# VISUAL STRATEGIES IN BOCCIA

**Matheus Dantas[1], Thaísa Dantas[2], Edgard Morya[2], José Gorla[1]**

[1]UNICAMP; [2] Instituto Internacional de Neurociências Edmond e Lily Safra

Boccia is a precision target-ball paralympic sport with a visuomotor coordination demands. It was originally designed for people with cerebral palsy, but now it can be played by athletes with neurological impairment that affects motor function. Precise ball-target throwing depends of visual information and upper limb movements. Goal: We aimed to study visual patterns in boccia parathletes during a penalty ball task. Methods:20 boccia parathletes between 18- 40 years old, 15 males and 5 females, throwed 6 balls in a penalty area. The target box (25 x 25cm) was 5 meters away from the throwing line. An eye- tracker glasses (SMI 60Hz binocular) recorded eye- movements during 6 penalty ball throws. Begaze software (SMI) was used to analyze eye fixation and movements related to the target box (area of interest - AOI). Results: 34% participants showed longer fixation prior to the first arm swing, 68% participants showed unstable fixation to the target during the arm swings, 22% participants showed stable and longer target fixation during the arm swings with more throwing precision, 10% participants showed neck involuntary movement with no target fixation, but were able to consistently throw accurately. Conclusion: Overall, these results can be explored in training strategies to increase athletes' visuomotor coordination to best precision, such as using quiet eye to better motor performance. Since, Paralympic boccia challenges the ability to control and coordinate movements, eye-tracker can be an important tool to investigate and improve throwing performance.

**Keywords:** *Boccia, visuomotor coordination, eye-tracker.*