



## Initial Postoperative Instructions

### ACL Reconstruction

Dr. Mia S. Hagen

**Medication:** You will receive the following prescriptions:

- Percocet – this is a strong narcotic combined with Tylenol. The narcotic can have side effects such as constipation, nausea, vomiting, itchy rash, and it can make your head feel full/lightheaded/weird. Do not take with alcohol or additional Tylenol as it can put you at risk of liver damage. You can take 1-2 pills every 4 hours as needed for pain.
- Naproxen – this is an anti-inflammatory. You will take a prescription-strength dose of this for 10 days and then you can taper. Take with food and do not continue taking if it causes pain in your stomach. You will take this twice a day.
- Colace – this prevents constipation caused by Percocet. You can take this twice a day.
- Zofran – this is to prevent nausea/vomiting caused by Percocet. Also taking the Percocet with food can help. You can take one pill every 6 or 8 hours.
- If you experience itchiness you can take over-the-counter Benadryl. You can take one 25 mg tablet every 6 or 8 hours.
- If you are at an increased risk of blood clots you will likely receive a 2-week prescription of low-dose Aspirin, one pill taken daily.

**Dressing:**

- You may remove your dressing after 48 hours. It is normal to see bloody bandages when you take off the dressing.
- Leave the tape strips (“Steri-Strips”) over your incisions. Do not remove. They will stay on for 1-2 weeks and slowly peel off. You can apply gauze or Band-aids over the wounds, make sure you change them daily.
- You may shower and let the water run over your incisions (and the white tape strips) 48 hours after your surgery. Do not scrub the incisions. Pat dry. Do not soak the incisions in a bath, hot tub, or pool until at least 3 weeks after surgery.
- Your stitches will be removed/trimmed around 1-2 weeks.
- **DO NOT APPLY LOTION/OINTMENT TO YOUR INCISION.**
- You will be given thigh-high compression stockings after surgery. These are to reduce the risk of blood clots. They also decrease swelling in your feet after surgery. You should

wear these at all times for the first 2 weeks after surgery. You may take them off to sleep, shower or to clean them (hand wash then air dry). Alternatively you can use an ace wrap.

### **Weight bearing & activities:**

- You may begin to put weight on your leg when you have the feeling back in your leg. Focus on striking the ground with your heel. You may wean off the crutches as guided by your PT.
- Rest and elevate your leg (above the level of your heart if possible) for the first 24 hours by placing a pillow under your calf and/or ankle.
- Do NOT place a pillow under your knee as it will keep you from straightening your knee.
- **IT IS VERY IMPORTANT TO GET YOUR LEG AS STRAIGHT AS POSSIBLE AS SOON AS POSSIBLE.**
- **Start physical therapy (PT) within the first week after surgery.** Please give the “Post-Operative ACL Rehabilitation” guidelines (pages 5-7 of this packet) to your PT.

### **Ice/Ice Cooling Unit:**

- Icing will help a lot with pain.
- Ice up to 20 minutes every hour. Use routinely for the first 2 days. Then you can taper to at least 3 times per day for 2 weeks, and then as needed after that.
- Do not put ice in direct contact with skin. If you have an ice cooling unit, do not place the pad in direct contact with skin.
- Do not wear ice or cooling unit when you are sleeping – it can burn your skin and lead to serious injury.

### **If you received a Nerve Block:**

- You were given an injection before/after surgery to block the conduction of your femoral nerve which controls pain, sensation, and your quadriceps muscle contraction.
- You should be relatively pain free for the first night but have little control of your leg. You should wear the knee immobilizer until the feeling returns in your leg (this will keep you from falling if you put weight on your leg).
- Make sure to start the Percocet on the first night before you go to sleep, even if you don't feel any pain because the block may wear off during the night and it can be difficult to catch up with the pain.

## Follow-up:

You will be seen by Travis, our physician assistant, at 1-2 weeks after surgery for a wound check and removal or trimming of stitches. You will be seen by Dr. Hagen at 6 weeks after surgery. Timing and length of additional follow-ups will be determined by your progress.

