

Rehabilitation guide focusses on achieving the following :-

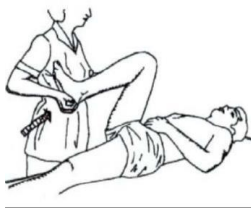
- Protection of the implant done
- Mobility and motion exercises.
- Muscle strengthening.
- Progressive weight-bearing and return to active normal life

Rehabilitation post Bone Cell Therapy

1. **Day of Implant – 48 hours Complete bedrest**
2. **48 hrs – 4 weeks - Passive Lower Limb Exercises by Continuous passive motion (CPM) machine**

Do each exercise 10 times or move to the point of resistance and hold for 30 seconds.

Try to achieve full range of motion by moving until you feel a slight stretch, but don't force a movement.



3. **4th Week – 10th Week: (Mobilization with Walker)**

Try to walk as smoothly as you can. As your muscle strength and endurance improve, you may spend more time walking. Gradually, you will put more and more weight on your leg.

You can return to work at this point of time with limited mobility and care taken



4. **10TH week – 12th Week: Partial Weight Bearing:**

Stand with two crutches and continue the motion achieved till this point

Bear just 10% of body weight equally on both the foot initially.



5. 12th week - 16 weeks: Full Weight Bearing: (Walking with Cane or Crutch)

You are ready to use a cane or single crutch when you can stand and balance without your walker, when your weight is placed fully on both feet, and when you are no longer leaning on your hands while using your walker.

Use the cane or crutch in the hand opposite the operated hip.



6. 16th Week onwards: Climbing Stairs- sports

At first, you will need a handrail for support and you will only be able to go one step at a time. '

Gradually you can return to all normal physical activities including sports

*You will be advised to not to use any non-drug therapies like massage, acupuncture, acupressure, or any other method of joint manipulation for the affected joint during the course of the study

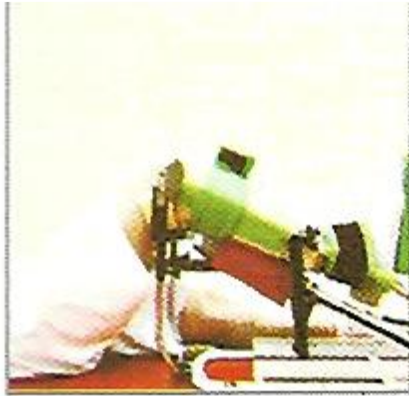
*This rehabilitation information is recommendation only; it may be differentiated with one's condition and should consult with doctor.



Rehabilitation after ACI for knee joint(s) post discharge will be as follows :-

- 1. Day of Implant – 48 hours :- Complete bedrest**
- 2. 48 hours -4 weeks**

It is recommended to keep you in non-weight bearing until 4 weeks after ACI. You can increase the weight bearing gradually and you may be able to sustain your partial weight bearing at 5 weeks to 8 weeks after ACI.



- 3. 4- 8 weeks-**

Range of Motion (ROM)

Recovery on your range of motion is gradually increased with a continuous passive motion (CPM) machine and may be completed to 140 degrees of range of motion at 8 weeks after ACI



- 4. 8-12 weeks-**

Indoor exercise

Muscle strengthening of the surrounding knee joint can be done with four point exercise, isometric exercise, hamstring exercise and squatting exercise. At 12 weeks after ACI, you may

start performing stationary bike activity without resistance and increase the resistance gradually. You may return to work at this point.



5. 13- 26 weeks –

Outdoor exercise

At 13 weeks after ACI you can start walking lightly and at 24 weeks after ACI , you can perform jogging. Later you may enjoy higher intensity exercise and sports activity 36 weeks after ACI.

You will be advised to not to use any non-drug therapies like massage, acupuncture, acupressure, or any other method of joint manipulation for the affected joint during the course of the study.

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Phase 1			
0-12 weeks	Weight Bearing	Range of Motion	Therapeutic Exercises
	<p>0-2 weeks: Nonweight bearing</p> <p>2-4 weeks: Partial weight bearing</p> <p>4-6 weeks: Progress to use of one crutch</p> <p>6-12 weeks: Progress to full weight bearing</p>	<p>0-4 weeks: CPM: use in 2-h increments for 6-8 h per day at 1 cycle/min—begin at 0-30 degree increasing 5-10 degrees daily per patient comfort; patient should gain at least 90 degrees by week 4 and 120- 130 degrees by week 6</p>	<p>0-2 weeks: Quad sets, straight leg raises, hamstring isometrics; complete exercises in brace</p> <p>2-6 weeks: Begin progressive closed chain exercises</p> <p>6-10 weeks: Progress bilateral closed chain strengthening, begin opened chain knee strengthening</p> <p>10-12 weeks: Progress closed chain exercises using resistance less than patient's body weight, progress to unilateral closed chain exercises, begin balance activities</p>
Phase 2			
12 weeks -6 months	Full with a normalized gait pattern	Full active range of motion	Advance bilateral and unilateral closed chain exercises with emphasis on concentric/eccentric control, continue with biking, climbing stairs and treadmill, progress balance activities
Phase 3			
6- 9 months	Full with a normalized gait pattern	Full and pain free	Advance strength training, initiate running and jogging—start with 2-min walk/2-min jog, emphasize sport-specific training
Phase 4			
9- 18 months	Full with a normalized gait pattern	Full and pain free	Continue strength training—emphasize single leg loading, begin a progressive running and agility program; high-impact activities (basketball, tennis, etc) may begin at 16 months if pain free