

NOTE

Biochemical Response in Women to Certain Selected Exercises

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Rope skipping is an ideal indoor exercise that helps to improve a woman's appearance, by toning up the muscles in the body. This life-time fitness activity being performed by college women over a period of 10 weeks has improved the haemoglobin content in the blood. This biochemical change that has occurred in women is being presented.

To enjoy good health and to attain it, one's life must be free from cares and anxieties. One must have a healthy habit, balanced diet and regular exercise. Exercise helps a person to maintain a healthy body weight by burning excess calories and prevents the adding of undesired adipose tissue¹⁻⁶. College students become pre-occupied with studies and as a result they often forget about fitness requirements and gain weight. Physical ailments, emotional depression and lack of stamina detract from mental effort and drain the students, potentially resulting in decreased functioning. If the person is in good physical condition, he or she has a better chance in academic excellence and has a happy college experience than physically unfit counterparts. So every college must have physical fitness programs which may include jogging/rope skipping/aerobic exercise programmes.

Rope skipping exercise can be performed either indoor or outdoor. Since this does not require much equipment and may be performed even in houses this exercise suits women much better than any other exercise.

Twenty women students were selected at random and among them ten acted as control group and the other ten underwent rope skipping training programme for a period of 10 weeks. Haemoglobin content in blood was tested prior to and after the training programme.

Rope skipping group used plastic ropes. Five exercises were selected and performed with repetition. The length of the work interval and the time taken to perform each exercise were increased gradually on every two weeks from 36 seconds to 60 seconds. The subjects underwent the training under strict supervision. All the subjects were tested prior to and after the training programme. To estimate haemoglobin, Sahli's Acid Haematin Method was used in the clinical laboratory.

After the completion of the training period final testing was done. The collected data from these two groups namely rope skipping group and control group prior to and after completion of the training period on the selected variable haemoglobin were statistically examined for significant difference, if any, by

applying analysis of covariance (ANCOVA). To test the significance, 0.05 level of confidence was fixed.

Details of haemoglobin of the rope skipping group and the control group are presented below in the table.

ANALYSIS OF COVARIANCE FOR THE DATA ON HAEMOGLOBIN OF ROPE SKIPPING AND CONTROL GROUPS

	Rope skipping group (g %)	Control group (g %)	df	F Ratio
Pre-test mean S.D.	10.50	10.58	1	0.35
	0.20	0.18	18	
Post-test mean S.D.	11.36	10.60	1	118.24*
	0.12	2.12	18	
Adjusted post-test mean	11.40	10.60	17	132.00

*Significant at 0.05 level of confidence.

The tabulated F ratio for df 1 and 18 and 1 and 17 are 4.41 and 4.45 respectively.

The table shows that the pre-test mean in haemoglobin of rope skipping group is 10.50%, and that of control group is 10.58% resulting in a F-ratio 0.35. The obtained F ratio is less than the tabulated F-ratio 4.41 at 0.05 level of confidence and hence it indicates that there is no significant difference between the pre-test means. The post-test mean of rope skipping group is 11.36% and that of the control group is 10.6% with an F-ratio of 118.24 which is significant at 0.05 level of confidence. The calculated F-ratio 132 for the adjusted post-test means of rope skipping group (11.40%) and that of the control group (10.60%) is significant since it is higher than the table value 4.45 (df 1 and 17) at 0.05 level of confidence for significance.

The above statistical analysis indicates that there was a significant variance among the two groups after the training periods. Hence we can conclude that rope skipping exercise done over a period of time improves the haemoglobin content in the blood significantly.

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(Received: 20 July 1998; Accepted: 3 November 1998)

AJC-1606