## Crutch Use

To walk with crutches:

- Pull crutches under your arms and press them into your ribs
- Move the crutches ahead of you 6-12 inches
- Push down on the handgrips as you step up to or slightly past your crutches
- Make sure to bear weight on your hands, not under your arms
- Check your balance before you continue

To sit down in a chair:

- Back into the chair until you feel it on your legs
- Put both crutches in your hand on the affected side, reach back for the chair with the other hand
- Lower yourself into the chair

To get up from the chair:

- Hold both crutches on your affected side
- Slide to the edge of the chair
- Push down on the arm of the chair on the good side
- Stand up and check your balance
- Put crutches under your arms, pressing crutches into ribs

Going upstairs:

- Start close to the bottom step, and push down through your hands
- Step up to the first step, remember to good foot goes up first!
- Next, step up to the same step with the other foot, making sure to keep the crutches with your affect leg
- Check your balance before you proceed to the next step
- Make sure someone is there if you need it

Going downstairs:

- Start at the edge of the step, keeping your hips beneath you.
- Slowly bring the crutches with your affected limb down to the next step (the operative leg goes down first!)
- Be sure to bend at the hips and knees to prevent leaning too far forward, which could cause you to fall
- Make sure someone is there if you need it

## After Surgery, Call the Clinic if you have...

- A fever higher than 101° (38.3° C)
- Changes in your incision:
  - Opening
  - Drainage
  - Redness
- Numbness, tingling, or loss of function of your leg.
  - Please note that if you receive an anesthetic nerve block on the day of surgery, it can last for 24 hours or more. You may notice some unusual tingling on occasion after the block wears off. This should go away in a few days. If not, please call the office.
- Increased pain in the knee that is not helped by your medications.
- Increased pain or swelling in your calf.
- Nausea or other side effect not controlled by the medications you are given.
- Any symptom you do not fully understand.
- Number to call **during business hours** (8 am – 5 pm, M-F, excluding holidays):
  - **(206) 598-3294**. Wait for **Option 8** and ask to speak to a nurse.
- Number to call **after hours**:
  - **(206) 598-6190**. You should receive a call back within 30 minutes. If not, call again.
- **Please do not hesitate to call us if you have any questions or concerns!!**

### Call 9-1-1 immediately if you have:

- Chest pain
- Shortness of breath

**Prescription Refills:** Call (206) 598-3294 x8. Call before running out of your medication – please allow 3 business days for refills. Do not have your pharmacy call us, we must speak directly to you. Percocet and other narcotic pain prescriptions cannot be faxed/mailed to the pharmacy – they must be picked up from the clinic or mailed to your home.

# Post-Operative ACL Rehabilitation: Isolated primary ACL Reconstruction

Dr. Mia S. Hagen

*Please give this handout to your therapist*

## Phase 0: Preoperative visit

Goals	Ready for Surgery When
<ul style="list-style-type: none"> <li>• Patient education                             <ul style="list-style-type: none"> <li>▪ Phase 1 exercises</li> <li>▪ Crutch use</li> <li>▪ Wound care</li> </ul> </li> <li>• Normal gait</li> <li>• Minimal effusion</li> <li>• Optimize ROM &amp; strength</li> </ul>	<ul style="list-style-type: none"> <li>• Minimal effusion</li> <li>• Active ROM 0-120</li> <li>• Strength returned                             <ul style="list-style-type: none"> <li>▪ 20 straight leg raises (SLR) without lag</li> </ul> </li> </ul>

