

## Ballistic differences in professional soccer players with and without visual impairment

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Vision is considered the most important sensory input modality for sport performance (1). Recent studies have shown the existence of developmental delays in motor and sport skills in individuals with visual impairment (2). The purpose of the current study is to examine the kinematic and ballistic differences during football match between professional players with visual impairment and players without visual impairment. During athletic preseason, all soccer players of Delfino Pescara 1936 were evaluated on the basis of visual and orthotic parameters. The sample was composed of 18 professional players including 8 with visual impairment (age -yrs-  $23.5 \pm 2.50$  SD; height -cm-  $181.75 \pm 9.08$  SD ; mass -kg-  $78 \pm 8.58$  SD) and 10 with no visual impairment (age -yrs-  $26.6 \pm 5.29$  SD; height -cm-  $177.1 \pm 5.95$  SD; mass -kg-  $74.3 \pm 6.78$  SD). All players were subjected to Natural and Corrected Visual Acuity, Refractive Examination during Miosis and Cycloplegia, Intraocular Pressure (IOP), Extrinsic Ocular Motility, Examination of Convergence and Cover Tests. During all regular season (September 2015/ May 2016, 42 matches, 3780 minutes) for each player it was reported the number of passing under 10 meters, errors of passing under 10 meters (expressed in centimeters), number of passing over 10 meters, errors of passing over 10 meters (expressed in centimeters) and shots in the target and out the target. The results suggest that the players with visually impairment miss passing with a higher percentage than in the control group in both conditions (under the 10 meters and over 10 meters). No significance emerged on the parameter shots on target in both groups. Results showed that the vision is a fundamental proprioceptive channel for the performance in elite soccer players but the small samples analyzed and the lack of prior research studies on the topic subject suggest that further studies will be needed.

### References

- [1] Differences in Soccer Kick Kinematics Between Blind Players and Controls. *Adapted Physical Activity Quarterly*, 2011, 28, 251-266.
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### Keywords

Vision; sport performance; soccer; ball speed; visual impairment.