



# TRACKING INSTANT PHYSIOLOGICAL CHANGES PRE-POST SMALL SIDED HOCKEY PLAY

**Dr.R.Muniyappan**

*Physical Director, Nirmala Matha Convent Matric Hr Sec School, Kuniammathur, Coimbatore, Tamilnadu.*

---

## ABSTRACT

*The design of the study was to find out the result of small sided hockey play on selected physiological variables. To achieve the design of the study 10 male Youth School hockey Players were selected from Nirmala Matha Convent Matric Hr Sec School, Kuniammathur, Coimbatore, Tamilnadu. The subjects were dehydrated in two half's hockey match. The age group of subjects ranged from 14-16 years. The study was delimited to the following variables Body temperature and Heart rate were tested difference between after completion of two half's hockey match. To perform this analysis, the researcher used dependent 't' test to find out the significant difference between pre and post small sided hockey play. In this case to test the significance 0.01 level of confidence was utilized. It was found that there was a significant enhance in heart rate and body temperature after small sided hockey play.*

**KEYWORDS:** *Hockey, Body Temperature, Heart Rate.*

---

## 1. INTRODUCTION

The body's normal temperature is 98.6°. Hard exercise like hockey increases heat production in the muscles, which in turn increases internal body temperature. As internal heat increases, the blood transports the heat to the skin, where it is then released from the body as sweat. The loss of fluid through sweating reduces the volume of blood, which in turn means there is less blood available to deliver oxygen and other nutrients to the muscles. This results in muscular fatigue. As fluid losses during exercise continue, the rate of overheating accelerates. Energy normally utilized by the muscles must instead fuel the cooling process. With less energy, muscle strength, power and endurance are reduced. Drying out alludes to the deficiency of water from the different body liquid compartments, including the plasma, the water washing the cells. Water comprises 50 to 70% of the human body. It fills in as a form for compound responses, temperature guideline and grease for grown-ups day by day water needs is assessed at 1ml/kcal used. Sources incorporate all drinks and numerous non refreshments food sources. The minerals are working in the body; it assists with understanding the nature and general synthetic properties of water. Water is the biggest part of the human body, making up 50 to 70% of the body's weight. Slender muscle tissue contains about 73% water. Fat tissue is about 20% water. The fat substance expansions in the body absolute body

water diminish towards half. The body controls the measure of water in every compartment basically by controlling the electrolyte focuses in every compartment. In arrangement electrolytes separate into charged particles called particles. Water is pulled in to particles, like sodium, potassium, chloride, phosphate, magnesium and calcium. By controlling the developments of particles all through the cell compartments the body keeps up the fitting measure of water in every compartment. Thus the present study has been carried out to study the Tracking Instant Physiological Changes Pre-Post Hockey Play.

## 2. REVIEW OF RELATED LITERATURE

Senthil Kumaran and Abdul Halik (2021) Accomplish the study to identify the design of the study was to find out the result of basketball play on selected physiological variables. To achieve the idea of the study 10 male Youth School Basketball Players were selected from St. Britto Hr. Sec. School, Madurai. The subjects were dehydrated in four quarters Basketball match. The age group of subjects ranged from 14-16 years. The study was delimited to the following variables Body temperature and Heart rate were tested difference between after completion of four quarters Basketball match. To perform this analysis, the researcher used dependent 't' test to find out the significant difference between pre and post Basketball play. In this case to test the significance 0.01 level of confidence was utilized. It was found



that there was a significant enhance in heart rate and body temperature after Basketball play.

Rajkumar (2020) Carryout the study to identify the effect of volleyball play on selected physiological variables. To achieve the purpose of the study 12 male inter-collegiate Volleyball players were selected from Department of Physical Education, Bharathiar University Coimbatore. The subjects were dehydrated in 5 Set Volleyball match. The age group of subjects ranged from 18- 28 years. The study was delimited to the following variables, Body temperature and Heart rate were tested difference between after completion of 5 set Volleyball play. To execute this investigation, the researcher used dependent't' test to find out the significant difference between pre and post Volleyball play. In this case to test the significance 0.01 level of confidence was utilized. It was found that there was a significant increase in heart rate and body temperature after Volleyball play.

