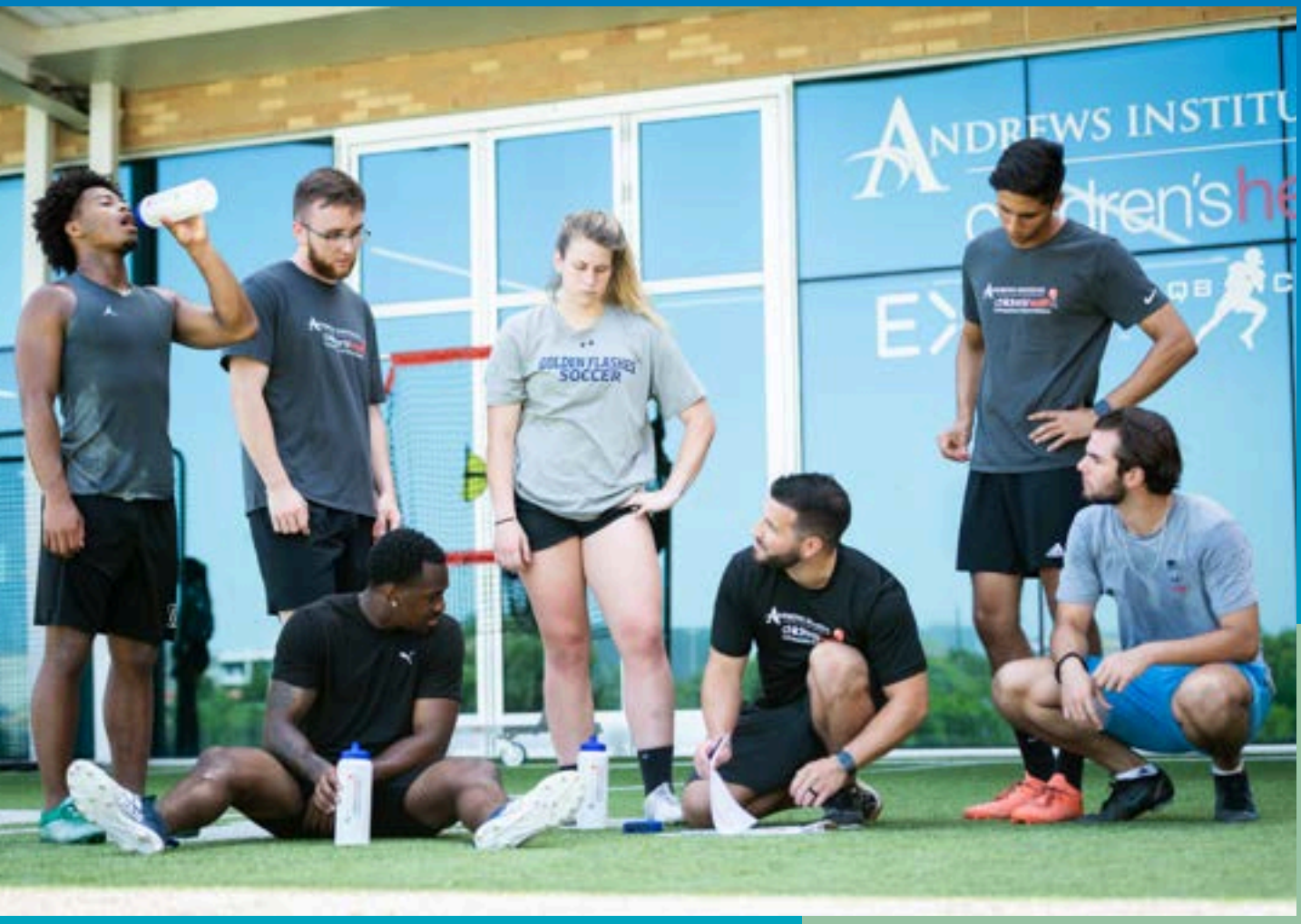
ANDREWS INSTITUTE
children's health®

ACL Return to Performance

Road Map



17211 Preston Road, Plano, TX 25024
Suite 1200
469-303-3000

lucy.phan@childrens.com

childrens.com/AndrewsSportsScience

Post Op Precautions

(For Surgeon to Check Off)

Swelling

Manage swelling by keeping leg elevated above heart level as much as possible. Use pillows to prop up your lower leg to keep the knee as straight as possible.

