THE COLLAGEN MENISCUS IMPLANT

Safely Return to Activity

REHABILITATION GUIDELINES

Ivy Sports Medicine
As with any surgery, rehabilitation is an important part of the process. The duration of the rehabilitation program following implantation of the Collagen Meniscus Implant (CMI) can last six months, bracing and crutches are provided for the first 6-8 weeks. It offers a balanced combination of strengthening and motion exercises to protect newly formed tissue throughout the regeneration process.

This structured rehabilitation program encourages maximum tissue growth following CMI implantation. Various published studies have shown the long-term patient benefit of meniscus preservation in terms of avoiding post-meniscectomy syndrome and repeat surgeries.

**WEEK 1 - 4**

Weight Bearing:
- Crutches must be used at all times during ambulation

**Week One:**
- No weight should be placed on the affected leg when ambulating with crutches
- When standing, the affected leg may rest on the ground

**Week Two:**
- Partial weight bearing of up to 30% of body weight may be placed on the affected leg when ambulating with crutches

**Week Three through Week Four:**
- Gradual increase of partial weight bearing from 30% to 50% of body weight on affected leg when ambulating with crutches

Bracing:
- Brace must be worn at all times except when performing passive motion exercises
- Brace setting: full extension, 0°

Motion:
- Only passive motion exercises on CPM machine or motion exercises using the unaffected leg to support the affected leg
- Range of motion: 0 to 60°
- Setting CPM machine: 0-60°

**Week 5 - 6**

Non-Weight Bearing (WB)
- Slowly to 50% WB; locked full extension; 0-60° passive exercise

**Week 7 - 8**

50-90% WB; continue brace; 0-90° passive exercise
- Full WB; full ROM; flexion-extension exercise

**Week 9 - Month 6**

Continue strength / agility training

**Exercise:**

**Sitting Position:**
1. Unaffected leg provides support and leverage. **FIG A**
2. Using the unaffected leg, raise flexed leg to full extension of affected knee joint, then lower slowly. **FIG B**
3. There should be no active muscle contraction in the affected leg
   a. Range of motion: 0° (full extension) to 60° flexion
   b. Repeat 500 times, three times daily
   c. Duration: 10-15 minutes each session

**Patella Mobilization:**
- Three times daily mobilization supervised by physical therapist or following instructions of physical therapist

**Strengthening:**
1. Exercise in horizontal position, with leg outstretched
2. Start exercises as soon as muscle tone permits
3. Outstretch affected leg and raise repeatedly. **FIG C & D**
   a. Repeat exercise 30 times, twice daily
   b. Duration: 5 minutes each session
WEEK 5-6

Weight Bearing:
• Gradual increase of partial weight bearing from 50 to 90% of body weight on affected leg when ambulating with crutches

Bracing:
• Brace must be worn at all times except when performing passive motion exercises, unless otherwise specified
• Brace setting: full extension, 0°

Motion:
• Passive motion exercises on CPM machine or motion exercises using the unaffected leg to support the operated leg
• Range of motion: 0 to 90°
• Setting CPM machine: 0-90°

Exercise:
Sitting Position:
1. Healthy leg provides support and leverage. FIG E
2. Using the healthy leg, raise flexed leg to full extension of affected knee joint, then lower slowly. FIG F
3. There should be no active muscle contraction in the affected leg
   a. Range of motion: 0° (full extension) to 90° flexion
   b. Repeat 500 times, three times daily
   c. Duration: 10-15 minutes each session

Patella Mobilization:
• Three times daily mobilization supervised by physical therapist or following instructions of physical therapist

Strengthening:
1. Exercise in horizontal position, with leg outstretched. FIG J & K
   a. Outstretch affected leg and raise repeatedly
   b. Repeat exercise 30 times, twice daily
   c. Duration: 5 minutes each session

2. Small bend quadriceps extension exercise
   a. Flex outstretched affected leg to 20 degrees, then slowly return to full extension. FIG I
   b. Repeat exercise 30 to 50 times, twice daily
   c. Duration: 5 minutes each session

3. Cycling (home trainer) without resistance
   a. Brace must be worn during exercise
   b. Day 1: cycle for 3 minutes
   c. Day 2: cycle for 5 minutes
   d. Increase by up to 5 minutes daily as tolerated to a maximum of 45 minutes

WEEK 7-8

Weight Bearing:
• Increase to full weight bearing on the affected leg while ambulating with crutches
• Discontinue crutches as soon as patient is able to walk without a limp

Bracing:
• Brace must be worn at all times except when performing motion exercises, unless otherwise specified
• Brace setting: 0 to 90°

Motion:
• Begin active motion exercises
• Gradually increase to full range of motion as tolerated

Exercise:
Sitting Position:
1. Actively raise flexed leg to full extension of affected knee joint, then lower slowly
2. Keep foot flexed during entire exercise
3. Independent exercise of affected leg, without support of an unaffected leg. FIG H
   a. Range of motion: 0 to 90° to full flexion as tolerated. FIG G & H
   b. Repeat 500 times, three times daily
   c. Increase by up to 5 minutes daily as tolerated to a maximum of 45 minutes

Patella Mobilization:
• Three times daily mobilization supervised by physical therapist or following instructions of physical therapist

Strengthening:
1. Exercise in horizontal position
   a. Repeated raising of outstretched leg. FIG J & K
   b. Repeat exercise 30 to 50 times, twice daily

2. Small bend quadriceps extension exercise
   a. Flex outstretched affected leg to 20 degrees, then slowly return to full extension. FIG I
   b. Repeat exercise 30 times, twice daily
   c. Duration: 5 minutes each session

3. Cycling (home trainer) without resistance
   a. Brace must be worn during exercise
   b. Day 1: cycle for 3 minutes
   c. Day 2: cycle for 5 minutes
   d. Increase by up to 5 minutes daily as tolerated to a maximum of 45 minutes
WEEK 9 - MONTH 4

Weight Bearing:
- Full unrestricted weight bearing

Bracing:
- Discontinue use of brace

Motion:
- Unrestricted full range of motion

Exercise:

**Sitting Position:**
1. Cycling (home trainer) with increased resistance
   a. Duration without brace: maximum 45 minutes, daily
2. Shallow knee bends
   a. Range of motion: 0 to 30°. FIG L
   b. Repeat exercise 20 times, twice daily
3. Water exercise (optional)
   a. Run in deep water using a floatation vest
   b. Make sure the water is deep enough that the foot does not touch the pool bottom
   c. Day 1: 5 minutes
   d. Increase by up to 5 minutes daily as tolerated to a maximum of 45 minutes

MONTH 5 - 6

Exercise:

**Strengthening:**
1. Exercise with elastic resistance cord
   a. Lateral agility exercises using an elastic resistance cord. FIG M & N
   b. Repeat exercises at same tension
   c. Week one through two: repeat 20 times, once or twice daily, every other day
   d. Week three through four: repeat 30 times, once or twice daily, every other day
   e. At two week intervals, increase to a maximum of 50 times, twice daily, every other day
The exercise rehabilitation program following implantation of the CMI device extends six months.

The program was designed by experienced surgeons and physical therapists.

It offers a balanced combination of strengthening and motion exercises providing protection for the newly formed tissue throughout the delicate tissue generation process.

Strict adherence to the rehabilitation guidelines ensures the best possible generation of new tissue to fill the meniscal defect.