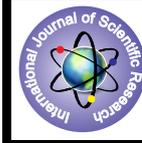


Long Term Playing of Table Tennis Improve the Visual Reaction Time



Medical Science

KEYWORDS : Table tennis Players, Visual Reaction Time, Duration of playing table tennis

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ABSTRACT

Introduction: Reaction time is the time interval between applications of a visual stimulus to onset of response. The present study was conducted to measure simple visual reaction time in 50 table tennis players.

Material Method: The Simple visual reaction time was measured by the direct RT computerized software in table tennis players. During the visual reaction time testing, visual stimuli were given for eighteen times and average reaction time was taken as the final reaction time. Result: In this study we observed that visual reaction time is shorter in table tennis players who are playing table tennis for longer duration than who are playing table tennis for short duration. It was also found that continuing playing of table tennis improves reaction time. Conclusion: Our study concluded that playing of table tennis for longer time is beneficial to eye-hand reaction time, concentration and alertness.

INTRODUCTION:-

Now a days peoples are more involved in videogames, watching TV, movies and exploring internet. Sports like table tennis, volleyball, badminton, cricket, football, etc are preferred less with modernisation. These sports not only make them physically healthy but would also improve their alertness, concentration.

Visual reaction time is time required to response to visual stimuli. Reaction time acts as a reliable indicator of rate of processing of sensory stimuli by central nervous system and its execution in the form of motor response(Solanki Jayesh, Joshi Naisargi & Shah Chinmay,2012). Reaction time can be described into three types (1) Simple reaction time:- here there is one stimulus and one response. (2) Recognition reaction time: - here there are some stimuli that should be responded to and other that should not get response. (3) Choice reaction time: - here there are multiple stimulus and multiple responses(Luce RD, 1968 & Welford,1980). Sports such as table tennis, badminton, tennis and squash have been classified as reaction sports(Yoshida K., Hiruta, S.& Shimaoka, M (1995). In table tennis specifically, the incredible speed of the ball and the short distance it travels between opponents allows a very minimal amount of time to react and execute shots. Table Tennis player has to give proper and quick response during the game. They have to strike the ball in proper direction. Kramer AF, Hahn S& McAuley E,(2000) found that participants who completed a six month aerobic exercise program exhibited improvements in reaction time. Thus we devised the present study to compare visual reaction time in table tennis players who playing table tennis for different duration.

MATERIAL AND METHOD:-

The present study was conducted in 50 Table Tennis players of age group of 14 to 30 years of male in Jamnagar district. The players were divided in to three groups based on duration of playing table tennis. Group 1-included 18 players those who playing since 1 year, group-2 included 17 players those who playing since more than 1 to less than or equal 3 years and group-3 included 15 players those who playing since more than 3 years. The research protocol was approved by Institutional ethical committee and informed consent obtained from

each subject prior to inclusion in the study. Personal history and medical history of both groups was collected in pre-designed proforma. Medical history was taken to rule out any medical or surgical disease which would affect reaction time of individual. After taking consent, simple visual Reaction time was measured in millisecond (ms) by Direct RT computerized software. It was carried out with adequate light and in silent atmosphere. Visual reaction time was measured where subject has to respond to different colour stimulus appearing on computer screen by pressing spacebar key on keyboard. Subjects were given practice session before measuring the actual reaction time. Data was collected and was statistically analyzed by using ANOVA test. Reaction time was reported as mean ± SD. The level of significance between group 1,2 and 3 was taken if p value was less than 0.05.

RESULTS:-

Table:1 Show General characteristic of table tennis players (all values in Mean±SD)

Number	50
Age(years)	21.38±4.80
Height(cm)	167.70±10.21
Weight(kg)	59.68±11.61
BMI(kg/ m2)	21.12±3.17

Table no.1 shows the mean age of table tennis players was 21.38 years. Mean height of table tennis players 167.70 cm. Mean weight of table tennis players 59.68 Kg. Mean BMI of table tennis players 21.08 Kg/m2.

Table:2 show effect of duration of playing table tennis on visual reaction time in table tennis players

Groups	Number of players	Visual raction time(ms) (Values in Mean±SD)	P value
Group-1	18	274.22±15.85	<0.05
Group-2	17	265.17±16.32	
Group-3	15	255.00±19.26	

Table no.2 shows simple visual reaction time in group-1 (274.22±15.85ms), group-2 (265.17±16.32ms) and group-3 (255.00±19.26 ms). Visual reaction time was significant faster in group-3 than group-1 and group-2.

DISCUSSION:

In present study there are difference of visual reaction time between group 1, 2 and 3. Visual reaction time is shorter in group-3 than group-2 and group-1. But in group-3 visual reaction time is significantly shorter than group-1. Reaction time is an important component of motor movements. It is one of the important methods to study a person's central information processing speed and fast coordinated peripheral movement response. It has been well documented that exercise and sports beneficial to mental health(Glenister D,1996 & Salmon P, 2001). Researchers have also established that exercise and sports results in a mild enhancement of cognitive function(Colcombe S Kramer AF & Tomporowski PD, 2003) . Although the mechanism behind exercise and human information processing have not been exactly identified. There are several possible mechanisms which provide primary support for different hypothesis. Different direct and indirect mechanisms could explain relationship between exercise and mental processing. Perhaps the most popular mechanism is the idea that those individuals who exercise at moderate to intense levels have higher rates of cerebral blood flow. This increased amount of blood flow in the brain results in improvements in cognitive functioning due to increased supply of necessary nutrients, such as oxygen and glucose(Etnier JL, Salazar W, Landers DM et al,1997). Result from present study are similar with finding of studied by Kramer et al,(2000) found that participants who completed a six month aerobic exercise program exhibited improvements in reaction time. Hascelik

Basgoze, O., Turker, K & Norman, S. (1989) determined the visual reaction times of volleyball players before a training program to be 214.55 ms and after a training program to be 191.3 ms. Mamog'lu O, Ag'aog'lu SA, &Ag'aog'lu YS (2000) found the visual reaction times of professional soccer players to be 175.0 ± 14.0 ms and of part-time soccer players to be 177.0±18.0 ms. Fontani, G., L. Lodi & A. Felici,(2006) showed that in karate, more experienced practitioners had shorter reaction time.

Table tennis is a sport that depends on finely crafted movements that occur very quickly and a precise execution of shots. Table tennis player has to give a good attention to the stimuli and has to be alert to give a proper motor response. The quicker reaction time in table tennis players is due to improved concentration, alertness, better muscular co-ordination and improved performance in speed and accuracy task. Exercise increased activation of central nervous system and could facilitate cognitive processes.

CONCLUSION:

Our study concluded that playing of table tennis for longer duration has shorter visual reaction time as compared to short duration of playing. These results support the view that playing of table tennis is beneficial to eye-hand reaction time and improve the concentration and coordination.

ACKNOWLEDGEMENTS:

We are thankful to Jamnagar municipal corporation sports complex, officers club Jamnagar for their co-operation in this study.

CONFLICT OF INTEREST:- None declared.

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