

Background & General Considerations

- **Low-Grade/Small Rotator Cuff Tears:** At times rotator cuff tissue collects minor injuries or small tears. Fraying of these tissues are also called “low-grade” tears and small rotator cuff tears are also called low grade at times. Smoothing the frayed portions can decrease catching sensations that can cause pain. Repairing small tears when needed can decrease pain. Smoothing these tissues is often called a “debridement.”
- **Postoperative Pain Pump:** No shoulder exercises while a pain pump is in place
- **Sling Time:** Have the patient wear sling at all times except while showering and while doing exercise or physical therapy for the first 2 weeks or as directed on the initiating prescription. Rotator cuff repair studies involving small tears suggest that 2 weeks of sling time is sufficient.
- **Range of Motion Restrictions:** Avoid active abduction for 6 weeks. If a biceps tenodesis is performed, no resisted active elbow flexion is advised for the first 6 weeks. “No lifting anything heavier than a coffee cup for the first 6 weeks.”
- **Maturation Time:** To allow the joint to restore normal synovial fluid mechanics, do not lift heavy objects, support body weight, perform heavy upper body weight lifting, or perform sudden jerking movements for 8 weeks with debridement and 12 weeks with small rotator cuff repairs. Tendon to bone healing starts to get strong at 6 weeks but likely is not mature out to 6 months.
- **Return to Sports:** A return to sporting activities at 3-4 months may be considered, but each individuals return to sporting activities will be specified and tailored by the circumstances of their case.
- **Protocols are Guidelines and Functional Progression:** Please note that the following protocol is a general guideline. Patients should not be progressed to the next phase until they demonstrate proper form with all activities and functional criteria are met in the current phase. The timelines of this protocol are a general guideline.
- **Whole Body Approach:** Assess functional movements of the whole body and incorporate treatment modalities for loss of mobility and stability in the entire system.
- **Ideal Frequency:** Formal physical therapy provides the optimal environment and guidance throughout the recovery process. In an ideal situation, 20-30 visits during the first 2-3 months of the recovery would be optimal. Patients should visit with a physical therapist 2 times a week for the first 6 weeks, then 2 to 3 times a week for the next 2-6 weeks. This is not always possible and must be tailored for each patient.
- **BLOOD FLOW RESTRICTION THERAPY:** Blood Flow Restriction (BFR) has compelling evidence that it can improve the systemic healing response when used post-operatively with low-intensity resistance training (LIRT). However, not everyone will have access to BFR.
- **Neurocognitive Rehabilitation:** It is clear that injury events effect the brain as much as the muscles and joints involved. Progressive rehabilitation programs are combining

neuromuscular with neurocognitive methods. Consider the addition of neurocognitive methods to each phase of the rehabilitation process.

Phase I (Maximal Protection Phase, Generally Weeks 0-2):

Principles/Goals:

- Protect Debridement/Repair Tissue: Sling at all times including sleeping
- If Biceps Tenodesis Performed, no resisted elbow flexion for first 6 weeks and no biceps isometrics for the first 2 weeks.
- Diminish Pain Associated with Swelling and Initial Post-Surgical Inflammatory Response
- Avoid Overhead Movement/Lifting for First 6 weeks
- Optimize Nutrition and Healing Response
- Prevent Negative Effects of Sling Immobilization
- Minimize Muscle Atrophy
- Keep Incisions Clean and Dry

Treatment Recommendations/Examples (Day 1-14)

- Elbow/Hand ROM and Gripping Exercises, Encourage Use of Squeezing Ball that Accompanies Sling
- Tables Slides Instead of Pendulums
- Active Scapular Control Exercises in Sling
- Shoulder Submaximal Isometrics (No Biceps Isometrics for Day 1-14)
- Gentle, Pain-Free ROM
 - Passive flexion to 90
 - Passive ER at 45 degrees of abduction to 35 degrees
 - Passive IR at 45 degrees abduction to 35 degrees

-Rhythmic Stabilization Drills

- ER/IR in scapular plane
- All directions at 100 degree flexion

-Neck Mobility, Stability Exercises

-Cryotherapy and Soft Tissue Modalities as Needed

-Blood Flow Restriction (BFR) has compelling evidence that it can improve the systemic healing response. Considering using with LE strengthening exercises.

-Neurocognitive Rehabilitation: Consider the addition of neurocognitive methods to each phase of the rehabilitation process.

