Large and Massive Rotator Cuff Tear Repair Protocol

These reconstructions were performed with some tension at the repair site and were primarily performed for pain relief and mild loss of strength. Most repairs are double row, transosseous (or equivalent) repairs which should allow early range of motion with a low risk of re-rupture.

Phase I: Immediate postoperative period (weeks 0-6)

During the first 6 weeks after tendon repair, loads across the repair should be minimal. The goal of this phase is to allow the clot and repair tissue at the surgical site to organize so that it can withstand physiologic loads. Passive range of motion allows gentle tensile stress and is important in decreasing stiffness which may cause pain.

Goals:	Maintain/protect integrity of repair
	Increase passive range of motion (PROM)
	Diminish pain, stiffness
	Become independent with activities of daily living (ADL's)

Precautions:	Sling for 2-6 weeks except for physical therapy (at physician's discretion)
	No AROM in flexion or abduction
	No lifting of objects, but can use arm to assist in ADL's

Days 1-14
Sling at all times except for pendulum exercises and shoulder shrugs; sling at night
Finger, wrist, and elbow active range of motion as tolerated
Scapular isometrics with shoulder shrugs and scapular retraction
Cervical range of motion
Cryotherapy if available

Weeks 2-4
Continue with the sling as per your doctor's orders; still hang by side without active flexion or abduction; if an abduction pillow was prescribed, please continue to use it
Unrestricted passive ROM in the supine position; ***no towel stretches***
May resume general conditioning program (e.g. walking, stationary bike)
As long as the elbow is by the side there should be minimal risk to the repair site

Weeks 4-6
PROM exercises
Goal is to achieve full PROM by week 6-8
Continue cryotherapy for pain
Heat for ROM exercises
Continue scapular retraction and isometrics

Criteria for progression to Phase II:
Passive forward flexion to 150 degrees
Passive external rotation in adduction to 50 degrees

Passive external rotation in abduction to 75 degrees
Passive external rotation in abduction to 45 degrees
All motions are in the scapular plane

Phase II: Protection and Active Range of Motion (weeks 6-10)

By post-operative week # 8, the rotator cuff repair should be strong enough to withstand the force applied by lifting the hand above shoulder height. However, most animal studies indicate that the tendon-to-bone interface is not strong enough for true strengthening until post-operative week #10. The goals of this phase are to establish normal muscle firing patterns that will allow full activities of daily living. Resistance and/or weighted training exercises are not allowed until postoperative week #10 and full passive range of motion is achieved.

Goals:	Allow healing of soft tissues
	Restore full passive range of motion
	Decrease pain and inflammation
	Do not overstress healing tissue
	No pain with ADL's

Precautions:	No weight lifting
	No towel stretches or excessive behind the back movements
	Avoid upper extremity bike and ergometer exercises
	Pulleys, AAROM allowed

Weeks 6-10
Full AAROM, full PROM
Begin AROM as tolerated after week 8
Start rotator cuff isometrics at week 10
Continue with periscapular strengthening
Pulley activity as tolerated
Aquatherapy if available

Criteria for progression to Phase III:
Full active range of motion in all planes

Phase III: Early Strengthening (weeks 10-16)

By post-operative week #10 tendon-to-bone healing should be strong enough to allow a gradual program of muscle strengthening. Shoulder and scapulothoracic motion should be supple enough to allow strengthening without irritating the shoulder. *Attempting to strengthen a stiff shoulder can cause pain and may stress the repair.* Elevation of the arm should occur without scapular assistance.

Goals	Full passive range of motion

	Full active range of motion
	Restoration of shoulder strength (endurance)
	Eventual return to functional activities

Precautions	No lifting of objects >5 lbs, no overhead lifting
	No overhead work or sports

Week 10-16
Strengthening requires full passive range of motion
Strengthening should always start below shoulder level height
Resistance bands in external and internal rotation (concentric and eccentric)
External rotation resistance in side-lying position
Lateral raises: side-lying abduction limited to 45 degrees allows strengthening with minimal risk of impingement
Prone rowing, extension and horizontal abduction
Build muscle endurance
Please *avoid supraspinatus strengthening in the "empty-can" position**

Phase IV: Advanced Strengthening (After Week 16)
This is a continuation of Phase III. The goal is continued strengthening with a gradual return to sports, labor, or recreational activities.

Goals	Full, pain free active range of motion
	Improve shoulder strength, power, endurance
	Return to labor, sports, recreational activities

Weeks 16-20
Continue to maintain full range of motion
Proprioceptive training
Light sports (golf chipping/putting or equivalent)

Week 20 and longer
Progression of strengthening. Large tears may take longer than 20 weeks to regain full strength.
Increase sports interval training (ground strokes in tennis, wedges in golf, or equivalent)
Return to sports and weight lifting allowed once normal strength (side-to-side) achieved. No throwing, tennis serves or freestyle swimming until post-operative month 6

* In general, overhead strengthening and bike ergometers can place the shoulder closer to an "impingement" position in the subacromial space. They may cause mechanical impingement and rotator cuff irritation. The "empty can" position with the thumb pointing down brings the greater tuberosity closer to the acromion and should be avoided.