



## ASSESSMENT OF SIMPLE VISUAL REACTION TIME OF FEMALE NON-ATHLETES COMPARED TO FEMALE ATHLETES

**Baby M.**

Department of Psychology V.N.G.I.A.S.S., Nagpur (M.S.) India

**Abstract:** This investigation was aimed at studying visual simple reaction time of college student athletes of organised group games and students who do not play any sport. The study was conducted on 20 female college students who never played any sport and 18 female players who played organised group sport like baseball, football and softball of ages 18-23. The reaction time apparatus was used for data collection. Visual simple reaction time of students for both the groups was measured in millisecond. The study revealed that players are significantly faster in their reaction to light as compared to non players.

### Introduction:

Reaction time is defined as the interval of time between the onset of a stimulus, and the initiation of a response (Magill & Anderson, 2014). Neuromuscular and psychomotor connections are the fundamental basis of the body's reaction pathway to the brain. Gender, age, mental state, and learning experience also play a role in the athlete's ability to react to a given stimulus (Iulian, 2012). The slower the stimulus recognition information is passed to the brain, the slower the reaction movement. Visual reaction time (VRT) is the time that elapses from the initiation of a stimulus until a response is achieved. Having a quick reaction time can influence the success of one's athletic ability. Improving reaction time develops one's ability to respond faster to different stimuli that are present throughout a sport. This study tested the Simple VRT of female athletes and non-athletes.

Athletes are required to make many decisions while engaged in their sport of choice. Specifically, baseball and softball players must decide whether or not to swing the bat, how to react to a ball that is coming off the bat when playing the field, and several other stimulus that occur while playing the game. The players' VRT is crucial in a variety of sports. The average VRT is 250 milliseconds for the average person (Senel, Ömer, and Hüseyin Eroğlu, 2006). However, someone who does not play a sport may not be acclimated to reacting as quickly to visual stimuli. Therefore, it was

observed that athletes have faster reaction times compared to those who do not play a sport (Senel, Ömer, and Hüseyin Eroğlu, 2006). In addition, reaction times among different sports vary (Senel, Ömer, and Hüseyin Eroğlu, 2006). This study focused particularly on athletes who play baseball, football or softball. Those who were athletes and non-athletes had their reaction time tested on Reaction time apparatus. The athletes' mean VRTs were compared to the non athletes' mean VRTs. It was observed that the athletes displayed a faster VRT than the non-athletes.

The hypothesis of this experiment was that the VRT of the athlete female students will be faster as compared to athletes.

### Material and Method:

This research was done on female students of Vasantrao Naik Government Institute of Arts and Social Sciences, Nagpur.

Participants consisted of athletes: baseball players (n=6), football players (n=6) and softball players (n=6), and non-athletes: females (n=20). A survey was administered to participants before the VRT test was implemented. VRT was tested using the reaction time apparatus with red.

Protocol: A simple reaction time test was administered. Athletes and non athletes had their VRT tested. When the VRT was examined it was referred to as a trial, twenty trials make up one test. In addition, there was a rehearsal trial used to familiarize the participant with the VRT apparatus. Each

trial consisted of a series of twenty stimuli. At the end of the twenty trials, mean and standard deviation were computed of the responses which were in milliseconds (ms).

**Results:**

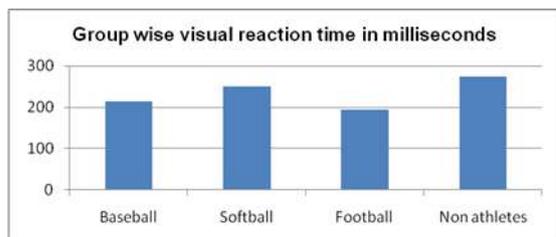


Figure 1 displays the athletes, baseball players mean VRT 213.25 ms, softball players mean VRT 250.2 ms and football players mean VRT 194.3 was faster than non-athletes VRT 274.4ms.

Table 1. Mean, Standard Deviation (SD) and t-values obtained on Visual Reaction time scores among Athletes (18) and Non-athletes (20) female students.

Table-1. Mean, Standard Deviation (SD) and t-values obtained on Visual Reaction time scores among Athletes (18) and Non-athletes (20) female students.

Group	Mean	SD	t-value
Athletes	218.66	30.62	3.52**
Non-athletes	274.4	63.2	
**p<.01			

The t-test compared the female athletes and non-athletes and the comparison was found to be statistically significant (p<0.01)

**Discussion:**

VRT was significantly faster for athletes as compared to non athletes and supported the hypothesis. VRT may also affect daily tasks. A quickened VRT may aid in driving and child care due to the ability to react in a timely manner to an assortment of stimuli. These results support the view that playing is beneficial to eye-hand reaction time, improve the concentration and alertness.

**References:**

- 1) **Classe, John G., Leo P. Semes, Kent M. Daum, Rod Nowakowski, Larry J. Alexander, John Wisniewski, James A. Beisel, Kelly Mann, Robert Rutstein, Mark Smith, et al(1997).** “Association Between Visual Reaction Time and Batting, Fielding, and Earned Run Averages Among Players of the Southern Baseball League.” Journal of the American Optometric Association: 43-49
- 2) **Iulian, A. D. (2012).** Study regarding the relation between the accumulation of psycho-motor experience in the practice of sprint events, and the value of start reaction time. Scientific Journal of Education, Sports, and Health, 13(2), 62-69.
- 3) **Magill, R., & Anderson, D. (2014).** Motor learning and control: Concepts and applications (10th ed.). New York, NY: McGraw-Hill.
- 4) **Senel, Ömer, and Hüseyin Eroglu.(2006).** Correlation between Reaction Time and Speed in Elite Soccer Players. School of Physical Education and Sport. 4.2, 126-30.

\*\*\*\*\*