ORTHOPEDIC CENTERS OF COLORADO
Advanced Orthopedic & Sports Medicine Specialists

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Dr. Stephen Thon

Surgery Guide: ACL Reconstruction

Your guide to Surgery and Recovery

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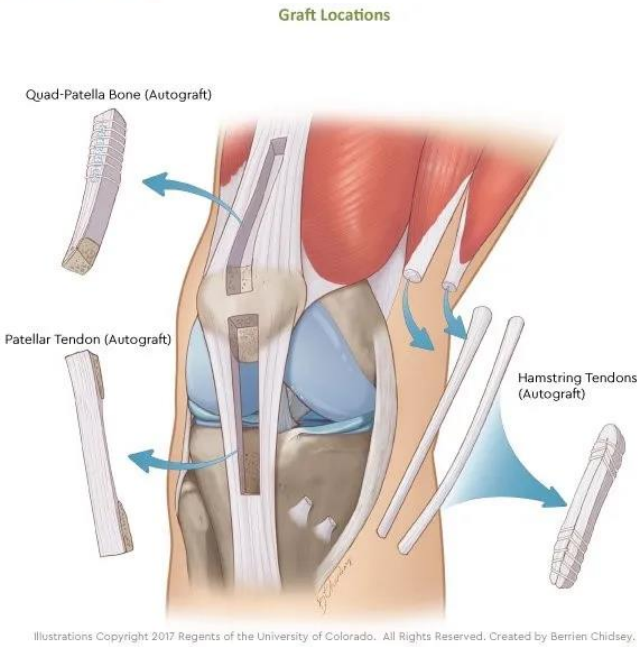
ACL RECONSTRUCTION GRAFT OPTIONS

The selection of an ACL graft is a complex decision that should be made in consultation with an orthopedic surgeon specializing in sports medicine. The ideal graft choice depends on various factors, including your age, activity level, previous injuries, and surgeon's expertise. Discuss your options and concerns with your surgeon to determine the best approach for your specific situation. This is for informational purposes only and does not replace professional medical advice.



Bone-Patellar Tendon-Bone (BTB) Graft: The BTB graft is harvested from your own patellar tendon, which involves removing a small section of the middle third (~33%) of the patellar tendon attached to bone plugs from the patella and tibia.

Pros:

- Longest track record (30+ years), Good stability and durability, Faster graft incorporation, Less risk of re-rupture in younger, high-demand athletes

Cons:

- Potential for anterior knee pain from where graft is harvested from, May require a larger incision, Risk of patellar fracture or patellar tendonitis

Quadriceps Tendon Graft: The quadriceps tendon graft is obtained from your own quadriceps tendon, which is located above the patella (knee cap), and involves harvesting a strip of the tendon (~20%) from the quadriceps.

Pros:

- Strong graft, Less postoperative pain compared to BTB grafts, smaller incisions, Potentially quicker recovery than BTB grafts, Less overall percentage of tendon removed (~20%), All soft tissue, no bone plugs needed (less pain)

Cons:

- Slightly higher rates of stiffness/arthrofibrosis compared to BTB, Has not been in mainstream use for as long as BTB (~10-15 years)

Hamstring Tendon Graft: Providing good stability and cosmesis, this graft is often chosen for patients who are lower demand, prioritize less postoperative pain and stiffness, but may experience slightly longer graft incorporation time.

Note: The hamstring tendon graft is an option, but I do not use it in my practice due to personal preference

Pros:

- Less postoperative pain and stiffness compared to BTB grafts, Good graft strength and stability, Improved cosmesis due to smaller incisions

Cons:

- Longer graft incorporation time compared to BTB grafts, Slightly higher risk of graft laxity, Potential for hamstring weakness or pain, Increased risk of graft rupture in younger, high-demand athletes

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Allograft: Allograft is obtained from a cadaveric donor. Tissue banks carefully screen and procure the grafts from deceased donors, preserving and processing the tendons or bone-patellar tendon-bone complexes for use in ACL reconstruction surgeries.

