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Research article

National Basketball Association Players' Return to Play and Performance After Operative Treatment of Meniscal Tears

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Abstract

Prior studies have examined return-to-play (RTP) rates and performance outcomes following meniscus surgery in professional basketball players but have largely focused on earlier eras. With advancements in surgical techniques, rehabilitation, and player management strategies, updated insights into postoperative outcomes are needed. We hypothesized that National Basketball Association (NBA) players would demonstrate a higher return-to-play (RTP) rate than the ~80% reported in 2010, with short-term performance declines but recovery by the second postoperative season. We also evaluated the impact of age, body mass index (BMI), and position on outcomes. NBA players who sustained isolated meniscal tears and underwent surgery between 2010 and 2023 were identified through public databases. Performance metrics—including games played, minutes per game (MPG), player efficiency rating (PER), and distance covered per game—were assessed preoperatively and at one and two years postoperatively. Multivariable linear regression analyzed associations between age, BMI, position, and outcomes. Of 47 eligible players, 43 (90.7%) returned to NBA play. Players missed a median of 17 ± 34 games postoperatively and continued their careers for an average of 4.7 ± 3.4 seasons. The percentage of games played per season significantly declined at one (60.9%, $p < 0.001$) and two years (64.2%, $p < 0.01$) postoperatively versus pre-injury (79%), a novel finding. MPG and PER declined at one year (22.3 vs. 26.0, $p = 0.02$; 14.6 vs. 16.4, $p = 0.04$) but recovered by year two (23.8 MPG, 15.8 PER; both $p > 0.1$). Older age correlated with reduced games played, MPG, and PER. BMI and position had no significant impact. NBA players demonstrate high RTP rates after meniscus surgery. While playing time and efficiency recover by year two, reduced availability persists, likely reflecting ongoing workload management strategies.

Key words: NBA, basketball, knee, meniscus, performance, postoperative outcomes.

Introduction

Professional basketball, epitomized by the National Basketball Association (NBA), demands exceptional athleticism and exposes players to substantial musculoskeletal stress - especially on the knee. The sport's high-intensity actions such as running, pivoting, cutting, and jumping place the knee at considerable risk of injury.(Baker et al., 1985; Krinsky et al., 1992) Epidemiologic studies in elite athletes have demonstrated that knee injuries are not only common but are also associated with significant time lost from play and, in some cases, diminished career longevity.(Poulsen and Johnson, 2011; Yeh et al., 2012) In this context, injuries affecting the meniscus have drawn particular attention because they may compromise knee stability and alter the kinetic chain, thereby impacting overall performance.(Aune et al., 2014; Minhas et al., 2016).

Numerous investigations have evaluated the impact of operative treatment on performance following major knee injuries and lower extremity surgeries.(Starkey, 2000; Busfield et al., 2009; Drakos et al., 2010; Harris et al., 2013b; a; Minhas et al., 2016; Trofa et al., 2017) In particular, anterior cruciate ligament (ACL) tears have been extensively studied in various athletic populations. Studies of ACL reconstruction have consistently reported decreases in game participation and efficiency metrics in professional and collegiate athletes.(Busfield et al., 2009; Shah et al., 2010; Brophy et al., 2012; Harris et al., 2013a) These findings not only underscore the importance of optimal treatment and rehabilitation protocols but also illustrate how injury-specific analyses can inform expectations regarding return-to-play.

Although meniscal injuries represent a small but significant subset of knee injuries among NBA players, they can have significant implications for player performance and career longevity. A 2022 systematic review of professional men and women's basketball injuries found that the mean annual incidence of meniscal tears in professional basketball was 2.3 - 3.3 injuries per year.(Lian et al., 2022) Prior studies in an NBA sample have reported RTP rates ranging from 80.6% to 81.5%, with no significant long-term declines in games played, minutes per game, and key performance metrics such as PER.(Yeh et al., 2012; Minhas et al., 2016) However, these studies were primarily conducted in earlier decades, did not distinguish whether injuries were treated operatively versus nonoperatively, and may not reflect the current state of basketball and impact of modern surgical techniques, rehabilitation protocols, and evolving load management strategies.(Bansal et al., 2021; Cong et al., 2024).

This study aims to provide an updated analysis of meniscus surgery outcomes and assess the effect that surgery has on various performance metrics among NBA players between the 2009 - 2010 to 2022 - 2023 seasons. Specifically, we compare return to play (RTP), minutes per game (MPG), player efficiency rating (PER), games per season, and distance covered between the season preceding injury and seasons following surgery. We hypothesize that while surgical intervention enables a return to professional play, it is associated with significant changes in these performance outcomes. By correlating surgical results with detailed performance metrics and demographic factors, our study seeks to provide insights that may enhance clinical decision-making and inform athletic management in professional sports.

