

MENISCAL REPAIR PROTOCOL

The fibro cartilaginous menisci act as shock absorbers, force distributors, and aid in knee stabilization. Meniscal tears are the most common of all knee injuries. The most common mechanism of injury is twisting the knee with a planted foot. A "pop" is often audible followed by severe pain and swelling. With the next few days, the patient may notice a "catching" feeling or feel that the knee is "locked up" and gives way. Stairs may be difficult and painful as well as squatting and kneeling activities.

If conservative treatment fails and the tear is in a location in which healing can occur, a meniscal repair is indicated. If at all possible, it is beneficial to repair a tear rather than remove part of the meniscus because 70-90% of people who undergo total menisectomies have osteoarthritis OA in the knee joint within 10 years. The greater the amount of meniscus that can be saved, the more stability and the less chance of arthritis down the road. **Following surgery, it is important to consult with Dr. Stewart regarding the size of the tear and subsequent repair.** This will affect the time frame for limiting ROM and weight bearing. If the repair was made at the outer third or periphery of the meniscus, where ample blood supply exists, faster healing can be expected and rehab should progress accordingly.

The following protocol should be followed unless otherwise instructed following a meniscal repair. Rehab for the first 6 weeks following a repair is critical but boring. Limited exercises can be done due to the ROM and WB'ing precautions. These exercises are critical however. It is important to allow the repair to heal and to avoid stress to the meniscus during this time frame. Squatting or kneeling is contra-indicated.

*The hamstrings attach to the posterior portion of the meniscus and therefore, active and resistive hamstring activity should be avoided for at least 6 weeks post-op!

*A home exercise program is critical and should be emphasized heavily to the patient, especially initially. The more the patient does at home, the faster recovery will be.

PHASE ONE: Weeks 1-3

Following surgery, the patient will be placed in an immobilizer which will be worn for at least 3 weeks.

Dr. Stewart's belief is that for small repairs, the patient can partially weight bear in with the brace in extension after surgery, but that for larger tears no weight bearing should be done in either flexion or extension for the first 4 weeks, and only partial weight bearing in extension for weeks 4-6.

PROM and AAROM 0-30° for the first week, 0-60° for the second week, and 0-90° for the third week.

EXERCISES/STRENGTH/NM CONTROL

Quad sets with EMS or bio feedback - the more the better; 100x/day

SLR - 4 way

SAQ

LAQ

Seated hip flexion

Multi-hip

RANGE OF MOTION:

Heel slides - follow precautions!!!!

Hamstring and calf stretch - hold 30 seconds

Prone hangs to gain full knee extension

MODALITIES:

EMS or EGS if needed for quad facilitation or swelling, respectively

Ice following exercise and initially, every hour for 20 minutes

*The hamstrings attach to the posterior portion of the meniscus and therefore, active and resistive hamstring activity should be avoided for at least 6 weeks post-op!

PT should perform HEP 3x/day

MENISCAL REPAIR PROTOCOL

PHASE TWO: Weeks 3-6

- ROM can now be progressed slowly, as tolerated
- Deep flexion in a weight bearing position should NOT be performed
- Limit closed chain exercises to 90°
- For small tears, the patient can discontinue immobilization and work towards a normal gait pattern. Crutches can be discharged when a normal gait is achieved.
- For large tears, the patient may begin partial weight bearing with the knee immobilizer locked in extension after 4 weeks.

EXERCISES/STRENGTH

Quad sets are continued until swelling is gone and quad tone is good

SLR (4 way) add ankle weights when ready

Weight shifting - lateral; forward/backward

Shuttle/Total gym - (limit to 90°) bilateral and unilateral - focus on weight distribution more on heel than toes to avoid overload on Patella tendon

Multi-hip - increase intensity as able

Leg Press (limit to 90°)

Step-ups - forward

Wall slides (limit to 90°)

Mini-squats - focus on even distribution of weight

Calf raises

RANGE OF MOTION

Goal is 0-125°

Patella mobilization - manual - especially superior and inferior

Perform scar massage aggressively at portals and incision

Heel slides - seated and/or supine at wall

Continue with HS and calf stretching

Bicycle - do not perform until 110° of flexion are achieved - do NOT use bike to gain ROM. Perform daily and increase resistance as able to work quad.

BALANCE

Single leg stance - even and uneven surface - focus on knee flexion

Plyoball - toss

Lateral cone walking with single leg balance between each cone

GAIT

Cone walking - forward and lateral

D/C crutches when normal gait

MODALITIES

Continue to use ice following exercise

Continue with HEP daily

By end of this phase, the patient should ambulate with normal gait I, have good quad control, controlled swelling, and be able to ascend/descend stairs

PHASE THREE: Weeks 6-12

- For large tears, the patient can discontinue immobilization and work towards a normal gait pattern. Crutches can be discharged when a normal gait is achieved.
- Goals for this phase are full quad control, good quad tone, and full ROM; patient should be able to perform normal ADLs without difficulty.
- Exercises will be advanced in intensity based on quad tone - a patient who continues to have poor quad tone must not be advanced to activities that require high quad strength such as squats and lunges.

MENISCAL REPAIR PROTOCOL

PHASE THREE: Weeks 6-12 (cont'd)

STRENGTH

Continue with previous exercises, increasing intensity as able

Step-ups - forward and lateral; add dumbbells to increase I; focus on slow and controlled movement during the ascent and descent.

Squats - Smith press or standing

Lunges—forward and reverse; add dumbbells or medicine ball

Hamstring curls (not until week 7)

Single leg squats

Russian dead lifts—bilateral and unilateral

Single leg wall squats

Cycle - increase intensity; single leg cycle maintaining 80 RPM

RANGE OF MOTION

Full ROM should be achieved

Continue with hamstring and calf stretch

Initiate quad stretch

BALANCE

Plyoball - toss - even and uneven surface

Strength activities such as step-ups and lunges on airex

MODALITIES

Continue to use ice after exercise

Continue with HEP at least 3x/week

PHASE FOUR: Weeks 12-36

- Continue with previous strengthening program 3x/week, focusing on increasing intensity and decreasing reps (6-10) for increased strength.
- Initiate lateral movements and sports cord: lunges - forward, backward, or side step with sports cord, lat step-ups with sports cord, step over hurdles.
- Jogging
- Plyometric program - bilateral progressing to unilateral (plyos can include squat jumps, tuck jumps, box jumps, depth jumps, 180 jumps, cone jumps, broad jumps, scissor hops)
- Leg circuit: squats, lunges, scissor jumps on step, squat jumps
- Power skipping
- Bounding in place and for distance
- Quick feet on step - forward and side-to-side - use sports cord
- Progress lateral movements - shuffles with sports cord; slide board
- Ladder drills
- Swimming - all styles
- Focus should be on quality, NOT quantity
- Landing from jumps is critical – knees should flex to 30° and should be aligned over second toe. Controlling valgus will be initially be a challenge and unilateral hops should not be performed until this is achieved.
- Initiate sprints and cutting drills. Progression: straight line, figure 8, circles, 45° turns, 90° cuts.
- Carioca
- Sports specific drills
- Single leg hop test



Bruce A. Stewart, MD, MBA
Orthopaedic Surgeon/Sports Medicine Specialist
370 N. 120th Avenue
Holland MI 49424
P 616.396.5855

MENISCAL REPAIR PROTOCOL

PHASE FOUR: Weeks 12-36 (cont'd)

- Biodex test
- Biodex Goals:

	Peak Torque/BW Males	Peak Torque/BS Females
60°/s (%)	110-115	80-95
180°/s (%)	60-75	50-65
300°/s (%)	30-40	30-45