### 3. METHODOLOGY

The design of the study was to find out the result of small sided hockey play on selected physiological variables. To achieve the design of the study 10 male Youth School hockey Players were selected from Nirmala Matha Convent Matric Hr Sec School, Kuniammuthur, Coimbatore, Tamilnadu. The subjects were dehydrated in two half's hockey match.

The age group of subjects ranged from 14-16 years. The study was delimited to the following variables Body temperature and Heart rate were tested difference between after completion of two half's hockey match. To perform this analysis, the researcher used dependent't' test to find out the significant difference between pre and post small sided hockey play. In this case to test the significance 0.01 level of confidence was utilized. The researcher reviewed the available scientific literature from books, Journals, periodicals, research, papers and magazines and also taking into consideration the feasibility criteria of availability of instrument, the subsequent variable is appropriate to the current study.

### 3.1 SELECTION OF VARIABLES AND TESTS

The investigator reviewed the available scientific literature from books, Journals, periodicals, research, papers, and magazines also taking into consideration the feasibility criteria of availability of instrument, the following variables are applicable to the current study.

The certain variables are

1. Body Temperature
2. Heart Rate

**TABLE - 1**  
**Selection of Tests**

S. No	VARIABLES	TEST ITEMS/ INSTRUMENT	UNIT OF MEASUREMENT
1	Body Temperature	Thermometer	Fahrenheit
2	Heart Rate	Pulse Oximeter	Beat/Min

## 4. RESULTS

### 4.1 RESULTS OF BODY TEMPERATURE

**TABLE - 2**

The Mean, Standard Deviation, difference between the Means, And 't' Ratio on Body Temperature of Pre-Post Small Sided Hockey Play				
Test	M	S D	D M	't' Ratio
Pre Test	97.33	0.67	2.36	6.85*
Post Test	99.69	0.85		

\*Significance at 0.01 levels, (df= N-1) 10-1= is 3.25.

Table-2 shows that the body temperature means of pre test and post test are 97.33 and 99.69 respectively. The obtained't' value 6.85 and the table value is 3.25 at 0.01 level of confidence. Since the

obtained't' value is greater than the table value. It is concluded that there was a significant difference in body temperature between the pre and post small Sided hockey play.

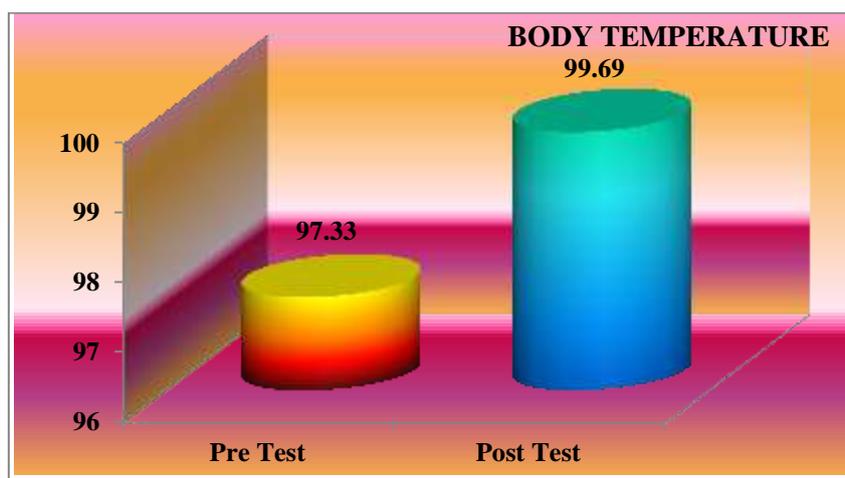


Chart-1: The Mean Values of Pre Test and Post Test on Body Temperature

4.2 RESULTS OF HEART RATE

TABLE - 3

The Mean, Standard Deviation, difference between the Means, And 't' Ratio on Heart Rate of Pre-Post Small Sided Hockey Play				
Test	M	SD	DM	't' Ratio
Pre Test	71	2.63	15	16.65*
Post Test	86	2.88		

\*Significance at 0.01 levels, (df= N-1) 10-1= is 3.25.

