

Influence of concurrent strength, endurance training and detraining on per cent body fat

■ M. MUTHURAJ AND Y. WISE BLESSED SINGH

Received : 27.09. 2011; Revised : 26.11.2011; Accepted : 04.01.2012

■ ABSTRACT

The aim of this study was to examine the influence of concurrent strength and endurance training and detraining on per cent body fat. Thirty healthy men (mean (SD) age 21.3 (years) were assigned to experimental (n = 15) and control (n = 15) groups. They carried out 12 weeks concurrent strength and endurance training followed by 30 days detraining period. Per cent body fat was measured before and immediately after training and also during detraining period. The data collected from the two groups prior to and post experimentation were statistically analyzed by analysis of covariance (ANCOVA). The data on post experimentation and detraining period (three cessation) were analyzed by two way (2 x 4) factorial ANOVA with last factor repeated measures. Although concurrent strength and endurance training improved per cent body fat (12.78%) all training induced gains had been abolished after thirty days of detraining.

■ **Key Words** : Concurrent training, Detraining and per cent body fat

■ **How to cite this paper** : Muthuraj, M. and Singh, Y. Wise Blessed (2012). Influence of concurrent strength, endurance training and detraining on per cent body fat. *Internat. J. Phy. Edu.*, 5 (1) : 1-4 .

See end of the article for authors' affiliations

Correspondence to :

M. MUTHURAJ

Department of Physical Education
and Sports Sciences, Annamalai
University, Annamalainagar,
CHIDAMBARAM (T.N.) INDIA
Email: john.muthuraj@yahoo.com

Athletes and non-athletes, take part in a combination of strength and endurance training, which is often called concurrent training. Physical activity is a broad term that encompasses all forms of muscle movements. These movements can range from sports to lifestyle activities. Furthermore, exercise can be defined as physical activity that is a planned, structured movement of the body designed to enhance physical fitness. Physical activity can be beneficial for anyone and can be started during any stage of life.

Body composition is used to describe the percentages of fat, bone and muscle in human bodies. Because muscular tissue takes up less space in our body than fat tissue, our body composition, as well as our weight, determines leanness. Body composition is an essential measure of health and fitness for both athletes and the general population. Storage body fat consists of fat accumulation in adipose tissue, part of which protects internal organs in the chest and abdomen.

Essential body fat is necessary to maintain life and reproductive functions. Excessive fat is a good predictor of

health problems because it is associated with cardiovascular disease, high cholesterol, and high blood pressure. Higher proportions of fat-free mass indicate an increase in muscle, and thus an increased ability to adapt to everyday stress. Body fat percentage can be measured in several ways. The most common method is by using a set of measurement calipers to measure the thickness of subcutaneous fat in multiple places on the body. This includes the abdominal area, the sub scapular region, arms, buttocks and thighs. Body weight reduction as a result of endurance training increases circulating levels of adiponectin, and the increase in adiponectinaemia is associated with decrease in body mass index (BMI) and the improvement in insulin sensitivity (Yang *et al.*, 2001).

Detraining refers to the bodily effect experienced when one takes an extended break from regular, vigorous fitness training. Fitness levels and muscle mass can decline during a break that lasts between two and four weeks. While this sort of long-term break may reduce current fitness levels, it may also offer long-term benefits if the person starts retraining, allowing them to