



DR. JIHAD ABOUALI
SPORTS MEDICINE & ARTHROSCOPY

Helping you move with less
pain and greater confidence

ACL RECONSTRUCTION

Post-Operative Care &
Rehabilitation Protocol





YOUR RECOVERY MATTERS

Your recovery depends on how closely you follow your care plan.

This protocol helps you:

- ☒ Protect your surgical repair
- ☒ Reduce complications
- ☒ Restore strength and mobility
- ☒ Return safely to activity

WHAT YOU NEED TO KNOW

- Recovery is based on time **AND** your progress, **not time alone**
- Do not rush your recovery
- Pain and swelling should guide your activity
- Everyone heals at a different pace
- If pain or swelling increases, reduce your activity
- **When in doubt, follow your surgeon's guidance**

IMPORTANT

- Do not compare your recovery to others
- Your plan may change based on your surgeon's guidance

IMMEDIATE POST-OPERATIVE CARE



These early steps support healing, reduce complications and set the foundation for a successful recovery.



DIET

- Begin with clear liquids and light foods such as water, juice, broth, or tea
- Progress to soft foods such as toast, crackers, or soup as tolerated
- Return to a normal diet once nausea has resolved



SWELLING CONTROL

- Elevate the operative leg to chest level whenever possible
- Do not place pillows under the knee
- Place support under the foot or ankle instead
- Avoid keeping the knee bent for prolonged periods



EARLY RECOVERY

- Begin gentle movement as tolerated
- Short walks are encouraged
- Rest and elevation remain important
- Follow your rehabilitation plan closely



Mild pain, swelling, and fatigue are expected during early recovery.

BRACE, WALKING & ICE THERAPY



Protecting the knee early helps reduce stress on the graft and supports healing.



WALKING & RESTRICTIONS

WALKING

- Use crutches for support
- Weight bear as tolerated unless otherwise instructed
- Avoid activities that increase pain or swelling
- Avoid prolonged standing or walking for the first 7–10 days
- Crutches are typically used for up to 4 weeks
- Do not drive while using crutches

RESTRICTIONS

- Avoid long periods of sitting without elevation
- Avoid long-distance travel for 2 weeks

RETURN TO WORK

- Sedentary work may resume after 3–4 days if pain is manageable



KNEE BRACE & RANGE OF MOTION (ROM)

STANDARD ACL RECONSTRUCTION

TIME	BRACE	ROM GOAL
Weeks 0-2	Brace locked in full extension 0° for ambulation. Follow your surgeon's guidance regarding brace on during sleep.	Full extension immediately; flexion to 90° by 1-2 weeks
Weeks 2-4	Brace unlocked for walking if quadriceps control is adequate and extension lag is minimal	0 - 120° flexion
Weeks 4-6	Brace typically set at 0 - 120° or fully unlocked	Progress to full ROM
Around 6 Weeks	Brace discontinued if full extension achieved, quadriceps strength adequate, and gait normalized	Full ROM by 6 weeks (typically 0 - 135°+)

IF MENISCAL REPAIR WAS ALSO PERFORMED

TIME	BRACE	ROM GOAL
Weeks 0-4	Brace locked in extension for ambulation	0 - 90°
Weeks 4-6	Brace gradually unlocked	Progress to 120°
After 6 Weeks	Brace discontinued as strength and gait normalize	Full ROM allowed

CRYOTHERAPY (ICE THERAPY)



APPLY

20 minutes



REMOVE

Approximately 2 hours



REPEAT

Throughout the day



ELEVATE

While icing

IMPORTANT



Your surgeon may modify these guidelines based on graft type, associated procedures, swelling, quadriceps control, and overall recovery progression.

WOUND CARE & SHOWERING



These early steps support healing, reduce complications and set the foundation for a successful recovery.



WOUND CARE

- It is normal for the knee to bleed and swell after surgery
- A small amount of drainage from the incision is normal during the first few days after surgery
- If blood soaks through the bandage, reinforce with additional dressing
- Loosen the bandage if swelling develops in the foot or ankle
- Keep surgical incisions clean and dry



SHOWERING INSTRUCTIONS

First 7 Days

- May begin the day after surgery using a plastic covering over the surgical site
- Do not immerse the leg in water
- No baths, hot tubs, or pools

After 7 Days

- Remove surgical dressing
- Apply clean or waterproof dressing if needed
- Shower normally, but do not soak the leg
- Leave dressing in place if it cannot be safely removed

