

## EFFECT OF SAQ TRAINING ON NEUROCOGNITION INDEX OF STATE LEVEL WOMEN SOCCER PLAYERS

<sup>1</sup>Mr. Sudipto Birbongshi, <sup>2</sup>Dr. Ashok Kr Goon

<sup>1</sup>Research Scholar, <sup>2</sup>Professor DPESS Visva Bharati

<sup>1,2</sup>Department of Physical Education and Sports Science, Bolpur, Santiniketan, India

Email - sudipto.birbongshi2.sb@gmail.com

**Abstract:** The FIFA Women's World Cup was inaugurated in 1991 and has been held every four years since, while women's football has been an Olympic event since 1996. Today, football is played at a professional level all over the world. Millions of people regularly go to football stadiums to follow their favourite teams, while billions more watch the game on television or on the internet. **Selection of subjects:** Twenty female Soccer layers aged between 14-17 were selected from Bahiri High School, Bolpur, Birbhum who participated in state level competition. **Variables:** For the evaluation of Neurocognition index CNS Vital Sign software was applied. **Selection of Training:** For the present study SAQ training was applied for 8 weeks (3 days in a week). Pre-test and Post-Test was taken to see the effect of training. For the analysis of data Descriptive statistics and Paired t-test was applied to analysis the data. The level of significance was set at 0.05. **Results and discussion:** the mean pre-test and post-test data of experimental group on Neuro-cognition index (NCI) were  $93.33 \pm 12.21$  and  $104.25 \pm 6.90$  respectively. The mean pre-test and post-test data of experimental group on composite memory were  $66.75 \pm 14.14$  and  $95.33 \pm 7.52$  respectively. The t-ratio of pre-test and post-test on Neuro-cognition index (NCI) was 4.02 which was significant at 0.05 levels as the p-value was 0.002 which is less 0.05. Thus, it may concluded that post-test score on Neuro-cognition index (NCI) was better than pre-test score on neuro-cognition index (NCI) of the subjects. It can be concluded that SAQ training has a great impact in improving Neurocognition Index of State level women soccer players.

**Key words:** Neurocognition, SAQ training, CNS Vital Sign software.

### 1. INTRODUCTION:

There are conflicting explanations of the origin of the word "football". It is widely assumed that the word "football" (or the phrase "football") refers to the "action of the foot kicking a ball". There is an alternative explanation, which is that football originally referred to a variety of games in medieval Europe, which were played on foot. There is no conclusive evidence for either explanation. The growth in women's football has seen major competitions being launched at both national and international level mirroring the male competitions. Women's football has faced many struggles. It had a "golden age" in the United Kingdom in the early 1920s when crowds reached 50,000 at some matches; this was stopped on 5 December 1921 when England's Football Association voted to ban the game from grounds used by its member clubs. The FA's ban was rescinded in December 1969 with UEFA voting to officially recognize women's football in 1971. The FIFA Women's World Cup was inaugurated in 1991 and has been held every four years since, while women's football has been an Olympic event since 1996. Today, football is played at a professional level all over the world. Millions of people regularly go to football stadiums to follow their favourite teams, while billions more watch the game on television or on the internet. A very large number of people also play football at an amateur level. According to a survey conducted by FIFA published in 2001, over 240 million people from more than 200 countries regularly play football. Football has the highest global television audience in sport. Association football has been played by women since at least the time of the first recorded women's games in the late 19th century. It has traditionally been associated with charity games and physical exercise, particularly in the United Kingdom. In the late 1960s and early 1970s, women's association football was organized in the United Kingdom, eventually becoming the most prominent team sport for British women.

However Football requires players to perform numerous actions that require strength, power, speed, agility, balance, stability, flexibility and endurance (Bloomfield et al., 2007; Gorostiaga et al., 2004; Helgerud et al., 2001) suggesting that the physical conditioning of players is a complex process. During a soccer match, players cover about 10 km in total, which includes a sprint every 90 seconds (11% of overall activity) with each action lasting on average of 2 to 4 seconds and covering a distance of 15 m (Stolen et al., 2005). Although speed represents a very important component of fitness for a soccer player, quickness (acceleration speed during the first steps) is probably more important. This is because sprints in soccer are mainly performed over short distances undertaken at maximal intensity although the longest distances tend to be about 40 m and usually involves several changes in direction (Jovanovic et al., 2011; Rienzi et al., 2000).

SAQ training is speed, agility, and Quickness training. SAQ is a system of training aimed at the development of motor abilities and the control of body movement through the development of the neuromuscular system. It aims to improve the athlete's ability to perform explosive multi-directional movements by reprogramming the neuromuscular

system to work effectively. SAQ training is an acronym for speed, agility and quickness training. These are often integrated into soccer drills and other session and activities. This type of training is very beneficial as it helps to improve your power in lateral, linear, horizontal movement, ground force reaction time, and brain signal efficiency, spatial awareness and motor skills. It also looks to improve the acceleration of your legs and arms as well as being able to slow it down.

Neurocognition Index measures an average or mean score derived from the domain scores or a general assessment of the overall Neurocognition status of the subject. This summary view tends to be most informative when evaluating a population, a condition category and outcomes.

**2. OBJECTIVE:**

The purpose of the present study was to see the effect of SAQ training on Neurocognition of women soccer players.

**3. METHODOLOGY:**

**Selection of subjects:**

Twenty female Soccer layers aged between 14-17 were selected from Bahiri High School, Bolpur, Birbhum who participated in state level competition.

**Variables:**

For the evaluation of Neurocognition index CNS Vital Sign software was applied.

