

# Effect of a Four-Week Intensive Yoga Program on Resting Heart Rate of Inter-University Male Players of Haryana

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## Abstract

The purpose of the present study was to examine the effect of a four-week intensive yoga program on the resting heart rate of inter-university level male players from Haryana. Twenty male players participated in the study. A pre–post experimental design was used to assess the impact of the yoga intervention. Resting heart rate was measured before and after the four-week yoga program. Descriptive statistics including mean and standard deviation were calculated, and a paired sample t-test was applied to determine the significance of differences between pre-test and post-test values. The pre-test mean (SD) value of heart rate was 71.10 (2.69) beats per minute, while the post-test mean (SD) value was 69.60 (2.28) beats per minute. The mean difference between the two measurements was  $-1.50$ . The paired t-test revealed a significant difference ( $t = 2.79$ ,  $df = 18$ ,  $p < .05$ ). The findings indicate that the intensive yoga program significantly reduced the resting heart rate of the athletes. Therefore, yoga practices may be considered an effective method for improving cardiovascular efficiency among players.

**Keywords:** yoga, heart rate, cardiovascular fitness, paired t-test

## Introduction

Physical fitness and cardiovascular efficiency are essential components of athletic performance. In sports players must maintain high levels of endurance, agility, and stamina. Resting heart rate is an important physiological indicator of cardiovascular fitness and overall health. Lower resting heart rate values are often associated with improved cardiovascular efficiency and better physical conditioning.

In recent years, yoga has gained significant attention as a complementary training method for athletes. Yoga practices involve breathing techniques, physical postures (asanas), and meditation, which collectively help improve physiological and psychological functioning. Regular yoga practice has been reported to reduce stress, enhance respiratory efficiency, and improve cardiovascular function.

For athletes engaged in intensive sports training, incorporating yoga into their training routine may provide additional benefits such as improved recovery, reduced fatigue, and better cardiovascular regulation. Therefore, the present study aimed to examine the effect of a four-week intensive yoga program on the resting heart rate of inter-university male players of Haryana.

## Objectives of the Study

To determine the pre-test resting heart rate of inter-university male players.

To determine the post-test resting heart rate after participation in a four-week intensive yoga program.

To analyze the effect of the yoga program on heart rate using a paired sample t-test.

## Hypothesis

It was hypothesized that there would be a significant difference between pre-test and post-test resting heart rate of the players after participation in the intensive yoga program at the 0.05 level of significance.

## Methodology

**Participants:** The participants for this study consisted of 20 inter-university level male players from Haryana. The subjects were selected using purposive sampling and were actively involved in training.

## Research Design

The study employed a pre-test and post-test experimental design to examine the effect of the yoga intervention.

## Variable

Independent Variable: Four-week intensive yoga program

Dependent Variable: Resting heart rate (beats per minute)

## Procedure

Prior to the start of the intervention, the resting heart rate of all participants was measured under standardized conditions. Following the pre-test, the athletes participated in a four-week intensive yoga program, which included selected asanas, pranayama, and relaxation techniques. After the completion of the program, the resting heart rate was measured again under the same conditions to obtain post-test data.

The set of *asanas* and *pranayama* included in the course

1. Humming in meditative posture: *Vajrasana, padmasana* or *Sukhasana* (5-10 min)
2. Loosening exercises from head to toes: 3-5 repetitions on each side (5-10 min)
3. *Surya Namaskar*

Standing: *Ardhakatichakrasana, Padahastasana, Ardhashakrasana, Vrikshasana*

Sitting: *Konasana, Naukasana, Paschimotanasana*

Lying prone: *Dhanurasana, Makarasana, Bhujangasana*

Lying supine: *Uttitapadasana, Sarvangasana, Halasana*

Starting with 2-3 repetitions, holding each pose up to 60 sec, gradually increasing to 10-15 repetitions (40-50 min)

4. *Pranayama* (breathing exercises): 15-20 times each
5. Relaxation in *shavasana* (5 min)

## Statistical Analysis

The following statistical techniques were used to analyze the collected data:

Mean

Standard Deviation

Paired Sample t-test

The level of significance was set at 0.05.

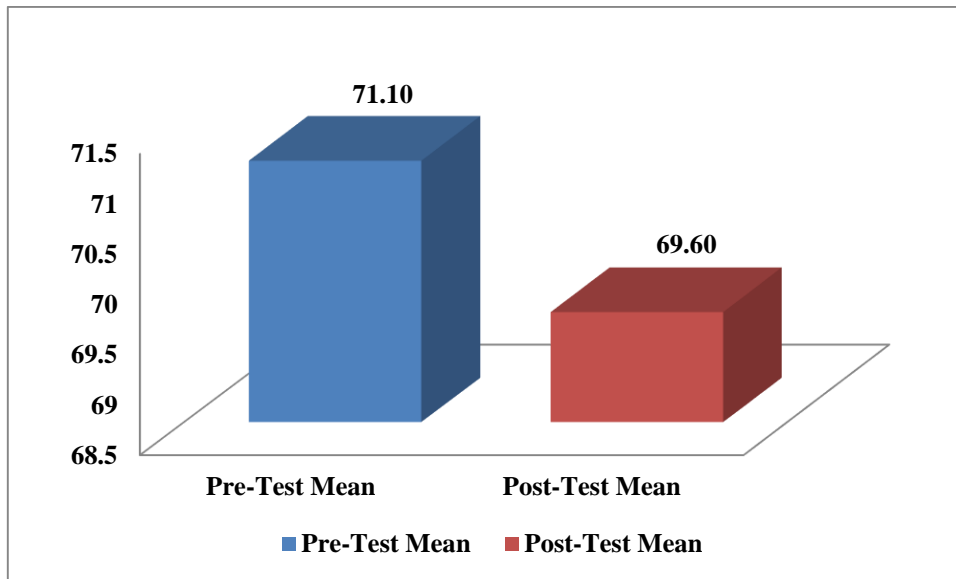
## Results

**Table-1: Pre-Test and Post-Test Mean (SD) Values of Resting Heart Rate**

Variable	Pre-Test Mean (SD)	Post-Test Mean (SD)
Heart Rate (bpm)	71.10 (2.69)	69.60 (2.28)

The results indicate that the resting heart rate of the players decreased from 71.10 bpm to 69.60 bpm after the four-week yoga intervention.

**Figure-1: Graphical presentation of Pre-Test and Post-Test Mean Values of Resting Heart Rate**



**Table-2: Paired Sample t-Test for Resting Heart Rate**

Variable	Mean Difference	t-value	df	Level of Significance
Heart Rate	-1.50	2.79	18	Significant at .05

The calculated t-value (2.79) with df = 18 was found to be significant at the 0.05 level, indicating that the intensive yoga program significantly reduced the resting heart rate of the players.

### Discussion

The present research has revealed that participation in a four-week intensive yoga training program resulted in a reduction of the resting heart rate among inter-university male players.

It has been recognized that yoga practices like pranayama and relaxation have a positive impact on increasing parasympathetic activity and reducing sympathetic nervous system activity. This phenomenon reflects a reduction in the resting heart rate.

The findings of the present research corroborate previous research findings that have revealed the positive contribution of yoga practice to athletic training by increasing physiological efficiency.

### Conclusion

Based on the findings of the study, it can be concluded that the four-week intensive yoga program resulted in a significant reduction in the resting heart rate of inter-university male players belonging to Haryana. The reduction in the heart rate of the players indicates improved efficiency in the cardiovascular system, which proves that yoga can be effectively incorporated into the training of the athletes.

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