Cryotherapy

☐ You have purchased a cold therapy unit (Game Ready or Ossur Cold Rush) which has been wrapped under your post-operative dressings. Please utilize 3-4 times a day for 20-30 minutes while awake.

☐ If you received a nerve block for your surgery, the efficacy of your cold therapy unit for pain may be limited until your block has worn off, in approximately 12-24 hours.

☐ You may use ice packs 3-4 x a day 20-30 minutes at a time.

Wound Care/Dressings

☐ Keep dressing and incision clean and dry until you are seen in the office for your first postoperative appointment, where it will be removed.

☐ Remove dressings in _____ days

Bracing/Knee Immobilization

☐ Do not remove knee immobilizer until first post-operative appointment.

☐ You have been placed in a hinged knee brace post-operatively.

- ☐ Brace is to remain locked in extension. During ☐ Sleep ☐ Weightbearing ☐ Always
- ☐ Range of Motion allowed: _____ to _____ degrees
- ☐ OK to take brace off for ROM exercises
- ☐ See attached handout for daily post-operative exercises beginning the day after surgery

☐ Not applicable

Range of Motion

☐ Range of motion as tolerated

☐ Range of motion _____ to _____ until further specified

☐ No motion until further specified

Scan to Learn Crutch Walking

Weightbearing

☐ Weight-bearing as tolerated: Use crutches as needed for comfort.

☐ Partial weight-bearing: Use crutches and place only _____% weight for _____ weeks.

☐ Touch-down weight-bearing: Use crutches and minimal weight bear (toe-touch) for _____ weeks.

☐ Non-weight-bearing: Use crutches for ambulation until your first post-operative visit when further instructions on your progression will be provided.

☐ Other: _____

Dates to Remember

Surgeon: ☐ Loveland ☐ Pace ☐ Redman ☐ Roaten

Surgery Date: _____
Post-Op Date: _____
First Follow-Up Date:_____

Physical Therapy Location:

_____

Physical Therapist Name:

_____

First Physical Therapy Visit:
_____ @ _____ AM/PM

Remember to schedule your Functional Test *before* your follow-up visits so your surgeon can review the results with you.

Functional Testing Dates:

(*3 Month tests are typical for CHAI PT patients, not required for External PT Patients)

3 Month: _____ 6 Month: _____ 9 Month: _____ 12 Month: _____
24 Month: _____

Follow-up Dates:

3 Month: _____ 6 Month: _____ 9 Month: _____ 12 Month: _____
24 Month: _____

Overview

From Your Care Team

Dear Patients,

Thank you for choosing Children's Health Andrews Institute - CHAI! We are committed to your health and well-being as you prepare for surgery, go through rehabilitation, and following your return to sport. From our comprehensive team, this guide includes resources we believe are most helpful to support your return to performance journey. We hope this answers any questions you may have about this process. Please feel free to contact us anytime if you have additional questions.

Sincerely,

Your Care Team

Scan Below to Meet Your Care Team

Meet The Surgical Team

Meet The Rehabilitation Team

Meet EXOS Sports Performance

Meet Sport Psychology

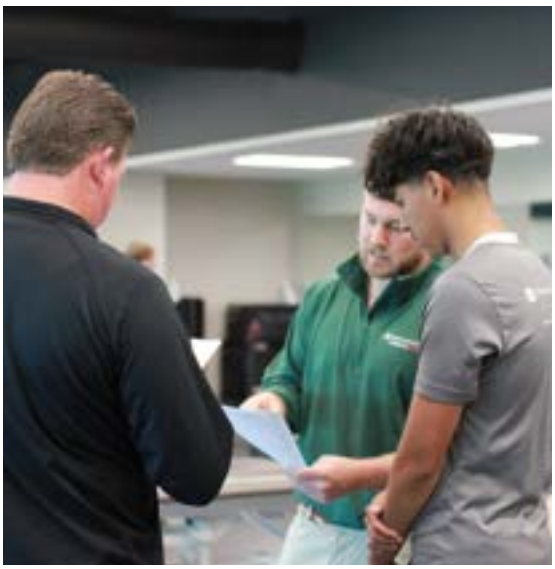
ANDREWS INSTITUTE
children's health
Orthopaedics & Sports Medicine

