

## **Meniscal Repair Post-Op Rehab Primer**

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There are a variety of meniscal tears and injury subtypes. Chronic meniscal pathology has been linked to a higher incidence of knee osteoarthritis<sup>28</sup>, but some meniscal tears have a capacity to heal. Meniscal repair is often attempted to preserve knee joint health and normal knee mechanics. The type of tear and location may significantly impact the surgery performed and subsequent post-operative rehabilitation precautions. Unfortunately, these factors contribute to significant variation in post-operative rehabilitation protocols available and lack of agreement or consensus on basic principles and progressions.<sup>30-31</sup>

### **When will I begin physical therapy and rehabilitation following surgery?**

Typically, most patients will begin supervised physical therapy anywhere from 2-14 days following surgery depending on the preference of your surgeon. It is imperative that you follow the surgeon's preference and begin physical therapy during this window to limit post-operative complications, and to set yourself up for a successful outcome.

### **What can I do to set myself up for success post-operatively?**

- Swelling is expected post-operatively due to the inflammatory process, invasiveness of the surgical procedure, and trauma to the knee joint and tissues. However, excessive and prolonged swelling can lead to stiffness and range of motion deficits, muscular weakness and inhibition, and pain or discomfort.<sup>29</sup> It is advisable to manage the limb swelling through limb elevation, cryotherapy or icing, use of prescribed medications, intermittent exercise, and compression garments or wraps

as directed by your surgeon and physical therapist. Be aware that periods of prolonged standing and/or walking may also contribute to excessive swelling in the early post-operative period, and you should plan to modify your activity accordingly.

- Pain control is another critical element to a successful rehabilitation and surgical outcome. Prescribed and over the counter medications may have some side effects, however they are often a useful tool to limit swelling and pain that may prevent completion of the home exercise program, restorative sleep, etc. that are essential to healing and recovery. Temporary use of these medications may allow faster and more comprehensive recovery when they are used as directed. There are also several online tools to help manage pain through evidence-based strategies as well as meditation, breathing, pain science education, and other tools. Ice has also been shown to improve pain control and decrease pain medication usage in the early post-operative period.<sup>18-20</sup>
- Patients should strive for a well-balanced diet to ensure adequate nutrition including additional protein intake to build and repair tissues, allow wound/incision repair, and preserve immune function. This may take on added importance as strength training progresses to fully ensure muscle fiber repair following more intense exercises that may trigger muscle fiber breakdown from progressive overload for strengthening.
- Although sleep may be interrupted in the early stages of post-operative recovery due to discomfort from the surgery, brace application at the involved limb, and other factors, attempting to obtain adequate restorative sleep is vital to your body's recovery both physically and mentally. The use of ice just before bed, prescribed medications, and brace use while sleeping may limit pain that could negatively impact sleep quality.
- Additionally, there is some research evidence that applying ice to the affected knee for 20 minutes prior to exercise may allow improved forced production for greater exercise effectiveness during home exercise program and physical therapy sessions.<sup>26</sup>

### How long will I be in a brace following meniscal repair surgery?

- After meniscal repair, many patients are often placed in a brace for 4-6 weeks following surgery, depending on the surgeon's preference. Typically, the brace is locked in full extension to allow safer distribution of load in the repaired meniscal tissue and limit detrimental forces that may impact meniscal loading. However, this may vary greatly according to tear type and location, surgical procedure performed, and surgeon's preference. It is still critical during this phase to work on

improving available range of motion despite being locked in extension in the brace for weight bearing.

#### Will I be limited with weight bearing and for how long after meniscal repair surgery?

- Weight bearing restrictions may vary significantly from surgeon to surgeon and according to the surgical procedure. Often patients are limited to partial or non-weight bearing restrictions for 4-6 weeks post-operatively with crutches. This may help limit stress on repaired meniscal tissue. Typically, patients are often limited to weight bearing in full knee extension in a locked brace to better distribute compressive weight bearing forces and limit stress to repaired tissue. Evidence indicates that when indicated, immediate weight bearing and range of motion may have significant benefits.<sup>31</sup>

#### When can I begin range of motion (ROM) and is there a restriction?

- Many post-operative protocols will limit knee flexion or bending to 90 degrees for the first 4-6 weeks post-operatively. There is some research that indicates an increase in meniscal forces with increased shearing and compressive stress beyond 90 degrees.<sup>28</sup> This is specifically problematic in a weight bearing position (such as deeper squatting).<sup>28</sup> However, there is significant variability between surgeons and protocols and no definitive consensus. Some research indicates that when the ROM is performed in a non-weight-bearing position that it can be safely performed without harmful effects to the meniscal repair or tissue.<sup>33-34</sup> We strongly advise deferring to your surgeon and physical therapist who may customize the protocol based on meniscal tear location, type, and fixation achieved with meniscal repair. When range of motion activities are performed, it is strongly advised to perform them in a non-weight bearing position passively or with some assistance using hands, straps, etc. to minimize additional forces related to active muscular contraction.

#### Will there be any other post-operative precautions to know?

- In some cases, isolated hamstring contractions may be limited post-operatively to limit stress to repaired meniscal tissue. Evidence shows an attachment with hamstrings at the posterior portion of the medial meniscus.<sup>31-32</sup> In this scenario resisted knee flexion or resisted bending should be avoided, specifically with medial meniscal repairs.

