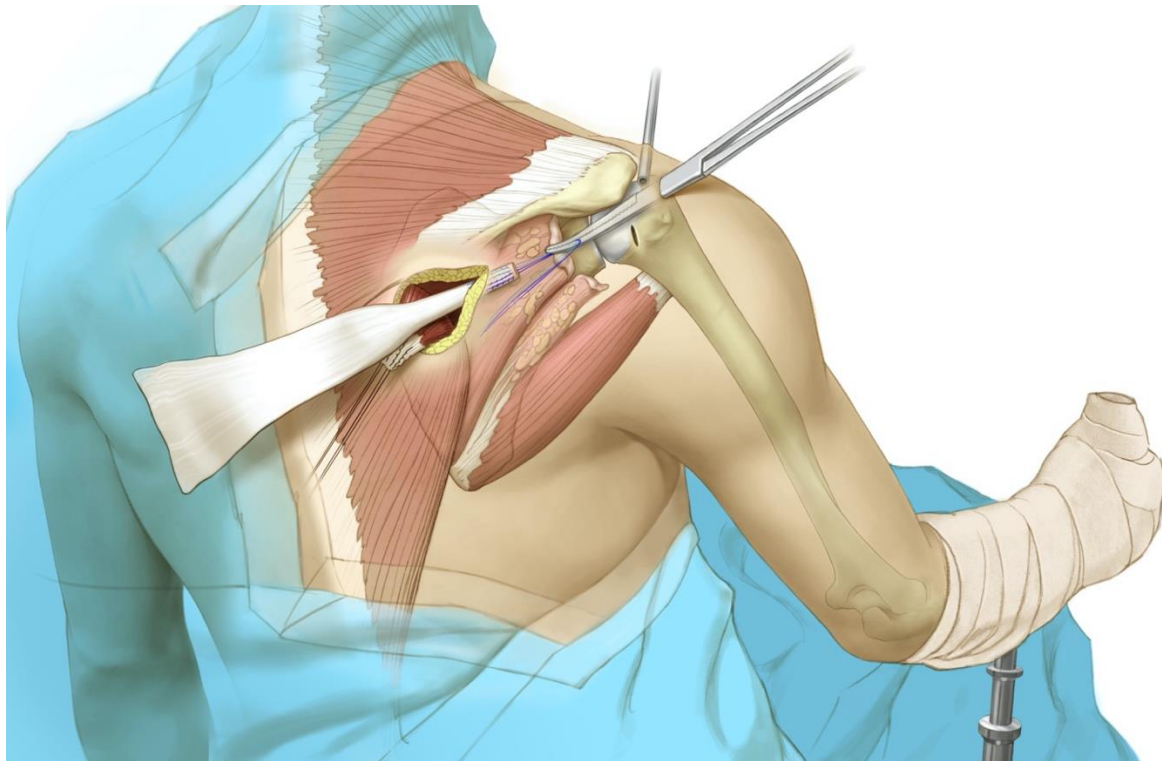


Lower Trapezius Tendon Transfer Protocol

The intent of this protocol is to guide clinicians and patients through the rehabilitation course for a lower trapezius tendon transfer. This protocol is time based (i.e. dependent on tissue healing) as well as criterion based and should not be a substitute for one's clinical decision making. Specific therapy interventions should be decided based on the individual needs of the patient, their clinical exam and post-operative progress. If you have any questions, please contact the surgeon or their team directly.

Why a Lower Trapezius Tendon Transfer?



When rotator cuff muscles are torn, an arthroscopic repair is almost always possible if the rotator cuff is repairable. Repairable means that the quality of muscle is still preserved, and the tendon quality and length are good for the repair. However, when the rotator cuff tendon is degenerated and shortened, the healthy muscle tissue is replaced with fat and it cannot be effectively repaired.

As an alternative to repair in these cases, tendon transfers were developed to restore function of the shoulder. The lower trapezius transfer was developed specifically to restore external

rotation function, to restore elevation through humeral head depression, and to avoid the need for a reverse total shoulder in the young, active population.

In the procedure, the lower trapezius tendon is released from the scapula and an Achilles allograft is used to lengthen the tendon so that it can reach the shoulder joint. The transfer is complete when the tendon is attached to the supraspinatus and upper border of the infraspinatus.

Based on anatomical, kinematic, and biomechanical studies, the lower trapezius transfer has been found to be the optimal transfer to reconstruct massive irreparable rotator cuff tear involving the posterior and superior portions of the rotator cuff. In addition to publications about the outcome of this transfer, there are numerous outcome studies confirming the reliability of the arthroscopic (or open) lower trapezius transfer.

Surgical Management of Massive Irreparable Posterosuperior Rotator Cuff Tears: Arthroscopic-Assisted Lower Trapezius Transfer:

[Eric R Wagner](#)¹, [Bassem T Elhassan](#)²

Rev Musculoskelet Med 2020 Oct;13(5):592-604.

Lower trapezius transfer with Achilles tendon augmentation: indication and clinical results

[William R Aibinder](#)¹, [Bassem T Elhassan](#)¹

2018;13(4):269-272.

Epub 2018 Nov 7.