Rehab Milestones and Phases

Typical Rehab Progression

- **Progressing through rehab is individual to each person and timelines can vary.**
- **The return to sport timeline depends on restoring physical metrics (strength, ROM, power, etc.) AND biological healing timelines (i.e. graft maturation)**
- **Athletes take 9-12+ months to return to sport based on current research**
- **Strength changes and progress take time, typically seen after 10-12 weeks.**
- **Full-body exercises are crucial for achieving goals and returning to sport.**
- **Meeting specific competencies is crucial in rehabilitation to prevent future injuries and ensure optimal outcomes.**

CHAI Sports Science offers Functional Testing to support your rehabilitation and track your performance progress, providing a report for review with your care team.



These Tests Measure

- Work Capacity
- Strength
- Explosiveness
- Speed
- Agility
- Neuromuscular Control
- Confidence and Readiness

Tests are performed at
3, 6, 9, 12, and 24 months from your surgery date.
(Before the follow-up visit with your surgeon)

Questions regarding Return to Performance or Testing? Contact by email, phone call, or text!

Lucy Phan, MS, CSCS, USAW
Manager, Human Movement Science
Program Manager, Return to Performance & Sports Science
lucy.phan@childrens.com | 469-439-5403

Rehab Phase Progression

***This is a guide and should not override clinical judgment and decision-making. Patient should not advance through phases until meeting criteria to optimize tissue healing. Progressions should be made by your healthcare team.**

PHASE	FOCUS	CLEARANCE TO NEXT PHASE
Phase 0: Prehab *Pre-Operative Rehabilitation*	- Injury recovery - Readiness for surgery	
Surgery (Prior to surgery be sure to schedule your first physical therapy appointment)		
Phase 1: Rehabilitation ***~0-4 Months***	- ↓ Swelling - ↓ Pain - ↑ Range of motion - ↑ Neuromuscular control - ↑ Strength	☐ Tissue Protection ☐ Range of Motion ☐ Neuromuscular Control ☐ Pass Strength Criteria*
Phase 2: Return to Running/Plyometrics ***~4-6 Months***	- ↑ Work Capacity & Strength - Per PT - Start Return to Running/Plyometric Progression - Improve asymmetry	☐ Increase Functional Capacity ☐ Display Running Competency ☐ Display Plyometric Competency ☐ Pass Strength Criteria* ☐ Pass Plyometric Criteria*

Phase 3: Return to Participation
Athlete is physically active but not ready to tolerate the demands of sport at the competition level
~6-9 Months
	- Per PT - Start Return to Change of Direction Progression
	- Per PT - Start Return to Practice Progression
	- Improving asymmetry
	  o ↑ Landing mechanics
	  o ↑ Work capacity
	  o ↑ Strength
	  o ↑ Explosiveness
	  o ↑ Reactive strength
	  o ↑ Speed
		☐ Rehab is Ongoing/Referred to S&C
		☐ Modified/restricted Training
		☐ Sport-related activity/drills/skills
		☐ Complete Practice Progression
		☐ Display Change of Direction Competency
		☐ Pass Psychology Criteria*
		☐ Pass Strength Criteria*
		☐ Pass Power Criteria*
		☐ Pass Landing Criteria*
		☐ Acknowledge Risk of Secondary Injury

Phase 4: Return to Sport
Athlete has returned to sport but may not be performing at desired level
~9-12 Months
	- Unrestricted return to practice and competition
	- Secondary injury prevention
	- Rehab as needed
	- Emphasized training
	- Sport-related activity/drills/skills
		☐ Continue structured S&C program to reach preinjury metrics
		  ☐ Work Capacity ≥ Preinjury
		  ☐ Strength ≥ Preinjury*
		  ☐ Explosiveness ≥ Preinjury*
		  ☐ Reactive Strength ≥ Preinjury*
		☐ Speed ≥ Preinjury*

