

General

Lisfranc Joint Injury: A Comprehensive Review of Rehabilitation Duration in Basketball Athletes

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Introduction

Lisfranc injuries, characterized by abnormal forces on the tarsometatarsal (TMT) joints in the feet, are common foot injuries in athletes. This study aims to evaluate the outcomes of Lisfranc injuries in advanced basketball athletes, including retirement rates and time to return (TTR) to play.

Methods

A retrospective analysis was conducted on advanced basketball athletes who suffered Lisfranc injuries. Data was collected from reputable news sources and cross-referenced for accuracy. The inclusion criteria encompassed multiple basketball leagues, including the NBA, WNBA, NCAA Men's, and NCAA Women's. The study evaluated the number of players who returned to play, their TTR, and the incidence of Lisfranc injuries in each league.

Results

Out of the 22 athletes included in the study, 73% (n=16) returned to play after a Lisfranc injury, while 27% retired from the sport. The average TTR for the athletes who resumed playing was 307 days (10.09 months). The average age of players who returned was 24.6 years, with the NBA having the highest average age of 29.5 years. The incidence of Lisfranc injuries varied across leagues, with the NFL having the highest incidence over a specific time span.

Discussion

The study highlights the significant impact of Lisfranc injuries within the NBA, with a substantial number of players opting for retirement after such injuries. The TTR for basketball athletes was longer compared to other sports, such as the NFL. The physical nature of football may explain the increased incidence of Lisfranc injuries in that sport. The rarity of Lisfranc injuries in basketball poses challenges in conducting statistical analyses, emphasizing the need for larger sample sizes and specific focus on basketball players in future research.

BACKGROUND

Basketball is a physical, contact team sport and the explosive vertical and horizontal movements predispose the foot to traumatic pathology.¹ Lisfranc Joint Injuries are common foot injuries in athletes and occurs when the tarsometatarsal (TMT) joints in the feet experience abnormal forces.² This results in a partial or complete tear, depending on the severity of the injury. The injury causes instability within the arch of the foot, which may lead to chronic pain, a reduction in mobility, and loss of weight bearing ability on the affected foot.^{2,3}

Diagnosis of a Lisfranc injury is typically made with X-ray scans and MRI.⁴ Lisfranc injury causes ligament damage without dislocation of the Lisfranc joint.⁴ For mild Lisfranc injuries, standard of care involves a non-weight bearing cast for approximately two months. For severe Lisfranc injuries including fractures with displaced bones, surgical management through open reduction internal fixation (ORIF) or midfoot fusion are commonly performed to realign the TMT joints.^{2,3} Operative interventions are commonly indicated when injuries feature diastasis ranging from 1 to 3 mm in an unspecified or nonuniform location.⁵ Surgical intervention for Lisfranc injuries in athletes participating in high-demand sports aims to restore joint stabil-

ity, optimize foot function, facilitate earlier return to activity, and minimize the risk of long-term complications.⁶

Understanding the incidence and time to return for basketball players with Lisfranc injuries can assist in providing insight into injury progression and with setting realistic expectations. The purpose of this study was to evaluate the incidence of the Lisfranc Joint Injury and its rehabilitation duration in advanced basketball athletes.

METHODS

Data regarding advanced basketball athletes with Lisfranc Injury in the United States were collected from the 2000-2001 to 2022-2023 season. Initially, news sources such as the *Entertainment and Sports Programming Network (ESPN)*, its affiliated-network articles, and other sports journal articles were used. The search terms “Lisfranc”, “Lisfranc Tear”, and “Lisfranc Injury” were utilized in news source searches to find player injury information. Any information on Lisfranc Injuries experienced by players that was not reported directly by ESPN were cross-examined by at least one more article from alternative data repositories to ensure accuracy. This included multiple local journals rather than larger media platforms and were most used for reported injuries outside of the NBA and WNBA.

Advanced basketball athletes were defined as athletes in the National Basketball Association (NBA), Women’s National Basketball Association (WNBA), National Collegiate Athletic Association Men’s Basketball (NCAAMB), National Collegiate Athletic Association Women’s Basketball (NCAAWB). Athletes that were injured and returned to the same respective league prior to injury were considered in analysis. Athletes that did not return to play, retired, or joined a different league were excluded from time to return analysis. Separate calculations were made to determine the percentage of athletes that suffered this injury and retired from basketball.