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Methods

Data collection and study population

This study utilized publicly available injury reports, press releases, and player profiles to identify professional NBA athletes who sustained an isolated meniscal tear between 2010 and 2023. To be included in the study, athletes must have completed at least one full year of professional play prior to their injury. Players in their rookie years or earlier and those with concomitant injuries were excluded. Demographic, play time, and performance-related data were obtained through mining online databases and publicly available sports statistics websites, as done in many previous epidemiological studies.(Amin et al., 2013; Podlog et al., 2015; Minhas et al., 2016) Examples of websites used include http://www.nba.com, http://espn.go.com/nba/, https://www.prosportstransactions.com/basketball/, and https://hashtagbasketball.com/nba-injury.

Variables and outcomes

The demographic information collected for each athlete included body mass index (BMI), weight, height, position, and age at the time of injury. The primary outcome of the study was return to play (RTP), which was strictly defined as professional participation in at least one NBA game in the season following injury and surgery. Additionally, the proportion of games played before and after surgery was assessed to evaluate the impact of the injury and subsequent surgical intervention. Only unique athletes were included in the study; thus, if player had a meniscus tear in the contralateral knee, only their primary tear was included.

Secondary outcomes included play time and performance metrics. Play time measurements consisted of minutes per game (MPG), player efficiency rating (PER), and distance covered during games. The PER is a standardized metric used in basketball analysis to evaluate player performance by summing positive contributions, such as points, rebounds, and steals, while subtracting negative contributions, such as turnovers and fouls. PER is normalized to 15 each season and calculated per minute to control for playing time.

Performance metrics and play time statistics were analyzed for the season preceding the injury (preoperative season) and one and two years postoperatively. The season in which injury and surgery occurred was considered to be the index season. The preseason/offseason was considered the "index season" if surgery occurred during this time period.

Statistical analysis

Statistical analyses were conducted using R version 2023.09.1 (Boston, MA). Differences in performance and play time metrics before and after the injury were assessed using a two-tailed paired t-test with a level of significance set at $\alpha = 0.05$. We calculated that a sample size of 34 would achieve a power of 80% and a level of significance of 5% for detecting an effect size of 0.5 between pairs.

To explore the influence of player-specific factors on postoperative outcomes, a linear regression analysis was performed. This model evaluated the effects of age, BMI, and position on changes in MPG, PER, distance covered, and the proportion of games played two years post- versus pre-injury.

Results

A total of sixty-one NBA players were identified as having had operative management of a meniscus tear between the 2009 - 2010 and 2022 - 2023 seasons. After applying the inclusion criteria, forty-seven players were included in the study (Figure 1). Reasons for exclusion included confounding injuries (n = 3), such as ACL and patellar tendon tears, and sustaining the injury during their rookie season or earlier (n = 11).

Among the forty-seven players included who underwent surgical treatment, forty-three players (90.7%) successfully returned to play at the NBA level. Of those who returned to sport, the average body mass index (BMI) was 25.2 ± 1.9 kg/m^2, with a mean height of 199.6 ± 9.9 cm and weight of 100.7 ± 13.0 kg (Table 1).