Phase 5: Prevent Reinjury/Return to Performance *Extends return to sport period where athlete is performing similar or above injury levels* ***~12-24 Months***	- Emphasized higher-level training - Sport-related activity/drills/skills - Performance enhancement	☐ Work Capacity ≥ Healthy Average* ☐ Strength ≥ Healthy Average* ☐ Explosiveness ≥ Healthy Average* ☐ Reactive Strength ≥ Healthy Average* ☐ Speed ≥ Healthy Average*

***See next page for examples of tests**

Functional and Performance Testing

01 Psychological Readiness

The patient will complete self-reported outcome measures. These questionnaires will assess knee function, confidence, risk appraisal, and emotions related to returning to sport. The patient will fill these out at 3, 6, 9, 12 months.

02 Biodex – Isokinetic

The Biodex Isokinetic System Dynamometer assesses knee strength, power, and endurance differences between the patient's surgical and non-surgical leg. Results guide improvement areas and readiness for returning to running, activities, or sports. This test will be performed at 3, 6, 9, and 12 months post-op.

04 Vertical Jump Tests

Patients will perform vertical jumps on force plates to measure vertical power and landing, assessing force production, limb deficits, and force absorption. These jumps will be done on both legs and single legs. This will be performed 6, 9, and 12 months.

05 Hop Tests

Patients will execute a single-leg hop and a single-leg triple hop to measure horizontal power, deceleration, and landing control, allowing arm movement. This assessment will evaluate force production, limb deficits, and absorption during takeoff and landing, conducted at 6, 9, and 12 months.

*Practice trials will be always given for each physical test.
**Additional tests may be conducted and determined based on clinical judgement

Bridge Training

Our Bridge training program is designed as an extension of physical therapy for athletes who are post-surgery and/or recovering from injury and need modified athletic training before returning to sport. We focus on the individual needs of each athlete and customize their training progression, accordingly.

Our Programs Include:

- Individualized strength training
- Modified speed and agility training
- Nutritional Education/Services from our dietitian (*ask for pricing*)
- Functional Movement Assessment and Return to Sport Consulting in conjunction with physical therapy

Schedule

Monday - Friday

- 6:30a, - 7:30am
- 5:00pm - 6:00pm

EXOS APP

Pricing

- Unlimited $299
- 2x/week $249
- 1x/week $149

Phone: 214-679-4701
7211 Preston Rd., Plano, TX 75024

chaiexos@teamexos.com
@exos_childrenshealth

Mental Health Support

Young athletes face mental health challenges like non-athletes, alongside unique stressors from academic demands, training, performance expectations, and managing mental health disorders. When athletes get injured, it's important for their care teams to monitor their physical and mental well-being, addressing feelings of loss and isolation by guiding them to necessary support resources.

How can I support my child's Mental Health during Injury Recovery?

- Pay attention to their self-set expectations, and signs of mental health issues and disordered eating.
- Consider their goals and lead with positivity and motivation.
- Encourage while avoiding excessive questions.
- Establish a supportive environment for processing emotions without focusing on solving problems.
- Listen with the intent for them to feel heard, not to respond.
- Awareness is the key for early intervention with student-athletes who may need help.
- Ask questions like "what do you need from me today for you to feel successful"?

Book a Behavioral Health Consultation today!

Contact by email, phone, or text.

Kimberly Williams, LCSW
Behavioral Health Care Manager
kimberly.williams2@childrens.com
Phone: 972-965-4594
Hotline: 844-856-6926 ext. 10169

Nutritional Support for Injury Recovery and Return to Play

Goals of nutrition are to support muscle protein synthesis, preserve muscle mass, maintain energy balance, and prevent body fat accrual.

