



## A STUDY OF HAND EYE COORDINATION AMONG MALE SPORTSPERSONS IN RELATION TO THEIR OCULAR HEALTH STATUS

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**Abstract:-** The present study was conducted to find out the effect of ocular health status on hand eye coordination of male sportspersons. This study was conducted on 50 male sportspersons who took part in team and individual sports. The criterion for selection of subjects was participation in university or national level championship. Hand eye coordination of the subjects was assessed by mirror drawing test while ocular health status was determined by specific ocular tests namely visual acuity, errors of refraction, cover-uncover test and asthenopia. Results indicate that hand eye coordination in male sportspersons with normal ocular health status was significantly better as compared to subjects who need ophthalmic corrections due to ocular health problems. It was concluded that ocular health status emerges as important maker as far as hand eye coordination of male sportspersons is concerned.

**Keywords:** Coordination among Male Sportspersons, national level championship.

### INTRODUCTION

Ability to track the movements of our hand with our eyes is called hand eye coordination. In hand eye coordination eyes send useful information to brain regarding hand movement. Hand eye coordination indirectly gives our eyes the power to coordination movements of the hands. Eyes give information about visual stimuli to brain; brain sends signals to our hands. It allows our hands to move according to visual stimuli. This is a very difficult process and it happens within split second. If due to some visual problems error occurs in this process, coordinated movements are difficult in exercise and sports.

It has been recognised in second century by Roman Physician that some kind of relationship do exist between visual skills and sports performance because sports require a player to utilise maximum visual information in order to perform certain perceptual tasks efficiently.

It has also been established in the past that vision plays an important role as far as perceptual abilities, motor responses and level of performance of a sportspersons are concerned [Revien & Gabor; 1981; West & Bresson, 1996; Griffiths, 2002). Despite the importance of ocular system in sports very few studies have been conducted in India. Hence, in the present study effect of ocular health status on hand eye coordination of male sportspersons has been examined.

### HYPOTHESIS

It was hypothesized that male sportspersons with normal ocular health status will show superior hand eye coordination as compared to male sportspersons with deficient ocular health status.

**METHODOLOGY:-**

The following methodological steps were taken to conduct the study :

**Sample :**

50 male sportspersons from various team and individual sports were selected as sample for the present study. The criteria for selection of subjects were participation in university or national level championship.

**Tools:**

**Hand Eye Coordination :**

Hand eye coordination of the subjects was assessed by mirror drawing test. This was done by digital mirror drawing apparatus. In this test, time taken while drawing is recorded. Lesser the timing better is the hand eye coordination is the direction of scoring in this test.

**Ocular Health Status:**

Ocular health of the selected subjects was assessed by Snellen’s chart, cover-uncover test, errors of refraction test and asthenopia test respectively. Ocular examination was done AIIMS Raipur C.G. Subjects diagnosed with problems such as visual acuity, convergence insufficiency, errors of refraction and visual fatigue were classified as having some or other visual problems.

**Procedure:**

- ❖ Ocular examination of the subjects was conducted by ophthalmologist at All India Institute of Medical Sciences, Raipur.
- ❖ Subjects needed ophthalmic corrections due to ocular disorders were separately grouped and rest with normal ocular health status were grouped separately.
- ❖ Mirror Drawing test for hand eye coordination was conducted under the supervision of the researcher.
- ❖ The time in seconds to draw the figure was noted for all subjects.
- ❖ To compare hand eye coordination of subjects with normal ocular health status and subjects who need ophthalmic corrections i.e. deficient ocular health status, independent sample ‘t’ test was used.

The result presented in table 1.

**RESULT:**

**Table 12**  
**Effect of Ocular Health Status on Hand Eye Coordination of Male Sportspersons**

Variable	Ocular Health Status				MD	‘t’
	Need Ophthalmic Correction (N=12)		Normal (N=38)			
	Mean	S.D.	Mean	S.D.		
Hand Eye Coordination (in sec.)	408.83	61.04	338.18	83.64	70.64	2.69**

\* Significant at .01 level

NS Not Significant

t(df=48) at .05 level = 2.01; t(df=48) at .01 level = 2.68 with equal variance assumed.

A perusal of entries reported in table 1 indicate that hand eye coordination of male sportspersons with normal ocular health status is significantly better as compared to male sportspersons who need ophthalmic corrections due to associated ocular problems. The reported t=2.69 which is statistically significant at .01 level, also confirms the above finding. The results presented can be interpreted in a way that subjects with normal ocular status took less time in completing a drawing accurately as compared to subjects requiring ophthalmic corrections.

## DISCUSSION:

The results of the present study indicate that hand eye coordination in male sportspersons suffering from ocular disorders such as visual acuity, convergence insufficiency, errors of refraction and visual fatigue is compromised. Since all these factors are directly related to visual processing of information, it is quite natural that due to disorders of eye the coordination between eye and hand is compromised which results in poor hand eye coordination.

## CONCLUSION

On the basis of results and associated discussion, the researcher came to a conclusion that ocular health status affect hand eye coordination of sportspersons. It was also concluded that not only visual acuity but other ocular disorders such as errors of refraction, convergence insufficiency and visual fatigue hinders hand eye coordination.

## REFERENCES :

Revien, L. and Gabor, M. (1981). Sports Vision: Dr. Revien's Eye Exercises for Athletes. New York: Workman Publishing; 1981.

West, K. L., & Bressan, E. S. (1996) The effect of a general versus specific visual skills training programme on accuracy in judging length-of-ball in cricket. *International Journal of Sports Vision*, 3, 41–45.

Griffiths, G. (2002). Eye speed, motility and athletic potential. *Optometry Today*, v. 42, p. 34-37.



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