



THE IMPACT PROTOCOL

The first seven weeks of rehab are not outlined. At Physio Pro we use our standard knee protocols for the first seven weeks until the criteria to enter the impact protocol has been met. Patients must meet the entry-level FTA criteria at a minimum of eight weeks. We will not begin the program sooner 8 weeks post-op. Progression of the program is at the discretion of the therapist/physician. Sound clinical judgment is essential for safe progression. If the criteria are not met then standard therapy will continue until objective measures are adequate.

There are a total of five phases of rehabilitation to complete before a safe return to competition can be considered. Although estimated timeframes are outlined, not all patients will progress equally as there may be complicating factors that may hinder or expedite rehabilitation. Below are the criteria for progression through the various phases of our protocol. Rehabilitation.

Anticipated timelines and suggested interventions are found on the following pages.

Patients must commit themselves to a vigorous but safe 4 to 6 month rehab regime to insure safety and protection of their knee before returning to unrestricted activities.

Suggested Frequency of Training throughout the Impact Protocol: 3 days a week on non-consecutive days.

Exercise Dosage: Instead of sets and reps, Physio Pro uses time for almost all of our impact activities. We usually start with 30 seconds and increase the time as indicated in 10-second increments. As we begin to integrate patients back to impact activities, we need to “dose” the intensity, duration and amount of activity accordingly. In the early phases of our protocol, we encourage clinicians to have their patients warm up adequately and start their program with the given Plyometric activities. This is to prevent poor form secondary to muscular fatigue early in the protocol. At the later stages we reverse this to challenge our patients while they are fatigued insisting they maintain good form throughout the activity throughout the phases exercise duration will increase. The goal is to complete as many touches as possible using proper technique. If the athlete fatigues and loses proper technique, they should stop and rest until they can perform them properly again. At any point during the protocol if the patients loses form, or has joint pain the activity is stopped.

Resistance Training: We continue appropriate traditional progressive resistive exercise in conjunction with the impact protocol targeting muscle groups that display deficiencies. Examples of traditional strength exercises extend far beyond the scope of this document.

Important Components to the Impact Protocol

- 1 Choose your patients appropriately. Not all patients need to reach this level of rehab. Know your patients and their ultimate goals.
- 2 Follow functional testing criteria to assure safe participation/progression into the given phase of the program
- 3 Know your physician. Some surgeons want to prolong soft tissue healing times. When in doubt, contact the doctor before progressing to more vigorous activity.
- 4 Utilize Rest Breaks to restore short-burst creatine phosphate and fast glycolytic energy systems Double or triple the time/duration for the desired exercise for its subsequent rest/recovery period.
- 5 Encourage patients to be hydrated and properly nourished prior to vigorous exercise.
- 6 Please consider proper footwear and use a firm but forgiving surface.
- 7 Correct posture and body alignment is the focus for all phases.
- 8 Utilize controlled quiet landings, landing in a toe→ ball→ heel→ toe pattern for most jumps.
- 9 (Activates the hamstring/quad co-contraction and minimizes joint reaction forces) Special situations requiring different landings will be discussed later in the program.
- 10 Minimize amortization phase (landing of first jump should be the beginning of the next jump) This stresses good quick eccentric muscle control.
- 11 Land with knees bent greater than 60 degrees of flexion. After 60 degrees of flexion, the hamstrings and quadriceps work together through co-contraction. The Quadriceps becomes an ACL agonist vs. antagonist.
- 12 Land with strong Athletic positioning with the feet shoulder width apart, the knees comfortably flexed, shoulders back, chest over the knees, and the center of balance over the balls of the feet.
- 13 Avoid Dynamic Valgus Moment or knock-knees positioning with landing

ESTIMATED WEEKS 8-10

IMPACT PHASE A: Entry Level Plyometrics

ROM: 0-0-125

Effusion: Minimal to none, no joint line tenderness

Strength: 65% quad | 30% HS/Quad Ratio

Special Testing: Satisfactory Lachman/Drawer

Functional Score: >6 score on Cinti Knee Rating System

Functional Testing: 1 Minute Step Test > 60%, Satisfactory squat test, step-down test

