KEVIN M. ROTH, MD
Orthopedic Sports Medicine / Fracture Care
www.KevinRothMD.com

POST OPERATIVE INSTRUCTIONS

THIGH/KNEE/TIBIA OSTEOTOMY OR FRACTURE REPAIR
(TIBIAL TUBERCLE OSTEOTOMY / HIGH TIBIAL OSTEOTOMY / DISTAL FEMORAL OSTEOTOMY)

(All of this information, and more helpful information, can be found on Dr. Roth's website at www.KevinRothMD.com)

DIET

- Start with clear liquids (jello, soup broth, Gatorade, etc.), crackers, white bread and other light foods
- Progress slowly to heavier foods as you tolerate the lighter foods without any nausea

WOUND CARE

- Keep your dressing clean and dry and in place for three days after surgery
- You may shower by placing a large garbage bag over your dressing and brace – do not submerge your leg under water
- You will leave the operating room with a white stocking on your leg, a brown ACE bandage over the stocking, a blue ice pad over the ACE bandage (if you decided to purchase), and a knee brace over that.
- On day 3 after surgery, you may remove your dressing. Steps to change your dressing:
    - First remove the brace by unclipping the four clips at the ends of each strap. Then remove the blue ice pad (if purchased).
    - Next unwrap or cut off the ACE bandage.
    - Next, you will remove the white stocking. This can usually be removed like a sock, but it can also be cut off. You will not need it any longer after it is removed.
    - After removing the stocking, you will find a wrap of white cotton material. This can be slowly pulled apart with your fingers.
    - Beneath the cotton wrap you will find some gauze pads, all of which can be removed and discarded.
    - And beneath the gauze pads, you will see small yellow strips on the incisions – these can also be removed and discarded.
    - Beneath the yellow strips you will see white or brown sticky strips called "Steri-Strips." These are like bandaids over the incisions, and these should be left in place.

- It is normal for there to be some blood staining on the gauze dressings. If the wounds are completely dry, you may just place band-aids over them at this point. If there is a small amount of drainage still coming from the wounds, place a clean and dry gauze dressing on them daily until the drainage stops. If the drainage continues, call Dr. Roth's office to inform him.

- Once the incisions are completely dry for 24 hours, you may shower. Let the water and soap run over the incisions and pat them dry with a clean towel after the shower. Do not scrub the incisions or vigorously dry them. Do not submerge the incisions under water **(e.g. NO bath tubs, swimming pools, hot tubs, ocean swimming, etc.).**

MEDICATIONS

- It is important to know that there will be some pain after surgery – this is very normal. Unfortunately, there is no such thing as "painless surgery." While pain can sometimes be a marker of something going wrong, in the context of surgery, it is usually completely normal. If you are concerned about the level of pain that you are experiencing, please call Dr. Roth's office and we can discuss with you and ask a few questions to confirm that your level of pain is normal and not a sign of something dangerous.
- Dr. Roth uses the pain scale from 0-10 to try to help recommend how many opiate pain pills to take, so try to be honest with yourself about your pain level. Remember, zero is no pain at all, and 10 is the *worst pain in the world*. When someone calls and says casually over the phone his or her pain is a level 9, this is typically an exaggeration, as a person in level 9 pain would be screaming in agony, and would likely be unable to make a phone call. Dr. Roth recommends not taking any opiates if your pain is in a 0-4 range. 0-4 pain is expected, it is normal, and it is just the price of having a surgery. If your pain rises above a 0-4, use the charts below for some recommendations of how to add in opiate medication to try to bring it down to the 0-4 range.
- You will usually have a nerve block which will last for 8-16 hours after surgery, or if you discussed with the anesthesiologist, you may have a nerve block that can last a few days. You will start to feel some tingling in your knee and your foot when the nerve block starts to wear off. This is the sign that the pain is soon to follow, so you want to start taking your pain medication at this time.
- Some animal laboratory data has suggested that NSAIDs (Advil, Aleve, ibuprofen, naproxen, meloxicam, diclofenac, Celebrex, etc.) can slow tendon healing to bone, but this has not been confirmed in human studies. Because of that animal data, some doctors recommend avoiding NSAIDs after tendon and bone surgery, however, there are other advantages of NSAIDs which likely outweigh the risks. Dr. Roth prefers to use NSAIDs after tendon and bone surgery to help patients get away from opiate medications, which have their own long list of side effects and risks. Unless you have other medical reasons for avoiding NSAIDs (GERD, stomach ulcer, kidney disease), Dr. Roth recommends taking NSAIDs as soon as possible after surgery and trying to wean away from opiate medications as soon as possible.

