

Research Paper :

## Influence of extensive interval training on speed

K. KRISHNASAMY AND P. KARTHIKEYAN

Accepted : July, 2010

### ABSTRACT

The purpose of the study was to find out the effect of extensive interval training on speed. Thirty men players of Annamalai University, Tamil Nadu, India were randomly selected as subjects and their age ranged from 18 to 23 years. The selected subjects were randomly assigned into two equal groups namely, Experimental (N=15) which underwent extensive interval training for 8 weeks with 3 sessions per week and Control (N=15) which did not undergo any special training. The subjects were tested for speed prior to and after training on speeds. The obtained data were statistically assessed for any significant difference using ANCOVA. The results showed a significant improvement in speed ( $6.98 \pm 0.16$  VS  $7.14 \pm 0.19$ ,  $P < 0.05$ ) in the experimental group when compared with the control group. On the basis of the findings it was concluded that extensive interval training significantly improved speed on male players.

See end of the article for authors' affiliations

Correspondence to:

**K. KRISHNASAMY**  
Department of Physical  
Education and Sports  
Sciences, Annamalai  
University, ANNAMALAI  
NAGAR (T.N.) INDIA

**Key words :** Speed, Extensive interval training.

The ability to generate strength and power is a very important component for success in many sports, particularly in those involving extensive movements. Prolonged muscle strength training increases muscle strength in the trained muscles among children, adults and elderly people. Moving speed and strength combined is referred to as power, and power is essential in performing majority of the sports skills. Although specific exercises designed to enhance the explosive movements have been taught for some time, only in the last decade a new system emerged which emphasized explosive reactive power training known as plyometrics.

Extensive interval training characterized by maximum or near maximum rates of force development, is effective for enhancing physical performance. When properly taught and supervised, extensive interval exercises are safe and likely to reduce the risk of injury during participation in sports and other activities that involve higher rate of force development and acceleration.

For athletes to perform at their best, speed, strength and endurance need to be developed to optimal levels. However, unfortunately for the coach, often development of one of these can inhibit the development of another. So, the coach needs to find 'middle ground' where training is periodized so that each physical attribute can be best developed (Reaburn and Courts, 2000).

### METHODOLOGY

The purpose of the study was to find out the effect of extensive interval training on speed. Thirty male players

studying in the Department of Physical Education and Sports Sciences, Annamalai University, Chidambaram were selected as subjects of this study, and their age ranged from 18-23 years. The selected subjects were randomly assigned into two equal groups of fifteen subjects each namely, extensive interval training group and control group. Extensive interval training was selected as an independent variable. Speed was selected as criterion variable. The extensive interval training group underwent extensive interval training for 3 sessions per week for 12 weeks and the control group did not undergo any special training. Each training session started with light warm-up and ended with warm down session. The subjects were tested on speed at prior to and after training. The rest interval between sets were fixed as 2 minutes. The data on speed was collected by administering 50 meters run. The data were collected prior to and immediate training programme on speed. They were statistically examined for significant differences, if any, by applying analysis of covariance (ANCOVA). The level of confidence was fixed at .05 level of significance.

Table 1 shows that the pre-test means of extensive interval training and control groups were 7.04 and 7.13, respectively. The obtained F" ratio of 0.34 for pre-test means was less than table value of 4.20 for df 1 and 28 required for significance at .05 level. The post-test means of extensive interval training and control groups were 6.98 and 7.14, respectively. The obtained "F' ratio of 5.89 for post-test means was more than the table value of 4.20 for df 1 and 28 required for significance at .05 level. The

**Table 1 : Analysis of covariance of data on speed between pre test and post test of experimental and control groups**

Test	Extensive interval training group	Control group	Source of variance	Sum of squares	df	Mean squares	Obtained 'F' ratio
<b>Pre-test</b>							
Mean	7.04	7.13	Between	0.024	1	0.021	0.34
S.D.	0.22	0.23	Within	1.98	28	1.074	
<b>Post-test</b>							
Mean	6.98	7.14	Between	0.202	1	0.209	5.89*
S.D.	0.16	0.19	Within	0.95	28	0.038	
<b>Adjusted post test</b>							
Mean	6.94	7.04	Between	0.8044	1	0.8046	33.75*
			Within	0.21	27	0.0072	

adjusted post-test means of experimental and control groups were 6.94 and 7.09, respectively. The obtained 'F' ratio of 33.75 for adjusted post-test mean was more than the-required table value of 4.21 for df 1 and 27 for significance at .05 level.

Thus, the result of the study indicated that there was significant difference between the adjusted post test means of extensive interval training group and control group.

## OBSERVATIONS AND DISCUSSION

The results showed that there was significant improvement on speed due to the effect of extensive interval training. The results were in conformation with the findings of numerous studies published recently. Extensive training involving countermovement and loaded jump-squat training may be more effective for enhancing sport speed in elite players (Cronin and Hansen, 2005). Extensive exercises can improve Squat Jump and Running Velocity 3 prepubertal boys and influence the maximum velocity phase. Combined lower-body strength-power training is effective as speed training for improving maximum speed and maximum power output in the jump squat, and it is more effective than power training at producing all –around (*i.e.*, from BM to 80 kg) improvement in the load – power relationship of the jump squat (Cormie *et al.*, 2007).

## Conclusion:

– There was a significant difference between extensive interval training group and control group on speed.

– There was a significant improvement on speed due to extensive interval training programme.

---

Authors' affiliations:

**P. KARTHIKEYAN**, Department of Physical Education and Sports Sciences, Annamalai University, ANNAMALAI NAGAR (T.N.) INDIA

---

## REFERENCES

- Cormie, P., McCaulley, G.O. and McBride, J.M. (2007).** Med Sci Sports Exert, Power Versus Strength-Power Jump Squat Training Influence on the Load. *Power Relationship*, **39** (6) : 996-1003.
- Cronin, J.B. and Hansen, K.T. (2005).** Strength and power predictors of sports speed. *J. Strength Cond. Res.* **19**(2): 349-357.
- Peter Reabum and Aaron Courts (2000).** Concurrent sprint, strength and endurance training. *Sports Coath*, p. 3.

————— \*\*\* —————