



## RELATIONSHIP BETWEEN TOTAL BODY FAT, RMR AND GLYCOGEN CONTENT AMONG SPORTSPERSON

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### ABSTRACT

The study was aimed to see the relationship between the various variable which compose the body of an individual. For fulfil the purpose of the study the data was collected on 30 variables belongs to the Lakshmbai National Institute of Physical Education, Gwalior. Under probability sampling technique simple random method was used by the investigator to select the samples from the concern population. The age of the samples is ranges between 17-25 years. The "maltron bioscan 916" was used to collect the data from the samples and the data was analysed with the help of spss22 version software. The product moment correlation coefficient was used to check the relationship between all three groups. After analysing the data it was concluded that there is significant and positive correlation between the variable resting metabolic rate and glycogen content, on the other hand RMR with fat and glycogen with fat have found negative relationship among themselves.

**KEYWORDS :** Total body fat, resting metabolic rate and glycogen.

### Introduction

By the nature of sports body fat is varied in elite athletes. When a men drop under 8% of the body fat and women drop under 14% there is benefits of performance in both of them. Body fat% in body composition is of great interest of athletes and is frequently negatively associated with performance (Gomez, 2004; Malina, 2007; Sigurbjorn, Evans, Saunders, Obgurn). The appraisal of body composition can provide valuable information for both the athlete and coach in monitoring sequentially the influences of training and nutrition. Therefore, the determination of body composition is important in terms of a training plan as well as success in the game (Kurt et al. 2010). The importance of resting metabolic rate for sports and for physical activity is quiet unknown. But this doesn't means that it is not valuable for an individual. Glycogen is an important factor for determine the sports performance. Glycogen is discovered in 1857 by French physiologist Claude Bernard, it is the storage form of glucose, and therefore the energy, in animals in which it is present in liver, muscle and in lower amounts in nearly all the other tissues and organs. During fast activity glycogen is one of the important source of energy. In this study the researcher was made the attempt to find the relationship between total body fat, resting metabolic rate and glycogen content in among sportsperson.

### Objective of the study

The objective of the study is to find out the relationship between total body fat, RMR and glycogen content.

### Hypothesis

The hypothesis of the study was "there is significant relation between all three groups of total body fat RMR and glycogen content".

### Significance of the study

The study will be helpful for individuals, nutritionists to choose or prepare the best chart of nutrition for the individuals.

### Methodology

To fulfil the aim of the study the samples were drawn from Lakshmbai National Institute of Physical Education, Gwalior. Under probability sampling technique the simple random method was applied by the researcher to select the samples from the concern population. This study was delimited to 30 samples, so 30 samples were drawn from the population. The ages of the subjects were ranges between 17-25 years. The "maltron bioscan 916" was used to collect the data from the samples and the data was analyse with the help of spss22 version software. The product moment correlation coefficient was used to check the relationship between all three groups.

### Findings and Interpretations

In the following sections the statistically analysed data has been presented. Results pertaining the relation between the total body fat, RMR and glycogen content.

**Table-1: shows the mean, S.D and SEM.**

| Descriptive Statistics |           |           |                |
|------------------------|-----------|-----------|----------------|
|                        | N         | Mean      | Std. Deviation |
|                        | Statistic | Statistic | Statistic      |
| RMR                    | 29        | 1620.9655 | 175.32042      |
| fat                    | 29        | 13.9455   | 6.08157        |
| glycogen               | 29        | 467.5862  | 63.27125       |

For applying any parametric statistics there are certain assumptions which are need to be fulfil. For this study all the assumption of the pearson correlation was successfully fulfilled. The above table shows the average and std. deviation value of all three groups.

**Table-2: shows the pearson correlation between three groups.**

| Correlations |                     |         |         |          |
|--------------|---------------------|---------|---------|----------|
|              |                     | RMR     | fat     | glycogen |
| RMR          | Pearson Correlation | 1       | -.774** | .928**   |
|              | Sig. (2-tailed)     |         | .000    | .000     |
|              | N                   | 30      | 30      | 30       |
| fat          | Pearson Correlation | -.774** | 1       | -.573**  |
|              | Sig. (2-tailed)     | .000    |         | .001     |
|              | N                   | 30      | 30      | 30       |
| glycogen     | Pearson Correlation | .928**  | -.573** | 1        |
|              | Sig. (2-tailed)     | .000    | .001    |          |
|              | N                   | 30      | 30      | 30       |

\*\* . Correlation is significant at the 0.01 level (2-tailed).

After analysing the raw data the above table has obtained which shows the whole picture of the data. The above table shows that there is highly positive (.928) correlation among resting metabolic rate and glycogen content. Whereas (-.774, -.573) negative correlation between RMR and fat and glycogen and fat. The associated p value for all three groups is 0.000 which is less than 0.05 label of significance, which express there is significant relation between all the variables.

### Conclusion

After analysing the data through spss 22 version, it was found that all the variable have significant relationship between themself. The variable resting metabolic rate and glycogen content have shown the highly positive relation which means if one variable increases another will also increases whereas other two combinations found

negative relationship which means if one decreases other will increase vice-versa.

### Acknowledgments

I am very thankful for my elders who sports me allot and motivating me to doing research for the development of society and profession.

### References

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