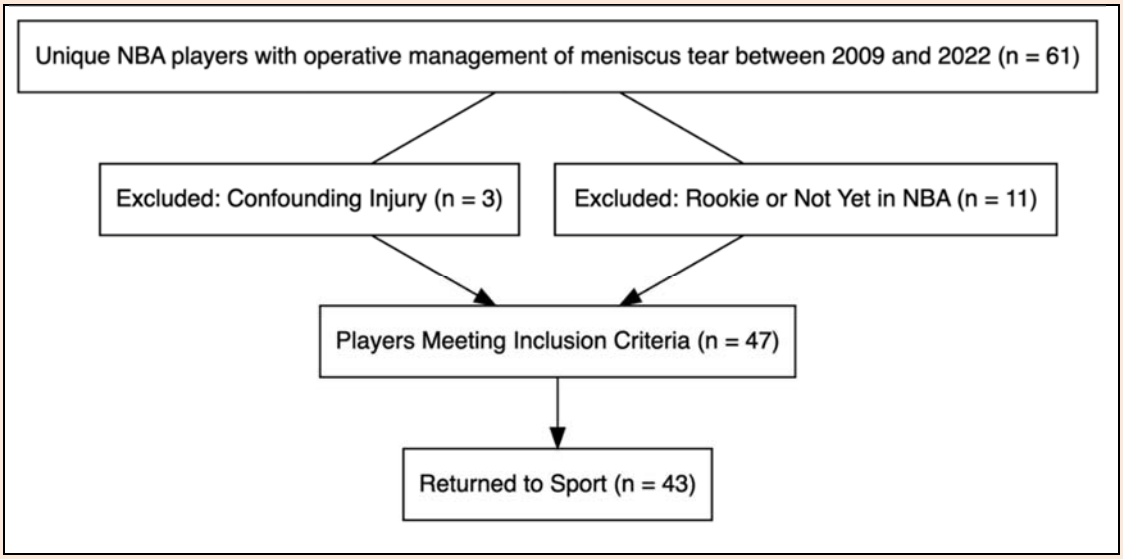

Figure 1. Flow diagram of players included in study.

Table 1. Demographics of players returning to play.

Variable	Count (%) / Mean (SD) (n = 43)
Height (cm)	199.6 (9.9)
Weight (kg)	100.7 (13.0)
BMI	25.2 (1.9)
Position	
Point Guard	13 (30.2%)
Shooting Guard	6 (14.0%)
Small Forward	10 (23.3%)
Power Forward	5 (11.6%)
Center	9 (20.9%)
Laterality of Meniscus Tears	
Left Knee	24 (55.8%)
Right Knee	19 (44.2%)
Meniscus Tear Location	
Lateral	20 (46.5%)
Medial	9 (20.9%)
Unknown	14 (32.6%)

On average, knee arthroscopy for a torn meniscus occurred in athletes aged 27.0 ± 4.1 years, with athletes missing a median of 17 ± 34 [0 - 206] games following surgery (Figure 2). Athletes who returned to sport did so for an average of 4.7 ± 3.4 [1 - 15] seasons (Figure 2). Twelve players (27.9%) were still active at the start of the 2024-2025 season. Additionally, nine players (20.9%) underwent subsequent revision arthroscopy on the ipsilateral knee during the study period. Of the four players who did not return to the NBA, three went on to play internationally while one played in the G-league. Compared to those who RTP, these players were younger at the time of surgery (22.4 ± 1.4 years) and only played two NBA seasons on average, suggesting that factors other than injury were preventing them from returning to play in the NBA.

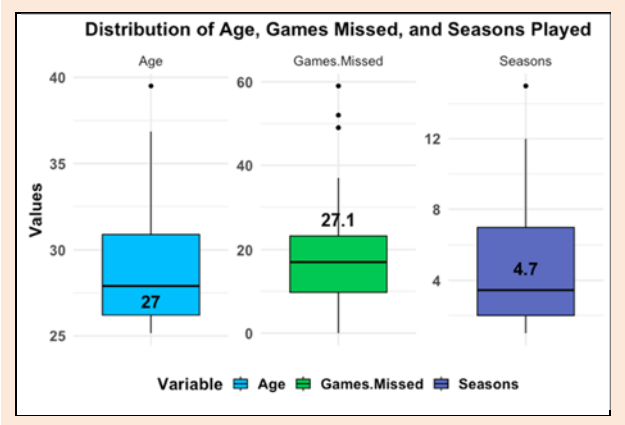

Figure 2. Box plot of players' mean age at injury, postoperative games missed, and postoperative seasons played.

Among athletes who underwent surgery and returned to play, a significant decrease was observed in the percentage of games played per season at both one (60.9%, $p < 0.001$) and two years (64.2%, $p < 0.01$) postoperatively, compared to preoperative baseline values (79%). Minutes per game (MPG) also showed a significant decline at one year, dropping from 26.0 preoperatively to 22.3 at one year ($p = 0.02$) but not at two years postoperatively (23.8, $p = 0.14$) (Figure 3). When evaluating performance statistics among all NBA players returning to play, PER was significantly lower at one year postoperatively (14.6, $p = 0.04$) but not at two years postoperatively (15.8, $p = 0.14$), compared to the preoperative baseline (16.4). Similarly, distance covered per game significantly decreased from 1.95 miles preoperatively to 1.67 miles at one year postoperatively ($p = 0.02$). However, by two years postoperatively, the distance covered per game (1.72 miles) was no longer significantly different from baseline ($p = 0.08$).

In our multivariable linear regression analysis, neither position nor BMI showed a significant association with the primary or secondary outcomes (Table 2). However, age at the time of surgery was significantly associated with changes in the percentage of games played, MPG, and PER two years' post-surgery (Table 2). Specifically, for each additional year of age at the time of surgery, athletes played an average of 4.5% fewer games, 1.7 fewer minutes per game, and experienced a 0.7 decline in PER.

