



HARVARD MEDICAL SCHOOL AND
BRIGHAM AND WOMEN'S HOSPITAL

SCAPULAR MUSCLE TRAINING PROGRAM

PHASE I: ACUTE PHASE

Goal: Minimize further injury to tissues

Focus:

1. Promote scapular and glenohumeral muscle activation working synchronously and without substitution.
2. Restore passive mobility.

Specifics:

Core/Lower Extremity

- Stretches for hip
 - Hip flexors
 - Hip rotators
 - Hip adductors
- Standing resisted hip strengthening with tubing
 - Extension
 - Abduction
 - Hip flexion
- Begin functional core strengthening (for balance and control) such as
 - Stepping back and up onto platform without UE support
 - Assume “power position” and hold for 3 seconds
 - Assume “cocked arm” position as in Figure 11 and hold scapular squeeze for 3 seconds

Shoulder

- Stretches for posterior shoulder capsule
 - Cross body arm stretch with scapula stabilized against wall
 - “sleeper stretch”
- Stretches for anterior musculature
 - Doorway stretch starting with arms by side and progressing to shoulder abduction 90 °

Scapula

- Active scapula movement, especially retraction, with arm by side and no resistance
 - Watch for substitutions
- Progress to isometric scapular exercises
 - Low scapular retraction
 - Inferior glide scapular adduction

Criteria to progressing to Phase II:

- Minimal or no pain with ADLs
- Demonstrate good voluntary control of scapula with minimal or no verbal cues
- Improved flexibility
- Demonstrate no loss of balance with standing hip exercises

PHASE II: RECOVERY PHASE

Goal: Further strength core, lower extremity kinetic chain and unilateral scapular muscle balance.

Focus: Improve dynamic stability as well as proprioceptive and neuromuscular control.

Specifics:

Core/Lower Extremity

- Stretching for hip flexors and rotators as in Phase I
- Progressive core strengthening
 - Prone hip extensions
 - Backward lunge with trunk rotation to opposite side
- Dynamic stretches for hip
- Advanced hip strengthening such as resisted lateral walking
- Progressive functional core strengthening exercises such as
 - Resisted trunk rotation during throwing phases incorporating 3 second isometric holds at different phases of throwing

Shoulder

- Continue stretches for shoulder from Phase I

Scapula

- Initiate resisted scapular strengthening with bands, i.e.: low/mid/high rowing
- Initiate standing rotator cuff strengthening with bands.
 - Be sure to progress ER and IR from 0° of shoulder abduction to 90° shoulder abduction.
 - Vary stance from parallel feet to tandem stance
- Resisted scapular protraction in standing
- Resisted scaption in standing

Other

- Resisted wrist flexion and extension

Criteria for progressing to Phase III:

- Minimal to no pain with all exercises
- Normal motor control of scapular and shoulder muscles without substitution
- Good flexibility during static and dynamic stretching

PHASE III: Functional/Advanced Strengthening

Goals:

1. Incorporate sport-specific drills, including ballistic and endurance training.
2. Begin "Advanced Throwers Program."

Core

- Dynamic stretching for core and hip flexors combined
- Initiate resisted "lifts" and "chops" in half kneeling and progress to staggered stance

Lower extremity

- Single-legged squats with knee straight and knee bent

Shoulder/Scapula

- Focus on shoulder and scapular endurance exercises such as
 - Prone-lying over ball or bench and performing IWTY
 - Supine-lying on ball and performing scapula protraction
 - Initiate plyometric 2-handed throws with medicine balls
 - Progress to plyometric 1-handed throws with arm at 90/90
- Initiate eccentric strengthening such as
 - Prone 90/90 ball drops
 - "Slow" throwing with weighted ball in half-kneeling position