

Effect of circuit and interval trainings on selected physiological variables in women cricket players

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■ ABSTRACT

The purpose of the study was to find out the influence of circuit and interval trainings on selected physiological variables in women cricket players. To achieve this purpose, forty five women cricket players were randomly selected as subjects, studying in Annamalai University, India and their age ranged between 18 to 22 years. The selected subjects were divided into two experimental groups and a control group with fifteen subjects in each group. Experimental group I (CTG=15) underwent circuit training, group II (ITG=15) underwent interval training and group III served as control group (CG=15). During the training period, the two experimental groups underwent their respective training programme for 12 weeks (4 days/ week) and the training programmes were given about from 45 to 60 minutes per day. Physiological analyses were done on vital capacity and VO_2 max to find out the significant effect of training on women cricket players. The data collected from the three groups before and after the experimental training period were statistically examined to find out the significant improvement using the analysis of covariance (ANCOVA). The level of confidence, was fixed at 0.05. Hence, it was concluded that circuit training and interval training have significant increase on vital capacity and VO_2 max level.

■ Key Words : Circuit training, Interval training, Vital capacity, VO_2 max

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Physical exercise is any bodily activity that enhances or maintains physical fitness and overall health and wellness. It is performed for various reasons including strengthening muscles and the cardio-vascular system, honing athletic skills, weight loss or maintenance, as well as for the purpose of enjoyment (Stampfer *et al.*, 2000).

Vital capacity (VC) is the the maximum amount of air that can be inhaled or exhaled from the lung. Vital capacity is equivalent to the inspiratory reserve volume (IRV) plus the tidal volume (TV) plus the expiratory reserve volume (ERV). $VC = IRV + TV + ERV$.

VO_2 max is the maximal oxygen uptake or the maximum volume of oxygen that can be utilized in one minute during maximal or exhaustive exercise. It is measured as millilitres of oxygen used in one minute per kilogram of body weight (ml/kg/min). VO_2 max or maximal oxygen uptake is one factor that

can determine an athlete's capacity to perform sustained exercise and is linked to aerobic endurance. A high VO_2 max may indicate an athlete's potential for excellent aerobic endurance (Costill and Wilmore, 1994).

The factors affecting VO_2 are often divided into supply and demand factors. Supply is the transport of oxygen from the lungs to the mitochondria (including lung diffusion, stroke volume, blood volume, and capillary density of the skeletal muscle) while demand is the rate at which the mitochondria can reduce oxygen in the process of oxidative phosphorylation. (Bassett and Howley, 2000).

■ METHODOLOGY

Selection of subjects :

To achieve for the purpose of this study, forty five women