### What should I expect on my first physical therapy visit?

- Your first physical therapy visit will involve the provider reviewing your history and details of your surgical procedure, getting baseline range of motion and strength data, beginning some treatment, developing a home exercise program based on the surgery details and demonstrated impairments or deficits, and providing some education to begin a successful rehab journey. You should wear loose fitting fitness clothing or bring shorts to allow your provider to properly examine and treat your knee.

### When can I shower or bathe?

It is often advisable to sponge bathe for the first few days following surgery. If you do not have weight bearing post-operative precautions and you're comfortable weight bearing at the surgical leg, you may shower with the wounds adequately covered to stay dry. Typically, saran wrap or plastic trash bags wrapped tightly at the leg to waterproof the knee and protect the incisions work best. You want to avoid getting the incisions wet which may increase the risk of infection, and you will not be permitted to submerge the incisions in a bath or pool until all surgical incisions are completely closed and fully healed.

### What will physical therapy (PT) involve?

For PT appointments, please dress in comfortable clothing you can bend, move, and exercise comfortably in, and that will allow your provider to examine and/or treat your knee. PT will involve exercises to address knee range of motion and stiffness, lower extremity strength of the surgical and non-surgical leg, gait and movement training, and in many cases manual therapy and stretching to help restore normal mobility. Your PT provider may choose to implement other modalities such as neuromuscular electrical stimulation (NMES), blood flow restriction (BFR) training, or other equipment and techniques to expedite your recovery. As you improve and the program progresses, the program will shift towards strength training, movement retraining, and sport-specific training focus.

### How often will my physical therapy sessions be?

This is variable according to insurance restrictions and financial considerations with copays, deductible responsibilities, etc. Your therapist will do their best to effectively allocate and utilize your available PT visits based on some of these considerations as well as your progress. For those whose benefits may be limited, we have developed video and exercise resources to help you continue to progress even when you are not able to attend physical therapy in-person.

### Do I need to purchase additional equipment or materials?

We do not mandate or require that you purchase additional equipment. Adhering to the provided education suggestions and regular prescribed PT attendance is typically sufficient to allow successful rehabilitation. Some patients have reported added benefits from integration of a [portable neuromuscular electrical stimulation \(NMES\)](#) unit to facilitate quadriceps strength recovery.<sup>17</sup>

### What should I avoid with the surgical leg post-operatively?

Post-op meniscal repair patients should avoid pivoting on the affected limb in a weight bearing position with the foot fixed on the ground such as when turning or during transfers during the early post-op period. We do want patients to resume normal activities as soon as possible and permissible, including returning to fitness training and programming. However, you should consult your provider prior to resuming, because there may be activities that are not indicated and may be harmful in the early post-operative period.

### How long will PT last?

This will again vary from patient to patient depending on multiple factors including: individual goals, your insurance coverage, and your rehabilitation progress.

### Will I need to join a gym or perform weight training exercises?

Body weight exercises will be useful earlier in rehabilitation, but to fully restore strength at the affected leg, you will need to progressively overload the lower extremities with resistance exercises. Lower extremity weakness and lack of force production, specifically at the quadriceps is a common deficit following many knee surgeries. For patients with a limited training history and limited familiarity with weight training technique, it may be useful to review technique with your physical therapist and/or implement [video resources](#). Additionally, it will be critical to work with your physical therapist to adjust the training volume and resistance to facilitate continued progress. Those patients with a limited training history may also need assistance to determine appropriate training intensity.

### When can I return to work?

This will be a very individualized decision for each person based on job duties and requirements, financial considerations, job security and job stability concerns, and vacation or sick time available. Be aware that a return to a more physically demanding job may not be appropriate for several weeks or months following surgery. Also, jobs requiring prolonged standing, walking, or positioning the leg in a dependent position for lengthy periods may contribute to an increase in swelling and discomfort, which may delay rehabilitation progress and recovery.

### When can I begin to run again?

Running often begins between 3-5 months post-operatively. However, this will vary between individuals based on whether and when they attain established clinical benchmarks and criteria.

### When can I return to sport?

Return to sports clearance is based on multiple considerations. However, time from surgery is not as important as meeting established clinical benchmarks and criteria. Benchmark testing may include: hop testing, vertical jump testing, peak force testing of specific muscle groups, torque/body weight ratio, movement/motor control testing, and other screening tools. 9 to 12 months is the typical timeframe to fully resume return to pivoting and/or contact sports, but this will vary between individuals.

### Will I get back to my pre-surgery functioning?

A significant proportion of patients will resume pre-injury activities and performance levels.<sup>22-23</sup> The timeframe for everyone to achieve these goals varies significantly and each patient's rehabilitation is different. It is often tempting to compare your progress to others who have previously undergone similar surgery. However, everyone's rehabilitation journey is unique and impacted by many factors. Working closely with your providers to identify, continually reassess, and target your specific deficits or impairments is critical to your success. Fully completing rehabilitation and achieving established clinical rehabilitation benchmarks and criteria significantly improves chances of return to sport and/or return to pre-injury activity and performance.

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