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# Altitude Training and Its Influence on Low-Density Lipoprotein Among Cricket Players

**Dr. P. Yoga[1*]**

[1]Assistant Professor, Alagappa University College of Physical Education, Alagappa University, Karaikudi, Tamilnadu, India.

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*Corresponding Author: yogap@alagappauniversity.ac.in

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The purpose of the present study was to investigate the effect of altitude training on Low-Density Lipoprotein (LDL) levels among cricket players. To achieve this, thirty cricket players were selected from Madurai District, Tamil Nadu, India, during the year 2025. The subjects' ages ranged from 18 to 25 years. The participants were divided into two equal groups, each consisting of 15 players: the experimental group and the control group. The experimental group underwent an altitude training program for six weeks, while the control group did not participate in any special training during the course of the study. Low-Density Lipoprotein (LDL) was used as the criterion variable in this study. LDL levels were measured using a LDL analyzer (blood test) both before and immediately after the six-week training period. The statistical technique of the 't' ratio was used to analyze the mean differences in the pre-test and post-test data between the experimental and control groups. The results revealed a significant difference in LDL levels, with the experimental group showing a greater improvement due to the altitude training, as compared to the control group.

**Keywords:** *Altitude Training, Low Density Lipoprotein and 't' Ratio.*



## 1. INTRODUCTION

Today, sports have become an integral part of our culture, influencing and being influenced by various social institutions, including education, economics, arts, politics, law, mass communication, and even international diplomacy **(Alaguraja, K. et al., 2019)**. Yoga, which benefits people of all ages, is a fascinating subject for those with a philosophical mind. It is defined as the silencing of the mind's activities, leading to a complete realization of the intrinsic nature of the Supreme Being **(Alaguraja, K. et al., 2017)**. In the sports world, physical education plays a crucial role because physical training enhances performance and effectiveness in sports **(Alaguraja, K. et al., 2018)**.

Yoga is a system of exercises that helps the mind and body achieve tranquillity and spiritual insight **(Alaguraja, K. et al., 2019)**. When practicing yoga asanas, it is important not only to stretch the body but also to ensure the mind is aligned with the body **(Alaguraja, K. et al., 2019)**. One can begin practicing yoga at any time, starting with meditation or pranayama, even before engaging in the physical postures **(Alaguraja, K. et al., 2019)**. In today's society, there is an increasing emphasis on appearing smarter, feeling better, and living longer. To achieve these ideals, scientific evidence suggests that one of the keys is maintaining high fitness levels through exercise **(Alaguraja, K. et al., 2019)**. When consciousness operates with the intellect and all the senses, it can give an illusion of awareness, even though the mind may be less receptive and more critical **(Yoga, P. et al., 2019)**. Yoga is not a religion but a practical aid, and its techniques can be practiced by people of all faiths, including Buddhists, Jews, Christians, Muslims, Hindus, and even atheists. Yoga is a union for all **(Selvakumar, K. et al., 2019)**.

## 2. RESEARCH METHODOLOGY

### 2.1. Selection of subjects

The purpose of this study was to investigate the effect of altitude training on low-density lipoprotein (LDL) levels among cricket players. To achieve this, thirty cricket players were randomly selected as subjects for the study. The participants' ages ranged from 18 to 25 years.

### 2.2. Selection of variable

- **Independent variable:** Altitude training
- **Dependent variable:** Low density lipoprotein

## 3. EXPERIMENTAL DESIGN AND IMPLEMENTATION

The selected subjects were divided into two equal groups of fifteen players each: an altitude training group (Experimental Group) and a control group. The experimental group underwent altitude training for six days per week over a period of six weeks. The control group, on the other hand, did not undergo any special training and continued with their regular physical activities as per their curriculum. The biochemical variable, low-density lipoprotein (LDL), was selected as the criterion variable for this study. All subjects in both groups were tested for LDL levels, which were measured using a low-density lipoprotein analyzer (blood test) before and immediately after the training program.

### 3.1. Statistical technique

The‘t’ test was used to analysis the significant differences, ifany, difference between the groups respectively.

### 3.2. Level of significance

The 0.05 level of confidence was fixed to test the level of significance which was considered as an appropriate.

