



Orthopedic Surgery, Sports Medicine & Arthroscopy Specialists

Jonathan Watson, MD

REHABILITATION PROTOCOL- Nonoperative Internal Impingement

The rehabilitation guidelines are presented in a criterion based progression program. Individual patients will progress at different rates depending on their age, associated injuries, pre-injury health status, rehab compliance, tissue quality and injury severity. Specific time frames, restrictions, and precautions may also be given to protect healing tissues and the surgical repair/reconstruction. The therapist should consult the referring physician with any questions or concerns.

INDIVIDUAL CONSIDERATIONS

PHASE 1 (~0-4 weeks)

REHAB GOALS	<ol style="list-style-type: none"> 1. Minimize swelling & pain 2. Improve ROM 3. Optimize scapular/LE/trunk mobility
PRECAUTIONS	<ol style="list-style-type: none"> 1. Minimize hyperangulation (no hyperabduction, no ER at 90/90 or ER above 90 abduction) 2. Do not sleep on injured shoulder or with arm overhead 3. Ice as needed for pain
RANGE OF MOTION EXERCISES	<ul style="list-style-type: none"> ○ Passive, active assist ROM in all plane ○ Throwers- posterior shoulder/pec/trap/lat stretches ○ Sport specific hip/LE stretches ○ Soft tissue mobilizations/techniques as tolerated
SUGGESTED THERAPEUTIC EXERCISES	<ul style="list-style-type: none"> ○ As above ○ LE and core activities when pain tolerates ○ Serratus/rhomboid/lower trap strengthening, low rows. ○ Sternal lifts, shoulder dumps ○ Quadruped, dead bugs, supermans, physio ball wall squats ○ Scapular PNF ○ Supine lying with balancing objects in hand of injured arm (pack shoulder) move to side lying ○ Closed chain- pushup plus, scapular clocks, ball/physioball oscillations, seated towel slides, thumbtacks ○ Higher level athlets- balance/proprioception begin 2 leg, progress to unilateral, unstable surface, etc ○ Week 3- LE plyometrics, sport specific LE exercises that do not stress shoulder
CARDIOVASCULAR EXERCISE	<p>Stationary bike, elliptical (no UE), stairmaster within pain tolerance</p> <p>Can begin running if painless ROM</p>

PROGRESSION CRITERIA	<ul style="list-style-type: none"> ○ No rest pain, little/no activity pain ○ Full ROM ○ Good scapulothoracic mobility & control ○ Improved core/trunk/pelvic stability & posture
-----------------------------	--

PHASE 2 (~5-8 weeks)

REHAB GOALS	<ol style="list-style-type: none"> 1. Begin rotator cuff strengthening 2. Continue stretching 3. Minimize pain and swelling
PRECAUTIONS	<ol style="list-style-type: none"> 1. Avoid repetitive overhead activity 2. Ice as needed after activity
RANGE OF MOTION EXERCISES	<ul style="list-style-type: none"> ○ Continue phase 1 exercises ○ Normalize active ROM/end range/abnormal kinematics ○ Glenohumeral/scapular mobilizations as needed
SUGGESTED THERAPEUTIC EXERCISES	<ul style="list-style-type: none"> ○ Continue phase 1 exercises ○ UE- low rows, shoulder extension from 90 flexion to 0 with scapular pinch, chin tucks, kettlebell holds, dynamic hug, supine punches, prone rows, assisted pullups, lat pulldowns arms in front ○ Rotator cuff- Isometrics (abduction/adduction, flexion/extension, IR/ER), Prone I, Ts, Ys, Ws, side lying ER, standing IR/ER. Diagonal patterns after 1-2 weeks. Front raises, lateral raises, full can scaption ○ Bodyblade In multiple planes, wall angels, lawnmowers, lunge & punch. ○ Upper & lower body rolling patterns
CARDIOVASCULAR EXERCISE	<p>Continue phase 1</p> <p>Stairmaster, UBE, rowing machine</p> <p>Run/sprint progression</p>
PROGRESSION CRITERIA	<ul style="list-style-type: none"> ○ Normal glenohumeral and LE kinematics ○ Total arc of ROM equivalent to contralateral ○ Strength at least 75% contralateral

PHASE 3 (~8-12 weeks)

REHAB GOALS	<ul style="list-style-type: none"> ○ Maintain ROM ○ Improve scapular, cuff strength ○ Minimize pain
PRECAUTIONS	
RANGE OF MOTION	<ul style="list-style-type: none"> ○ Continue exercises from phase 2. ○ Mobilizations as needed

EXERCISES	<ul style="list-style-type: none"> ○ Posterior shoulder/pec stretches for throwers
SUGGESTED THERAPEUTIC EXERCISES	<ul style="list-style-type: none"> ○ Continue exercises from phase 2 ○ LE & core- progress strengthening. ○ UE- pushup progression ○ thrower’s exercises: ER/IR at 0 abduction (progress to IR/ER as pain tolerates), scaption ER full can, rows into ER at 90 abduction seated on stability ball, lower trap seated on stability ball, elbow flexion, elbow extension/triceps, wrist extension, wrist flexion, supination, pronation, sleeper stretch, supine horizontal adduction stretch into IR, Prone horizontal abduction neutral/full ER at 100, prone row, Diagonal pattern (D2) flexion/extension ○ Progress closed chain UE activities, balance, PNF, etc ○ UE plyometrics: begin 2 hand activities ○ Sport specific- drills with arm below shoulder height (fielding). Ok to begin batting
CARDIOVASCULAR EXERCISE	Continue phase 2
PROGRESSION CRITERIA	<ul style="list-style-type: none"> ○ Full pain free active ROM ○ No pain/swelling/instability ○ Normal glenohumeral & scapulothoracic mechanics ○ 85% strength of contralateral

PHASE 4 (~12+ weeks)

REHAB GOALS	<ul style="list-style-type: none"> ○ Full ROM in all planes ○ No pain with sport activities ○ Improvement of strength, endurance, neuromuscular control ○ Return to sport/work
PRECAUTIONS	Post-activity soreness should resolve within 24 hours Avoid post activity swelling
RANGE OF MOTION EXERCISES	<ul style="list-style-type: none"> ○ Continue with flexibility exercises from previous phase
SUGGESTED THERAPEUTIC EXERCISES	<ul style="list-style-type: none"> ○ Continue phase 3 activities. Progress with resistance/load. ○ Sport specific- ok to begin overhead sport specific activities. Throwers begin interval throwing program ○ Kettlebell Turkish get-ups w/added neck & shoulder rotations ○ UE plyometrics- progress to unilateral & overhead, endurance wall dribbles, heavy full kinetic chain activities
CARDIOVASCULAR	Progress to baseline

EXERCISE	
PROGRESSION CRITERIA- RETURN TO SPORT	<ul style="list-style-type: none">○ Normal kinematics of GH & ST joints○ Full painless active & passive ROM○ Strength 90% contralateral○ No pain/discomfort after activity○ Completion of sport specific/throwing program○ Physician clearance