Discussion

Our study examined RTP outcomes following knee arthroscopy for meniscus tears in NBA players, revealing a RTP rate of 90.7%. However, significant reductions were observed in games played one and two years postoperatively. By the second year, players returned to their pre-injury MPG, PER, and distance covered per game. Lastly, age was identified as a significant factor associated with decreased availability and performance.

Compared to the previous literature, our study demonstrates a higher return to play (RTP) rate of 90.7%. A study of 129 isolated meniscal tears in NBA athletes from 1988-2010 identified an RTP rate of 80.6%, while another investigation of 54 meniscus tears in NBA players between 1984 and 2012 reported an RTP rate of 81.5%.(Yeh et al., 2012; Minhas et al., 2016) These previous studies primarily examined cases from the 1990s and 2000s, whereas our study extends to the 2022-2023 season, offering valuable insight into how modern advancements in meniscus treatment may influence postoperative outcomes. Over the past decade, there has been a growing shift toward meniscal preservation in recognition of the meniscus's crucial role in knee function, reflected in the increasing adoption of meniscus repair techniques, despite repairs still comprising a relatively small proportion (10 - 15%) of all meniscal procedures.(Beaufils and Pujol, 2017; Chung et al., 2019; Lee et al., 2019) Advances in surgical techniques, including novel suturing methods and all-inside repair devices, have contributed to improved repair success rates.(Feucht et al., 2015; Cinque et al., 2017) Additionally, emerging biological and biomaterial-based strategies, such as growth factor augmentation and scaffold implants, are being explored to enhance meniscal healing and long-term joint preservation. (Lee et al., 2014; Patel et al., 2016; Pereira et al., 2019) Younger patient age, similar to that of our study cohort, is associated with a higher likelihood of repair over debridement.(Wasserburger et al., 2021).

In contrast to the stable postoperative PER reported in prior studies, our findings indicate a significant decrease in PER during the first operative season. However, by two

