

TIBIAL TUBERCLE OSTEOTOMY

Your First Two Weeks After Surgery

Your surgery is done, and now the recovery starts. This guide walks you through the first two weeks, from the day of surgery until **your PA visit at 2 weeks** (your follow-up with our physician assistant). Keep it somewhere handy. It answers most of the questions patients call us about. Your medicines are covered in the separate **Medication Guide** that comes with it.

YOUR PLAN AT A GLANCE

WEIGHT ON YOUR LEG	Toe-touch only for 6 weeks , about 10 to 15 pounds, for balance. Your crutches carry the rest
BRACE	Locked straight whenever you are up and walking. Off for your bending exercises, resting, and sleep
BENDING	Sitting or lying down. Goal: 90° (a right angle) by 6 weeks , not past it
KEY RESTRICTION	No standing exercises, squats, or steps on the surgery leg. The bone must heal first
MEDICINES	No anti-inflammatory medicines for 6 weeks. Keep taking your 81 mg aspirin
PHYSICAL THERAPY	Starts 5 to 7 days after surgery, 2 times a week
SHOWERING	Starting 48 hours after surgery, with the incision covered until your PA visit. No baths, pools, or hot tubs for 4 weeks
FOLLOW-UP	Your PA visit at 2 weeks
QUESTIONS	(425) 656-5060 , day or night

What We Did

Your kneecap glides in a groove on the front of your thigh bone. Yours was being pulled off-center by the bony bump below the kneecap where the patellar tendon attaches, called the **tibial tubercle**. We made a careful cut in the bone (an **osteotomy**), moved the tubercle to a better spot, usually inward and a little forward, and **held it with screws**. We also loosened the tight tissue on the outer side of the kneecap. Together, this lets the kneecap track in the center of its groove.

The bone cut heals like a broken bone. For 6 weeks the screws hold it while the bone knits together. **Putting weight on it too early can shift the bone or loosen the screws.** That's why toe-touch matters most.

Your two jobs for the next two weeks

- **Protect the bone.** Toe-touch only, crutches every time you are up, brace locked straight for walking.
- **Wake up your quad** (the big muscle on the front of your thigh) and **keep the knee moving.** This prevents stiffness.

Day by Day

What to do, and what to expect, from the day of surgery to your PA visit.

DAY 0

The Day of Surgery

Goal: Rest, ice, elevate, and keep the knee straight.

Rest today. The main goal is to **prevent swelling and pain** and get your recovery started. **Icing and elevation** are the two best ways to do that.

- **Keep the knee straight.** When lying in bed or on the couch, put a pillow **under your calf**, not under your knee. The knee should rest fully straight.
- **Ice right away.** Unbuckle the brace and put the ice machine pad directly over the ACE wrap. The dressing protects your skin. Use it **20 minutes on, 20 minutes off**.
- **Toe-touch only.** When you get up, the foot of your surgery leg may rest on the floor with about 10 to 15 pounds, for balance. Your crutches and good leg carry the rest.
- **Avoid sitting with your leg down or walking too much** today. Both increase swelling and pain.
- **Your leg will feel heavy.** Have someone help you move it, or loop a towel around your heel to lift it.
- **Ankle pumps:** point and flex your foot 20 times every hour you are awake. This keeps blood moving in your calf.

Your nerve block

Before surgery you had a **saphenous nerve block**, numbing medicine placed near a nerve on the inside of your thigh. It numbs the inside of your knee and shin and usually wears off **12 to 24 hours** after surgery. Pain often climbs the first night as it fades. **Take your pain medicine before bed on the first night, even if you feel fine.** It is much easier to stay ahead of pain than to catch up to it. Numb skin can't feel when it is getting too cold, so **never put ice directly on bare skin.**

Before bed tonight

- ☐ Pain medicine taken
- ☐ Ice machine on, leg elevated on a pillow under the calf
- ☐ Ankle pumps done
- ☐ Crutches and brace next to the bed

DAY 1

The Day After Surgery

Goal: Take off the bulky dressing, refit the brace, and start moving.