Phase II (Early ROM and Strengthening Phase, Generally Weeks 3-6)

Principles/Goals:

-Gradually Restore Full Range of Motion, But Avoid Active Abduction for First 6 Weeks

-If Biceps Tenodesis Performed, No Resisted Elbow Flexion for First 6 Weeks Enhance Neuromuscular Control

-Improve Muscular Strength

-Restore Scapular Stability and Neuromuscular Timing

-Improve Rotator Cuff Activation

-Optimize Nutrition and Healing Response

-Begin Restoring Muscle Mass

Criteria to Progress to Phase II

-Steadily Progressing ROM

-Minimal Pain

-Normal Scapulohumeral Rhythm in Gravity Lessened Positions

Treatment Recommendations/Examples

-Table Slides and Pendulums

-Pulleys in Scapular Plane

-Restore Normal Range of Motion

- Passive flexion to 160 degrees
- Passive ER at 90 degrees abduction to 80 degrees
- Passive IR at 90 degrees abduction to 75 degrees

-Active ROM Can Progress to Limits Above

-May Begin to Work on Gentle Behind the Back Stretches to Tolerance

-Progress all Isotonic Strengthening and Tube Exercises

- Prone Row
- Prone shoulder extension
- Sidelying external rotation
- Supine lower trap

-Progress all Scapula Stabilization Exercises

-Progress Proprioceptive Neuromuscular Facilitation (PNF) Techniques

-Core Strengthening

-Cryotherapy and soft tissue modalities as needed

-Blood Flow Restriction (BFR) has compelling evidence that it can improve the systemic healing response. Considering using with LE strengthening exercises.

-Neurocognitive Rehabilitation: Consider the addition of neurocognitive methods to each phase of the rehabilitation process.

Phase III (Intermediate ROM and Strengthening Phase, Generally Weeks 6-12)

Principles/Goals:

- Restore Active Abduction, Avoid Isolated Abduction Strengthening Until 12 Weeks
- Increase Strength/Endurance
- Improve Neuromuscular Control/Scapulohumeral Rhythm
- Improve Rotator Cuff Activations and Strength
- Prepare for Sport Specific Movements (Progress to Overhead)
- Enhance Neuromuscular Control
- Optimize Nutrition and Healing Response
- Restoring Normal Muscle Mass

Criteria to Progress to Phase III

- Full Pain Free Range of Motion
- No Pain or Tenderness
- Normal Scapulohumeral Rhythm in Gravity Lessened Positions

Treatment Recommendations/Examples

- Emphasize Strengthening in Functional Movements
- Begin Mobility/Stability of Appropriate Spinal Segments
- Proprioception Neuromuscular Facilitation and Perturbation Training
- Initiate Plyometric Training (2 hand to 1 hand drills)
- Incorporate Cardiovascular Training
- Resistance Exercises Progressing to 90 degrees Shoulder Abduction
- Progress Proprioception Exercise (Below Shoulder to Above Shoulder)
- Capsular Stretching Program (active/passive as needed)

- Initiate Closed Kinetic Chain Exercises at Week 7
- Incorporate Sport Specific Drills (towel drills, dry throws, wind up)
- Restore Normal Open Kinetic Chain and Close Kinetic Chain Combined Functional Joint Movement Patterns
- Continue to Progress Mobility/Stability of Appropriate Spinal Segments
- Cryotherapy and soft tissue modalities as needed
- Blood Flow Restriction (BFR) has compelling evidence that it can improve the systemic healing response. Considering using with LE strengthening exercises.
- Neurocognitive Rehabilitation: Consider the addition of neurocognitive methods to each phase of the rehabilitation process.

Phase IV (Optimize Strength/Proprioception and Return to Sport, Weeks 13-20)

Principles/Goals:

- Complete Interval Sport Program Pain Free
- Improve Muscular Strength and Endurance
- Optimize Neuromuscular Control
- Enhance Muscular Strength, Power, Endurance
- Progress Functional Activities
- Return to Sport Activities

Treatment Recommendations/Examples

- Consider Once a Week to Once to Twice a Week Visits
- Initiate Linear Throwing Program (2 weeks rainbow tosses prior to linear throwing) or Return To Swinging Program (Golf/Tennis)
- Progress Body Weight Resistance Upper Extremity Exercises

- Progress Dynamic Warm-up and Mobility Exercises
- Continue Core Stability in Functional Sport/Activity Demand Positions
- Initiate Endurance Training
- Initiate/Progress Interval sport Program
- Consider restricted/Non-contact return to sport activities

Return to Sport Considerations

- A return to sports at 2 to 4 months is reasonable, but each individual's return to sport will be specified and tailored by the circumstances of their case.
- Timing of Return to Sport Considers Many Factors Including Age, Specific Sport, Participation Level, Time of Season. This will be tailored and considered in light of risks and benefits of timing.
- Consider Video Recording of Athletic Activities to Ensure a Return of Proper, Balanced Functional Movements as well as Form and Technique
- Athlete Must Demonstrate Quality and Symmetric Movement Throughout the Entire Body
- Symmetric and Acceptable Scores on Closed Kinetic Chain Upper Extremity Strength Testing
- Return to Sport Testing Can be Used to Help Identify Deficiencies and Guide Final Preparations

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For additional information, please contact the office of Dr. Adam Anz, serving the greater Pensacola, Gulf Breeze, and Gulf Coast communities.