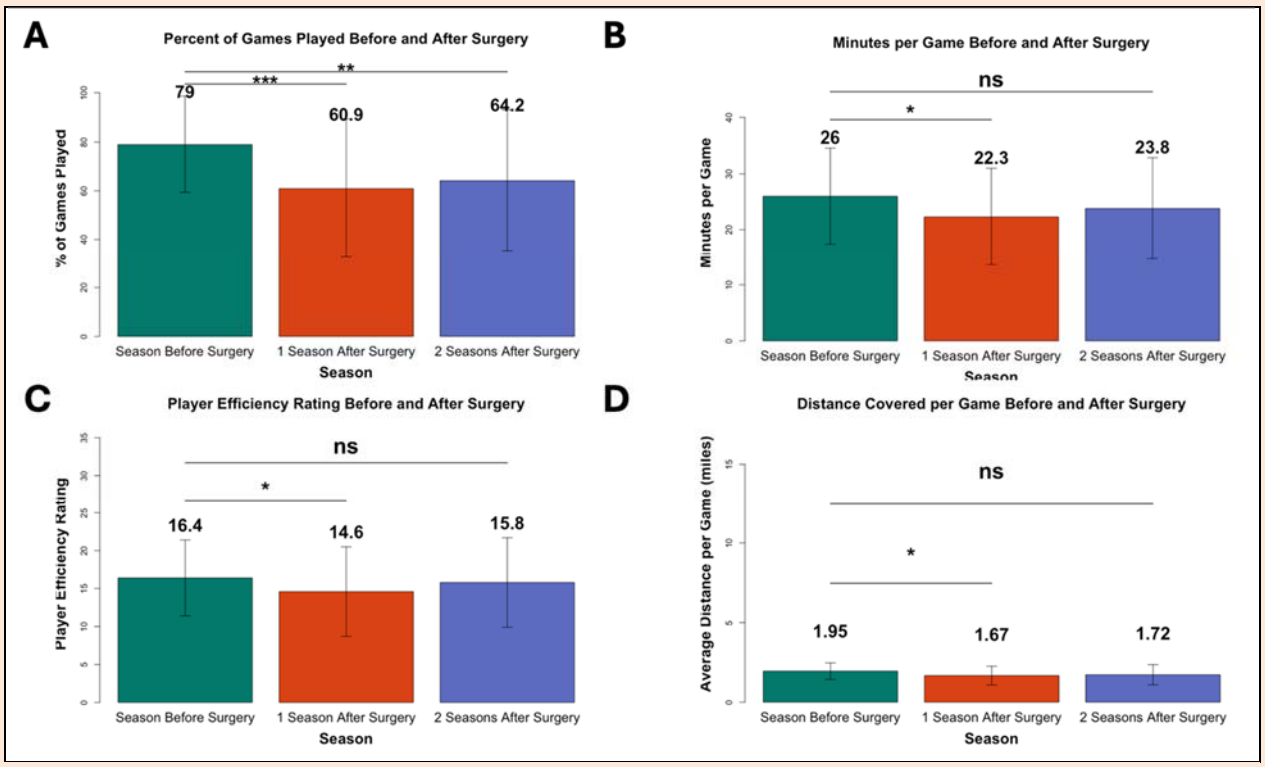

Figure 3. Postoperative availability and performance outcomes. The paired t-test compares A) the percentage of games played, B) the minutes per game, C) the player efficiency rating, and D) the distance covered per game preoperative season versus one- and two-year postoperatively. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Table 2. Multivariable Linear Regression of Postoperative Outcomes at Two Years.

Variable	Percent of Games Played Estimate (95% CI)	p-value	MPG Estimate (95% CI)	p-value	PER Estimate (95% CI)	p-value	Distance per Game Estimate (95% CI)	p-value
Position								
Point Guard	18.2 (-15.9, 52.3)	0.29	1.4 (-6.6, 9.5)	0.72	0.4 (-3.7, 4.4)	0.86	-0.1 (-0.9, 0.7)	0.78
Shooting Guard	-11.9 (-58.9, 35)	0.61	-1.4 (-11.6, 8.6)	0.79	1.3 (-4.0, 6.6)	0.61	0.6 (-0.4, 1.5)	0.20
Small Forward	-3.1 (-39.9, 33.8)	0.87	4.8 (-3.8, 13.4)	0.26	1.5 (-3.0, 6.0)	0.50	0.2 (-0.6, 0.9)	0.64
Power Forward	3.5 (-38.9, 35.8)	0.87	-3.6 (-13.0, 5.7)	0.43	-1.0 (-5.8, 3.8)	0.68	-0.4 (-1.4, 0.5)	0.36
Center	Ref	–	Ref	–	Ref	–	Ref	–
BMI	0.6 (-5.9, 7.1)	0.85	0.7 (-0.9, 2.4)	0.37	0.4 (-0.5, 1.3)	0.35	-0.1 (-0.3, 0.0)	0.11
Age	-4.5 (-7.8, -1.3)	**<0.001**	-1.7 (-2.5, -0.8)	**<0.001**	-0.7 (-1.1, -0.3)	**0.002**	-0.1 (-0.2, 0.1)	0.24

years postoperatively, performance levels were comparable to pre-injury baselines. This suggests that while athletes may experience a temporary decline in performance following surgery, they are likely to regain their pre-injury level of play once they have fully returned to competition. This insight can be valuable for team management, coaching, and training staff when setting recovery expectations and developing rehabilitation protocols. The overall finding of no long-term change in on-court performance aligns with existing literature, reinforcing the notion that surgical intervention does not compromise an athlete's career trajectory.(Yeh et al., 2012; Minhas et al., 2016) However, our study is unique in identifying this initial performance dip, highlighting a critical period during which targeted rehabilitation and workload management may be particularly beneficial in optimizing recovery.

Notably, we observed that the total number of postoperative seasons played after meniscus surgery was higher compared to a previous study examining an earlier three-decade period in the NBA (4.7 ± 3.4 vs 3.2 ± 0.51, p = 0.002).(Minhas et al., 2016) Additionally, we identified a significant decrease in percent of games played at one and two seasons postoperatively, which is in contrast to previous studies. This suggests a shift in player management strategies, where athletes are taking more games off in the short term, potentially as a proactive measure to prolong their careers and optimize long-term performance. This is consistent with what would be expected in this new era of "load management." Load management is defined as scheduled periods of rest to reduce the physiological load a player endures during the season to promote career longevity and mitigate injury.(Jildeh, 2024) In fact, the NBA released a report that showed that between the 1990s and 2020s, the average number of games missed per season by those defined as star players rose from 10.6 games to now 23.9 games. Of the top 50 scorers in the 2022 - 2023 NBA season, only 12 played in at least 70 of the league's 82 regular-season games.

