



## EFFECT OF ENDURANCE TRAINING

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### Abstract:

### Introduction:

Endurance exercise training results in profound adaptations of the cardiorespiratory and neuromuscular systems that enhance the delivery of oxygen from the atmosphere to the mitochondria and enable a tighter regulation of muscle metabolism. These adaptations effect an improvement in endurance performance that is manifest as a rightward shift in the 'velocity-time curve'. This shift enables athletes to exercise for longer at a given absolute exercise intensity, or to exercise at a higher exercise intensity for a given duration. There are 4 key parameters of aerobic fitness that affect the nature of the velocity-time curve that can be measured in the human athlete. These are the maximal oxygen uptake ( $VO_{2max}$ ), exercise economy, the lactate/ventilatory threshold and oxygen uptake kinetics. Other parameters that may help determine endurance performance, and that are related to the other 4 parameters, are the velocity at  $VO_{2max}$  ( $V-VO_{2max}$ ) and the maximal lactate steady state or critical power. This review considers the effect of endurance training on the key parameters of aerobic (endurance) fitness and attempts to relate these changes to the adaptations seen in the body's physiological systems with training. The importance of improvements in the aerobic fitness parameters to the enhancement of endurance performance is highlighted, as are the training methods that may be considered optimal for facilitating such improvements.

Endurance" refers to your ability to exert yourself or remain active over time. It also refers to your ability to withstand fatigue, stress or pain. Endurance training helps improve cardiovascular, respiratory and muscular endurance during any aerobic or anaerobic exercise. While most people exclusively associate swimming, running and biking with endurance training, there's more to it than just three sports.

Muscular endurance refers to your muscles' ability to contract repeatedly over an extended period of time and resist fatigue. For example, keeping your legs moving for the duration of a long run takes muscular endurance. Running also tests your cardiovascular endurance. Cardiovascular endurance refers to your heart, blood vessels and lungs' ability to pump oxygen steadily for long periods of movement or work. The ability to keep your breath steady throughout a long run without needing to stop demonstrates one type of cardiovascular endurance.

### Why is Endurance Training Important

The importance of endurance training goes beyond running a marathon or completing a triathlon. Endurance not only enhances your performance while working out, but also contributes to your overall health, providing you with energy, improved heart function and increased metabolism. Many team sports including soccer, lacrosse, ultimate frisbee and basketball require endurance as do activities like hiking, snowshoeing, skiing, climbing and snowboarding.

**Sample:**

Purpose for this Study Was to find out the physical fitness sample used for these were the student of Anubhuti school Jalgaon aged Between 15/16 years . I made one group of 16 boys an then take pre test 12 m Run an walk without training program an after finished training program gote the result as expected.

**Methodology:**

Sample selected by randomly from the students of anubhutischoolaged between 15/16 years. The Training period was 4 week between after pretest all the edurance related training were covered by me this training of 4 week covered varicose endurance related training like long distance,shorts distance ,interval traing,fartlek,etc this time for 30 minutes each session . After completion of 4 week training analysis was done on the basis of Mean,Mediam,SD, & t ratio.

**Hypothesis:**

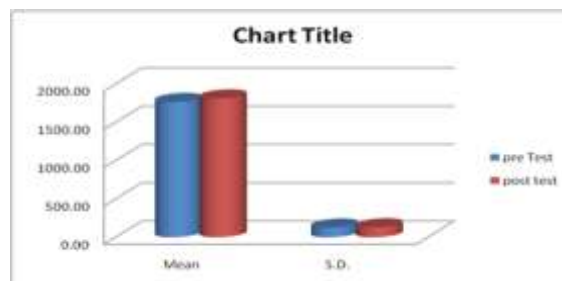
It was hypothesis that there will be positive significant effect of sports Training Programme on Anubhuti school student physical efficiency.

	pre Test	post test
MEAN	1765.625	1812.5
SD	124.791	128.452
T ratio	<b>1.046</b>	

t-Test: Two-Sample Assuming Equal Variances		
	<i>pre Test</i>	<i>post test</i>
Mean	1765.625	1812.5
Variance	15572.92	16500
Observations	16	16
Pooled Variance	16036.46	
Hypothesized Mean Difference	0	
df	30	
t Stat	-1.04696	
P(T<=t) one-tail	0.151739	
t Critical one-tail	1.697261	
P(T<=t) two-tail	0.303478	
t Critical two-tail	2.042272	

tab t = 2.04

	Pre Test	Post Test
ShantisagarPawar	1700	1750
Raghav Mittal	1900	1950
DevanshGhanatra	1850	1900
VedantAgrawalk	1750	1800
Rudrakshasharam	1850	1900
yashAgrwal	1650	1700
AniketAgrwal	1500	1550
KetanTapdiya	1700	1750
Raj Agrawal	1650	1700
Nirajiri	1650	1650
harshitparikh	1750	1800
omkarpadvi	1800	1850
janaktanna	1750	1800
manaschouhan	1850	1900
aakantjain	1900	1950
manishpathak	2000	2050
	1765.625	1812.5



MEAN	1765.625	1812.5
SD	124.7915	128.4523
T ratio	1.016	

	Mean	S.D.	t ratio
pre Test	1765.63	124.79	1.016
post test	1812.50	128.45	

**Discussion on Finding**

During the 4 week training experimental group was given training. Mean performance

groups was positive, at the Pre test period to the commencement of Training Performance of experimental group was increased more significantly than control group when tested statistically. Further the comparison of values of calculated 't' of experimental with 't' of improvement of experimental group higher than.

The finding of this study shows that there is significant difference among t group viz experimental. Finding shows high significant difference in the Pre and post test among the experimental group of players. Calculated value of 't' was greater than the table value of 't' at 0.05 level of confidence as shown.

The finding also revealed that there is significant difference in pre and post test of respective control group. Calculated value of 't' was greater than the table value of 't' at 0.05 level of confidence as shown.

The finding reveals that there is no significant difference in pre test of experimental group. Calculated value of 't' is less than the table value of 't' at 0.05 level of confidence.

The finding also revealed that there is a high significant difference in post test of experimental group. Calculated value of greater than the table value of 't' at 0.05 level of confidence as shown.

#### **Conclusion:**

Following conclusion are given on the basis of finding.

1) It can be concluded that significant difference was found in pre and post test of experimental group players. It was also concluded from the table that positive effect of Training can be seen on experimental group.

2) It can be concluded from the table 3 that significant difference was found between post test of experimental group, which may be the result of four week training programme given to experimental group where as no significant difference was found in pre test of experimental group of players. Which shows the authenticity of homogeneous group made before the providing training to the experimental group of subject?

It is therefore concluded that, as the practice with running effective significant on the improvement of running ability of

Anubhuti players, it would be used by the coaches to evaluate and classify their players and athletes.

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