



Phase 1	Maximum Protection (0 to 14 Days)
Aims	Protect healing tissue Decrease pain and inflammation Prevent muscle atrophy Initiate elbow ROM
Precautions	Avoid valgus force or position during exercises ROM exercises are gentle active or active assisted. No shoulder external rotation
Treatment	Week one <ul style="list-style-type: none">• Immobilization in sling with 90° of elbow flexion• Ice to reduce pain and inflammation• In forearm supination active wrist flexion and extension ROM.• Full finger range of motion• Full wrist radial and ulnar deviation• Full cervical spine ROM(flex, ext, rotation, and side flexion) Week two <ul style="list-style-type: none">• In supine lying: Active assisted or active elbow flexion and extension in range 30 to 100 degrees with forearm supination• elbow pronation and supination ROM• Initiate wrist isometrics• Initiate elbow flexion and extension isometrics• Active shoulder flexion and abduction ROM in the sling keep forearm in 90 degrees flexion and in supination. NO SHOULDER EXTERNAL ROTATION.• Shoulder girdle elevation and depression. Shoulder girdle pro- and re-traction.

(UCL) Reconstruction Post-Operative Protocol - throwers



Tanya Anne Mackenzie

Phase 2	Active Range of Motion and Early strengthening (2 - 6 weeks).
Aims	<p>Gradually increase elbow ROM</p> <p>Protect repair</p> <p>Introduce shoulder girdle function</p> <p>Regain and improve muscular strength as a secondary goal</p> <p>Scar tissue management and scar mobility</p>
Precautions	<p>Avoid valgus force or position during exercises</p> <p>ROM exercises are gentle active or active assisted.</p> <p>Avoid passive and resisted shoulder ER until 6 weeks.</p>
Treatment	<p>Week 3</p> <ul style="list-style-type: none"> • In supine lying, active elbow flexion and extension 30° to 120° with forearm supination. • Towards end of week 3 progress slowly on to full elbow ROM as tolerated • Active scapular stabilisation exercises • Begin grip strength and finger strength • Whole body motion with core work while in sling • Shoulder isometrics (IR, abd, and biceps, avoid resisted shoulder ER) • Maintain shoulder ROM, introduce 90% of gentle active shoulder ER. • Scar tissue management • Restore scar mobility • If scar sensitive – desensitise program. • Begin grip strength <p>Weeks 4 to 5</p> <ul style="list-style-type: none"> • Isotonic shoulder and scapular strengthening avoiding valgus stress • Start isotonic shoulder ER strength (hand stays on medial side of elbow to avoid valgus strain) <p>Weeks 5 to 6</p> <ul style="list-style-type: none"> • Progress shoulder program strength • Progress elbow ROM • Core stabilisation program • Aim for full ROM in elbow • Elbow ROM 0-145 degrees
Other	<ul style="list-style-type: none"> • Walking and stationary bike with sling on permitted. But no treadmill and no running or jarring activities (ensure that incision is closed i.e. no risk of infection from perspiration)

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Phase 3	Strengthening Phase (6 - 10 weeks)
Aims	Increase strength power and endurance Maintain full elbow ROM Gradually initiate sport activity
Precautions	There should be no pain on doing the strength exercises. Post exercise soreness should be mild and relived within a few hours of stopping exercises
Treatment	Weeks 6 to 8 <ul style="list-style-type: none"> • Wean from sling • Restore/maintain full elbow range of motion • Light resistance ex for arm (half –one lbs): wrist curls and extensions, forearm pro- and supination, elbow extension and flexion. • Advance shoulder strengthening program • Proprioception and neuromuscular control drills • Light manual resistance in PNF patterns with proximal stabilization • Week 8-10 <ul style="list-style-type: none"> • Concentric and eccentric biceps and triceps • Stabilisation of wrist flex/pronators • Isotonic forearm and wrist program • Shoulder program – introduce resisted shoulder external rotation • Evaluate upper limb ANT and restore normal neurodynamics • Scapular muscle function • Initiate plyometrics starting with 2 hand drills close to the body-chest and side throw Week 9: <ul style="list-style-type: none"> • Diagonal PNF patterns, • shoulder rotations in neutral and in abduction and scaption, • Scapular retractors, posterior tilt, and upward rotation with resistance. • Introduce upper limb weight bearing into isometric holds in the press up and push up positions.
Other	Week 11 onwards: Can start to swim, and walking, stationary bike with brace off. Continue to avoid running or jumping
Phase 4	Advanced Strengthening (12 –16 weeks)

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Precautions	There should be no pain on doing the strength exercises. Post exercise soreness should be mild and relived within a few hours of stopping exercises. Control the speed of the movements carefully
Treatment	<ul style="list-style-type: none"> • Initiate rhythmic stabilisation drills in protected positions i.e. at the side. Avoid valgus strain. • Initiate closed kinetic chain exercises • Two-armed rebounder drills, progressing to one-armed off a wall. • Introduce one hand plyometric 90/90 throws
Other - throwers	Initiate plyometrics starting with 2 hand drills first further from the body Start ‘slow motion air throws’ Running and sprinting can be introduced gradually.(50%-75% speed) Start hand wall dribbles
Phase 5	Interval throwing Program (16- 20 weeks)
Aims	Increase strength and power and endurance of upper limb musculature
precaution	There should be no pain on throwing. If there is soreness after throwing it should be mild and subside within a few hours.
Treatment	<p>Gradual return to sport program</p> <ul style="list-style-type: none"> • Initiate interval throwing program based on advice below and particular to type of sport • Dynamic neuromuscular control with shoulder stabilisation • Check throwing mechanics • Strengthen the muscles involved in throwing, with attention to core • Plyometric progressions over a period of 4 weeks. Progress from 2 arms in sagittal plane to 1 arm in the sagittal plane, then to 2 arm rotational movements then 1 arm rotational movements). • Start throwing. Use an interval return to throwing program with the intention to return to 100% throwing only at 28 weeks. Please refer to the guidelines for interval return to throwing program. • Address hip, calf and core strength. <p>Week 16: running allowed but monitor environment to minimise falls.</p>
Guide	<ul style="list-style-type: none"> • Return to full work capacity and competitive throwing from 28 weeks