

## Relationship between Competitive Performance and Selected Physiological Parameters of Elite Male and Female Gymnasts

Sharma<sup>1</sup>, R. K., Nigam<sup>2</sup>, A. K.

<sup>1</sup>Grade-I Gymnastic Coach, (Sports authority of India), Department of Sports and Youth Welfare S. P. Office, Bilaspur (CG) Pin-495009.

<sup>2</sup>Assistant Professor, Department of Physical Education, Guru Ghasidas Central University, Bilaspur (CG), Pin-495009.

### Abstract

The purpose of this study was to investigate and compare the physiological variables in relation to performance of elite male and female gymnasts of inter-university level. The subjects of the study were sixty three elite male and female gymnasts (males = 32, females= 31) of inter-university level belong to different cultural background of India and who represented their respective university teams in All India Inter-university Gymnastics Championships at Amritsar. Blood pressure (systolic and diastolic) and the heart rate, winning performance scores of elite male and female gymnasts were chosen as the criterion measures for the study. The results of the study indicated that both blood pressure and heart rate of elite male and female gymnasts were raised after the performance on competitive apparatus. There was no correlation between competitive performance of both gender and selected physiological parameters. Significant differences existed between pre-test and post-test heart rate, both blood pressure of elite female gymnasts of inter-university level, but similarity was found in the pre-test and post-test of systolic blood pressure in elite male gymnasts. Elite male and female gymnasts of inter-university level had similarity in their post-test heart rate, systolic and diastolic blood pressure, but similarity was found in the pre-test of heart rate in elite female gymnasts.

**Keywords: Elite, Performance, Gender, parameters, Tests.**

### Introduction

In competitive situations, the sports are anxious to a certain degree which eventually affect their performance no human being is free from tension and stress. In the stressful setting provided by competitive sports it is usual to observe a player.

In many exercise and fitness magazines, the idea is established that heart rate alone is a good predictor of the aerobic benefits of exercise. This idea greatly oversimplifies the complexity and grand design of the cardiovascular system. Chamber size increase is a result of an increased filling rate during

prolonged endurance training exercise. An increase in ventricular wall thickness occurs from high intensity strength training. The total peripheral resistance to blood flow increases due to muscle contraction. More pressure must be generated by the heart to move blood. (Menzel, 1997).

Exercise elevated both blood pressure and pulse rate, increasing more after jumping rope than after walking. Immediately after jumping rope, the pulse rate was about twice as high as the immediate pulse rate after walking. Blood pressure after jumping rope increased about 46% and 61% for systolic and diastolic, respectively, over walking. Additionally, it took longer for pulse rate