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## Shoulder impingement syndrome and rotator cuff dysfunctions: New concepts and relationship with overhead sports activities

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It was Neer, in the 1970's, who initially introduced the concept of sub acromial impingement as a result of a repetitive mechanical friction of the rotator cuff tendon (RCT) under the anteroinferior portion of the acromion, especially when the shoulder is forward flexed and internal rotated. According to Neer, it was the perpetuation of this attrition that produced a progressive degeneration of the tendon, a bone reaction or spur, and a partial and progressive full thickness lesion of the RCT. In spite of Neer's theory being the most prevalent for many years, it has recently been questioned in the light of newer clinical and research findings with the advent of arthroscopy, and after many anatomical, pathophysiological and biomechanical studies. Contemporary evidences have led to the introduction of new concepts but nevertheless the precise causes of the RCT lesions are still widely discussed. Nowadays, there is a general consensus in considering it rather as a rotator cuff dysfunction. This dysfunction appears to be caused by a pathophysiological continuum, involving several initiating factors, both intrinsic and extrinsic which ultimately lead to the failure of the cuff to fulfil its physiological role. This point of 'failure' may, therefore, occur much earlier, even before the tendon has reached the threshold where it sustains a tear, either partial or complete as revealed clinically. Hence, during the patients' visit, we need to broaden our glance examining around the shoulder, and not only at the shoulder, considering all the shoulder girdle joints, methodically focusing and observing the posture of our patients and any other defect. Only by following this approach, we will be able to discover in a young athlete, a micro instability or a simple muscle imbalance, an internal impingement, a scapular dyskinesia or a postural imbalance.

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## To compare the mean percentage improvement in coordination, strength and disability in overhead throw athletes with partial thickness tear of the rotator cuff following plyometric training in different phases of rehabilitation

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A total of 30 male overhead throwers suffering from partial thickness tear of the rotator cuff injury, on the basis of inclusion criteria were taken in the study. A full description of the study, including the selection process was explained to each patient. Documented consent was obtained from each patient. Group 1 consisted of athletes with history of rotator cuff injury one and half year back and group 2 included athletes with rotator cuff injury 3 months back. Coordination, strength and disability were assessed pre and post plyometric training for a period of 3 weeks and the mean percentage of improvement were compared in both the group following plyometric training. Intragroup analysis showed a significant improvement in coordination, strength with the level of significance ( $p < 0.05$ ). Group 1 showed an improvement in the mean percentage in coordination, the strength of supraspinatus muscle, and bench press when compared to the group 2. While the group 2 showed an improvement in mean percentage in the strength of the subscapularis, teres minor muscle and infraspinatus muscle when compared with the group 1.

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