Pros:

- No additional incisions required (cadaver graft), Suitable for patients with failed previous grafts, Potential for less pain compared to autografts, Larger graft availability

Cons:

- Higher risk of graft re-tear compared to autografts IN YOUNGER PATIENTS, Risk of disease transmission (incredibly rare), Slightly increased laxity compared to autografts, Higher Cost

Bridge Enhance ACL Repair (BEAR Implant):

Pros:

- Preserves the native ACL tissue, Promotes healing and regeneration of your native tissue/ligament, Potential for more natural knee function, Minimally invasive procedure.

Cons:

- Limited long-term data compared to traditional grafts, some tears are not suitable for use, Higher cost compared to traditional grafts, can only be performed at certain centers where it is approved

WHEN IS THE BEST TIME TO FIX YOUR ACL?

Studies have shown that the ideal time to fix your ACL is generally 4-6 weeks after your injury. This is to prevent stiffness and excessive scar tissue formation after your surgery. The ideal time to fix your ACL may take longer than this. *What we are looking for is:* the swelling in your knee has gone down to close to normal size, you have your full range of motion at the knee, and your knee is not significantly painful anymore.

WHY DO WE SEND YOU TO REHAB BEFORE YOUR SURGERY?

We call this "Pre-hab". Going to Pre-hab before your surgery can improve your recovery after surgery and actually helps with your healing. We will send you to Pre-hab to help with your range of motion, restore your quadriceps strength and activity, and to help your knee prepare for surgery. Pre-hab can help prevent problems down the line from surgery such as stiffness and scar tissue.

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MEDICATIONS

You will take multiple medications as part of our opioid sparing protocol. This protocol is designed to have fewer side effects, better, pain relief, and reduced opioid use/addiction rates. There are multiple medicines we provide but none are addictive or habit forming. You will be given a small prescription of oxycodone to take ONLY AS NEEDED. Start taking your medications the day of your surgery. It is important to have started the pain medications before your block wears off and the pain returns. You should also set an alarm for the middle of the night to take your medications.

Sample Medication Schedule below starting first medicines at 8am

	Three Times per Day				
8am:	Acetaminophen 1000mg*	2pm:	Acetaminophen 1000mg*	~8pm:	(*or before bed)*
	Meloxicam 7.5mg*		Methocarbamol 750mg		Acetaminophen 1000mg*
	Methocarbamol 750mg				Meloxicam 7.5mg*
	Omeprazole 20mg				Methocarbamol 750mg
	Aspirin 81mg				

Can also alternate every 4 hours

BRACE WEAR

Your brace must be worn at all times, **including while you sleep,** FOR THE FIRST TWO WEEKS**.** There are only four situations in which you may remove your brace: 1) during physical therapy, 2) to shower, 3) to change clothing, and 4) while awake and at complete rest (I.e. sitting on couch watching TV, etc…). If up and walking about the brace must be worn, this is to protect your newly repaired knee from re-injury. Click the link to the right for instructions on how to apply your knee brace.

Length of time in the brace, depends on the type and extent of the repair performed. It is usually, at minimum, 6 weeks after surgery but can be longer. It will depend on what type of surgery you had and any other injuries that were addressed at the time of surgery (i.e. meniscus, cartilage, etc…). Please check your discharge packet specifically for the length of time in the brace and any specific restrictions.

DRESSINGS

Your outer dressings may be removed after 48 hours (or the morning of the second day). Leave the steri-strips (little band-aids) over each incision until they fall off naturally. It is normal for your incisions to drain water like fluid that may be tinged red some time after your surgery. If you have some drainage, reapply some clean gauze with tape until the drainage stops. Do NOT apply any lotions, ointments, or other liquids (besides running water) to your incisions until they have completely closed and there are no scabs over the incisions. This usually takes at least 3-4 weeks.

SHOWERING/HYGIENE

You may shower once your dressings are removed on the second day after your surgery. Running water is ok over the incisions, but you may not soak or submerge your incisions in water for a minimum of 3 weeks after your surgery. Soaking/Submerging your incisions too soon can increase your risk of getting an infection.