Nutrition intervention by the sports dietician should occur immediately following an injury. – American Sports and Performance Dietitians Association

"Injuries are an inevitable part of sports participation. Nutrition may not be able to keep an athlete completely injury-free, but it can often speed up injury and recovery." – NCAA.org

Protein

- Helps athletes heal and repair muscle tissue
- Should emphasize proteins with a high leucine content (aim for ~3g leucine per serving)
- Daily protein intake should be between 1.6-2.5g/kg BW/day (depending on phase of injury)

Protein specifics:

- Amount: 20-40g (depending on leucine content)
- Frequency: every ~3-4h (4-6 meals daily)
- Type: quickly digested, high leucine content during the day (whey protein, part-skim cheddar cheese and lean meats are great sources); slowly digested proteins prior to sleep (i.e. low-fat cottage cheese, low-fat Greek Yogurt

Carbohydrate

- Needs unique to each scenario
- Used for fuel so the protein eaten can be used to heal and repair muscle tissue
- Needs are typically lower to prevent excess weight gain*
- Should include whole grains, fresh fruits, and vegetables

*The athlete should understand that some weight gain may be preferable to support a full recovery

Carbohydrate Recommendations:

- Amount: 3-5g/kg BW/day

i.e. for a 170lb male = 232-386g/day (typical 4 oz whole-wheat bagel = 60 grams)
Choose low glycemic index foods like whole grains

Fat

- Needs unique to each scenario
- Essential for healing, recovery, and decreasing inflammation
- Should come from anti-inflammatory nuts and nut butters, seeds, avocado, oily fish, flaxseed oil, extra virgin olive oil, and omega-3 fish oil.
- Pro-inflammatory omega-6 vegetable oils, saturated and trans-fat should be limited
- Omega-6/omega-3 ratio should be low to enhance anti-inflammation

Research-based Supplements & Nutritional Considerations

Micronutrients	Sources	Function
Vitamin C	Citrus fruit, red and green peppers, cantaloupe	Antioxidant, wound healing, tissue repair, immune function
Vitamin A	Sweet potato, spinach, carrots, tomatoes	Cell growth and development, immune function
Vitamin D	Sun exposure, oily fish, dairy products, fortified foods	Promotes calcium absorption and bone health
Calcium	Low-fat milk, fortified non-dairy milk, low-fat Greek yogurt, cheese, broccoli, kale, fortified orange juice	Promotes calcium absorption and bone health
Magnesium	Almonds, sesame and sunflower seeds, cashews, peanuts, bananas	Nucleic acid and protein synthesis, improves absorption and metabolism of calcium and vitamin D, improves circulation
Zinc	Lean beef, crabmeat, chicken, cashews, peanuts, bananas	Wound healing, protein synthesis, immune function
Copper	Sesame, pumpkin and sunflower seeds, cashews, shiitake mushrooms	Assists with red blood cell (RBC) formation, immune function and bone health, regenerates elastin

Foods and Research Based Supplements that may Speed Recovery from Injury:

High quality omega-3 fatty acids:

Found in:

- Cold-water fish such as salmon and tuna

Branches chain amino acids (BCAAs): 3g of leucine every 3-4 hours

Found in:

- 25-30g whey protein powder
- 140g chicken
- 170g fish

Casein: 20-25g prior to bed

Found in:

- Casein protein powder
- 1 cup of low-fat cottage cheese
- 1 ½ cups Greek Yogurt

Tart cherry juice: 12-24oz per day for anti-inflammatory and antioxidant support

Gelatin or gelatin-based foods: may support collagen synthesis

Creatine monohydrate: 10 g/day for 2 weeks, then 5 g/day

Beta-hydroxy-beta-methyl butyrate (HMB): leucine metabolite shown to provide anabolic and catabolic properties on lean body pass – 3 g/day

Fish oil supplements: 3-4 g/day DHA + EPA recommend

Ultimately, a nutrition plan that includes a well-balances diet from a variety of whole foods is best for a healing athlete. Supplements may be beneficial to an athlete's nutrition plan in addition to meals and snacks. Athletes should meet with a sports dietitian to see how supplements can safely fit into their nutrition plan

Notes

ANDREWS INSTITUTE

children's health®

The Comeback is Always Stronger than the Setback

17211 Preston Road, Plano, TX 25024
Suite 1200
469-303-3000

lucy.phan@childrens.com

childrens.com/AndrewsSportsScience