**Selection of Training:**

For the present study SAQ training was applied for 8 weeks (3 days in a week). Pre-test and Post-Test was taken to see the effect of training.

**4. ANALYSIS :**

For the analysis of data Descriptive statistics and Paired t-test was applied to analysis the data. The level of significance was set at 0.05.

**5. RESULTS AND DISCUSSION:**

After collection of data statistical analysis were obtained. The analysis of all the results were presented in Tables below.

Variables	Groups	Mean	Std. Deviation (±)	Std. Error Mean (±)
Neuro-Cognition Index (NCI)	Pre Test	93.33	12.21	3.52
	Post Test	104.25	6.90	1.99

**Table-1** displays that the mean pre-test and post-test data of experimental group on Neuro-cognition index (NCI) were 93.33±12.21 and 104.25±6.90 respectively. The mean pre-test and post-test data of experimental group on composite memory were 66.75±14.14 and 95.33±7.52 respectively.

Variables	Groups	Mean	Std. Deviation (±)	Std. Error Mean (±)
Neuro-Cognition Index (NCI)	Pre Test	88.13	11.26	3.98
	Post Test	94.75	9.08	3.21

**Table-2** shows that the mean pre-test and post-test data of Control Group on Neuro-cognition index (NCI) were 88.13±11.26 and 94.75±9.08 respectively.

Variables	Mean Differences	Std. Error of Differences	t-Ratio	Sig. Level (2-tailed)
Neuro-Cognition Index (NCI)	10.92	2.71	<b>4.02*</b>	0.002

**Table-3** indicated that t-ratio of pre-test and post-test on Neuro-cognition index (NCI) was 4.02 which was significant at 0.05 levels as the p-value was 0.002 which is less 0.05. Thus, it may concluded that post-test score on Neuro-cognition index (NCI) was better than pre-test score on neuro-cognition index (NCI) of the subjects.

Variables	Mean Differences	Std. Error of Differences	t-Ratio	Sig. Level (2-tailed)
Neuro-Cognition Index (NCI)	6.63	3.01	2.20	0.063

**Table-4** describes the t-Test of Control Group. Here the t-ratio of pre-test and post-test on Neuro-cognition index (NCI) was 2.20 which was not significant at 0.05 levels as the p-value was 0.002 which is less 0.05. Thus, it may concluded that post-test score on Neurocognition Index (NCI) was likely same as pre-test score.

## 6. DISCUSSION:

The purpose of the present study was to investigate the effect of Speed Agility and Quickness (SAQ) training on Neuropsychological parameters of state level women soccer players. After 8 weeks of SAQ training it was revealed that there was Significant differences ( $t = 4.02^*$ ) in Neurocognitive Index (NCI) of Pre-teat and Post-Test of Experimental Group But there was No significant differences ( $t=2.20$ )of this parameter in case of control group. It can be concluded that SAQ training has a great impact in improving Neurocognition Index of State level women soccer players.

## REFERENCES:

1. Annika Prien 1 2, C. B.-D. (2020). Cognitive Ageing in Top-Level Female Soccer Players Compared to a Normative Sample from the General Population: A Cross-sectional Study. *J Int Neuropsychol Soc* , 26 (7), 645-653.
2. Annika Prien 1 2, N. F.-D. (2020). Neurocognitive performance and mental health of retired female football players compared to non-contact sport athletes. *BMJ Open Sport Exerc Med* , 3 (6), 952-980.
3. Athos Trecroci 1, Z. M. (2016). Agility profile in sub-elite under-11 soccer players: is SAQ training adequate to improve sprint, change of direction speed and reactive agility performance? *Res Sports Med* , 24 (4), 331-340.
4. Barbara Franca Haverkamp, R. W. (2020). Effect of physical activity interventions on cognitive outcomes and academic performance in adolescents and young adults: A meta-analysis . *Physical Activity, Health and Exercise* , 8 (2), 2637-2660.
5. Bennett, J., Doberstein, S., Siemsen, D., & Galezio, L. (2014). Tachistoscope and Visual Working Memory in Sport-related Concussion. *Investigative Ophthalmology & Visual Science* , 55, 351.
6. Brian L. Brooks, Vickie Plourde, Taryn B. Fay-McClymont, William S. MacAllister & Elisabeth M. S. Sherman. (2019). *Child Neuropsychology* , 4 (7), 980-991.
7. Caterina Pesce, A. T. (2007). Focusing of visual attention at rest and during physical exercise in soccer players. *Journal of Sports Sciences* , 25 (11), 1259-1270.
8. Christiano Rodrigues Alves 1, B. G. (2012). Effects of acute physical exercise on executive functions: a comparison between aerobic and strength exercise. *J Sport Exerc Psychol* , 34 (4), 539-49.
9. Dr I Basevitch, D. K. (2008). Training visual attention and decision-making processes in football players. *Physiology & Sports Science Psychology Sports, Recreation & Leisure Studies* , 15 (2), 56-58.
10. Dymphie In de Braek 1, K. D. (2010). Working Memory Training in Professional Football Players: A Small-Scale Descriptive Feasibility Study-The Importance of Personality, Psychological Well-Being, and Motivational Factors. *Neurosurgery* , 67 (5), 465-467.
11. Elliot J. Pellman, M. M. (2004). Concussion in Professional Football: Neuropsychological Testing—. *Neurosurgery* , 55 (6), 1290-1305.
12. Geoff Manley 1, A. J. (2017). A systematic review of potential long-term effects of sport-related concussion. *Br J Sports Med* , 51 (12), 969-977.
13. Grant L Iverson 1 2, A. J. (2017). Predictors of clinical recovery from concussion: a systematic review. *Br J Sports Med* , 51 (12), 941-948.