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## Muscular endurance of students: A comparison of NCC cadets, yoga practitioners and sports persons

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### Abstract

Muscular endurance is an important dimension of physical fitness and health. It is essential to develop muscular endurance in the youth. There are several activities through which this can be done in a formal manner. Prominent among these activities are NCC, yoga and sports. Thus, the present paper focuses on comparing muscular endurance of NCC cadets, yoga practitioners and sports persons. The study adopted the descriptive method of the causal-comparative type and included 1200 students in the age group of 17-21 years. It was found that the mean muscular endurance of sports persons is the highest, followed by NCC cadets and yoga practitioners in that order.

**Keywords:** Muscular endurance, NCC, yoga, sports

### Introduction

Physical fitness and health of young students is of paramount importance not only for the individual students but also for the progress and prosperity of the entire country. There are several indicators or dimensions of physical fitness and health and one such indicator is muscular endurance. Muscular endurance is the ability of a muscle or group of muscles to carry out repetitive tightening against a force for an extended period of time. Persons with higher muscular endurance carry out higher number of repetitions. Physical activities and training undertaken by NCC cadets, yoga practitioners and sports persons are expected to enhance muscular endurance. Hence the present paper focuses on comparing muscular endurance of NCC cadets, yoga practitioners and sports persons.

### Objective of the study

To compare muscular endurance of NCC cadets, yoga practitioners and sports persons in the college going age group.

### Definition of the terms

1. Muscular endurance:
2. NCC cadet:
3. Yoga practitioner: He/she is a person who regularly performs yoga not only for health but also as a sports.
4. Sports person:

### Hypothesis of the study

This is as follows:

### Research hypothesis

There will be a significant difference in the muscular endurance of NCC cadets, yoga practitioners and sports persons in the college going age group.

### Null hypothesis

There is no significant difference in the muscular endurance of NCC cadets, yoga practitioners and sports persons in the college going age group.

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**Methodology of the study**

The present study has adopted the descriptive method of the causal-comparative type in that it attempts to focus on existing students’ muscular endurance and hence is termed as descriptive research. Besides, it attempts to compare muscular endurance of NCC cadets, yoga practitioners and sports persons and hence is termed as causal-comparative method.

**Sampling techniques**

The study used purposive sampling technique wherein colleges offering NCC, yoga and sports were included as sample.

**Sample size**

The sample included 1200 students in the age group of 17 to 21 years with 400 students each from NCC, yoga and sports.

**Tools of the study**

Muscular endurance (Bent knee sit up) was measured using Kansal (1996) method. This test was used to measure the dynamic (isotonic) endurance of abdominal muscles. This test is common for the both boys and girls aged ten years and

above. The equipment used was a stopwatch and mat or clean floor.

**Scope and delimitations**

The study was delimited to male students age between 17 to 21 years who are regularly participating in National Cadet Corp programmes, intercollegiate sports and yoga practitioner students.

**Significance of the study**

This study may help NCC cadets, sports persons and yoga practitioner students of Mumbai to understand and realise their muscular endurance. This study may help to search for a better programme to achieve good muscular endurance of students. This study may guide not only NCC students, sports participants and yoga practitioner students in University of Mumbai to attain best possible muscular endurance.

**Data analysis and results**

The null hypothesis was tested using the technique of one-way classification of ANOVA as shown in the following table:

**Table 1:** Anova for muscular endurance of NCC cadets, yoga practitioners and sports persons

Source of variance	SS	df	MSS	F	Significance
Among Means	4110.887	2	2055.443	468.41	<i>p</i> <0.01
Within Group	5252.593	1197	4.388		
Total	9363.479	1199			

**Interpretation**

Table 2 reveals that the F-ratio is significant is *P*<0.01. It implies that the null hypothesis is rejected and the research hypothesis is accepted. It may be concluded that muscular endurance of NCC cadets, yoga practitioners & sports persons differs significantly. Further, a t-test was applied the findings of which are as shown in the following table.

**Table 2:** Comparisons of muscular endurance of NCC cadets, yoga practitioners and sports persons

Groups	Mean	SE	Sports	Yoga
NCC	29.0825	.09500	<i>p</i> <0.01	<i>p</i> <0.01
Sports	31.0375	.12166	--	<i>p</i> <0.01
Yoga	26.5175	.09531		--

**Conclusion and Discussion**

From table 3 it may be concluded that the mean muscular endurance of sports persons is the highest, followed by NCC cadets and yoga practitioners in that order. The muscular endurance of sports person is the highest possibly because of their training, food habits as well as rigorous practice. Similar reason could prevail for NCC cadets too due to their physical training and activities. On the other hand yoga is more about breathing and exercise for internal peace. Hence muscular endurance is the lowest for yoga practitioners.

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