Research Paper | International Journal of Physical Education, Vol. 4 No. 2 (October, 2011) : 127-131

Comparative effect of different types of resistance training on body composition

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Received : *July, 2011;* Accepted : *September, 2011*

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ABSTRACT

The purpose of the study was to investigate the comparative effect of Akhada training and Free weight and Machine training on body composition. Ninety male B.P.Ed. students in the age group of 18-24 years studying in Lakshmibai National University of Physical Education, Gwalior were randomly selected as subjects for the study. All the subjects were divided randomly into two experimental groups and a control group and each group had equal number of subjects. The Akhada group was trained with the Akhada style training and Free weight and Machine group was trained with modern free weight and machine training programme prepared by the investigator himself whereas control group did not participate in any training program for 12 weeks. Data collected were analyzed using the analysis of co-variance (ANCOVA) at 0.05 level of significance and showed significant change in body composition. Post hoc mean comparison showed that experimental groups (Free weight and Machine and Akhada group) had significant difference with control group in body composition but no significant difference between Akhada group and Free weight and Machine group. The results of the study showed that both type of trainings *i.e.* Akhada training and Free weight and Machine training produced significant improvement in body composition.

Kumar, Sanjeev and Bhukar, Jai Prakash (2011). Comparative effect of different types of resistance training on body composition. *Internat. J. Phy. Edu.*, **4** (1) : 127-131.

Key words : Akhada training, Free weight, Machine training, Body composition

Since ancient times, people in India believed that the human body is indeed an instrument of Dharma (shareera madhyam khalu dharma sâdhanam). Hence, the body is to be properly nourished, and maintained. In medieval India, people gave as much importance to physical exercise as to literary education. The principle of "a sound mind in a sound body" was not only accepted but also faithfully practiced. India has a tradition of physical culture that goes back at least 6000 years. In that time, the Indian warriors and wrestlers devised many unusual training methods and pieces of equipment to increase their strength, stamina, and flexibility. (Encyclopedia of Indian Physical Culture, 1950).Weight training is a common type of strength training for developing the strength and size of skeletal muscles. It uses the force of gravity (in the form of weighted bars, dumbbells or weight stacks) to oppose the force generated by muscle through concentric or eccentric contraction. Weight training uses a variety of specialized equipment to target specific muscle groups and types of movement.

Ancient Greek sculptures also depict lifting feats. The weights were generally stones, but later gave way to dumbbells. The dumbbell was joined by the barbell in the later half of the 19th century. Early barbells had hollow globes that could be filled with sand or lead shot, but by the end of the century, these were replaced by the plate-loading barbell commonly used today (Amhem Daniel, 1985). Physical training or conditioning of the body needs individualized training as per the capability and capacity of a person. The modern physical training programme was, therefore, developed after reviewing the latest literature and techniques available on conditioning of the body with regard to physical and physiological fitness. Modern training was imparted on the progressive overload principle keeping in view the basic load components like intensity, density, duration, frequency, repetition, load and recovery. All the load components were used while imparting different types of conditioning programmes for the development of endurance, strength, speed, flexibility, other co-coordinative abilities and internal systems of the body.

Weight training can be defined as those exercises that are designed to strengthen a specific muscle by causing them to become fixed resistance usually in the form of a barbell or dumb-bell. Weight training is a means of training to develop certain parts of the body for specific purposes. Free weights include dumbbells, barbells, medicine balls, sandbells, and kettlebells. Unlike weight machines, they do not constrain users to specific, fixed movements, and therefore require more effort from the