MOVEMENT/ACTIVITY/CRUTCHES

In most cases, you are encouraged and allowed to walk after surgery with your brace on. Your brace will need to be locked in full extension when ambulating/mobile. Most patients will use crutches for the first week or two but this is dependent on your surgery and injury. Going for light walks multiple times per day is encouraged to keep your blood flow up. Also when at rest make sure to perform ankle pumps multiple times per day to help reduce the risk of blood clots.

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TED HOSE/BLOOD CLOT PREVENTION

You will need to wear your Ted Hose (white stocking) at all times for the first two weeks,, including when you sleep You may remove them to change your clothing and to take a shower. Otherwise, they should remain in place at all times. Also when at rest make sure to perform ankle pumps multiple times per day to help reduce the risk of blood clots.

SLEEP

It is often very difficult to sleep in the first few weeks after surgery. The surgery/anesthesia itself may interfere with your sleep-wake cycle. You need to wear your brace when you sleep for the first two weeks. After that point, you do not need to wear the brace while sleeping.

DRIVING

Returning back to driving is different for everyone but for most is sometime between 2-6 weeks after surgery. It tends to be longer for those who have right leg surgery over left leg surery. Some requirements to resume driving are: you MUST no longer be taking opioid pain medications, you must be able control the steering wheel on your own while adhering to your restrictions with your knee, and your reaction time and stamina must have returned to normal. Discuss driving with your therapist to see if you are ready to return to the road on your own.

RETURN TO WORK

Going back to work is dependent on the type of job you perform. Most people take at least 1-2 weeks off from work after surgery. If you have a "desk" job", you may return to work whenever you feel comfortable to do so as long as you are able to wear your brace and adhere to the restrictions for your knee. Jobs that require heavy lifting/pushing/pulling/etc… may not be performed until much later in your recovery and may require 3+ months off of work before it is safe to return. Please discuss with your employer what (if any) light duty you may be able to perform during this time. Any paperwork required for missing time off work including FMLA should be directed to ThonCareTeam@occ-ortho.com

Work Restrictions can be found at https://www.stephenthonmd.com/pdfs/work-restrictions-acl.pdf

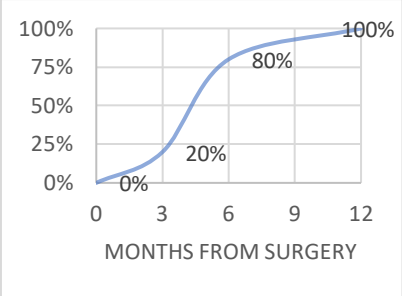
PHYSICAL THERAPY

You will start physical therapy within the first 1-2 weeks after surgery. You should go to physical therapy (PT) at least once per week for the first 6-12 weeks. PT may increase after this time point. In addition, they should provide you with exercises to perform on your own at home. You may notice some increase in pain after your PT sessions, this is normal to experience. It should go back down with rest. PT is slow by design during the early phase and then ramps up. This is necessary to give your knee the proper time to heal as strong as possible.

EXPECTED RECOVERY

Your recovery is slow at first, accelerates in the mid-point, and the levels out as you reach full recovery. Full recovery and return to sports after ACL surgery is generally in the realm of 9-12 month. It takes about 3 months to regain your normal gait and full range of motion, 6 months to feel a noticeable/significant difference, and about 9-12 months to return to full sports.

Note: This is approximate. Your recovery may be different depending on the extent of your tear



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FOLLOW UP APPOINTMENTS

You will be seen a total of 6 times after your surgery to ensure your recovery is going smoothly. Full recovery from ACL Surgery is dependent on how severe your injury was to begin with. It is expected to be at least 6 to 12 months in total with gradually increasing times between each visit.

You will be seen at the following intervals after surgery:

- 2 weeks
- 2 months
- 4 months
- 6 months
- 9 months
- 12 months.

THINGS TO LOOK OUT FOR AFTER SURGERY?