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- You have been given a prescription at your preoperative visit for an opiate narcotic pain medication (Oxycodone, Percocet, Norco, Tramadol etc.). Pay attention to whether your medication has acetaminophen (Tylenol) in it as it will affect how you use the pain regimen charts below.

- **If you have a history of Obstructive Sleep Apnea (OSA), be sure to let Dr. Roth know as he may decide to change your post-operative pain regimen.**
- **If your narcotic pain medication has ACETAMINOPHEN in it (e.g. Norco, Percocet) then you CANNOT also take TYLENOL at the same time, which is the same medication.**
- Side effects of the pain medication include itching, nausea, vomiting, dry mouth, constipation, dizziness and lightheadedness. Taking the medication with food will decrease the risk of nausea. **To prevent constipation, it is recommended that you take a stool softener while taking the opiate. Colace can be purchased over the counter. Take one tab 2-3 times per day.**
- If taking the opiate medication causes you to experience itching without a rash, and without any swelling of the mouth or difficulty breathing, this is very common, and is not technically a true allergy. Options to manage this are to try to wean off the opiates and just take the Advil/Tylenol regimen described below, or to take Benadryl for the itching. However, understand that the Benadryl typically does not manage the itching very well, and often just puts you to sleep so you aren't as bothered by the itching.
- Try to wean off of the narcotic pain medication as soon as possible. Using Dr. Roth's regimen below will help you transition away from the opiates as soon as possible.

- Dr. Roth's Suggested Post-Operative Pain Management Regimens

(Note that generic medications are exactly the same as brand name and can be substituted at lower cost and without any change in effectiveness.)

DR. ROTH'S SUGGESTED OVER-THE-COUNTER PAIN REGIMEN **MODERATE PAIN** ***DO NOT take the Tylenol if your opiate has acetaminophen in it already (e.g. Percocet, Norco)***	
6 AM	600 mg Advil (ibuprofen) 1000 mg Tylenol (acetaminophen)
12 NOON	600 mg Advil (ibuprofen) 1000 mg Tylenol (acetaminophen)
6 PM	600 mg Advil (ibuprofen) 1000 mg Tylenol (acetaminophen)
12 AM (MIDNIGHT)	600 mg Advil (ibuprofen) 1000 mg Tylenol (acetaminophen)

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DR. ROTH'S SUGGESTED OVER-THE-COUNTER PAIN REGIMEN **SIGNIFICANT PAIN** ***DO NOT take the Tylenol if your opiate has acetaminophen in it already (e.g. Percocet, Norco)***	
6 AM	600 mg Advil (ibuprofen)
9 AM	1000 mg Tylenol (acetaminophen)
12 NOON	600 mg Advil (ibuprofen)
3 PM	1000 mg Tylenol (acetaminophen)
6 PM	600 mg Advil (ibuprofen)
9 PM	1000 mg Tylenol (acetaminophen)
12 AM (MIDNIGHT)	600 mg Advil (ibuprofen)
3 AM	1000 mg Tylenol (acetaminophen)

Note that this regimen is the same as the "Moderate Pain" regimen, however, it splits the Advil and the Tylenol so that they are taken at different times. In this regimen, you are taking SOMETHING every 3 hours, so you are always on the "upswing" of one or the other medication. Just as one of the medications is wearing off, you are dosing yourself with the other medication.