1 Remove the bulky dressing

Undo the brace straps and remove the ACE wrap. **Save the ACE wrap.** Under it are gauze pads. Some dried blood on the gauze is normal. Throw the gauze away. Your incisions are closed with **dissolving stitches** under the skin and sealed with **skin glue** on top. **Leave the glue alone.** It peels off on its own over a few weeks, and nothing needs to be removed. The incision on the front of your shin is longer than the others. After today, cover it with a **dry gauze pad** as needed, held by the ACE wrap. **No creams, lotions, or ointments** on the knee for 4 weeks.

If the gauze is soaked through or an incision is actively dripping, call **(425) 656-5060**.

2 Refit the brace

Put the brace back on, **locked straight**. It will feel loose now that the dressing is off. Undo the Velcro and shorten the straps to snug it up. If a strap or hinge rubs on an incision, wrap the ACE wrap between your skin and the brace. With the bulky dressing off, the ice machine also works better.

3 Start bending your knee

Take the brace off for this. Always sitting or lying down, never standing.

- Lie on your back in bed.
- Slide your heel along the bed toward your bottom. Use your hands or a towel around your foot to help.
- You will feel pressure and tightness. That's okay, but there is no need to force it. **Don't push past a right angle (90°)** for the first 6 weeks. Use common sense.
- To straighten back out, put your other foot under your heel and lower the leg slowly.
- Repeat several times a day.

The two positions for your knee

Your knee should be in one of two positions: **out straight, or working on motion**. The most comfortable position is "slightly bent," with a pillow under the knee. **Avoid that position**. Either keep the leg straight or work on bending.

4 Wake up your quad

- **Quad sets:** With your leg straight, tighten the muscle on the front of your thigh by pushing the back of your knee down into the bed. Try it on your other leg first to feel what it should feel like. Hold 5 seconds, then relax. Do sets of 10 to 15 throughout the day, **every hour you are awake**.
- **Straight-leg raises:** Tighten your quad first, then lift the straight leg 6 to 12 inches off the bed and hold for a few seconds. You may not be able to do this at first. It is easier with the brace locked straight. Your strength will come back.

Sleeping

Take the brace off to sleep. Keep it next to the bed, because it needs to go back on, locked straight, before you get up. Keep the leg straight on a pillow under the calf.

DAYS 2–7

The Rest of the First Week

Goal: Bone protected, knee straight, bending started, quad firing.

- **Toe-touch only, every time you are up.** Crutches carry your weight. Short trips around the house, then back to rest with the leg elevated.
- **Keep working on bending** while sitting or lying down, and keep the knee **fully straight** at rest.
- **Quad sets every hour** you are awake, and straight-leg raises several times a day.
- **Start physical therapy 5 to 7 days** after surgery. Bring your PT prescription and protocol. Take your pain medicine about 30 to 60 minutes before PT if motion is painful. At PT, your therapist may start a small electrical stimulator (NMES) or a special cuff (BFR) to help your quad fire. The therapist provides these, so you don't need a home unit.
- **Shower starting 48 hours after surgery**, with the incision covered until your PA visit. See the Frequently Asked Questions.

- **Swelling peaks around days 2 and 3**, and bruising may creep down your shin to your ankle. Both are normal. Keep icing and elevating.
- **Start cutting back the narcotic pain medicine** as the pain allows. See your Medication Guide.

WEEK 2**Until Your PA Visit**

Goal: More motion, a stronger quad, and the bone still protected.

- **Still toe-touch only.** This does not change until at least 6 weeks, when an X-ray shows the bone is healing.
- **Bending:** keep working toward 90°, not past it. Once you reach about 60° to 75°, your therapist may start you on a stationary bike with no resistance, **rocking back and forth** in partial turns that stay within 90°. Full turns of the pedals wait until the 90° limit lifts after 6 weeks.
- **Brace:** stays **locked straight for walking** until 6 weeks, and off for sleep. Later, crutches come off first, then the brace.
- **School or desk work:** many people are ready **around 2 weeks** if they can get around safely on crutches. Keep the leg up and iced when you can.
- **Keep the knee from collapsing inward** when you sit, stand on your good leg, or get in and out of a car.
- **Keep going to PT** and doing your home exercises.

