

Original Paper

## Relationship between proprioception and rotator muscles strength with shoulder pain of wheelchair basketball athletes

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### Abstract

**Background and Objective:** Proprioception an important role in shoulder joint function. Exercise and throat of the upper extremity are complex and skinny movements that apply a great deal of stress on the shoulder joint. This study was done to evaluate the relationship between proprioception and rotator muscles strength in dominant and non-dominant side with shoulder pain of wheelchair basketball athletes.

**Methods:** In this descriptive-analytic study, 50 wheelchair basketball athletes were selected in non-random sampling way from wheelchair basketball gyms from Alborz and Tehran in Iran. WUSPI, MMT system and repositioning error test with felexometere were used for assessment of shoulder pain, rotator muscles strength and proprioception respectively.

**Results:** There was a significant difference between dominant and non-dominant side rotators strength and proprioception ( $P<0.05$ ). There was a significant relationship between internal rotators strength and proprioception in dominate side with shoulder pain ( $P<0.05$ ). There was not a significant relationship between external rotators strength and proprioception in non-dominate side with shoulder pain.

**Conclusion:** Repeated pattern of movements in the wheelchair basketball athletes at the long time causes muscle imbalance in strength shoulder joint. It is known as a risk factor in shoulder injuries.

**Keywords:** Muscle Strength, Proprioception, Shoulder Joint, Pain, Wheelchair Basketball

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