Continue to look out for any fevers greater than 100.4 degrees F (38.0 degrees C) or if your incisions/shoulder becomes increasingly swollen, red, warm to the touch, or having drainage that is thick or chalky. In addition, your pain should continue to decrease with time.

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FAQ'S

Q: How long with the surgery take?
A: The surgery will take about ~2-2.5 hours, but expect to be away from your loved ones longer as it takes time to go to sleep, position you for surgery, and give you time to wake up and become alert in the recover area.

Q: Will I need to stay in the hospital overnight?
A: No. This is an outpatient procedure.

Q: Will I need to take any antibiotics after the surgery?
A: Generally no, antibiotics are not needed. We will give you a dose of antibiotics through your IV within 1 hour prior to your procedure at the surgery center/hospital. Please notify the team if you have an antibiotic allergy. In most cases, you will not go home with a prescription for antibiotics. IF YOU ARE PRESCRIBED AN ANTIBIOTIC AFTER SURGERY, DR. THON WOULD LIKE YOU TO TAKE IT.

Q: What are the risks associated with surgery?
A: As with all surgery, there are risks of anesthesia complications, infection, damage to nerves and/or vessels, fracture, failure of the repair and need for further surgery. These risks are thankfully exceedingly low.

Q: Do I need to be in a brace?
A: Yes. The brace will be required for minimum of 6 weeks after surgery. You will be allowed to take it off to shower, get dressed, and for physical therapy, but otherwise you will need to keep this on.

Q: What medication will I go home with after surgery?
A: You will be prescribed an **opioid sparing multimodal medication protocol**. In multiple randomized controlled trials, this regimen provided improved pain control over standard opioid narcotics with improved pain scores, less constipation, and less upset stomach.

Q: What if I am on chronic pain medication?
A: We do not manage chronic pain medication. Please set up a plan with your prescribing provider PRIOR to your scheduled surgery date to help manage post---operative pain. We are happy to help execute this plan for both your safety and adequate pain control.

Q: Will I be offered anything else for pain management after surgery?
A: Yes. The anesthesiologist will offer you a nerve block to help with post---operative pain. This can provide relief for about 12---24 hours after surgery. In addition, ice will help with pain and swelling after surgery. Please make sure you have started taking your prescribed medications prior to the nerve block wearing off.

Q: What about sleeping after surgery?
A: Sleeping is the most challenging part of the recovery. Most patients find comfort sleeping in a Lay-Z-Boy or Barcalounger type chair. If you do not have access to these types of chairs, laying in bed with multiple pillows propping you up seems to help.

Q: When can I drive?
A: Recent studies have shown that it is safe to drive for most people after 2-6 weeks after surgery. You MUST be off all narcotic or sedating medications prior to any driving, In general, right leg surgery takes longer to return to normal driving than the left leg.

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Q: What clothing should I have for after surgery?
A: Light or loose fitting clothing that is easy to take on and off is recommended. You will want to wear shorts/pants that can be placed over your brace to go home with.

Q: When can I go back to work?
A: It depends on what your job is. If it involves you mainly sitting throughout the day, most patients will go back to work around 1-2 weeks post-op. If you are on your feet throughout the day, expect this to be longer. For work that requires heavy lifting, pushing, or pulling you will not be able to perform this work for a minimum of 8-12 weeks more than likely. The surgical team can provide you with a letter explaining your absence and/or restrictions if needed.

Q: When to call your doctor?
A: If you experience any of the following, call your doctor:

- Severe or increasing pain
- Cold, pale, or numb fingers
- Cloudy/Thick Drainage from your surgical site (clear/red drainage is usually normal)
- A fever over 101° for over 4 hours, abnormal redness of your incision, or a bad odor from your dressing. All of these symptoms could indicate an infection.

Disclaimer:
Everyone's recovery is different. The above information is merely a guideline and your individual recovery may be different based on your own unique situation and circumstances. It is important to continue to see Dr. Thon at the scheduled intervals. As always, if you have any questions or concerns with any of the above information, please call our office.

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