Your PA visit at 2 weeks

We will check your incisions, your motion, and your quad, review how PT is going, and answer your questions. Write your questions down as they come up, and bring this guide and your brace.

Managing Pain

Your medicines are explained on the separate **Medication Guide** that comes with this packet. Medicine is only one of the tools you have. These have been shown to lower pain and the amount of narcotic medicine people need:

- **Ice, elevation, and taking your Tylenol on schedule.** These are your best tools for pain and swelling. Take the Tylenol every 8 hours for the first 2 weeks, even if you feel okay.
- **No anti-inflammatory medicines for 6 weeks** (ibuprofen, naproxen, meloxicam, Celebrex, or gels like Voltaren). They can slow bone and cartilage healing. Keep taking your 81 mg aspirin.
- **Mindfulness meditation** has been shown to help with pain after surgery. Guided meditations are free at mindfulness-for-pain.mindful.org.
- **Listening to music** lowers pain levels and the need for narcotic pain medicine after surgery.
- **Accept that some pain is part of healing.** Your body sends blood flow and energy to the areas that hurt, and that is part of recovery. After the first couple of days, our goal is a pain level of about **6 out of 10 with medicine**. "Zero pain" is not the goal.

Expect pain to be worst on days 2 and 3. Most patients feel pretty good the day of surgery because of the numbing medicine used during surgery. Then things get sorer before they get better. This is normal and it passes. Without an anti-inflammatory, some people need the narcotic a little longer. Call us during business hours before you run out.

Constipation

Narcotic pain medicine commonly causes constipation. Try these in order:

1. Cut back on the narcotic pain medicine if your pain allows.
2. Drink plenty of water and other decaf fluids.
3. Eat dried prunes or drink prune juice.
4. Take Senna (Senokot), an over-the-counter laxative.
5. Add Miralax, a stronger over-the-counter laxative.
6. If you have not had a bowel movement in 5 days, call the office.

Your Ice Machine

If you have an ice machine (most of our patients have the **Breg Polar Wave**), **use it a lot**. It is one of the most effective tools you have for swelling and pain, especially in the first two weeks.

- **Use it 20 minutes on, 20 minutes off**, as often as you can while you are awake.
- **Day of surgery:** Put the pad on right over the ACE wrap and bandage. The dressing protects your skin.
- **Compression is fine from day one.** If your machine has a compression setting, use it. Cold plus compression controls swelling better than ice alone.
- **After the bulky dressing comes off:** Always keep a thin layer (a t-shirt, pillowcase, or the ACE wrap) between the pad and your skin. Check your skin each time you take the pad off.
- **Keep the leg elevated while icing.** Ice works best when the leg is above your heart.
- **No ice machine?** Bags of ice or frozen peas wrapped in a thin towel work well, on the same 20 minutes on, 20 minutes off schedule.

Eat to Heal

What you eat has a **direct effect on how well and how fast you recover**. After surgery your body breaks down muscle to get the building blocks it needs for healing. Good nutrition lets it rebuild instead.

- **Protein:** Aim for 1.6 to 2.0 grams per kilogram of your ideal body weight each day. Most people eat far less. A protein shake is an easy way to close the gap when your appetite is low.
- **Creatine:** 10 grams a day. It helps muscle energy and lowers inflammation, and it is one of the most studied and safest supplements. Let your other doctors know you take it, since it can raise a kidney number (creatinine) on blood work.
- **Vitamin D:** 2,000 to 5,000 IU a day. Important for bone healing and your immune system.
- **Vitamin C:** 500 mg twice a day. Your body needs it to make collagen, the protein that holds tendons, ligaments, and your repair together.
- **Collagen peptides:** 10 to 20 grams a day, taken with the vitamin C.
- **Water:** 8 to 10 glasses a day. Well-hydrated patients have less pain, nausea, and fatigue.

The full nutrition guide is at merrittsurgery.com/surgeries/nutritional-optimization

Is This Normal?

Use this page to decide whether to wait it out, call us, or call 911.

