Research Paper

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Compare the Effect of Basketball Game on Body Temperature and Sweating in Inter Collegiate Level Sportsmen

Physical Education

KEYWORDS : Body Temperature and Sweat

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ABSTRACT

Aim: The purpose of the study was to compare the effect of Basketball game on body temperature and sweating in Inter collegiate level sportsmen. Material and Method: The study was restricted to twenty male subjects. All were Inter collegiate level sportsman from Kanpur University Campus and DAV College, Kanpur. The data was collected during Inter Collegiate Championship held in Kanpur University, Kanpur. The data collected on body temperatures and sweating (body weight) before and after the game. Statistics: In order to analysis the data obtained paired't' test was employed; the level of significance chosen was set at .05. Result: The results from the data revealed that there were significant differences in oral temperature between, before the game and after the game. Conclusion: Oral temperature increased significantly after the game.

INTRODUCTION

Sports is as old as human society and it has achieved a universal status in modern society. It now enjoys a popularity which out strips any other form of social activity, it has become an integral part of the educational process. Million of fans follow different bordering on devotion. Many participate in sports activity for the fun or for health and fitness. Various factors have been isolated which are responsible for the excellence in sports.

Competitive sports performance of the sportsmen depends upon physical fitness, technique based upon scientific principles, scientific training programmer, diet etc. but the various environmental conditions like heat, cold, altitude and humidity also have a tremendous influence on the performance of the sportsmen.

No single temperature level can be considered to be normal, for measurement on many normal persons have shown a range of normal temperature from approximately 97 °C to 99 °C , when measured by rectum, approximately 1 °F greater is than the oral temperature. The average normal body temperature is generally considered to be 98 .6 °F (37 °C) when measured orally and approximately 1 °F or 6°C higher when measured rectally. (1)

The body temperature increased during work and this temperature elevation may be interpreted as the result of an active regulation. The difference between "energy output" and heat production is an expression of mechanical efficiency and the difference between "heat production" and "total heat lost" is the consequence of the elevated body temperature. (2)

Muscular work can increase the heat production 10 to 20 times the heat produced at rest. During work at a neutral environment, there is an increase in body temperature up to a maximum of 40 0 c or slightly higher at maximum workloads. The body temperature is not related to the absolute heat production but to the relative workloads. i.e., actually 0 uptake in relation to individual's maximum aerobic power, at a 50% load deep body temperature is about 38 0 c . The deep body temperature at rest and during work is within a wide range not affected by environmental temperature, but the skin temperature is affected. (3)

OBJECTIVE

The purpose of the study was to compare the effect of Basketball game on body temperature and sweating in inter collegiate level sportsmen.

MATERIAL AND METHODS

The study was restricted to twenty male subjects. All were inter collegiate level sportsman from CSJM University Campus and DAV College, Kanpur.

The data was collected during Inter collegiate Championship held in CSJM University, Kanpur. The data collected on body temperatures and sweating (body weight) before and after the game .

In order to analysis the data obtained paired't' test was employed; the level of significance chosen was set at .05.

The results from the data revealed that there were significant differences in oral temperature between, before the game and after the game. Oral temperature increased significantly after the game.

The results from the data collected on body weight revealed that there was significant difference in body weight before the game and after the game. Body weight decreased significantly after the game which in turn indicated a significant increase in the amount of sweat.

RESULT

TABLE-1

MEAN DEIFFERENCES IN ORAL TEMPERATURE BEFORE AND AFFTER GAME

	Mean	SD	DM	't' ratio
Pre Data	36.20	.41	0.84	10.60*
Post Data	37.04	.31		

*Significant at 0.05 level

$t_{.05}(19) = 2.09$

Table-I, reveals that there was significant difference in oral temperature before the game and after the game. . As the calculated value of 't' 10.60 was higher than tabulated value 2.09.

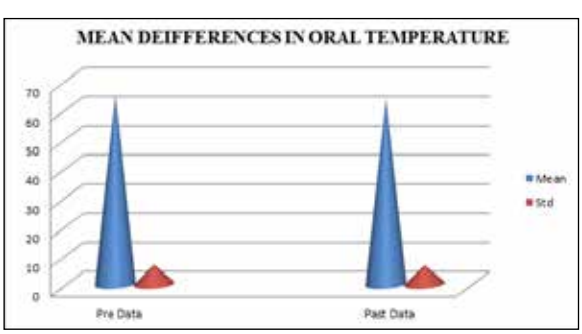

Fig.1- Mean differences in oral temperature before and after game

TABLE-2
MEAN DEIFFERENCES IN BODY WEIGHT (WEIGHT OF SWEAT) BEFORE AND AFTER GAME

	Mean	SD	DM	't' Ratio
Pre Data	65.22	6.75		
Post Data	63.80	6.55	1.41	8.78*

*Significant at 0.05 level

$t_{.05}(19) = 2.09$

It is evident from Table-II that there was significant difference in body weight due to sweating between before the game and after the game. As the calculated value of 't' 8.78 was higher than tabulated value 2.09.

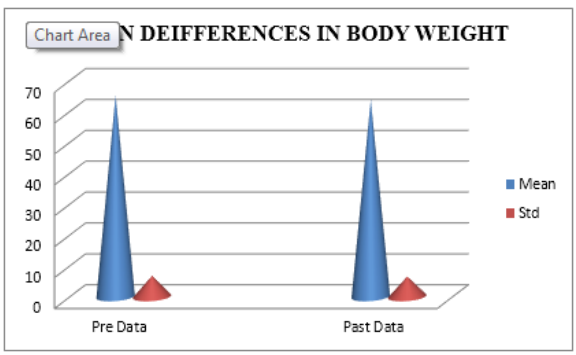

Fig.2- Mean differences in body weight (weight of sweat) before and after game

DISCUSSION OF FINDINGS

The analysis of data clearly reveals that there were significant differences in oral temperature between before the game and after the game. And the analysis of data also clearly reveals that there was significant difference in sweating between before and after the game.

Though skin temperature would have in creased during the early part of the game, after the game it came down to the same level as before the game. It may be due to the evaporative sweating which cooled down the surface temperature of the body. In addition, the skin temperatures are more related to the ambient temperature.

Similar findings have been shown by saltine and Gagge.(4)

Increase in oral temperature, that is core temperature during muscular work is associated with increase in metabolic rate. Since the mechanical efficiency vary from 0.25 percent depending upon the work at least 75 percent of the energy produced is converted into heat, which causes an increase in oral temperature.

Maron, Wagner and Horvath have shown increase in core temperature in their study which was conducted on marathon runners (5).

The analysis of the data collected on sweating clearly reveals that the group lost significant amount of sweat, which is related to increase in body temperature during muscular work under such conditions blood vessels of the skin dilates and more blood is directed to the periphery. The sweat glands of the skin are then activated and sweat is absorbed from the blood and excreted.

Similar results have been Shawn by wells.(6)

CONCLUSIONS

The results of the study seems to permit the following conclusions-

- Significant differences were noted in oral temperature between before the basketball game and after the basketball game.
- Significant differences were noted in body weight (due to loss of water) between before the basketball game and after the basketball game.

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