- 1 Shuttle-bilateral (3x 20)
- 2 Shuttle-alternating (3 x20)
- 3 Lateral bounding in place (3x 30")
- 4 Slide Board (3 x 30")
- 5 Jog in place (second week) (3 x 30")
- 6 High knees in place (second week) (3x 30")
- 7 Gluteal kicks in place (second week) (3x 30")



ESTIMATED WEEKS 10-12

IMPACT PHASE B: Transitional Plyometrics /Phase- Level I Agility

ROM: 0-0-130

Effusion: Minimal to none, no joint line tenderness

Strength: 70% quad | 30% HS/Quad Ratio

Special Testing: Satisfactory Lachman/Drawer

Functional Score: >6 score on Cinti Knee Rating System

Functional Testing: None

- 1 Shuttle-bilateral grid jumps (1x 20 CW, 1x 20 CCW)
- 2 Shuttle-alternating (2x20)
- 3 Shuttle unilateral grid hops (1x 20 CW, 1x 20 CCW)
- 4 Lateral bounding in place – 3 point (3x40")
- 5 Lateral bounding with rotation (1 x 30" R, 1x30" L)
- 6 Step work: Quick feet (second week) (1 x 30")
- 7 Step work: Ali shuffle (second week) (1 x 30")
- 8 Step work: Lateral quick feet (second week) (1 x 30")
- 9 Step work: Lateral skaters (second week) (1 x 30")
- 10 Return to jogging program (treadmill) (second week)
- 11 (3W-1J-1W-3J-3W-5J- 1W progression)

ESTIMATED WEEKS 12-14

IMPACT PHASE C: Level II Agility, Sport Specific Movement

ROM: 0-0-135

Effusion: Minimal to none, no joint line tenderness

Strength: 75% quad | 60-65% HS/Quad Ratio

Special Testing: Satisfactory Lachman/Drawer

Functional Score: >7 score on Cinti Knee Rating System

Functional Testing: No pain, gait deviation with 10 min TM jog

Continue jogging program on treadmill 2-3 days a week on non-protocol days

- 1 Jump Rope: Bilateral (1 x 1')
- 2 Jump Rope: Alternating (1' R, 1' L)
- 3 Step work: Quick feet (2x 30")
- 4 Step work: Lateral quick feet (2 x30")
- 5 Step work: Ali shuffle (2x30")
- 6 Step work: Lateral skaters (2x30")
- 7 Lateral Bounding with Rotation- 3 point (2 x 30" R, 2 x 30"L)
- 8 Sport cord: Forward (1/2 speed) (2 x 20)
- 9 Sport Cord: Backwards (1/2 speed) (2 x20)
- 10 Sport Cord: 3 point Lateral Bounding (2x 30" R, 2 x 30"L)
- 11 Dynamic Sports routine (second week) (1x)
- 12 Agility Ladder: "High Knees" (second week) (3x)
- 13 Agility Ladder: Lateral "High Knees" (second week) (3x)
- 14 Agility Ladder: Lateral Quick Feet "Ins and Outs" (front lead) (second week) (3x)
- 15 Agility Ladder: Lateral Quick Feet "Ins and Outs" (back lead) (second week)(3x)
- 16 Agility Ladder: "Ali Shuffle" (second week) (3x)
- 17 Agility Ladder: "Icky Shuffle" (second week) (3x)



ESTIMATED WEEKS 14-16

IMPACT PHASE D: Level III Agility, High Level Sport Specific Movement

ROM: Within 90% contralateral limb

Effusion: Minimal to none, no joint line tenderness

Strength: 75 to 70% quad | 65-70% HS/Quad Ratio

Special Testing: Satisfactory Lachman/Drawer

Functional Score: >7 score on Cinti Knee Rating System

Functional Testing: SL hop 30% , Broad Jump with sound mechanics

Continue Jogging program and transition to outdoors.

