

Influence of Weight Training and Plyometric Training on Selected Bio-Chemical Variables among College Football Players

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Abstract

The purpose of the present investigation is to find out the Influence of Weight Training and Plyometric Training on Selected Bio-Chemical Variables among College Football Players. To achieve these purpose 30 men students were selected from Rajapalayam Raju's College, Rajapalayam, Tamilnadu as subjects. Their age ranged from 18 to 25 years. They were divided into three equal groups of 10 subjects each and assigned to experimental group-I, experimental group-II and control group. In a week the experimental group I underwent weight training, experimental group II underwent plyometric training and control group was not given any specific training. All the subjects underwent three areas of test namely Low Density Lipoprotein (LDL), High Density Lipoprotein (HDL) and Blood Sugar. They assessed before and after the training period of six weeks. The analysis of covariance was used to analyze the data. The study revealed that the above said criterion variables were significantly improved due to the influence of weight training and plyometric training on selected bio-chemical variables among college football players.

Key words: Weight Training, Plyometric Training, Low Density Lipoprotein (LDL), High Density Lipoprotein (HDL).

Introduction

Weight training is concerned with improving the condition of the body in terms of strength, power, and endurance, through the use of respective movements against a resisting load of some kind. When weight training occurs on a regular basis and is accompanied by wise eating habits various systems of the body change in positive ways. Muscles become stronger, assume greater work bands and show less fatigue with each additional session of training (Yograj Theni, 1996).

Plyometric training is a relatively new concept of training that applies the specific principle recording the present strength conditions of the muscle prior to explosive contraction. The effect of plyometric training in increasing vertical jumping ability has studied experimentally, but no attempt has been made if they are more effective than the kinetic exercises (will and Freeman, 1980)

Statement of the Problem

The purpose of the study is to find out Influence of Weight Training and Plyometric Training on Selected Bio-Chemical Variables among College Football Players.

Dependent Variable

1. High density of lipoprotein
2. Low density of lipoprotein
3. Blood Sugar

Independent Variable

1. Experimental group I - Weight Training
2. Experimental group II - Plyometric Training
3. Control group - No training

Methodology

To achieve this purpose 30 men students were selected from Rajapalayam Raju's College, Rajapalayam, Tamilnadu as subjects. Their age ranged from 18 to 25 years. They were divided into three equal groups of 10 subjects each and assigned to experimental group-I, experimental group - II and control group. In a week the experimental group I underwent Weight Training, experimental group II underwent Plyometric Training and Control Group was not given any specific training. All the subjects underwent three areas of test namely Low Density Lipoprotein (LDL), High Density Lipoprotein (HDL) and Blood Sugar. They assessed before and after the training period of six weeks. The analysis of covariance was used to analyze the data. The study revealed that the above said criterion variables were significantly improved due to the influence of weight training and plyometric training on selected bio-chemical variables among college football players.

Results and Discussions**Table-I****Computation of Analysis of Covariance of Low Density Lipoprotein (LDL)**

Test	Experi mental group 1	Experi mental group 2	Control group	Sum of variance	Sum of squares	Df	Mean square	F
Pre test	140.4	139.60	143.00	Between	63.20	2	31.600	1.21
				Within	706.80	27	26.18	
Post test	134	133.70	142.50	Between	499.27	2	249.63	10.90*
				Within	618.60	27	22.91	
Adjusted mean	134.53	134.95	140.72	Between	221.26	2	110.63	48.59*
				Within	59.192	26	2.28	

Significant at 0.05 level with 2 and 27 (df) = 3.37

Table II shows the analyzed data on Low Density Lipoprotein (LDL). The pre test, post test and adjusted post test means of the Low Density Lipoprotein (LDL) were (140.4, 139.60, 143.00) (134, 133.70, 142.50) (134.53, 134.95, 140.72) for the experimental group I, II and Control group respectively. The obtained 'F' ratio for pre test 1.21 post test 10.90 and adjusted post test 48.59. The obtained 'F' ratio of post and adjusted post test were 10.90 and 48.59. The table value is 3.37 at 5% level of significance for the degree of freedom (2 & 27 and 2 & 26). Therefore it is proved that experimental group I has been better than the other two groups.

Table-II

Computation of Analysis of Covariance of High Density Lipoprotein (HDL)

Test	Experi mental group 1	Experi mental group 2	Control group	Sum of variance	Sum of squares	Df	Mean square	F
Pre test	47.7	44.10	43.80	Between	94.20	2	47.100	1.06
				Within	1198.60	27	44.39	
Post test	55.5	48.20	43.80	Between	698.47	2	349.23	8.30*
				Within	1135.70	27	42.06	
Adjusted mean	53.28	49.18	45.04	Between	319.43	2	159.71	21.70*
				Within	191.362	26	7.36	

Significant at 0.05 level with 2 and 27 (df) = 3.37

Table III shows the analyzed data on High Density Lipoprotein (HDL). The pre test, post test and adjusted post test means of the High Density Lipoprotein (HDL) were (47.7, 44.10, 43.80) (55.5, 48.20, 43.80) (53.28, 49.18, 45.04) for the experimental group I, II and Control group respectively. The obtained 'F' ratio for pre test 1.06 post test 8.30 and adjusted post test 21.70. The obtained 'F' ratio of post and adjusted post test were 8.30 and 21.70. The table value is 3.37 at 5% level of significance for the degree of freedom (2 & 27 and 2 & 26). Therefore it is proved that experimental group I has been better than the other two groups.

Table – III

Computation of Analysis of Covariance of Blood Sugar

Test	Experi mental group 1	Experi mental group 2	Control group	Sum of variance	Sum of squares	Df	Mean square	F
Pre test	98.2	97.30	98.40	Between	6.87	2	3.433	0.04
				Within	2510.10	27	92.97	
Post test	88.1	89.40	97.10	Between	473.27	2	236.63	3.97*
				Within	1610.20	27	59.64	
Adjusted mean	87.93	89.89	96.78	Between	432.41	2	216.20	20.49*
				Within	274.280	26	10.55	

Significant at 0.05 level with 2 and 27 (df) = 3.37

Table III shows the analyzed data on Blood Sugar. The pre test, post test and adjusted post test means of the Blood Sugar were (98.2, 97.30, 98.40) (88.1, 89.40, 97.10) (87.93, 89.89, 96.78) for the experimental group I, II and Control group respectively. The obtained 'F' ratio for pre test 0.04 post test 3.97 and adjusted post test 20.49. The obtained 'F' ratio of post and adjusted post test were 3.97 and 20.49. The table value is 3.37 at 5% level of significance for the degree of freedom (2 & 27 and 2 & 26). Therefore it is proved that experimental group I has been better than the other two groups.

Conclusions

From the analysis of the data, the following conclusions were drawn.

1. There was a significant difference among Weight Training group, Plyometric Training group and control group on selected Bio-Chemical Variables namely Low Density Lipoprotein (LDL), High Density Lipoprotein (HDL) and Blood Sugar.
2. There was a significant reductions were noticed on selected Bio-Chemical Variables namely Low Density Lipoprotein (LDL) and Blood Sugar due to the influence of Weight Training and Plyometric Training among College Football Players.
3. There was a significant improvement were noticed on High Density Lipoprotein (HDL) due to the influence of Weight Training and Plyometric Training among College Football Players.

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