Rehabilitation Considerations:

Respect the procedure. It is critical to the success of this surgery that the transferred tendon heal with the appropriate tension. Follow all range of motion, loading, and brace wearing instructions very carefully.

The lower trapezius has a new role. The lower trapezius has a new job of functioning like the rotator cuff to elevate and externally rotate the shoulder. It takes time to learn new movement patterns and activate transferred muscles correctly. Be patient and follow the protocol closely.

No Internal Rotation. Moving into internal rotation can overstretch the transferred tendon and effect the appropriate tension needed to maximize functional outcomes. Wear the brace as indicated, avoid reaching behind the back or placing hand on abdomen until cleared by surgeon. Physical therapists should not stretch the surgical arm into internal rotation.

PHASE 1: MAXIMAL PROTECTION (0 – 8 WEEKS)

Rehabilitation Goals

- The goal of the first phase of rehab is to maximize protection of the transfer and facilitate healing
- The arm must remain in a gunslinger brace to allow the transfer to heal at the appropriate tension

Gunslinger:

- Remain fully immobilized in the brace at all times for 8 weeks



Precautions

- Do not take off the brace. If removing for showering, keep arm at side with non-surgical arm supporting forearm in position of brace
- No shoulder motion permitted
- No weight bearing through surgical arm
- No pushing and pulling

Intervention:

- No formal physical therapy in this phase
- Pt is allowed to move the elbow, wrist, and hand while in the brace, but absolutely no shoulder motion is permitted
- Ice for pain and inflammation management

Criteria to Progress:

- Appropriate healing time for tendon transfer (I.e. not before 8 weeks, unless otherwise indicated by referring physician)

PHASE 2: ACTIVE ASSISTED/ACTIVE RANGE OF MOTION (8 – 16 WEEKS)

Rehabilitation Goals

- Retrain transferred tendon functionally
- Minimize post-operative stiffness while simultaneously protecting the tendon transfer
- Sling can be removed with surgeon's clearance
- Begin to use arm within ranges of comfort for light ADLs – with the exception of motion into internal rotation, such as reaching hand behind the back
- Reduce inflammation and pain
- Patient education emphasizing compliance of post-operative protocol, specifically avoiding stretching and loading the tendon

Sling:

- Sling can be gradually removed with physician's clearance

Precautions:

- Once the sling is removed, active motion of the shoulder is allowed within ranges of comfort; avoiding stretching of the tendon
- No stretching or passive range of motion at this time. Patient is cleared to use arm functionally to improve range
- Absolutely no internal rotation (for example, placing hand behind back or towards pants pocket). This can disrupt the correct tension of the transfer causing the procedure to fail



- No weight bearing through surgical arm
- No pushing and pulling

Intervention:

- Begin A/AAROM exercises to promote functional use of the surgical arm. Movements into scaption, ER, and a combination of both should be prioritized for retraining of the lower trapezius in its new role.
- Treadmill walking and stationary bike for cardiovascular health
- Core and hip strengthening, preventing any pushing or stress through the surgical arm
- If available, active assisted range of motion is permitted in the pool within ranges of comfort. Feet must remain on the pool floor. Swimming is not permitted. Do not push or pull surgical arm or create resistance in the water.

Criteria to Progress:

- Appropriate healing time for tendon transfer (i.e., not before 16 weeks unless otherwise indicated by referring physician)
- Minimal pain with AROM, appropriate recruitment of transferred tendon

PHASE 3: INITIAL STRENGTHENING (16 – 24 WEEKS)

Rehabilitation Goals

- Continue to retrain transferred tendon functionally
- Continue to use arm within ranges of comfort for ADLs
- Patient education emphasizing compliance of post-operative protocol, specifically over-stretching and over-loading the tendon

Precautions:

- Gradual progression of lifting activities
- No supporting of body weight by hands and arms
- No aggressive stretching in all planes
- Internal rotation is allowed once cleared by surgeon but no aggressive movements behind the back is permitted
- No stretching into internal rotation, including manual stretching by physical therapist
-

Intervention:

- Initiation of gentle strengthening with low level resistance bands



- Postural training and education
- Walking, jogging and stationary bike for cardiovascular health
- Core and hip strengthening, while continuing to protect the surgical arm
- If available, range of motion is permitted in the pool within ranges of comfort. Swimming is still not permitted until Phase 4, feet must remain on the pool floor.

Criteria to Progress:

- Good mechanics with active motion
- No compensation when performing light resistance exercises
- Ability to perform light, nonrepetitive activities of daily living or work tasks without pain or difficulty

PHASE 4: ADVANCED STRENGTHENING (24+ WEEKS)

Rehabilitation Goals

- Restore muscle strength and endurance
- Return to activity; patient will be allowed unrestricted activity 6+ months from surgery, once cleared by physician

Precautions:

- No forceful or heavy lifting
- Avoid falling
- Avoid activities that are painful
- No range of motion restrictions at this time

Intervention:

- Progressive strengthening, progressing to weights. Focus on low weights, high reps; proximal motor control and muscle endurance
- Proprioceptive training, including initiation of closed chain activities.
- Walking, jogging and bike for cardiovascular health
- Core and hip strengthening
- Continue with pool exercises progressing toward swimming. Focusing on breaststroke motion