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Effect of four weeks isometric practice on flexibility and agility of football players

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Abstract
The purpose of study was to determine the effects of four week isometric practice on flexibility and agility of football players. subjects and methods: the method of this study was experimental research and sample were 20 male football players of Kurukshetra (19-22). The result shows that there were significant effects on flexibility and agility of isometric practices.

Keywords: isometric, flexibility and agility

1. Introduction

Isometric training refers to method of training in which there is no change in the joint angle. Without movement, great musculotendinous tension can still occur, thus creating a training effect on the body. Although Isometric means same distance training, movement will occur in the form of shortening of the muscle fibres due to the contractile properties of the muscle. Properly performed isometric training is not just holding a position while looking at the clock for a set period of time. In fact, a focused maximal activation of a muscle or group of muscles is required to properly perform an isometric exercise.

Siff states, In his book Supertraining 'Isometric contraction requires a muscle to increase its tension from rest to a maximal or submaximal value over a certain time, to sustain this tension for another period and to decrease this tension to rest or a lower value". It is this increase in tension and maximal activation of muscle fibres, which gives isometric training a place in any performance, based athletic training system. Isometric exercise is a strange concept that may well go against everything you've been lead to believe about exercise, weight loss and muscle building. Normally when you think of going to the gym or doing a workout you imagine something fairly active with lots of lifting, sweating and running. Well isometric exercise is actually the complete opposite of this image (except for the sweating) and involves working out without moving.

On the other hand, isometric exercise refers to something more precise- holding still, often under conditions of substantial or maximum resistance. Holding any weight and keeping it still, neither allowing it to fall nor raising it, is an isometric exercise for the same muscles. And isometric exercise is also exemplified by any and every Hatha Yoga posture which you are holding steadily with muscular effort. Fred Kelley defines: "An isometric exercise is one in which the resistance produces a tremendous amount of tension within the muscle itself. This resistance could consist of any object too heavy to move." Gene hook defines: "A method of strength development which attains an overloading of the muscle by matching one part of the body against another. This is a type of muscular contraction in which the muscle does not decrease in length".

After analyzing the above definitions, the researcher asserts that: "Isometric exercise is the development of tension within a muscle by the application of resistance. However, if the resistance is greater than the amount of force exerted by the muscle, technically there will not be any change in its length". The purpose of study was to determine the effects of four week isometric practice on flexibility and agility of football players between 19-22 years old. It was hypothesized those four weeks isometric practice will increase flexibility and agility of football players.

Methodology

To achieve the purpose of the study 20 male football players were selected from kurukshetra between 19-22 years old. They were administered the training program of isometric practice for four weeks that is; five day a week in the morning and evening time for one hour. The data pertaining for the criterion variable were taken before administering the training program of four week in relation to flexibility and agility. The standard tests were applied to collect data for above said variables. After completion of training a post-test data was taken on all the variables. The following tests were administered for data collection on selected variables.

Bend & reach

To measure the flexibility.

Shuttle Run

To measure the speed.

Collected data was analyzed with the help of SPSS computer software. Mean, standard deviation, standard error of mean and't' test were used to compare the pre-test and post-test data.

Results

The following section of the report presents tables given a view of outcome of the study. The value of paired statistic of

flexibility is given below in table.1 and agility is in table no.2.

Table 1: Descriptive statistics of pre –isometric v/s post- isometric group of football players in relation to flexibility (Age Group 19-22)

Group	N	Mean	S.D.	SEDm	t-ratio	d.f.
Pre-test	20	2.20	0.83	0.18	7.667*	19
Post-test	20	3.35	0.74	0.16		

*Significant 't' 0.05

The table-1 shows that mean, standard deviation, standard error of mean with regard to pre data on flexibility were recorded 2.20, 0.83 and 0.18 respectively where in case of post data the same were recorded as 3.35, 0.74 and 0.16 respectively and 't' ratio 7.667 was found significant at 0.05 level.

Table 2: Descriptive statistics of pre –isometric v/s post- isometric group of football players in relation to agility (Age Group 19-22)

Group	N	Mean	S.D.	SEDm	t-ratio	d.f.
Pre-test	20	12.56	0.24	0.05	7.735*	19
Post-test	20	11.51	0.58	0.13		

*Significant 't' 0.05

The table: 1 indicates that mean, standard deviation, standard error of mean with regard to pre data on agility were recorded 12.56, 0.24 and 0.05 respectively where in case of post data the same were recorded as 11.51, 0.58 and 0.13 respectively and 't' ratio 7.735 was found significant at 0.05 level.

Conclusion

On the basis of the results obtained the following conclusions are drawn:

1. There is a significant improvement in the flexibility of football players after four week isometric practices. Hence, the hypothesis is accepted.
2. There is a significant improvement in the agility of football players after four week isometric practices. Therefore, the hypothesis is accepted.

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