Previous research indicated that lateral meniscus tears were more common than medial tears in NBA

players.(Yeh et al., 2012) Our study supported this trend, with lateral meniscus injuries accounting for 47% of cases compared to 21% for medial meniscus injuries. We found a nearly equal distribution of left (45%) and right (55%) knee injuries, consistent with Yeh et al., who also reported a near-even split.(Yeh et al., 2012) This contrasts with an earlier study that found 80% of knee injuries occurred on the right side in basketball players from the general population.(Baker et al., 1985; Yeh et al., 2012) We agree with their assessment that the high level of conditioning in professional athletes minimizes reliance on a dominant knee.

Older age, but not BMI, was linked to a reduction in games played, minutes per game, and PER following surgery. While prior studies have not specifically examined the impact of age and BMI on postoperative outcomes in NBA players with meniscus tears, existing research has associated a BMI over 25 kg/m² with an increased risk of meniscal tears.(Yeh et al., 2012) Additionally, age ≥ 30 years and BMI ≥ 27 kg/m² have been identified as predictors of failure to return to play after orthopaedic procedures.(Minhas et al., 2016) In our analysis, we treated age and BMI as continuous variables, allowing us to quantify how each additional year of age influences games missed and performance metrics. These findings offer valuable insights for teams and players when considering recovery timelines and long-term career planning.

Interestingly, position was not shown to significantly influence postoperative outcomes. This has not been previously studied in relation to outcomes following meniscus surgery. Instead, a previous study of NFL players found lower rates of return following meniscus surgery among running backs, receivers, linebackers, and defensive backs.(Aune et al., 2014) This may stem from the new style of "positionless" basketball. In the last decade, the gameplan philosophies employed by teams in the NBA have changed substantially, resulting in athletes playing multiple positions and initiating similar movements.

Limitations

This study has several limitations. We were unable to obtain specific details regarding surgical techniques, rehabilitation protocols, and the grade and type of meniscus tears. The inability to distinguish between meniscectomy and meniscal repair limits our ability to evaluate the impact of surgical approach on performance outcomes. However, our study only considers surgical outcomes, analysis which has previously been limited in the literature; this data can help inform athletes and training staff about expectations. Additionally, we could not control for confounding factors that may have influenced RTP and performance, including differences in the presence of minor or unreported injuries, and non-injury related reasons that led to retirement. Selection bias may also be present; as more prominent players were easier to track for inclusion in our dataset. We included the 2020 COVID-affected season in our analysis, acknowledging several potential confounders such as disruptions in training routines, game schedules, travel, diet, and contact tracing protocols. However, adjustments were made to account for the reduced number of games, similar to the approach we used to analyze data from the shortened 2011 - 2012 lockout season. Finally, the reliance on publicly available data limits our ability to verify the accuracy and completeness of the dataset.

Further research should aim to distinguish between meniscus repair versus meniscectomy and their impact on RTP and performance. Expanding the dataset to include a larger cohort and incorporating medical records for more granular analysis would enhance the reliability of findings. Additionally, exploring rehabilitation protocols and workload management strategies will be crucial in optimizing RTP outcomes for professional basketball players.

Conclusion

Our study provides updated insights into RTP outcomes following meniscus surgery in NBA players, demonstrating a high RTP rate but decreased postoperative game availability; however, we only identified a temporary performance decline in the first postoperative season. While previous studies have suggested lower RTP rates and postoperative career durations, improvements in treatment and rehabilitation may account for the more favorable outcomes observed in our cohort. Addressing existing knowledge gaps through further research will help optimize recovery strategies and enhance player longevity in professional basketball.

Acknowledgements

The experiments comply with the current laws of the country where they were performed. The authors have no conflict of interest to declare. The datasets generated during and/or analyzed during the current study are not publicly available but are available from the corresponding author who organized the study.

References

Amin, N.H., Old, A.B., Tabb, L.P., Garg, R., Toossi, N. and Cerynik, D.L. (2013) Performance outcomes after repair of complete achilles tendon ruptures in national basketball association players. *The American Journal of Sports Medicine* **41**, 1864-1868. https://doi.org/10.1177/0363546513490659

Aune, K.T., Andrews, J.R., Dugas, J.R. and Cain, E.L. (2014) Return to Play After Partial Lateral Meniscectomy in National Football League Athletes. *The American Journal of Sports Medicine* **42**, 1865-1872. https://doi.org/10.1177/0363546514535069

Baker, B.E., Peckham, A.C., Pupparo, F. and Sanborn, J.C. (1985) Review of meniscal injury and associated sports. *The American Journal of Sports Medicine* **13**, 1-4. https://doi.org/10.1177/036354658501300101