## Phase 1: Immediate Postoperative (0-2 weeks)

Goals	Exercise Suggestions	Criteria for Progression
<ul style="list-style-type: none"> <li>• Normal gait pattern                             <ul style="list-style-type: none"> <li>▪ Crutches initially → WBAT</li> </ul> </li> <li>• Full knee extension                             <ul style="list-style-type: none"> <li>▪ No brace</li> </ul> </li> <li>• Quad control:                             <ul style="list-style-type: none"> <li>▪ 20 SLR without lag</li> </ul> </li> <li>• Minimize pain</li> <li>• Minimize swelling</li> <li>• Patellofemoral precautions</li> </ul>	<ul style="list-style-type: none"> <li>• ROM:                             <ul style="list-style-type: none"> <li>▪ Extension: low load, long duration (5 min) stretching (heel prop, prone hang, calf stretch, hamstring stretch; minimize co-contraction and nociceptor response)</li> <li>▪ Flexion: wall slides, heel slides, seated assisted knee flexion, bike (rocking-for-range)</li> <li>▪ Patellar mobilization: monitor for reaction to effusion &amp; ROM</li> </ul> </li> <li>• Strength:                             <ul style="list-style-type: none"> <li>▪ Quad re-education: e-stim, biofeedback</li> <li>▪ Quad sets, SLR no lag, double-leg quarter squats, standing Thera-Band resisted TKE</li> <li>▪ Hamstring sets, ham curls, quad/ham co-contraction supine</li> <li>▪ Leg press in 90°-40° arc – start w/eccentrics</li> <li>▪ Side-lying hip add/abduction</li> <li>▪ Prone hip extension, seated hip flexion</li> <li>▪ Ankle pumps with Thera-Band calf press or heel raises</li> </ul> </li> <li>• Other:                             <ul style="list-style-type: none"> <li>▪ Cardiopulmonary: upper body erg machine</li> <li>▪ Scar massage when incision healed</li> <li>▪ Cryotherapy</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Crutches dc'd:                             <ul style="list-style-type: none"> <li>▪ To do so, must have normal gait pattern and can go up &amp; down stairs without pain or instability</li> </ul> </li> <li>• SLR no lag &gt;20 reps</li> <li>• Normal gait</li> <li>• ROM: 110° active flexion, no greater than 5° active extension lag                             <ul style="list-style-type: none"> <li>▪ NOTIFY SURGEON IF EXTENSION GOALS NOT MET BY 4 WKS</li> </ul> </li> </ul>

### Phase 2: Early Rehabilitation (3-6 weeks)

Goals	Exercise Suggestions	Criteria for Progression
<ul style="list-style-type: none"> <li>• Full ROM</li> <li>• Improve muscle strength</li> <li>• Progress neuromuscular retraining</li> </ul>	<ul style="list-style-type: none"> <li>• ROM:               <ul style="list-style-type: none"> <li>▪ Low load, long duration</li> <li>▪ Heel slides, wall slides, heel prop, prone hang, bike with lower seat height</li> <li>▪ Flexibility stretching all major groups</li> </ul> </li> <li>• Strength:               <ul style="list-style-type: none"> <li>▪ Quad: quad sets, mini-squats, wall-squats, step-ups, knee extension, leg press, shuttle press without jump</li> <li>▪ Ham: ham curls, resistive SLR with sports cord</li> <li>▪ Hip add/abduction with resistance, multi-hip machine</li> <li>▪ Standing heel raises from double to single leg support, seated calf press</li> </ul> </li> <li>• Neuromuscular training:               <ul style="list-style-type: none"> <li>▪ Wobble board, rocker board, single-leg stance, slide board, fitter</li> </ul> </li> <li>• Cardiopulmonary:               <ul style="list-style-type: none"> <li>▪ Stationary bike, elliptical, Stairmaster, NordicTrack</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Full ROM               <ul style="list-style-type: none"> <li>▪ NOTIFY SURGEON IF ALL ROM GOALS NOT MET BY 6 WKS</li> </ul> </li> <li>• Minimal effusion/pain</li> <li>• Functional strength and control in daily activities</li> <li>• IKDC Question #10 score <math>\geq 7</math>:               <ul style="list-style-type: none"> <li>▪ "How would you rate the function of your knee on a scale of 0-10 with 10 being normal/excellent function and 0 being the inability to perform any of your usual daily activities?"</li> </ul> </li> </ul>

