes played (per game)	23.7 ± 7.5	21.6 ± 7.0
Field Goal Percentage	0.419 ± 0.050	0.425 ± 0.037
2-Point Percentage	0.437 ± 0.061	0.453 ± 0.047
3-Point Percentage	0.307 ± 0.128	0.313 ± 0.113
Free Throw Percentage	0.796 ± 0.076	0.818 ± 0.092
Total Rebounds (per game)	3.4 ± 1.8	2.8 ± 1.2
Assists (per game)	2.1 ± 1.3	2.1 ± 1.4
Blocks (per game)	0.3 ± 0.1	0.3 ± 0.2
Steals (per game)*	1.1 ± 0.5	0.8 ± 0.4
Turnovers (per game)*	1.6 ± 0.7	1.3 ± 0.5
Player Efficiency Rating*	16.5 ± 5.0	14.3 ± 3.9

*Statistically significant difference (p < 0.05)

Figure 1. Return to Play Data



CONCLUSIONS

- A similar study evaluating the effect of ACL tears in the WNBA from 1998 to 2008 found that shooting percentage and steals per game were significantly affected post-ACL tear.²
- Our study also found that steals per game was affected after returning from an ACL tear, but we did not find any changes in shooting percentage.
- The most important finding of our study is that players' efficiency on the court significantly decreases after returning from an ACL tear.
- This information is valuable to players and teams in terms of anticipating the effects of a serious injury.

FUTURE DIRECTIONS

- Continue collecting data on ACL tears in the WNBA
- Create a database consisting of all WNBA injuries
- Determine the performance effects of injuries in WNBA players

REFERENCES

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