



## Investigate the Proprioception of the Shoulder and Elbow Joints with Special Perception of Action, under the Influence of Attentional Focus Instructions in Children with Autism spectrum disorder

### Poster Presentation

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### Abstract

**Introduction:** The Previous findings provide evidence that internal focus of attention may be more effective for facilitating motor learning in children with autism spectrum disorder. A possible explanation for these findings may stem from the enhanced proprioception or special perception of action influenced by the focus of attention in children with ASD, but no studies have investigated these variables. Therefore, the aim of this study was to investigate the proprioception of the shoulder and elbow joints with the special perception of action under the influence of Attentional focus instructions in children with autism spectrum disorder.

**Methods:** For this purpose, 33 Children with high-functioning autism spectrum disorder were randomly divided into three groups: external focus (n = 11), internal focus (n = 11), and control (n = 11). After presenting the instructions of Bean bag throwing skill, they were required to throw beanbags at a static target for ten pretest trials, 50 acquisition trials (5 blocks of 10 attempts), ten posttest trial, and ten retention trials. The proprioception of the shoulder and elbow joints by a camera and AutoCAD software was measured, and the special perception of action by drawing circles the same size as dart target in Microsoft PowerPoint.

**Results:** While all three groups learned the skills in a similar manner during the acquisition phase, the internal focus group demonstrated more robust motor performance than the external focus group and the control group in post and retention tests. Also, the improvement of the proprioception of the shoulder and elbow joints in the internal focus group was more than the other groups; but there was no significant difference between these groups in the specific perception of action variable.

**Conclusion:** The internal focus of attention in people with autism spectrum disorder improves the proprioception, but it has no effect on the specific perception of action.

### Keywords

Proprioception; Special Perception of Action; Attentional Focus Instructions; Autism Spectrum Disorder

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