Rugby football (rugby) is one of the famous collision sports. Of all shoulder joint dislocations, 60% occur during tackles. Many studies have reported that improvement of the tackling skill prevents shoulder joint dislocation. Moreover, there are external and internal risk factors of shoulder joint dislocation have been identified. In Japan, many players start playing rugby in high school. Rugby requires excellent aerobic capacity and high power of the upper limbs for tackle. Therefore, as the rugby career gets longer, some players develop unstable shoulders because of muscle imbalance and deficit shoulder range. The purpose of this study was to clarify the relationship between shoulder joint instability and physical function based on shoulder muscle strength, range of motion, and Upper Quarter Y-Balance Test (UQYBT) results among high school rugby players. For statistical analysis, an independent t test was used for intergroup comparison. For a subgroup analysis, the subjects were divided into three groups according to grade. One-way analysis of variance was used.

Sixty-five players participated in this study (age, 16–18 years). Players were divided into the normal and instability groups according to the results of the anterior apprehension and scapula dyskinesia tests. Forty-nine subjects were included in the normal group; and sixteen, in the instability group. ER range at the 2nd position was a significant difference in the group comparison. There was no significant difference in the other range, muscle strength, UQYBT. For the subgroup analysis, third-grade students had significantly larger IR ranges and lower ER ranges.

In conclusion, 30% of the players with shoulder instability had a limited ER range at the 2nd position. When examining by grade, we found the limited shoulder ER range restricted the physical function of the third-grade students. These findings were influenced by the characteristics of rugby and training. We will clarify of initial injury to shoulder dislocation by conducting a follow-up survey in the future.