## 4. ANALYSIS OF THE DATA

The significance of the difference among the means of the experimental group was found out by pre-test. The data were analysed and dependent‘t’ test was used with 0.05 levels as confidence.

**Table-I:** Analysis of t-ratio for the pre and post tests of experimental and control group on Low density lipoprotein (Scoresmg/dl)

| Variables | Group | Mean | | SD | | df | ‘t’ ratio |
|---|---|---|---|---|---|---|---|
| | | Pre | Post | Pre | Post | | |
| **Low density lipoprotein** | **Control** | 144.73 | 145.13 | 6.31 | 5.64 | 14 | 1.46 |
| | **Experimental** | 145.46 | 126.06 | 14.62 | 2.15 | | **5.30*** |

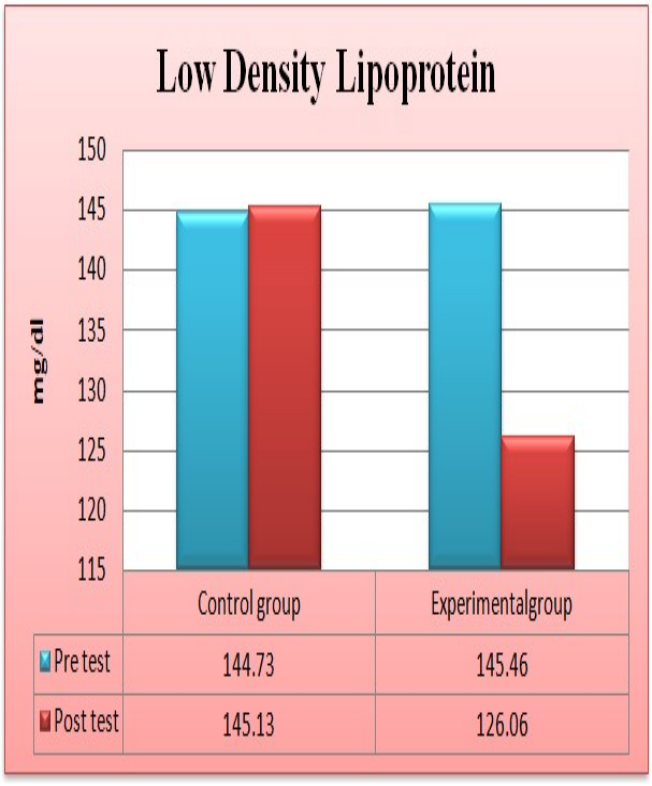
**Significance at 0.05 level of confidence.*

Tables I and Table II show that the mean values of pre-test and post-test for the control group on low-density lipoprotein were 144.73 and 145.15, respectively. The obtained 't' ratio was 1.46, which is less than the required table value of 2.14 for significance at the 0.05 level with 14 degrees of freedom, indicating that the difference was statistically insignificant.

In contrast, the mean values of pre-test and post-test for the experimental group on low-density lipoprotein were 145.46 and 126.06, respectively. The obtained 't' ratio was 5.30*, which is greater than the required table value of 2.14 for significance at the 0.05 level with 14 degrees of freedom, indicating that the difference was statistically significant.

The result of the study shows a significant difference between the control group and the experimental group in terms of low-density lipoprotein levels. It can be concluded that the experimental group experienced a significant improvement in low-density lipoprotein levels due to six weeks of altitude training.

**Figure-1**
**Bar Diagram Showing the Pre and Post Mean Values of Experimental and Control Group on Low density lipoprotein**




## 5. DISCUSSIONS ON FINDINGS

The result of the study indicates that the experimental group, specifically the altitude training group, showed a significant improvement in the selected dependent variable, low-density lipoprotein (LDL), when compared to the control group. It was also found that the improvement in LDL levels was attributed to the altitude training, as the experimental group exhibited more substantial changes compared to the control group.

## 6. CONCLUSION

On the basis of the results obtained the following conclusions are drawn,

- There was a significant difference between the experimental and control groups in Low-density lipoprotein levels after the training period.
- There was a significant improvement in Low-density lipoprotein levels, with the improvement being in favor of the experimental group due to the six weeks of altitude training.

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