- 1 Dynamic Sports routine (warmup)
- 2 Sport cord: Forward (3/4 speed) (2x 20)
- 3 Sport Cord: Backwards (3/4 speed) (2 x20)
- 4 Sport Cord: Lateral Shuffles (1 x 20 R, 1x 20 L)
- 5 Sport Cord: 3 Point Lateral Bounding with Rotation (2x 30"R, 2 x30"L)
- 6 Sport Cord: 3 Point Drill Forward(second week) (20x)
- 7 Sport Cord: 3 Point Drill Backward(second week) (20x)
- 8 Agility Ladder: "High Knees" (4x)
- 9 Agility Ladder: Lateral "High Knees" (4x)
- 10 Agility Ladder: Lateral Quick Feet "Ins and Outs"(front lead) (4x)
- 11 Agility Ladder: Lateral Quick Feet "Ins and Outs" (back lead) (4x)
- 12 Agility Ladder: "Ali Shuffle " (4x)
- 13 Agility Ladder: "Icky Shuffle" (4x)

IMPACT PHASE E: Impact Jump Program

ESTIMATED WEEKS 16-22 (Minimum Criteria to Enter Full Plyometric Program)

6 days a week X 6 weeks

(3 Days Plyometrics / 3 Days Functional Strengthening)

ROM: Within 90% contralateral limb

Effusion: Minimal to none, no joint line tenderness

Strength: 75 to 70% quad | 65-70% HS/Quad Ratio

Special Testing: Satisfactory Lachman/Drawer

Functional Score: >7 score on Cinti Knee Rating System

Functional Testing: SL hop 60% , Broad Jump with sound mechanics, Good form with eccentric step-down test



Dynamic Sports Routine Warm Up (All 6 Weeks)

Functional Strengthening (All 6 Weeks, Every Other Day, Non-Jump Days)

- 1 Hip Hinges: Sustained Isometric Squat
- 2 Cook Hip Lift
- 3 Fire Hydrants
- 4 Split Leg Squat/Chair Dip
- 5 Plank x 4
- 6 Multidirectional Lunge
- 7 Unilateral Straight Leg Dead Lift
- 8 Straight Leg Abduction with External Rotation
- 9 Lunge Walk

Plyometrics Phase I: 2 Weeks, 3x a week

- 1 Wall/Block Jump
- 2 Broad Jump
- 3 Squat/Vertical Jump
- 4 180/Half Spin Jump
- 5 Lateral Bounding In Place
- 6 Scissors/Rudder Jump
- 7 Richochets- Bilateral- Side to Side
- 8 Richochets- Bilateral- Back to Front

Plyometrics Phase II: 2 Weeks, 3x a week

(continue dynamic warm-up and functional strengthening)

- 1 Wall/Block Jump
- 2 Tuck Jump
- 3 Jump, Jump, Jump, Vertical Jump
- 4 Squat/Vertical Jump
- 5 Lateral Bounding for Distance
- 6 Scissors/Rudder Jump
- 7 Richochets- Bilateral- Side to Side
- 8 Richochets- Bilateral- Back to Front
- 9 Richochets- Unilateral- Side to Side
- 10 Richochets- Unilateral- Back to Front
- 11 Hop, Hop, Hop Stick

Plyometrics Phase III: 2 Weeks, 3x a week

(continue dynamic warm-up and functional strengthening)

- 1 Squat/Vertical Jump
- 2 Jump Up, Jump Down, Vertical Jump
- 3 Tuck Jump
- 4 Scissors/Rudder Jump
- 5 Jump Into Bounding for Distance
- 6 Richochets- Bilateral- Side to Side



- 7 Richochets- Bilateral- Back to Front
- 8 Richochets- Unilateral- Side to Side
- 9 Richochets- Unilateral- Back to Front
- 10 Single Leg hop and Stick

4-6 Months Post-Op (Return to Competition Criteria)

ROM: Within 90% contralateral limb

Effusion: Trace to none, no JLT

Strength: 80 to 85% quad or greater | 70-75% HS/Quad Ratio

Special Testing: Satisfactory Lachman/Drawer

Functional Score: >8 score on Cinti Knee Rating System

Functional Testing: SL hop >85%, Pass RTC criteria, Physician Clearance Must have prior to release

