

## Is There a Relation Between Shoulder Dysfunction and Core Instability?

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**Objectives:** Little is known about the relationship between core stability and shoulder dysfunction in shoulder impingement syndrome. The purpose of this study was to analyze the difference between healthy volunteers and patients with shoulder dysfunction in regard to core stability measures. Secondary purpose was to explore the relationship between measures of core stability and measures of shoulder dysfunction.

**Methods:** 15 patients with shoulder impingement syndrome (mean age: 32.2±4.2 years) and 15 healthy volunteers (mean age: 33.8±6.2 years) participated in this study. Sorenson test, front plank and side bridge exercise was performed to assess anterior, lateral and posterior core endurance, respectively. Simple shoulder test (SSS) and seated medicine ball throw test was used to evaluate the functions of the shoulder joints. Mann-Whitney U test was used for comparison of variables between groups. Analyses of relationships between variables were examined with Spearman correlation test.

**Results:** There was a statistically significant difference between patients with shoulder impingement syndrome and healthy controls in core stability and function ( $p < 0.05$ ). A strong positive correlation was found between shoulder functional test (SSS) and lateral bridge test ( $r = .874$ ,  $p < .05$ ). Additionally, a modest positive correlation was found between the SSS and the Sorenson test at ( $r = .695$ ,  $p < .05$ ), and a weak positive correlation was found between the SSS and the front plank test at ( $r = .365$ ,  $p < .05$ ).

**Conclusion:** Core stability and functional deficiency was found in patients with subacromial impingement syndrome. According to this study, greater shoulder dysfunction is correlated with greater stability deficiency. Therapists should consider incorporating core strengthening as an integral component of rehabilitation program in patients with shoulder dysfunction.

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