CONTACT YOUR CARE TEAM IF YOU NOTICE



Fever



**Excessive
redness**



**Increasing
drainage**



**Severe
swelling**

PAIN MANAGEMENT & MEDICATION GUIDANCE



- Pain medication given during surgery typically wears off within 8–12 hours
- Narcotic medication may be required for a short period

COMMON SIDE EFFECTS



Nausea



Drowsiness



Constipation

MEDICATION GUIDANCE



Take medication with food



Consider a laxative if needed



Do not drive or operate machinery while taking narcotics

IF VOMITING OCCURS



Reduce narcotic medication



Reduce food intake



Take Gravol (1–2 tablets every 4–6 hours)

ADDITIONAL PAIN CONTROL



Ibuprofen 200–400 mg may be taken between narcotic doses to improve pain control, reduce narcotic use, and allow longer intervals between doses.

Tylenol (Acetaminophen) 500–1000 mg may be taken every 6 hours as needed for breakthrough pain, in addition to ibuprofen.

RECOVERY ROADMAP & REHABILITATION



Your recovery progresses through structured phases designed to safely restore movement, strength, stability, and return to activity.



PHASE 1

PROTECTION & ACTIVATION

0 - 2 Weeks

Protect the graft, reduce swelling, and activate muscle control.



PHASE 2

MOVEMENT RESTORATION

2 - 6 Weeks

Restore normal movement and improve knee mobility.



PHASE 3

STRENGTH & CONTROL

6 Weeks - 4 Months

Build strength, improve control, and restore function.



PHASE 4

FUNCTIONAL REINTEGRATION

4 - 6 Months

Improve balance, agility, and movement patterns.



PHASE 5

RETURN TO SPORT & ACTIVITY

6 - 9+ Months

Safely return to sport, work, and daily activities.

IMPORTANT RECOVERY PRINCIPLES

- Progress on healing, not time alone
- Swelling control is essential
- Movement quality matters most
- Do not rush progression
- Recovery timelines vary for each individual

EARLY POST-OPERATIVE EXERCISES

Begin within 24 hours and perform daily

EXERCISES ARE ESSENTIAL TO



Improve
circulation



Reduce blood
clot risk



Restore knee
movement



Activate
muscles



Prevent stiffness
and complications



PATIENT GUIDANCE



Begin within 24 hours and perform daily.



It is normal to experience discomfort and stiffness.



It is safe and encouraged to gently bend and move your knee early after surgery.



Perform exercises 3–4 times daily until your first follow-up visit unless otherwise instructed.



GENERAL RECOVERY PROGRESSION

- Most patients participate in rehabilitation for approximately 3–9 months, with return to sport typically occurring around 6–9 months, depending on recovery.
- Recovery timelines may vary based on individual healing and surgical findings.
- Progression between phases is determined by meeting the criteria below, not by time alone.



CONSISTENCY IS CRITICAL

These exercises play a major role in recovery.

Patients frequently ask how much and how often to perform exercises. The frequencies and repetitions should be followed consistently unless otherwise directed by your care team.



PHYSIOTHERAPY



Begin after 7–10 days



Provide therapist with this protocol



Contact clinic if referral needed



These exercises are a key part of your recovery. Consistency and early movement help improve outcomes and get you back to the activities you enjoy.

ADVANCEMENT DEPENDS ON

- | | |
|---|--|
| ☒ Pain | ☒ Strength and control |
| ☒ Swelling | ☒ Clinical guidance |
| ☒ Range of motion | |

Phase 1
PROTECTION & ACTIVATION
 0-2 WEEKS

PRIMARY PHASE FOCUS

Protect the graft, reduce pain and swelling, restore knee extension, and activate early muscle control and safe movement.

GOALS						
	Control pain and inflammation	Restore full knee extension	Improve early knee flexion	Activate quadriceps	Improve circulation	Reduce stiffness and complications

EXERCISES	PURPOSE	HOW TO PERFORM	WHAT YOU SHOULD FEEL	COMMON MISTAKES	DOSAGE/ PROGRESSION
 Calf Pumps (Ankle Pumps)	Improve circulation and reduce blood clot risk	Move foot upward toward your head, then point away in a slow controlled motion	Gentle calf movement without knee strain	Moving too quickly or forgetting to perform regularly	20–30 repetitions every hour while awake
 Heel Slides	Restore knee bending and reduce stiffness	Slowly slide heel toward your body, then return to starting position	Gentle stretching behind or around the knee	Forcing motion or moving too quickly	10–15 repetitions, 3–4 times daily. Focus on gradual improvement in bending tolerance
 Quad Sets	Restore quadriceps activation and improve knee control	Tighten thigh muscle while pushing knee downward into the surface	Muscle tightening in front of thigh	Holding breath or using hip muscles instead of quadriceps	Hold 5–10 seconds, 20–30 repetitions, 3–5 times daily. Focus on improving muscle activation quality
 Straight Leg Raises	Strengthen and maintain knee control	Keep knee straight and slowly lift leg upward, then lower with control	Tightening in thigh muscles without knee bending	Performing exercise with bent knee or extension lag	10–15 repetitions, 3–4 sets daily. Only progress if knee remains fully straight
 Patellar Mobilization	Reduce stiffness and improve kneecap mobility	Gently move kneecap side-to-side and upward/downward using hands	Mild pressure around kneecap	Applying excessive pressure or moving aggressively	Perform several gentle repetitions throughout the day as instructed

