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**A COMPARATIVE STUDY OF PHYSICAL  
FITNESS BETWEEN YOUTH OF NORTH  
EASTERN AND NORTHERN REGIONS OF INDIA**

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# A Comparative Study of Physical Fitness between Youth of North Eastern and Northern Regions of India

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**Abstract –** *The future of a nation depends upon the future of its children. Proper upbringing of the children goes a long way in the development and well-being of a nation, participation in physical education & sports programme is essential for realizing true potential. Every nation is becoming increasingly concerned about the physical fitness of its youth, recognizing that the physical fitness is fundamental and contributory to happy and useful living in any capacity.*

*The purpose of the study was to compare the physical fitness between youth of north-eastern and northern regions of India. For the purpose of study 60 subjects (30 from each region) were selected to serve as the subjects. Their age was ranged between 17 to 21 years. The study was delimited to the seven physical fitness variables namely, Flexibility, Abdominal Strength Endurance, Leg Explosive Strength, Arms & Shoulder Strength Endurance, Agility, Cardio Vascular Endurance and Speed. For measuring these variables Sit and Reach Test, Bent Knee Sit-Ups Test, Standing Broad Jump Test, Pull Ups Test, Shuttle Run Test, One Mile Walk/Run Test and 50 Meter Dash Run Test were used respectively. The reliability was established using test-retest method.*

*To find out the significant differences between the youth of north eastern and northern regions of India, t-test was employed at 0.05 level of significance. The statistical analysis of data revealed that the youth of both of the regions had no significant difference in relation with the Flexibility and Agility, whereas in Abdominal Strength Endurance, Leg Explosive Strength, Arm & Shoulder Strength Endurance, Cardio Vascular Endurance and Speed significant difference was found.*

## INTRODUCTION

The future of a nation depends upon the future of its children. Proper upbringing of the children goes a long way in the development and well-being of a nation, participation in physical education & sports programme is essential for realizing true potential. Every nation is becoming increasingly concerned about the physical fitness of its youth, recognizing that the physical fitness is fundamental and contributory to happy and useful living in any capacity. The ability to carry out daily task with vigour and alertness, without undue fatigue and ample energy to enjoy leisure time pursuits and to meet unforeseen emergencies.

Physical Education must recognize and emphasize the needs of physical fitness for students under its charge and this recognition should become a determination to formulate and conduct a sound and effective physical fitness programme for them. In today's fast paced life physical fitness is becoming necessary for the youth. These physical fitness programmes contribute towards the growing importance of having a healthy and stress

free life. Individual who practice proper physical fitness leads to better functioning and can be utilized in the field of physical education and sports. Therefore, observing the felt requirement, we consider it necessary to attempt "A Comparative Study of Physical Fitness between Youth of North-Eastern and Northern Regions of India."

## MATERIALS AND METHODS

The study was used to compare the physical fitness between youth of north-eastern and northern regions of India. For this purpose of investigating the difference 60 subjects (30 from each region), studying at LNUPE, Gwalior, were randomly selected to serve as the subjects. Their age was ranged between 17 to 21 years. The study was delimited to the seven physical fitness variables namely, Flexibility, Abdominal Strength Endurance, Leg Explosive Strength, Arms & Shoulder Strength Endurance, Agility, Cardio Vascular Endurance and Speed. For measuring these variables Sit and Reach Test, Bent Knee Sit-Ups Test, Standing Broad Jump

Test, Pull Ups Test, Shuttle Run Test, One Mile Walk/Run Test and 50 Meter Dash Run Test were used respectively.

## FINDINGS

To establish the reliability of data test-retest method was employed and presented in Table 1.

**Table-1**

### Reliability Coefficient of Test and Retest Scores

S. No.	Test Items	Co-efficient
1.	Sit and Reach Test	0.91
2.	Bent Knee Sit-Ups Test	0.82
3.	Standing Broad Jump	0.85
4.	Pull Ups Test	0.78
5.	Shuttle Run Test	0.79
6.	One Mile Walk/Run Test	0.81
7.	50 Meter Dash Run Test	0.76

Table 1 shows all the tests were highly reliable to be utilized.

To find out the significant differences between the youth of north eastern and northern regions of India, t-test was employed at 0.05 level of significance. The statistical analysis of data pertaining to the Flexibility is given in Table 2.

**Table - 2**

### Significant Differences between the Youth of North Eastern and Northern Regions of India in Flexibility

Groups	Mean	S.D.	Difference between Mean (DM)	't' ratio
Youth of North Eastern Region	2.58	0.98	0.24	<b>0.99</b>
Youth of Northern Region	2.34	0.88		

**„t“ 0.05 (58) = 2.00**

It is evident from table-2 that there was no significant difference between the youth of north eastern and northern regions of India in the flexibility, since the calculated „t“ value 0.99 was found to be not more than tabulated value 2.00 required to be significant at 0.05 level.