Table-3 shows that the heart rate means of pre test and post test are 71 and 86 respectively. The obtained 't' value 16.65 and the table value is 3.25 at 0.01 level of confidence. Since the obtained 't' value

is greater than the table value. It is concluded that there was a significant difference in heart rate between the pre and post small sided hockey play.

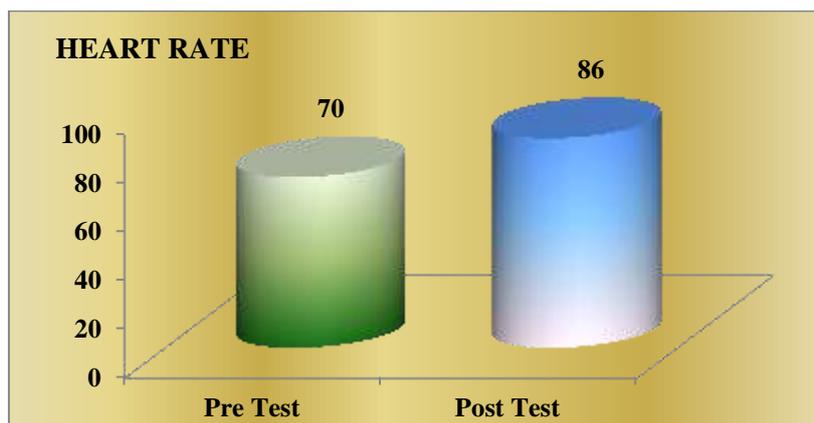


Chart-2: The Mean Values of Pre Test and Post Test on Heart Rate

5. DISCUSSION ON FINDINGS

From the analysis of the data the following findings may be drawn about the study. The result of the study reveals that there was a significant variance on body temperature and heart rate after the small sided hockey play. Due to the result of hockey play the body temperature and heart rate had appreciably increased. The findings of the present study had

similarity with the findings of Senthil Kumaran (2021), Eswari (2021), Rajkumar (2020). The hypothesis states that there would be a significant increase in body temperature and heart rate due to the result of small sided hockey play. The findings of this study reveal that there was a significant increase in body temperature and heart rate at 0.01 level of confidence, hence the hypothesis was accepted.



## 5.2 CONCLUSIONS

The result of the study reveals that there was a significant variance on body temperature and heart rate after the small sided hockey play. Due to the result of hockey play the body temperature and heart rate had significantly increased.

## 5.3 REFERENCES

1. Senthil Kumaran and Abdul Halik (2021) *Tracking Instant Physiological Changes Pre-Post Basketball Play. International Journal of Advance Research and Innovative Ideas in Education*, 7(3), 436-439.
2. S. Eswari, N. Kodeeswaran, S. Rajesh & S. Senthil Kumaran (2021) *Tracking Immediate Physiological Changes Pre-Post Small Sided Soccer Play, International Journal of Multidisciplinary Research and Modern Education*, Volume 7, Issue 1, 15-17.
3. Dr. M. Rajkumar (2020) *Tracking Immediate Physiological Changes Pre-Post Volleyball Play. Bharathiar National Journal of Physical Education and Exercise Sciences*, Vol. 11, No (2): Pg. 01-04.
4. Yanci J, Iturricastillo A and Granados, C (2014) *Heart rate and body temperature response of wheelchair basketball players in small-sided games. International Journal of Performance Analysis in Sport*, 14, 535-544.
5. David Watt.C (1998) *"Sports Management and Administration"*, London: EGFN.
6. Layrlee Sherwod (1996) *"Human Physiology"*, Los Angeles: West Publishing Company.
7. Melvin Williams.H (1995) *"Nutrition for Fitness and Sports"*, USA:Brown & Bench Mark Publishers.
8. Patricia Isenman A.E, Stephen Johnson (1999) *"Coaches Guide to Nutrition and Weight Control"*, Illinois: Leisure press.
9. Aaron Coutts and Ainta Sirotic (2004) *"Post match Recovery Practices"*, *Sports Coach*, 27:2.
10. Antonio Tessitore et al., (2006) *"Aerobic-Anaerobic Profiles, Heart Rate and Match Analysis in Old Basketball Players"*, *Gerontology*, 52: pp214-222.