- PROGRESS WHEN**
- ☒ Full knee extension achieved
 ☒ Pain and swelling controlled
- ☒ Straight leg raise performed without extension lag
 ☒ Quadriceps activation improving

Phase 2 MOVEMENT RESTORATION 2-6 WEEKS

PRIMARY PHASE FOCUS

Restore normal movement patterns, improve walking mechanics, and begin controlled strengthening and balance activities.

GOALS



**Normalize
walking
pattern**



**Improve
knee
flexion**



**Minimize
swelling**



**Improve
quadriceps
control**



**Functional
strengthening**



**Improve
balance and
stability**

EXERCISES

PURPOSE

HOW TO PERFORM

WHAT YOU SHOULD FEEL

COMMON MISTAKES

DOSAGE/ PROGRESSION



Heel Slides

Continue improving knee bending

Progressively increase bending range within comfort

Stretching without sharp pain

Forcing excessive motion

Continue 10–15 repetitions, 3–4 times daily while gradually improving motion



Quad Sets

Improve muscle activation during standing and walking

Tighten thigh muscles with improved control and endurance

Stronger muscle contraction

Rushing contractions

Increase hold quality and control during functional movement



**Straight Leg
Raises**

Improve early lower extremity strength

Perform with slower lowering and improved control

Controlled muscle fatigue

Knee bending during lift

Progress repetitions and control as tolerated



Mini Squats

Improve leg strength

Perform shallow squats while maintaining proper knee alignment

Muscle activation in thighs and glutes

Knees collapsing inward or squatting too deeply

Begin shallow and progress depth gradually as tolerated



**Stationary
Bike**

Improve mobility and endurance

Begin with high seat and low resistance

Gentle knee movement without excessive strain

Excessive resistance too early

Start with low tension and short duration, progressing gradually

PROGRESS WHEN

- ☒ Approximately 90° knee flexion or greater
- ☒ Walking pattern improving

- ☒ Minimal swelling
- ☒ Good quadriceps control
- ☒ Functional exercises tolerated comfortably

Phase 3
STRENGTH & CONTROL
 6 WEEKS - 4 MONTHS

PRIMARY PHASE FOCUS

Build lower extremity strength, endurance, balance, and movement control in preparation for higher-level activity.

GOALS



Restore full range of motion



Improve muscular strength and endurance



Improve movement quality



Improve single-leg control



Reduce compensatory movements

EXERCISES

PURPOSE

HOW TO PERFORM

WHAT YOU SHOULD FEEL

COMMON MISTAKES

DOSAGE/ PROGRESSION



Improve functional lower extremity strength and control

Lower body slowly while maintaining alignment

Controlled muscle fatigue

Knee collapsing inward or poor balance

Begin shallow and progress depth gradually



Build functional strength

Push platform away with controlled movement

Muscle fatigue without joint pain

Excessive depth or rapid movement

Begin with lighter resistance and progress gradually



Improve eccentric control and stability

Slowly lower body from step with control

Controlled muscle engagement

Dropping quickly or poor alignment

Progress height gradually as tolerated



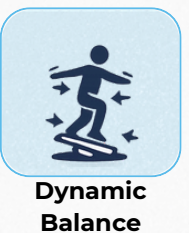
Improve unilateral strength and control

Perform exercises while maintaining stability

Muscle fatigue and balance challenge

Loss of balance or compensation

Progress duration and complexity gradually



Improve balance, coordination, and movement quality

Perform controlled balance challenges

Mild instability challenge

Rushing movements

Progress complexity gradually

PROGRESS WHEN

- ☒ Full range of motion achieved
- ☒ No increase in pain or swelling during or after activity
- ☒ Normal walking pattern
- ☒ Good lower extremity control during movement

Phase 4 FUNCTIONAL REINTEGRATION 4 - 6 MONTHS

PRIMARY PHASE FOCUS

Safely reintroduce impact activities, running progression, agility, and higher-level movement patterns.