**Table - 3**

### Significant Differences between the Youth of North Eastern and Northern Regions of India in Abdominal Strength Endurance

Groups	Mean	S.D.	Difference between Mean (DM)	't' ratio
Youth of North Eastern Region	29.66	1.7	6.5	<b>9.8*</b>
Youth of Northern Region	23.2	3.2		

**„t“ 0.05 (58) = 2.00**

Table-3 reveals that there was significant difference between the youth of north eastern and northern regions of India in the abdominal strength endurance, since the calculated „t“ value 9.8 was found to be more than tabulated value 2.00 at 0.05 level of significance. Thus, data provides sufficient evidence to ensure that the mean Abdominal Strength Endurance of youth of the north eastern region is significantly higher than the youth of the northern region in India.

**Table - 4**

### Significant Differences between the Youth of North Eastern and Northern Regions of India in Leg Explosive Strength

Groups	Mean	S.D.	Difference between Mean (DM)	„t“ ratio
Youth of North Eastern Region of North Eastern Region	2.366	0.14	0.29	<b>7.75*</b>
Youth of Northern Region	2.07	0.2		

**„t“ 0.05 (58) = 2.00**

Table-4 reveals that there was significant difference between the youth of north eastern and northern regions of India in the leg explosive strength, since the calculated „t“ value 7.75 was found to be more than tabulated value 2.00 at 0.05 level of significance. Thus, data ensures that the mean leg explosive

strength of youth of the north eastern region is significantly higher than the youth of the northern region in India.

**Table – 5**

**Significant Differences between the Youth of North Eastern and Northern Regions of India in Arm & Shoulder Strength Endurance**

Groups	Mean	S.D.	Difference between Mean (DM)	„t“ ratio
Youth of North Eastern Region	17.83	3.7	5.5	7.4*
Youth of Northern Region	12.3	1.8		

„t“ 0.05 (58) = 2.00

Table-5 reveals that there was significant difference and between the youth of north eastern and northern regions of India in the arm and shoulder strength endurance, since the calculated „t“ value 7.4\* was found to be more than tabulated value 2.00 at 0.05 level of significance. Thus, data ensures that the mean arm and shoulder strength endurance of youth of the north eastern region is significantly higher than the youth of the northern region in India.

**Table – 6**

**Significant Differences between the Youth of North Eastern and Northern Regions of India in Agility**

Groups	Mean	S.D.	Difference between Mean (DM)	„t“ ratio
Youth of North Eastern Region	12.01	1.1	0.05	0.15
Youth of Northern Region	12	1.5		

„t“ 0.05 (58) = 2.00

It is evident from table-6 that there was no significant difference between the youth of north eastern northern regions of India in the agility, since the calculated „t“

value 0.15 was found to be not more than tabulated value 2.00 required to be significant at 0.05 level.

**Table – 7**

**Significant Differences between the Youth of North Eastern and Northern Regions of India in Cardio Vascular Endurance**

Groups	Mean	S.D.	Difference between Mean (DM)	„t“ ratio
Youth of North Eastern Region	6.3	0.8	0.6	2.73*
Youth of Northern Region	5.7	0.9		

„t“ 0.05 (58) = 2.00

Table-7 reveals that there was significant difference between the youth of north eastern and northern regions the of India in cardio vascular endurance, since the calculated „t“ value 2.73 was found to be more than tabulated value 2.00 at 0.05 level of significance. Thus, data ensures that the youth of the northern region are significantly higher than the youth of the north eastern region with regard to cardio vascular endurance.

**Table – 8**

**Significant Differences between the Youth of North Eastern and Northern Regions of India in Speed**

Groups	Mean	S.D.	Difference between Mean (DM)	t ratio
Youth of North Eastern Region	7.63	1.5	- 0.9	2.3*
Youth of Northern Region	8.9	2.5		

Table-8 reveals that there was significant difference between the youth of north eastern and northern regions of India in cardio vascular endurance, since calculated „t“ value 2.3 was found to be more than tabulated value 2.00 at 0.05 level of significance.

Thus, data ensures that the youth of the north eastern region are significantly higher than the youth of the northern region with regard to Speed.

## **DISCUSSION**

The findings of the study indicates that there was a statistically significant difference between youth of the north-eastern and northern region of India in their physical fitness components such as Abdominal Strength Endurance, Leg Explosive Strength, Arm & Shoulder Strength Endurance, Cardio Vascular Endurance and Speed.

This may be attributed to the fact that the geographical condition, food habits, nature of work and life style are not alike in the youth of north-east and northern region which distinguish them physically. From the finding it was observed that in case of Abdominal Strength Endurance, Leg Explosive Strength, Arm & Shoulder Strength Endurance and Speed, youth of north-eastern region were better in comparison to the youth of northern region. In case of Cardio Vascular Endurance, youth of northern region were better than the youth of north-eastern region, whereas in case of flexibility and agility, there was no difference between them. These results may be utilized for the talent identification in sports and to formulate the physical education programme.

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