



## PHYSICAL THERAPY PRESCRIPTION

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### SWIMMER'S SHOULDER PHYSICAL THERAPY PRESCRIPTION

DATE \_\_\_\_\_

Underlying problem includes:      Weakness / fatigue of scapular stabilizers (especially retractors)  
Inflexibility of pectoral muscles  
Anterior capsular laxity  
Posterior capsular/Rotator cuff tightness  
Posterior Rotator cuff weakness

- Rx:**
- .. Development of core strength: lumbar stabilization, abdominals, pelvic girdle
  - .. Avoid/correct excessive anterior pelvic tilt/lumbar lordosis
  - .. Initial phase (Acute pain) :
    - Modalities as needed – Phonophoresis / Iontophoresis / Soft Tissue Mobilization / E-stim Cryotherapy / Ultrasound
    - Submaximal isometrics
    - Progress to isotonic exercises
  - .. Endurance training for scapular stabilizers: focus on Serratus Anterior, Rhomboids, Lower Trapezius, and Subscapularis :
    - Push-ups with a plus
    - Scapular elevation (scaption)
    - Rows
    - Press-ups
    - Upper body ergometry for endurance training
    - Prone lying horizontal flys
    - Side-lying external rotation, prone rowing into external rotation Push-ups onto a ball
  - .. Proprioceptive Neuromuscular Facilitation (PNF) patterns to facilitate agonist / antagonist muscle co-contractions
  - .. Rotator cuff (external rotation) strengthening : goal is ER:IR ratio at least 65%
  - .. Stretching of pectoral muscles, posterior capsule, posterior rotator cuff, latissimus
  - .. Generally do not need to stretch anterior shoulder

Treatment: \_\_\_\_\_ times per week

Duration: \_\_\_\_\_ weeks

\*\*Please send progress notes.

Physician's Signature: \_\_\_\_\_

Seth C. Gamradt, MD, Attending Orthopaedic Surgeon, USC

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## SHOULDER PAIN IN SWIMMING

### PATHOLOGY

Underlying pathology is Rotator Cuff tendonitis / bursitis due to:

- 1) Impingement of Rotator Cuff tendons during swimming stroke.
- 2) Rotator Cuff fatigue due to overuse – contributes to impingement.
- 3) Imbalance between internal and external rotators, resulting in impingement.
- 4) Joint laxity often plays some role.

### STROKE FLAWS ASSOCIATED WITH SHOULDER PAIN

- 1) Hand entry that crosses midline
- 2) Impingement exacerbated by thumb-first hand entry
- 3) Lack of body roll
- 4) Breathing only on one side may lead to compensatory cross-over on non-breathing side
- 5) Improper head position (eyes forward is WRONG > this impedes normal scapulothoracic motion)
- 6) New freestyle teaching is to use early hand exit
- 7) Proper balance in water comes from pushing the center of buoyancy (sternum) and head into water in order to float the legs

### STROKE ALTERATIONS TO DECREASE PAIN

- 1) Avoid straight arm recovery
- 2) More body roll
- 3) Breathe bilateral
- 4) Early catch, early recovery
- 5) Don't keep head up (look down)
- 6) Little finger first hand entry

### TREATMENT FOR EARLY PHASE

- 1) Ice BEFORE and AFTER practice
- 2) Proper warm-up before hard training sets
- 3) Identify and minimize / avoid strokes which precipitate pain. Train with different strokes. Decrease use of hand paddles. Do more kicking sets to provide shoulder rest.
- 4) Stretching shoulder and periscapular muscles. Emphasize posterior shoulder capsule stretching.
- 5) Specific strengthening exercises for external rotators, scapular stabilizer muscles. Perform exercises below horizontal (below eye level).

# PHYSICAL THERAPY PRESCRIPTION

## BASIC PRINCIPLES

- 1) Rotator Cuff and scapular stabilizer strengthening
- 2) Avoidance of impingement positions during rehabilitation
- 3) Restoration of muscle strength, balance, and flexibility
- 4) Emphasis on Serratus Anterior and Subscapularis

## STRENGTHENING EXERCISES

General Principles: Start with low loads. As endurance improves, may progress to sport-mimicking exercise, such as swim bench. Maintain proper scapulohumeral rhythm during exercises. Exercises should begin in the scapular plane. Start with open chain exercises.

## IF PAIN PROGRESSES

- 1) Reduction in training volume and dryland training. Eliminate painful strokes for 2-3 weeks, then gradually resume.
- 2) Continue icing, stretching.
- 3) Anti-inflammatory medication (non-steroidal anti-inflammatory medication)
- 4) Consider subacromial injection (only if refractory)
- 5) X-Ray/MRI