OK NORMAL

NORMAL — expected after surgery

- **More swelling on days 1 to 3** than on the day of surgery
- **Bruising** that spreads down the shin, calf, ankle, and even the foot over the first week (gravity pulls it down)
- Some **bloody fluid** on the bandage for the first 24 to 36 hours
- A **low fever up to 100.5°F** for the first 2 to 5 days. Deep breaths help bring it down
- **Numbness** around the incision and nearby skin. It usually improves, but can take 6 to 12 months
- A **warm** knee for several weeks
- Trouble sleeping, low energy, or feeling down for a few days

CALL CALL US

CALL US — (425) 656-5060

- **Temperature of 101.5°F or higher**, or shaking chills
- **Redness that spreads** away from an incision, or drainage that is cloudy, smells bad, or soaks the gauze
- Any drainage that **starts or continues after day 4**
- **Calf pain or swelling that keeps getting worse**, especially if it is only in one leg
- Pain that is **not controlled** by your medicines
- Nausea or vomiting that keeps you from keeping down fluids or medicine
- **Unable to urinate** for 8 hours after surgery
- **Black or tarry stools**, vomiting blood, or bleeding that won't stop
- **Foot that is numb, tingling, cold, or pale** and doesn't improve after loosening the brace and wrap

911 EMERGENCY

CALL 911

- **Chest pain**
- **Shortness of breath** or trouble breathing
- Coughing up blood
- Fainting or passing out
- **Very sleepy, hard to wake up, or slow or shallow breathing** (possible narcotic overdose)
- Swelling of the face, lips, or throat, or a widespread rash (allergic reaction)

Don't see an answer to your question here?

Call our office at **(425) 656-5060**, day or night
Learn more at **merrittsurgery.com**

Frequently Asked Questions

How much weight can I put on my leg?

Only a toe-touch for 6 weeks. Your foot can rest on the floor with about 10 to 15 pounds, for balance. Your crutches carry the rest. At about 6 weeks, once an X-ray shows the bone is healing, you will start adding weight at your own pace.

When do I need the brace?

Whenever you are **up and walking**, locked straight, for the first 6 weeks. Take it off for your bending exercises, PT, resting, and sleep. After 6 weeks, you will stop the crutches first. Once you walk confidently without crutches, the brace comes off.

When can I shower?

Starting **48 hours after surgery**. Sit on a shower chair and take off the brace and ACE wrap. **Keep the incisions covered** with plastic wrap or a waterproof cover until your PA visit. Pat the knee dry, put a dry gauze pad on if needed, then put the brace back on. **Never stand on the surgery leg in the shower. No baths, pools, or hot tubs for 4 weeks.**

Do I need stitches out?

No. All of your stitches are under the skin and dissolve on their own. The skin glue peels off by itself over a few weeks. Nothing needs to be removed.

Will I feel the screws?

Some people can feel the screws under the skin on the front of the shin, especially when kneeling. About 1 in 5 patients choose to have them removed later, after the bone has fully healed. That is a small outpatient procedure.

How do I do stairs on crutches?

"Up with the good, down with the bad." Going up, step up with your good leg first, then bring the crutches and surgery leg up. Going down, put the crutches and surgery leg down first, then step down with your good leg. The surgery leg only touches for balance. Use a handrail whenever there is one. Many people find it easier and safer to go up and down on their bottom the first few weeks.

When can I drive?

Right knee: only once you are **off crutches, your brace is unlocked or off, you are off all narcotic pain medicine, and you can brake hard**. That is usually about 8 to 10 weeks. **Left knee (automatic car):** usually 2 to 4 weeks. You must be off all narcotic pain medicine. It is not up to your surgical team to release you. The rule is that you must be a safe, unimpaired driver.

When can I go back to school or work?

Many people are back to school or desk work **around 2 weeks**, if they can get around safely on crutches and keep the leg up when they can. Jobs that need standing, walking, or lifting take longer because of the toe-touch rule. We'll plan this together at your visits.

Can I travel or fly?

Long car rides and flights raise the risk of blood clots, especially while you can't put weight on the leg. Avoid them in the first two weeks. If you must travel, do ankle pumps often, get up on your crutches every hour, and keep taking your aspirin. Please let us know before you go.

