



**A COMPARATIVE STUDY OF BODY COMPOSITION AND SOMATOTYPE OF
GOVERNMENT SCHOOL AND PRIVATE SCHOOL BOYS**

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Introduction

Tremendous urbanization and mechanization of daily routines almost everywhere seem to have resulted not only in ‘hurrying and scurrying’ but also depriving people of natural vitality, vigor, muscular power and prowess which is so essential for a purposeful life.

“The body must be vigorous in order to obey the soul; a good servant ought to be robust. The weaker the body, the more it commands, the stronger it is, the better it obeys. In order to think, we must exercise our limbs, our senses and our organs, which are the instruments of our intelligence. In order to derive all the advantages possible from these instruments, it is necessary that the body furnishes them should be robust and sound”.

Body type has an important role in different sports activities. Good body compositions and physical characteristics help a sportsmen to do the best in sports. Systematic physical activity and athletic training can change body composition in a characteristic way. Exercise will increase the percentage of muscle in the total body composition and decrease the percentage of fat. Muscularity is one of the important factors, which assists the sportsperson to increase performance by producing more energy during the sports activities.

Methods

Twenty Boys students from Govt. school and twenty students from Private school were randomly selected as subjects for the study. They were evaluated for body composition and somatotype. Following methods were adapted to measured body composition and somatotype.



Skinfold Thickness: Five Skin fold thickness at the sites of Biceps, Triceps, Subscapular, Suprailiac and calf were measured in mm with a skin fold caliper.

Body Fat %: Body density was calculated using the formula of Durnin and Womersley (1974). Body density calculated with the help of this formula was converted into percent body fat by the formula devised by Brozek et al (1963)

Somatotyping: Heath-Carter somatotype method was followed for somatotyping. Endomorph, Mesomorph and Ectomorph respectively were calculated with the equation derived from the Health-Carter rating form (Carter and Heath, 1990; Carter 1992) Body mass were measured by weighing scale in kg and Stature were measured by stadiometer in cm.

Skin fold thickness at the sites of biceps, triceps, subscapula, suprailiac and calf were measured with skin fold caliper in mm. Diameter of humerus and femur were determined with the help of a sliding caliper in cm. nearest to 1 mm. The circumference of upper arm and calf were measured with a cloth tape. Five skin fold thicknesses were used to calculate the body density of the subjects using the equation of Durnin and Womersley (1974) and percent of body fat was calculated using the formula of Brozek et al (1963).

Statistical Analysis

Mean, Standard deviation, Minimum value and Maximum value were calculated using the Statistical program with the help of computer.

Results

The average height and weight of the Govt. school students were 157 cm and 55.4 kg respectively and those of the students of Private school were 160 cm and 60.5 kg respectively. Both groups possessed mesomorphic-endomorph body type in average but the mesomorphic components of the Govt. school students were more than the private students. The endomorphic and ectomorphic components were same in both groups. The body fat% of the both groups was very similar (24.5% for Government students and 25.5% for Private students).

Body composition and somatotype of Govt. and Private Students are shown in Table 1 and Table 2 respectively.



Table – 1: Body Composition and Somatotype of Government School Boys Students.

	Height (cm)	Weight (kg)	Fat %	Endomorph	Mesomorph	Ectomorph
Mean	157	55.4	24.5	6.10	4.20	1.23
Standard Deviation	2.19	2	1.04	.18	1.17	.28
Minimum	152	56	23.2	5.8	2	.6
Maximum	162	64	28.6	6.4	6.4	1.7

Table – 2: Body Composition and Somatotype of Private School Boys Students.

	Height (cm)	Weight (kg)	Fat %	Endomorph	Mesomorph	Ectomorph
Mean	160	60.5	25.5	6.12	3.81	1.25
Standard Deviation	2.38	2.69	.70	25	1.56	.30
Minimum	156	58	24.2	5.6	.9	.8
Maximum	164	69	26.6	6.9	5.8	1.8

Discussion

The more mesomorphic components for the Government school boys students might be due to their regular engagement in sports and exercise activities. The body fat percentages of both the groups were very similar. This might be due to similar intake of food for both groups. This was reflected in BMI where both groups had same values. Thus from the above study it might be concluded that involvement in regular physical activities improved the muscularity pattern of the Government school boys students. The students without activity resulted less in muscularity.



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