IN ADDITION to the "Over-The-Counter" pain regimens above, the opiate you have been prescribed (typically oxycodone) can be added in AS NEEDED to supplement your pain and manage breakthrough moments of increased pain. You are encouraged to try to stop taking the opiate as soon as possible, and if you can manage without the opiate, please feel free to do so. At each moment that you are taking your other medications, try to assess your level of pain and take an oxycodone

SUGGESTED MODERATE PAIN REGIMEN – WITH OPIATE	
6 AM	600 mg Advil (ibuprofen) 1000 mg Tylenol (acetaminophen) + Pain Level 0-4: NO Oxycodone Pain Level 5-7: ONE Oxycodone Pain Level 8-10: TWO Oxycodone
12 PM (NOON)	600 mg Advil (ibuprofen) 1000 mg Tylenol (acetaminophen) + Pain Level 0-4: NO Oxycodone Pain Level 5-7: ONE Oxycodone Pain Level 8-10: TWO Oxycodone

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6 PM	600 mg Advil (ibuprofen) 1000 mg Tylenol (acetaminophen) + Pain Level 0-4: NO Oxycodone Pain Level 5-7: ONE Oxycodone Pain Level 8-10: TWO Oxycodone
12 AM (MIDNIGHT)	600 mg Advil (ibuprofen) 1000 mg Tylenol (acetaminophen) + Pain Level 0-4: NO Oxycodone Pain Level 5-7: ONE Oxycodone Pain Level 8-10: TWO Oxycodone

SUGGESTED SIGNIFICANT PAIN REGIMEN – WITH OPIATE ****** If you are following this regimen, and are consistently taking TWO oxycodone at EACH time point, please call Dr. Roth to let him know that you are requiring that level of pain relief. ******	
6 AM	600 mg Advil (ibuprofen) + Pain Level 0-4: NO Oxycodone Pain Level 5-7: ONE Oxycodone Pain Level 8-10: TWO Oxycodone
9 AM	1000 mg Tylenol (acetaminophen) + Pain Level 0-4: NO Oxycodone Pain Level 5-7: ONE Oxycodone Pain Level 8-10: TWO Oxycodone
12 NOON	600 mg Advil (ibuprofen) + Pain Level 0-4: NO Oxycodone Pain Level 5-7: ONE Oxycodone Pain Level 8-10: TWO Oxycodone
3 PM	1000 mg Tylenol (acetaminophen) + Pain Level 0-4: NO Oxycodone Pain Level 5-7: ONE Oxycodone Pain Level 8-10: TWO Oxycodone
6 PM	600 mg Advil (ibuprofen) + Pain Level 0-4: NO Oxycodone

	Pain Level 5-7: ONE Oxycodone Pain Level 8-10: TWO Oxycodone
9 PM	1000 mg Tylenol (acetaminophen) + Pain Level 0-4: NO Oxycodone Pain Level 5-7: ONE Oxycodone Pain Level 8-10: TWO Oxycodone
12 AM (MIDNIGHT)	600 mg Advil (ibuprofen) + Pain Level 0-4: NO Oxycodone Pain Level 5-7: ONE Oxycodone Pain Level 8-10: TWO Oxycodone
3 AM	1000 mg Tylenol (acetaminophen) + Pain Level 0-4: NO Oxycodone Pain Level 5-7: ONE Oxycodone Pain Level 8-10: TWO Oxycodone

Do NOT drive a car or operate any heavy machinery while you are taking narcotic pain medication (OxyCODONE, Oycontin, Norco, Percocet, Tylenol #3, etc.)

ACTIVITY

- It is very important to try to make sure that the knee is able to get fully straight after any knee reconstruction surgery. In order to avoid the knee become stuck in a bent position, **do not place pillows behind then knee, but rather place pillows under the ankle/foot, which will force the knee into full extension.** This will likely be uncomfortable, but will NOT damage the repair.
- Use crutches to assist with walking and help provide you stability as you learn to walk on an injured extremity. Wear your brace when walking. For the first two weeks after surgery, your brace should be locked in full extension whenever you are walking. **For the first six weeks after surgery, your weight bearing should be "Toe-Touch Weight Bearing," meaning you are just allowed to put enough weight to touch the foot to the ground for some balance while walking**.
- Your weight bearing will be advanced after six weeks.
- You may have bene given a Continuous Passive Motion machine (CPM). If you were, the CPM is to be used approximately 4 hours per day. It is OK to sleep in this machine. Start the machine on the first day after surgery at 30 degrees and advance by 10 degrees per day. Once you get to 100 degrees, you may call the company and return the machine.
- When you are not in the CPM machine and are laying down, elevate the operative extremity to chest level whenever possible to decrease swelling