How do I get a refill?

Call **(425) 656-5060** during business hours, Monday through Friday, a day or two before you run out. Narcotic pain medicine cannot be refilled after hours or on weekends. You can also ask at your PA visit.

YOUR MEDICATION GUIDE

Cartilage and Osteotomy

After surgery you go home with a small team of medicines. **Each one has a specific job**, and they work best together. This guide explains what each medicine is for, how to take it, and when to stop. Your prescription labels have your exact doses. If anything here differs from your label, follow the label and call us.

No anti-inflammatory medicines for 6 weeks

- Anti-inflammatory medicines can slow **bone and cartilage healing**. Do not take ibuprofen (Advil, Motrin), naproxen (Aleve), meloxicam, celecoxib (Celebrex), diclofenac, or anti-inflammatory creams and gels such as Voltaren.
- This includes any anti-inflammatory you usually take. You should have stopped it 7 days before surgery. We will talk about restarting it at your 6-week visit.
- **Keep taking your 81 mg aspirin** (unless we gave you a different blood thinner plan). It is a low dose that prevents blood clots, and it is part of your plan.
- Many cold, flu, and sleep medicines contain ibuprofen or naproxen. Check the label, or ask your pharmacist.

Your Medicines at a Glance

These are my standard medicines after this surgery

Your plan may be different because of your allergies, your health history, or a different plan for pain or blood thinners (anticoagulation). If we discussed a different plan with you, follow that plan and your prescription labels.

Type	Medicine	Its job	How to take it
PAIN	Acetaminophen (Tylenol)	Your main everyday pain medicine. Because you are not taking an anti-inflammatory, taking it on schedule matters more.	Every 8 hours for 2 weeks, then as needed
CLOTS	Aspirin 81 mg baby aspirin	Thins the blood slightly to prevent blood clots after surgery while you are less active.	Twice a day, unless you were given a different blood thinner plan
PAIN	Narcotic pain medicine usually oxycodone (or hydrocodone or Dilaudid)	Takes the edge off strong pain so you can rest, sleep, and do your exercises.	As needed
HELPER	Anti-nausea medicine ondansetron (Zofran) If prescribed	Settles nausea from anesthesia or the narcotic.	As needed
HELPER	Miralax and Senna	Treat constipation from the narcotic, if it happens.	Only if constipated
HELPER	Omeprazole 20 mg Prilosec	Protects your stomach if the aspirin upsets it.	Only if stomach upset

A Typical Day

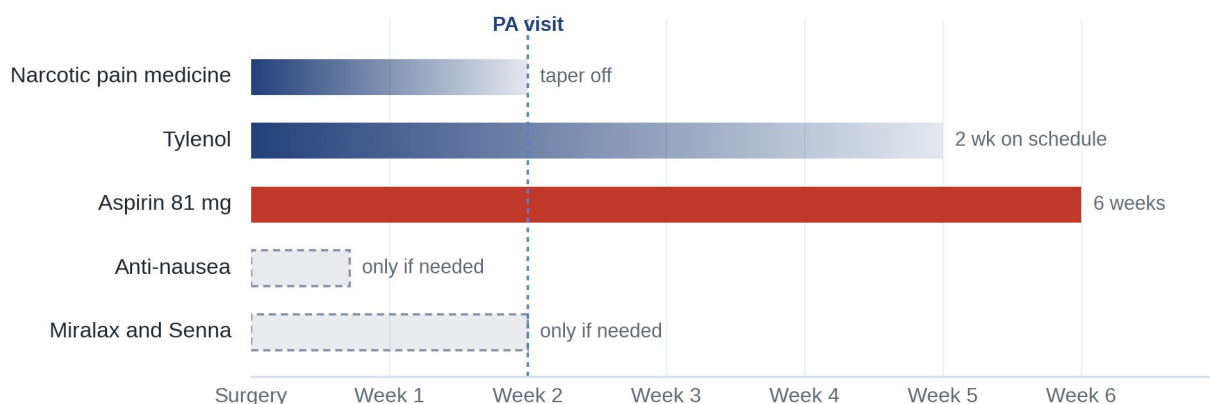
Scheduled medicines, spread through the day. Take the morning and bedtime doses with food or a snack.