### Phase 3: Strengthening & Control (7-16 weeks)

Goals	Exercise Suggestions	Criteria for Progression
<ul style="list-style-type: none"> <li>• Maintain full ROM</li> <li>• Demonstrate ability to descend an 8" step without pain or deviation</li> <li>• Running without pain or swelling</li> <li>• Hopping without pain, swelling, or giving-way</li> </ul>	<ul style="list-style-type: none"> <li>• Strength:               <ul style="list-style-type: none"> <li>▪ Squats, leg press, ham curl, knee extension 90°-0°, step up/down, lunges, sports cord, wall squats, hopping without pain (bilateral then single leg, end in ¼ squat)</li> </ul> </li> <li>• Neuromuscular training:               <ul style="list-style-type: none"> <li>▪ Wobble board, rocker board, roller board, perturbation training, varied surfaces</li> <li>▪ Instrumented testing systems</li> </ul> </li> <li>• Cardiopulmonary:               <ul style="list-style-type: none"> <li>▪ Stationary bike, elliptical, Stairmaster, NordicTrack</li> <li>▪ Straight line running* no sooner than 12 wks on treadmill or protected environment (NO cutting or pivoting)</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Running without pain or swelling</li> <li>• Hopping without pain or swelling (bilateral and unilateral)</li> <li>• Neuromuscular and strength training exercises without difficulty</li> </ul>

\*Prior to running, patient must pass a test circuit of single leg squats (3x30), double leg hops (3x30), single leg hops (3x30), and sport cord resisted running 3 x 90 seconds. Pain, fatigue, or break of form is a failed test.

**Phase 4: Advanced training (16-20 weeks)**

Goals	Exercise Suggestions	Criteria for Progression
<ul style="list-style-type: none"> <li>• Running patterns (Figure-8, pivot drills, etc.) at 75% speed without difficulty</li> <li>• Jumping without difficulty</li> <li>• Hop tests at 75% contralateral values               <ul style="list-style-type: none"> <li>▪ Cincinnati hop tests: single-leg hop for distance, triple-hop for distance, crossover hop for distance, 6-meter timed hop</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Strength:               <ul style="list-style-type: none"> <li>▪ Squats, lunges, plyometrics</li> </ul> </li> <li>• Agility drills:               <ul style="list-style-type: none"> <li>▪ Shuffling, hopping, carioca, vertical jumps, running patterns at 50-75% speed (e.g. Figure-8), initial sport-specific drills at 50-75% effort</li> </ul> </li> <li>• Neuromuscular training:               <ul style="list-style-type: none"> <li>▪ Wobble board, rocker board, roller board, perturbation training, varied surfaces</li> <li>▪ Instrumented testing systems – KT-1000 test, isokinetic testing at 120°/second and 240°/second</li> </ul> </li> <li>• Cardiopulmonary:               <ul style="list-style-type: none"> <li>▪ Running*</li> <li>▪ Any other cardiopulmonary equipment</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Maximum vertical jump without pain or instability</li> <li>• 75% of contralateral on hop tests</li> <li>• Figure-8 run at 75% speed without difficulty</li> <li>• IKDC Question #10 score <math>\geq 8</math> (see above)</li> </ul>

\*See separate Return to Run program

**Phase 5: Return-to-Sport (20-24+ weeks)**

Goals	Exercise Suggestions	Criteria for Progression
<ul style="list-style-type: none"> <li>• 85% contralateral strength</li> <li>• 85% contralateral on hop tests</li> <li>• Sport-specific training without pain, swelling, or difficulty</li> </ul>	<ul style="list-style-type: none"> <li>• Aggressive strengthening:               <ul style="list-style-type: none"> <li>▪ Squats, lunges, plyometrics</li> </ul> </li> <li>• Sport-specific activities:               <ul style="list-style-type: none"> <li>▪ Interval training programs, sprinting, change of direction, running patterns in football, pivot and drive in basketball, kicking in soccer, spiking in volleyball, skill/biomechanical analysis with coaches and sports medicine team</li> </ul> </li> <li>• Instrumented testing systems</li> <li>• Return-to-Sport evaluation recommendations:               <ul style="list-style-type: none"> <li>▪ Hop tests (see above), vertical jump, deceleration shuttle</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Return-to-Sport Criteria:               <ul style="list-style-type: none"> <li>▪ No functional complaints</li> <li>▪ Confidence when running, cutting, jumping at full speed</li> <li>▪ 85% contralateral values on hop tests</li> <li>▪ IKDC Question #10 <math>\geq 9</math> (see above)</li> </ul> </li> </ul>

**Please send progress notes. Thank you.**

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