- **You are to walk with crutches at all times.**
- Avoid long periods of sitting with the leg below your waist or long periods of standing/walking for the first 7-10 days after surgery as these activities are likely to increase the swelling of your leg.
- You may return to sedentary work / school 3-4 days after surgery if swelling and pain are tolerable and you are no longer taking narcotic pain medications.
- DO NOT SMOKE cigarettes, smokeless tobacco, cigars, dip, chew, or any other tobacco product for at least 3 months after surgery if at all possible, as these will all **inhibit healing of the repair**, **increase the risk of infection**, and decrease the ability of the wound to heal.

BRACE

- Brace is to be worn at all times (day and night) locked fully straight for the first week after surgery except when showering, doing exercises or when you are using the CPM. The brace will be unlocked by Dr. Roth or by the Physician's Assistant when appropriate.

ICE THERAPY

- Dr. Roth highly recommends purchasing an ice machine for the post-operative period as it is much more convenient than ice packs, however, if necessary, ice packs are sufficient as well.
- Start ice immediately after surgery. You will have a bulky dressing on your knee and therefore you may not feel like the cold is penetrating, but it is still helping.
- Ice for 20 minutes a minimum of four times daily, or more often if you prefer, but no more often than 20 minutes every hour. **Be sure there is always something between the ice pack and your skin and do NOT ice for longer than 20 minutes at a time or you could get frostbite.**
- If you had a block at the time of surgery, your leg may be numb for up to 24 hours. It is particularly important during this time to be aware of the clock when you are icing as you will not feel the cold and frostbite is a real concern.

EXERCISE

- You may start your exercises 24 hours after surgery (described below).
- Try to do your exercises a minimum of 3 times per day after surgery.
- Your knee will feel painful and stiff after surgery which is normal, but it is appropriate and healthy to start trying to bend and straighten it (unless otherwise instructed by Dr. Roth)
- Your goal range of motion at your first post-operative visit is to be able to get the knee completely straight and to 90 degrees of flexion.
- Formal physical therapy will begin after your first post-operative visit.
- Do ankle pumps throughout the day to minimize the risk of blood clots.

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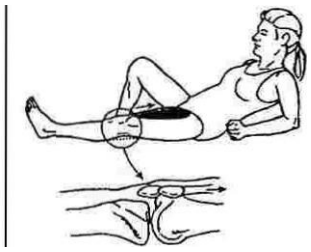
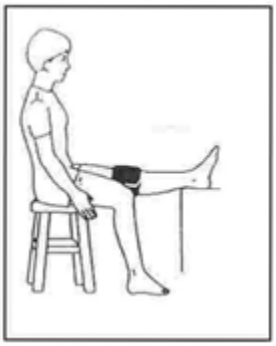
Specific Exercises

- QUADRICEPS SETS

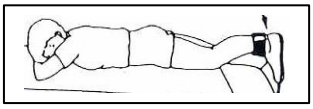


  - Lie down or sit with your leg fully extended. Tighten and hold the muscle on the front of your thigh ("quad") to make the knee flat and straight. Think about pushing the back of your knee down against the bed or floor. If you are doing it correctly, the knee will flatten and the kneecap will slide up toward the thigh muscle.

- HEEL PROPS
  - Lie on your back with your heel propped on a rolled towel or on the armrest of a couch. Or, sit in a chair with the heel propped on a chair. Leave nothing behind the back of your knee (e.g. no pillows behind your knee) and let the knee relax and become straighter. If you are unable to get the knee straight like this, you can place a weight (2 to 5 lbs.) on the thigh, just above the kneecap, to help push the knee straight. Patients often worry about "hyperextending" the knee, but this does not need to be worried about as long as you are not using more than 5 lbs. of weight.