Medicine	Morning with breakfast	Afternoon around 3 pm	Bedtime with a snack
Acetaminophen (Tylenol)	●	●	●
Aspirin 81 mg	●		●

Only when needed: Narcotic pain medicine; Anti-nausea medicine; Miralax and Senna; Omeprazole 20 mg.
Follow the label for how often.

How Long to Take Each One

Solid bars: take every day for the full time. Fading bars: taper off as you feel better. Dashed: only if needed.



Stop them in this order

- 1. Narcotic first.** Most people are off it within 1 to 2 weeks.
- 2. Tylenol on schedule for 2 weeks,** then only as needed until your pain is manageable without it.
- 3. Aspirin at 6 weeks. Always finish the full course.** It protects against clots while your weight bearing is limited or your bone is healing.
- 4. No anti-inflammatory until we say so** at your 6-week visit.

Each Medicine in Detail

Acetaminophen (Tylenol)

Its job: Your main everyday pain medicine. Because you are not taking an anti-inflammatory, taking it on schedule matters more.

How to take it: Take **1,000 mg (two 500 mg tablets) every 8 hours, on a schedule, for the first 2 weeks**. After that, take it as needed until your pain is manageable without it.

- **WARNING: Never take more than 3,000 mg of acetaminophen in a day from all sources combined.** Too much can seriously damage your liver.
- Some narcotic pills (such as Norco or Percocet) and many cold and flu medicines also contain acetaminophen. If yours does, it counts toward the 3,000 mg. We usually prescribe plain oxycodone for this reason. If you are not sure, ask your pharmacist or call us.

Aspirin 81 mg baby aspirin

Its job: Thins the blood slightly to prevent blood clots after surgery while you are less active.

How to take it: Unless we have discussed a different blood thinner plan with you, take **1 tablet twice a day** (morning and evening) for **6 weeks**. Finish the whole course, even if you feel great.

- **Some patients get a different blood thinner instead of aspirin**, for example if you already take one (such as Eliquis, Xarelto, or warfarin) or need a stronger one after surgery. If we have discussed a different plan with you, follow that plan instead of these aspirin instructions, and do not take aspirin on top of it unless we tell you to.
- If it upsets your stomach, take omeprazole (below).

Narcotic pain medicine usually oxycodone (or hydrocodone or Dilaudid)

Its job: Takes the edge off strong pain so you can rest, sleep, and do your exercises.

How to take it: Take as directed on the bottle, **only as needed** for pain. Use the lowest dose that keeps your pain around 6 out of 10.

- **Do not drive**, drink alcohol, or take sleeping pills or anxiety medicine (like Ambien or Xanax) while taking it.
- It causes constipation. See Miralax and Senna below.
- Without an anti-inflammatory, some people need it a little longer. **Call us during business hours before you run out** if you still need it.
- Store it out of reach, and take any leftovers to a pharmacy drop box when you are done.

Anti-nausea medicine ondansetron (Zofran)

If prescribed

Its job: Settles nausea from anesthesia or the narcotic.

How to take it: Take as directed, **only as needed** for nausea. The dissolving tablet goes on your tongue if you can't keep pills down.

Miralax and Senna (over the counter)

Its job: Treat constipation from the narcotic, if it happens.

How to take it: **Only if you become constipated**. Start with Senna, and add Miralax if you still need it. Follow the package directions, and see the constipation steps in your post-op packet. Stop when you stop the narcotic.

Omeprazole 20 mg (over the counter) Prilosec

Its job: Protects your stomach if the aspirin upsets it.

How to take it: **Only if you get an upset stomach or heartburn:** take 1 capsule once a day, 30 minutes before breakfast.

- If you already take a stomach medicine (Prilosec, Nexium, Protonix, Pepcid), keep taking yours instead.

Questions about your medicines?

Call our office at **(425) 656-5060**, day or night.

Refills: call during business hours, a day or two before you run out.

Call 911 for trouble breathing, or swelling of the face, lips, or throat after taking a medicine.