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Research Paper :

Study of correlation of leg length with stride length in middle-distance running

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ABSTRACT

From the results of the study under the present conditions, it can be concluded that leg length and stride length are significantly correlated, thus accepting the hypothesis proposed by the research scholar successfully. It indicates that the middle-distance runners with greater leg length may be at advantage by having greater stride length. Thus, they can perform better than those with lesser leg length.

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Key words : Leg length, Stride length, Middle-distance running

During the last 50 years the world has seen athletic performance rising very steeply. Almost everyday new performances, records are being created in sports like swimming, diving, athletics, not because human potential has suddenly increased but because principles of biomechanics, biodynamics are being exploited in the training of athletes right from the very beginning. Performance variables are being constantly studied under the controlled and field conditions very carefully by using scientific technology. Today no athletic effort fructifies without scientific backup.

Thus, nowadays best athletes are those who know how to use science and technology on day to day basis. Sport training today is perhaps most complicated task. Running is a vigorous conditioner for most of body's largest and most powerful muscles.

The 800m is far more challenging race because of the speed involved. It is almost sprint. For efficient running, the athlete must possess natural speed in abundance, but their high level success is based on the development of perfect mechanical form. In order to deliver maximum driving force, remaining in balance and avoiding tension. According to Ken Brauman, (1986) the horizontal speed of running is made up of mainly two components: the leg speed and the stride length. Improvement in either will increase speed as long as one is not improved at the expense of others.

In addition to increasing stride length, improvement in speed can come through improvement in the level of maximum speed, endurance, acceleration ability and reaction time. The length of stride generally ranges from 7 feet to 8½ feet. Stride length can be measured by dividing total distance with number of strides.

The speed at which the athlete runs is equal to the product of two factors: stride length and stride frequency. The large angle of thighs, legs, flexible hip joints, and a high bent knee action of the free leg all of which produce optimum stride length to bring the body in a correctly balanced position for next leg drive. A stride length is greater in toe to toe contact than in toe-take off to heel landing.

Anthropometry is the measure of woman (anthro=man, pometry=measure). The study of anthropometry is the study of human body measurements to assist in understanding human physical variations and aid in anthropological classification. Anthropometry plays vital role in determining athletic potential of any athlete. Anthropometric variables significantly influence the performance capacity of any athlete (Thani, 1995).

Purpose of the study:

The present study was undertaken to study the correlation of leg length with stride length in middle-distance running *i.e.* how leg length influences the length of strides and ultimately the running speed of athletes.

Significance of the study:

Much less work has been done in the past regarding