Bansal, S., Floyd, E.R., A Kowalski, M., Aikman, E., Elrod, P., Burkey, K., Chahla, J., LaPrade, R.F., Maher, S.A., Robinson, J.L., Patel, J.M. (2021) Meniscal repair: The current state and recent advances in augmentation. *Journal of Orthopaedic Research* **39**, 1368-1382. https://doi.org/10.1002/jor.25021

Beaufils, P. and Pujol, N. (2017) Management of traumatic meniscal tear and degenerative meniscal lesions. Save the meniscus. *Orthopaedics & Traumatology: Surgery & Research* **103**, 237-244. https://doi.org/10.1016/j.otsr.2017.08.003

Brophy, R.H., Schmitz, L., Wright, R.W., Dunn, W.R., Parker, R.D., Andrish, J.T., McCarty, E.C., Spindler, K.P. (2012) Return to Play and Future ACL Injury Risk After ACL Reconstruction in Soccer Athletes From the Multicenter Orthopaedic Outcomes Network (MOON) Group. *The American Journal of Sports Medicine* **40**, 2517-2522. https://doi.org/10.1177/0363546512459476

Busfield, B.T., Kharrazi, F.D., Starkey, C., Lombardo, S.J. and Seegmiller, J. (2009) Performance Outcomes of Anterior Cruciate Ligament Reconstruction in the National Basketball Association. *Arthroscopy: The Journal of Arthroscopic & Related Surgery* **25**, 825-830. https://doi.org/10.1016/j.arthro.2009.02.021

Chung, K.S., Ha, J.K., Kim, Y.-S., Kim, J.H., Ra, H.J., Kong, D.H., Wang, P.W., Choi, C.H., Kim, J.G. (2019) National Trends of

Meniscectomy and Meniscus Repair in Korea. *Journal of Korean Medical Science* **34**. https://doi.org/10.3346/jkms.2019.34.e206

Cinque, M.E., Geeslin, A.G., Chahla, J., Dornan, G.J. and LaPrade, R.F. (2017) Two-Tunnel Transtibial Repair of Radial Meniscus Tears Produces Comparable Results to Inside-Out Repair of Vertical Meniscus Tears. *The American Journal of Sports Medicine* **45**, 2253-2259. https://doi.org/10.1177/0363546517704425

Cong, T., Reddy, R.P., Hall, A.J., Ernazarov, A. and Gladstone, J. (2024) Current Practices for Rehabilitation After Meniscus Repair: A Survey of Members of the American Orthopaedic Society for Sports Medicine. *Orthopaedic journal of Sports Medicine* **12**. https://doi.org/10.1177/23259671231226134

Drakos, M.C., Domb, B., Starkey, C., Callahan, L. and Allen, A.A. (2010) Injury in the national basketball association: a 17-year overview. *Sports Health* **2**, 284-290. https://doi.org/10.1177/1941738109357303

Feucht, M.J., Kühle, J., Bode, G., Mehl, J., Schmal, H., Südkamp, N.P., Niemeyer, P. (2015) Arthroscopic Transtibial Pullout Repair for Posterior Medial Meniscus Root Tears: A Systematic Review of Clinical, Radiographic, and Second-Look Arthroscopic Results. *Arthroscopy: The Journal of Arthroscopic & Related Surgery* **31**, 1808-1816. https://doi.org/10.1016/j.arthro.2015.03.022

Harris, J.D., Erickson, B.J., Bach, B.R., Abrams, G.D., Cvetanovich, G.L., Forsythe, B., McCormick, F.M., Gupta, A.K., Cole, B.J. (2013a) Return-to-Sport and Performance After Anterior Cruciate Ligament Reconstruction in National Basketball Association Players. *Sports Health: A Multidisciplinary Approach* **5**, 562-568. https://doi.org/10.1177/1941738113495788

Harris, J.D., Walton, D.M., Erickson, B.J., Verma, N.N., Abrams, G.D., Bush-Joseph, C.A., Bach, B.R., Cole, B.J. (2013b) Return to Sport and Performance After Microfracture in the Knees of National Basketball Association Players. *Orthopaedic Journal of Sports Medicine* **1**. https://doi.org/10.1177/2325967113512759

Jildeh, T.R. (2024) Editorial Commentary: Load Management Is Essential to Prevent Season-Ending Injuries in the National Basketball Association. *Arthroscopy: The Journal of Arthroscopic & Related Surgery* **40**, 2474-2476. https://doi.org/10.1016/j.arthro.2024.02.024

Krinsky, M.B., Abdenour, T.E., Starkey, C., Albo, R.A. and Chu, D.A. (1992) Incidence of lateral meniscus injury in professional basketball players. *The American Journal of Sports Medicine* **20**, 17-19. https://doi.org/10.1177/036354659202000105