GOALS	 Improve power and endurance	 Improve landing and movement mechanics	 Reintroduce controlled impact	 Improve agility and coordination	 Prepare for higher-level functional activity
EXERCISES	PURPOSE	HOW TO PERFORM	WHAT YOU SHOULD FEEL	COMMON MISTAKES	DOSAGE/ PROGRESSION
 Walk / Jog Progression	Reintroduce impact activity gradually	Alternate walking and jogging intervals	Mild cardiovascular effort without instability	Progressing too quickly	Increase jogging duration gradually
 Plyometric Progression	Improve power and landing control	Perform controlled jumping and landing drills	Controlled impact absorption	Poor landing mechanics	Begin with low-impact drills before progressing
 Agility Drills	Improve coordination and directional control	Perform directional movement drills while maintaining control	Controlled speed and coordination	Rushing movements or poor control with directional changes	Progress speed and complexity gradually
 Lateral Movement Drills	Improve side-to-side control	Perform controlled lateral movement patterns	Muscle activation and coordination	Poor alignment or loss of control	Begin slowly before increasing intensity
 Single-Leg Hop Progression	Improve landing control and confidence	Perform controlled forward or lateral hops while maintaining balance	Controlled impact and stability	Poor landing mechanics or loss of balance	Begin with small controlled hops and progress distance gradually

PROGRESS WHEN

- ☒ Strength approaching the non-injured leg
- ☒ Good movement control

- ☒ No instability episodes
- ☒ Cleared by care team

Phase 5

RETURN TO SPORT & ACTIVITY

6 - 9+ MONTHS

PRIMARY PHASE FOCUS

Safely return to sport, work, and higher-level activity while maintaining long-term strength, stability, and movement quality.

GOALS



Return safely to sport or activity



Maintain strength and endurance



Restore confidence with movement



Reduce re-injury risk



Continue long-term conditioning

EXERCISES

PURPOSE

HOW TO PERFORM

WHAT YOU SHOULD FEEL

COMMON MISTAKES

DOSAGE/ PROGRESSION



Sport-Specific Drills

Prepare for return to activity demands

Perform movements specific to sport or activity

Increased confidence and coordination

Returning too aggressively

Progress intensity gradually



Multi-Directional Agility

Improve high-level movement control

Perform cutting, pivoting, and directional drills

Controlled athletic movement

Poor mechanics or excessive fatigue

Progress speed and complexity gradually



Advanced Plyometrics

Improve explosive power and landing mechanics

Perform higher-level jumping drills with control

Controlled impact tolerance

Hard or unstable landings

Progress only with good mechanics



Maintenance Strengthening

Maintain long-term lower extremity strength

Continue structured strengthening program

Muscle fatigue without joint irritation

Inconsistent participation

Continue regularly even after return to sport



Deceleration Drills

Improve stopping control and landing stability

Perform controlled stopping and direction-change drills

Controlled lower extremity stability

Stopping too abruptly or losing alignment

Begin slowly and progress speed gradually

IMPORTANT

- ☒ Progress based on symptoms, not time alone
- ☒ Reduce activity if pain or swelling increases
- ☒ Prioritize movement quality over speed
- ☒ Follow guidance from your care team

LONG TERM SUCCESS & RECOVERY



Recovery is a long-term process.
Consistency, patience, and quality movement are key to successful outcomes.



LONG-TERM SUCCESS

- Continue your strengthening program
- Maintain mobility and flexibility
- Prioritize movement quality
- Gradually return to sport and daily activities
- Stay consistent with your rehabilitation program



REMEMBER

- Progress is not always linear
- Swelling may fluctuate
- Strength rebuilds slowly
- Recovery takes time and patience
- Small steps lead to long-term success



CONTACT DR. ABUALI'S OFFICE IF YOU EXPERIENCE



**Severe or
worsening pain
or swelling**



**Fever greater
than 101°F**
(A low-grade fever
may be normal in
the first 1-2 days)



Chills



**Redness,
warmth, or
continuous
drainage**



**Persistent
nausea or
vomiting**



**Difficulty
breathing**
(Contact 911)

Seek immediate care if needed. Do not rely on email for urgent concerns.

WEBSITE

www.torontosportsdoc.com

CONTACT CLINIC

416-546-7373

YOUR REHABILITATION APP

Continue your recovery through the rehabilitation app with personalized exercise videos, progress tracking, and recovery guidance.



Your recovery is a process. Stay consistent, stay patient, and trust the plan.