

PHYSICAL THERAPY PRESCRIPTION

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).

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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