Lee, W.Q., Gan, J.Z.-W. and Lie, D.T.T. (2019) Save the meniscus - Clinical outcomes of meniscectomy versus meniscal repair. *Journal of Orthopaedic Surgery* **27**. https://doi.org/10.1177/2309499019849813

Lee, C.H., Rodeo, S.A., Fortier, L.A., Lu, C., Erisken, C. and Mao, J.J. (2014) Protein-releasing polymeric scaffolds induce fibrochondrocytic differentiation of endogenous cells for knee meniscus regeneration in sheep. *Science Translational Medicine* **6**. https://doi.org/10.1126/scitranslmed.3009696

Lian, J., Sewani, F., Dayan, I., Voleti, P.B., Gonzalez, D., Levy, I.M., Musahl, V., Allen, A. (2022) Systematic Review of Injuries in the Men's and Women's National Basketball Association. *The American Journal of Sports Medicine* **50**, 1416-1429. https://doi.org/10.1177/03635465211014506

Minhas, S. V., Kester, B.S., Larkin, K.E. and Hsu, W.K. (2016) The Effect of an Orthopaedic Surgical Procedure in the National Basketball Association. *The American Journal of Sports Medicine* **44**, 1056-1061. https://doi.org/10.1177/0363546515623028

Patel, J.M., Merriam, A.R., Culp, B.M., Gatt, C.J. and Dunn, M.G. (2016) One-Year Outcomes of Total Meniscus Reconstruction Using a Novel Fiber-Reinforced Scaffold in an Ovine Model. *The American Journal of Sports Medicine* **44**, 898-907. https://doi.org/10.1177/0363546515624913

Pereira, H., Fatih Cengiz, I., Gomes, S., Espregueira-Mendes, J., Ripoll, P.L., Monllau, J.C., Reis, R.L., Oliveira, J.M. (2019) Meniscal allograft transplants and new scaffolding techniques. *EFORT Open Reviews* **4**, 279-295. https://doi.org/10.1302/2058-5241.4.180103

Podlog, L., Buhler, C.F., Pollack, H., Hopkins, P.N. and Burgess, P.R. (2015) Time trends for injuries and illness, and their relation to performance in the National Basketball Association. *Journal of Science and Medicine in Sport* **18**, 278-282. https://doi.org/10.1016/j.jsams.2014.05.005

Poulsen, M.R. and Johnson, D.L. (2011) Meniscal Injuries in the Young, Athletically Active Patient. *The Physician and Sports Medicine* **39**, 123-130. https://doi.org/10.3810/psm.2011.02.1870

Shah, V.M., Andrews, J.R., Fleisig, G.S., McMichael, C.S. and Lemak, L.J. (2010) Return to Play after Anterior Cruciate Ligament Reconstruction in National Football League Athletes. *The American Journal of Sports Medicine* **38**, 2233-2239. https://doi.org/10.1177/0363546510372798

Starkey, C. (2000) Injuries and illnesses in the national basketball association: a 10-year perspective. *Journal of Athletic Training* **35**, 161-167.

Trofa, D.P., Miller, J.C., Jang, E.S., Woode, D.R., Greisberg, J.K. and Vosseller, J.T. (2017) Professional Athletes' Return to Play and Performance After Operative Repair of an Achilles Tendon Rupture. *The American Journal of Sports Medicine* **45**, 2864-2871. https://doi.org/10.1177/0363546517713001

Wasserburger, J.N., Shultz, C.L., Hankins, D.A., Korcek, L., Martin, D.F., Amendola, A., Richter, D.L., Schenck, R.C., Treme, G.P. (2021) Long-term National Trends of Arthroscopic Meniscal Repair and Debridement. *The American Journal of Sports Medicine* **49**, 1530-1537. https://doi.org/10.1177/0363546521999419

Yeh, P.C., Starkey, C., Lombardo, S., Vitti, G. and Kharrazi, F.D. (2012) Epidemiology of Isolated Meniscal Injury and Its Effect on Performance in Athletes from the National Basketball Association. *The American Journal of Sports Medicine* **40**, 589-594. https://doi.org/10.1177/0363546511428601

Key points

- NBA players had a 90.7% return-to-play rate after meniscus surgery, exceeding historical averages.
- While minutes per game and player efficiency rating recovered by year two, players continued to participate in fewer games postoperatively.
- Older age was associated with worse performance and availability outcomes, whereas BMI and position had no significant effect.

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