

# THERAPEUTIC EXERCISES FOR TREATMENT OF SHOULDER PAIN AND INSTABILITY RELATED SHOULDER IMPINGEMENT

Mihailova, Nina; Popov, Nikolay

National Sports Academy "V. Levski"

Dept. of Physiotherapy, ergotherapy and sports

Dept. of Theory and methods of Kinesitherapy, Sofia, 1000, 1 Gurguljat str.

**Key words:** *therapeutic exercises, shoulder instability, impingement*

The shoulder is a region of the body that is presented a challenge to physical therapists for many years. The condition of glenohumeral instability that is not related to recurrent shoulder dislocation, has received recognition only in the last few years.

The main purpose of this article is to present an approach for assessment of the muscular imbalance and management with emphasis on establishing muscular control in the shoulder girdle.

## Subjects

Twenty-eight persons with shoulder instability, which have been treated by the author in the last four years are evaluated. All the patients have minimal clinical signs of shoulder instability on physical examination, but they have complaints of pain and apprehension with overhead activities or impingement-like condition which appear resistant to treatment.

## Methods

All the patients were evaluated before and 1 month after physical therapy. Between these two evaluations the patients were treated with our therapeutic exercise program aimed on development of active muscle stabilization of the glenohumeral and scapulothoracic joints. The testing procedures we used were functional testing of the shoulder (Palmer&Epler, 1990) and athletic shoulder outcome rating scale (Tibone & Bradley, 1993). Standard statistical tests (students T-test, ANOVA) were used to determine significant differences ( $p < 0.001$ ).

## Muscle and kinesthetic assessment

Developing a program to improve glenohumeral and scapulothoracic muscular control should be based on assessment of length, strength, endurance and functional performance of the relevant muscle. A common error is to test scapular stabilizers for strength only. Good strength can exist along with very poor endurance and endurance is functionally the most important of the two. In assessment of the length of the shoulder musculature we found tight upper trapezius, levator scapulae, pectorals, especially pectoralis minor and latissimus dorsi. Those findings in most of the patients were associated with somewhat forward head posture and rounded shoulders. This kind of posture limit full scapular rotation, humeral flexion and external rotation and thereby jeopardizing glenohumeral and subacromial structures.

Assessment of muscular control begins with observation of scapulohumeral rhythm through elevation. Common imbalance that we observed in our patients include: 1) an initial hitching of the shoulder where upper trapezius is overactive and supraspinatus ineffective; 2) incomplete rotation and winging of the scapula that may only be evident in lowering when the scapular stabilizers must function eccentrically.