

Return to Play Following Meniscus Surgery



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KEYWORDS

• Meniscus • Athlete • Sports • Return to play • Repair • Transplant • Meniscectomy

KEY POINTS

- Meniscectomy offers a faster return to play and is a more attractive option to the in-season athlete.
- Meniscus repair should be performed when possible in the young athletically active patient.
- Accelerated rehabilitation protocols for meniscus repair offer equivalent functional outcomes when compared with traditional regimens.
- Meniscal allograft transplantation is a viable salvage procedure, although return to collision or contact sports must be carefully weighed.

INTRODUCTION

The menisci are semicircular, wedge-shaped cartilages that have been identified to play a role in shock absorption, load bearing, and stabilization of the knee. Over the past few decades, an abundance of research has been dedicated to meniscal preservation procedures, as both cadaveric and clinical studies have demonstrated a risk for early degenerative changes in the knee with complete loss of meniscal tissue (ie, total meniscectomy).¹ The vascular supply to the meniscus has also been extensively researched and demonstrates that the outer peripheral third has adequate blood supply (red-red zone), whereas the inner two-thirds tends to be more avascular (red-white zone and white-white zone). This has particular implications on the potential healing of a meniscus repair. Knowledge of the zones of blood supply as well as age of the patient and tear characteristics, such as chronicity, tear pattern, and tear location, can aid in making treatment decisions.²

MENISCAL INJURIES IN ATHLETES

Studies have suggested that there is an overall incidence of meniscal tears requiring surgery of 60 to 70 per 100,000 person years and approximately one-third of these tears are sport related.³ Acute traumatic tears are commonly seen in young athletes

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who are involved in sports that require cutting or pivoting movements.² Managing the athlete with a meniscus tear presents a new level of complexity to orthopedic surgeons. There can be significant pressure from coaches, teammates, and athletes themselves to return to play as soon as possible, as lost hours of play can have substantial cost burdens and deleterious consequences to the career of an athlete. With this in mind, the concept of early functional rehabilitation programs has been implemented to provide a faster return to play while still minimizing the risk for reinjury. Nevertheless, the team physician, coach, athletic trainers, and physical therapists must recognize the at-risk player and ensure that rehabilitation protocols are adjusted on a case-by-case basis. Furthermore, rehabilitation will vary depending on the procedure performed and concomitant injuries identified.⁴

MENISCECTOMY

Meniscectomy can involve partial, subtotal, or total removal of the damaged meniscal tissue and should be used only when a repair is deemed infeasible.⁵ Factors such as tear type, location, chronicity, and potential to heal should be taken into consideration along with the patient's age when making treatment decisions. When performing this technique, a minimalistic approach should be used when resecting meniscal tissue and a stable rim should remain with a smooth contoured edge to decrease the risk of recurrent tears. Although patients, specifically athletes, are able to return to physical activities much faster following meniscectomy, the risk of early degenerative changes must not be underestimated. A biomechanical study by Lee and colleagues⁶ demonstrated that as the degree of meniscectomy increased, the amount of contact stresses across the tibiofemoral joint significantly increased. It is recommended to conserve as much meniscal tissue as possible and to use meniscal-preserving techniques, such as repair, when feasible, especially in patients with high physical demands. Nevertheless, meniscectomy has the benefit of a faster return to activities and sport.

Rehabilitation following meniscectomy typically involves advancing activities as the patient tolerates them. Most are able to return to running, jumping, and sport-specific training at approximately 6 weeks when knee pain and effusions have subsided and quadriceps/hamstring strength has returned to normal. The speed of this program is due to the lack of a healing meniscus, as the damaged tissue has been removed. The standard protocol at our institution progresses in 3 phases: (1) 0 to 2 weeks: begin weight bearing and range of motion as tolerated along with quadriceps, hamstring, and core strengthening; (2) 2 to 4 weeks: addition of sport-specific exercises and return to cardio training; (3) 4 to 6 weeks: continued advancement in sport-specific training and maintenance of strengthening program. The return of full quadriceps function and strength often can be the most rate-limiting step during recovery, so it is prudent to have early strengthening in an athlete's rehabilitation protocol (Fig. 1). An athlete is released to competitive sports once equal strength, full range of motion, and endurance in sport-specific exercises has returned, typically within the 4-week to 6-week time frame.

A review of the recent literature demonstrates only a few studies evaluating the return to play of athletes following meniscectomy. An early study by Osti and colleagues⁷ evaluated partial lateral meniscectomy in 41 athletes and found that 98% of patients returned to sport at an average of 55 days. When further divided into subgroups, it was noted that patients with an isolated simple longitudinal tear returned the earliest (average 41 days). Kim and colleagues⁸ found a significant difference in time to return to play based on age (<30, 54 days; >30, 89 days) and level of competition (elite, 54 days; competition, 53 days; recreational, 88 days). A more recent article by Nawabi

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