Time to return (TTR) refers to the average time missed in days due to the injury. This was determined from the news article that identified dates of injury and return. The date of return refers to the date a player returned to same-league they competed in prior to injury for at least one possession of play. TTR was aggregated for all players and calculated. Each league’s athletes mean TTR was calculated separately.

RESULTS

The study analyzed 22 athletes. Five were from the NBA, two from the WNBA, 10 from NCAAMB, and five from NCAAWB. 6 of 22 (27%) basketball athletes retired after their injury. 16 of 22 (73%) athletes returned with an average missed time of 307 days. [Table 1](#) provides a comprehensive breakdown of injury data and TTR separated by league.

DISCUSSION

Lisfranc Injuries are common among athletes, and currently, there exists a gap in the literature discussing this trauma in the sport of basketball. The analysis revealed that a significant proportion of advanced basketball athletes (27%) who suffered a Lisfranc Injury retired from the sport. These findings serve to be beneficial for team personnel, sports medicine staff, coaches, and players in providing more knowledge of the Lisfranc Injury and its impact. The TMT joint is important for bearing weight and different types of movement can cause different kinds of stress on it.^{2,5} Returning from a Lisfranc injury may require certain changes to be made to a player’s playstyle. This may be beneficial in helping reduce any tension and discomfort felt in the injured foot. Given the high rate (27%) of basketball athletes that retired after this injury, it is possible players may fear reinjury or further long-term complications that may affect life after their career.

73% of players resumed playing. Of these players, the TTR averaged 307 days (equivalent to 10.09 months). In comparison, when this injury occurred in the National Football League (NFL), the TTR was 11.1 months.⁷ Moreover, it is important to note that the football statistics exclusively represent the NFL, while this study evaluated four leagues. Football is generally considered a significantly more physical sport than basketball and may explain the increased incidence of the Lisfranc Injury in the NFL.⁷ In this study, expanding the inclusion criteria to multiple basketball leagues allowed for attaining a larger sample size. This finding emphasizes the uncommon nature of the Lisfranc Injury within the realm of basketball while also posing a potential challenge in conducting statistical analyses. Further research with larger sample sizes and specific focus on basketball players is warranted to gain a more precise understanding of the impact of Lisfranc injuries on retirement rates and time to return in the basketball community.

This study has limitations. At this time, a publicly accessible injury database that provides extensive details about injury for basketball athletes does not exist and thus, reputable news source articles were utilized and cross-referenced to ensure accuracy. Specific data was not present on the severity of each injury or the method of treatment. TTR may be further complicated with time of injury in relation to personal circumstances, the basketball season, and team needs. Players may decide that their best course of action is to retire from the sport for other reasons that are not pertaining to the injury. Players injured towards the end of a season may experience a different set of expectations to return, level of care, or team involvement compared to players who are injured early in the season. This may affect time to recovery. Teams at times voluntarily choose to “rest” players during a season despite a player potentially being ready to make their return due to possible harm to a team’s chemistry.⁸ Team chemistry is important in team sports and organizations may view a player’s return detrimental to team success, thus prolonging the TTR.⁸ Further studies are needed to determine how different injury severity levels and treatment methods impact TTR.

Table 1. Time to return for Advanced Basketball Athletes

League	All Leagues	NBA	WNBA	NCAA Mens	NCAA Womens
Average Time to Return (Days)	307	267.5	355.5	325	342.5
Average Age of players who returned	25.4	29.5	31.5	20.5	20
Total Number of players who returned	16	2	2	8	4
Average Age of all players with Lisfranc Injury (years)	24.6	26.8	31.5	20.6	19.4
Total Numbers of players with Lisfranc Injury	22	5	2	10	5

CONCLUSION

In conclusion, this study emphasizes the significance of Lisfranc injuries within the NBA. A substantial number of NBA players opted for retirement following these injuries, while those who returned faced a prolonged recovery period compared to other sports. These findings underscore the unique challenges NBA athletes encounter when dealing with Lisfranc injuries. Further research is necessary to explore injury severity and treatment. This information is valuable for NBA team personnel, coaches, and players, aiding them in making informed decisions about the impact of Lisfranc injuries on the league.

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CONFLICTS OF INTEREST

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CONSENT STATEMENT

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