Fear of Re-Injury, Psychological Factors, and Sport Played Have Negative Impact on Return to Sport Following Medial Patellofemoral Ligament Reconstruction for Patellar Instability

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Introduction

- Patellar instability is most common in young, female athletes. Predisposing factors include trochlear dysplasia, patella alta, increase tibial tubercle groove distance, and abnormal lateral patellar tilt
- Most common treatment for chronic stability is medial patellofemoral ligament reconstruction (MPFLR), associated with high return to sport rate.
- Factors that affect return to sport (RTS) after MPFLR are not clear in literature.
- The purpose of this study was to analyze factors that affect return to sport after medial patellofemoral ligament reconstruction (MPFLR), such as psychological factors, sport played, and a positive apprehension test following surgery, and to determine the average return to sport rates and time to return to sport.

Methods

- This systematic review was conducted following the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines
- Peer-reviewed journal articles in the English language that were published from 2000 to present were searched systematically across PubMed, EMBASE, CINAHL, Web of Science, Scopus, and Cochrane Library was conducted in July 2022. A second search was performed in March of 2024 with identical search criteria.
- Studies were included if they met the following criteria: (1) documented use of MPFLR or combined MPFLR/TTO as treatment for patellar instability; (2) mentioned return to sport or return to play following MPFLR or combined MPFLR/TTO; (3) discussed factors that may affect ability or time to return to sport (including but not limited to sport played, psychological factors, and positive apprehension test after surgery); (4) published as a peer-reviewed article; (5) were reported in English; and (6) published from 2000-2022.
- Criteria for exclusion were as follows: (1) study design was a systematic review, narrative review, or case report; and (2) use of any additional concomitant procedures (including but not limited to cartilage restoration, MQTFL reconstruction, trochleoplasty, and lateral release).
- The following data was extracted from each study: return to sport (measured via percent of those who returned to sport), percent of those who returned at the same or higher level, and time to return to sport. Factors affecting return to sport, such as age, sex, sport played, level of competition, psychological factors, and anatomical abnormalities were also recorded. Complications were also recorded as a secondary outcome.
- Analysis performed via OpenMetaAnalyst when necessary for forest plots

Results

- 18 of 632 identified studies met inclusion criteria. 1,072 patients (1,1166 knees) that underwent MFPLR were recorded. 68.4% of patients were female, age range of 9.5-60 years.
- Return to sport rates were reported in each study and ranged from 60.0-100% following treatment for patellar instability with MPFLR. (Table 1)
- Ten of the 18 included studies (55.6%) reported a mean/median time to return to sport, which ranged from 3-10.4 months.
- Return to sport rates at the same level of competition or higher were recorded in 14 studies and ranged from 55.6-84.0%. (Table 2)
- In studies that reported patient reasoning for not returning to sport, fear of re-injury/lack of confidence in their knee was the most common reason in 6 out of 12 articles (50.0%). (Table 3)
- Volleyball/handball had the lowest return to the same level following surgery (18.2-50.0%).

Figure 1: Return to Sport Rate from Operative Treatment of Patellar Instability

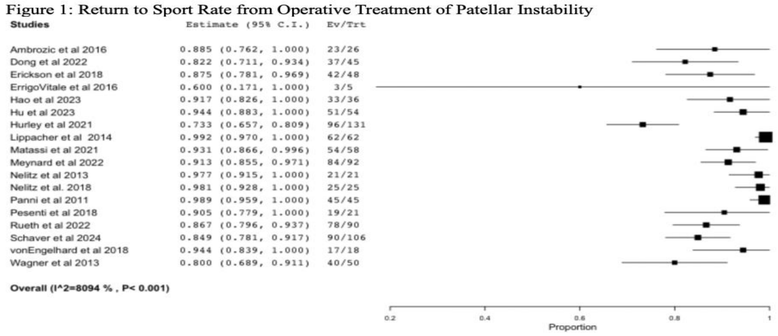


Figure 2: Return to Sport at the Same or Higher Level of Competition Rate from Operative Treatment of Patellar Instability

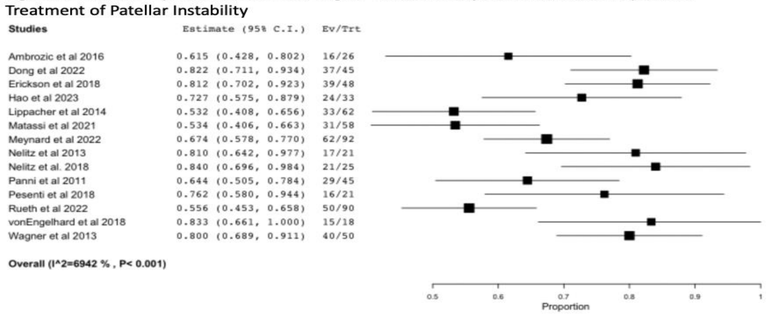
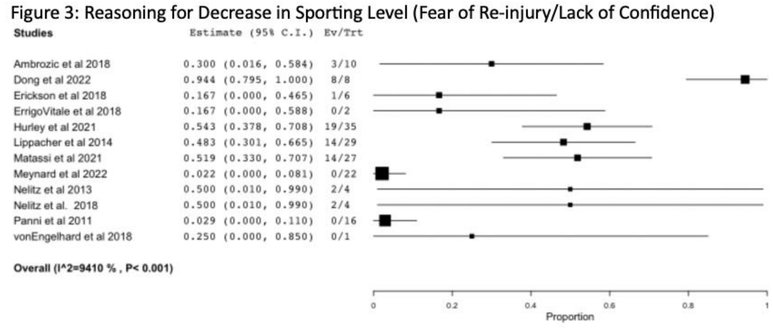


Figure 3: Reasoning for Decrease in Sporting Level (Fear of Re-injury/Lack of Confidence)



Limitations

- Studies differed in their definition of patellar instability that required surgical treatment. For example, definitions ranged from at least three different episodes of patellar dislocation to a single, first-time dislocation.
- Unable to assess radiographic measurements and other clinical parameters of patellar instability severity.
- Use of observational studies/case series, due to lack of randomized control trials in the literature.

Conclusion

- Athletes that underwent MPFLR following recurrent patellar instability returned to sport at a range of 60.0-100%.
- Return to sport at the same level or higher was found to have a lower maximum rate at 55.6-84.0%.
- Fear of re-injury and sport played were found to have a substantial impact on ability to return to sport.
- Surgeons can use this information to advise patients on expectations following surgery.

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