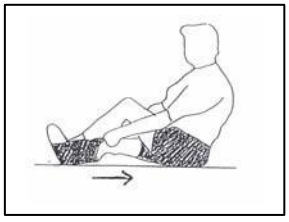


- PRONE HEEL HANGS



  - Lie on your stomach on a raised surface such as a table or a bed, and slide down so that your knee at the edge of the table and your foot is off the edge. Let the knee relax and let gravity pull your knee straight. As in the Heel Props above, if you cannot get the knee straight, a light weight (2 to 5 lbs.) can be hung from your heel to help add to the pull of gravity.

- HEEL SLIDES
  - While sitting or lying on the floor or a bed, gently try to slide your heel along the floor toward your thigh by bending your knee. Hold this for a few seconds, and then slowly straighten the knee back out. If you have trouble doing this, you can take a towel and wrap it around the ball of your foot and use your hands to help gently pull your knee into flexion.



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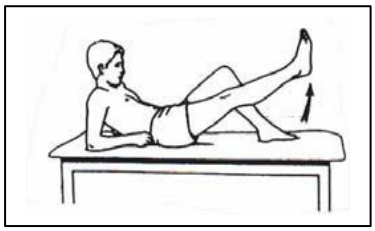
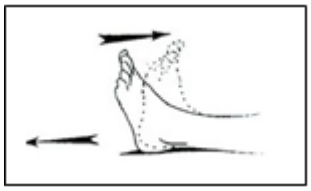
- STRAIGHT LEG RAISES
  - If your knee bends when you are doing this exercise, you are not yet ready. Continue working on the QUADRICEPS SETS (described above) until you are able to do this exercise keeping the knee completely straight
  - The Straight Leg Raise is all about focusing on tightening your quadriceps muscle, which is why you have to be good at the Quad Set before you can be good at the Straight Leg Raise
  - The steps of a good Straight Leg Raise are as follows:



    1. Tighten the quadriceps as much as you can (same as a quad set)
    2. Tighten it even harder!
    3. Lift your heel 4 to 6 inches off the floor, keeping the knee straight
    4. Think about tightening your quad even harder!
    5. Lower the leg gently back to the floor, keeping the quad as tight as possible
    6. Try one more time to tighten the quadriceps muscle
    7. Now relax and rest a minute or two, and repeat

- ANKLE PUMPS
  - Move your foot up and down like you are stepping on and off of a gas pedal. This helps circulate blood through your leg. Do this about 20-30 times, every few hours.



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EMERGENCIES

- During business hours, contact Sabrina in Dr. Roth's office at ***510-267-4013***. If you are not getting through to Sabrina because she is busy in the office and not able to immediately answer the phone, contact the Webster Call Center at ***800-943-8099*** and they will track down Dr. Roth.
- For concerns that cannot be addressed during business hours, call the Webster Call Center at ***800-943-8099***.
    - **For the first 48 hours after surgery, the call center will put you through directly to Dr. Roth's cell phone if you would like. Dr. Roth feels that it is very important that you have the opportunity to speak directly to your surgeon rather than to an "on-call" physician within the first 48 hours after surgery if you have concerns.** Because Dr. Roth is typically at home with his family during these times, he would appreciate the use of discretion when taking advantage of this service. If you feel you have a simple question that you would be comfortable with the on-call physician handling, please inform the call center.
- Please contact Dr. Roth's office immediately if any of the following are present, or for any other concerns:
    - Pain that is not controlled by the regimen described above
    - Pain that is unrelenting or getting worse over time rather than staying the same or improving
    - Numbness that lasts longer than 24 hours after surgery
    - Fever (greater than 101^{o} - low grade fever is normal for the first few days after surgery)
    - Redness around the incisions
    - Continuous drainage or bleeding from the incision (some drainage is expected)
    - Difficulty breathing
    - Chest Pain
    - Light headedness or passing out
    - Uncontrollable nausea, vomiting
    - Color change in the operative extremity
    - Blistering of the skin
- If you have an emergency that requires immediate attention, proceed to the nearest Emergency Room.

FOLLOW-UP

- If you do not already have a follow-up appointment scheduled, please contact **Dorothy at (510) 267-4016** to arrange an appointment. Follow-up appointments are generally 7-10 days after surgery.