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A comparative effect of yogic intervention strategies on low-density lipoprotein - pilot study

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Abstract
The objective of this study was to determine the Comparative effect of Selected Yogic Intervention Strategies on Low-Density Lipoprotein. The subjects for this study were Sedentary male from Gwalior. A total of 15 male subjects were selected and used as two experimental groups (10) and one control group (05). Suryanamaskar and Pragya yoga was considered the independent variable and Low-Density Lipoprotein was considered the dependent variable. For Low-Density Lipoprotein 2 ml of blood in plain vial was taken as the criterion measures. Training was given up to one month. 5 days in week each session scheduled for 45 minutes. The Pre-Test Post-Test randomize group design was used for this study. Tests were administered before the training program and after the completion of the treatment again test were administered. ANCOVA was used to locate significance effects of Suryanamaskar and Pragya Yoga on Low-Density Lipoprotein at 0.05 levels of significance. In relation to Low-Density Lipoprotein, effect of Suryanamaskar and Pragya Yoga was found insignificant.

Keywords: Suryanamaskar, Pragya Yoga, Low-Density Lipoprotein

Introduction
Suryanamaskar is characterized by a focus on dynamic connecting posture that creates a flow between the more static traditional yoga postures. Suryanamaskar is translated as linking and the system also implies the linking of the movement to the breath. Essentially the breath dictates the movement and the length of time held in the postures. Pragya Yoga is developed by Gurudev, Pt. Shri Ram Sharma Acharya, has pioneered a novel approach to yoga for a healthy and happy life, which is simple and suitable for the masses. He has named it "Pragya Yoga"– under the noble "Pragya Abhiyan" mission. Shantikunj - An Aranyak of our times, which is situated in the lap of the Ganges and under the shadow of the Himalayas, is a centre for learning this comprehensive yoga.
Low-density lipoprotein cholesterol is the fraction of total cholesterol that accumulates as fat deposits (plaques) on arterial walls. Lowering LDL cholesterol by dietary means or medications has been shown to decrease the risk of heart attacks, strokes, and death.
It transports about 75% of the blood's cholesterol to the body's cells. It is normally harmless. However, if it is exposed to a process called oxidation, LDL can penetrate and interact dangerously with the walls of the artery, producing a harmful inflammatory response. Oxidation is a natural process in the body that occurs from chemical combinations with unstable molecules. These molecules are known as oxygen-free radicals or oxidants.
In response to oxidized LDL, the body releases various immune factors aimed at protecting the damaged arterial walls. Unfortunately, in excessive quantities they cause inflammation and promote further injury to the areas they target.
As the Suryanamaskar is a traditional approach in yoga with lots of importance and benefits and Pragya Yoga has developed over the limitation of Suryanamaskar for the beginners as the difficulty in performing the asana are entirely different in both the package. So the research angle in the study is that, is there any difference in the effect of Pragya Yoga and Suryanamaskar on Low-Density Lipoprotein

Methodology
Selection of Subjects: fifteen sedentary male individuals their age were ranged between 35-55 years from Gwalior, M.P. were selected at random as subject of the study and divided in to

three groups of 5 subjects each. All subjects were almost from the same socio economic group and were found to be physically fit for the type of programme they were selected.

Selection of Variable: on the basis of various literatures on physical variables finding out the related research study and keeping in mind the specific purpose of the study to find out the selected yogic intervention strategies (Suryanamaskar and Pragya yoga) on Low-Density Lipoprotein which was measured by 2 ml of blood in plain vial was taken as the criterion measures.

Experimental Design: Pre-test and post-test randomized group design was employed in the study.

Training and Practice of yogic intervention strategies: The training of experimental given in the Yoga hall of Shri Ram colony, Gwalior. The Subject used practiced Pragya Yoga and Suryanamaskar barefoot. The practice session was conducted for a period of 45 minutes in the morning i.e.8.00 am. to 8.45 am on Monday to Friday for duration of one Month.

Statistical Procedure: To find out the significance of difference between different pair means, the ANCOVA was used. The level of significance was set at 0.05.

Results

Table 1: Descriptive Statistics of All the Three Groups for Ldl Cholesterol

Groups	Test	Mean	Std. Deviation	N
Pragya yoga	Pre	119.47	31.50	5
	Post	131.46	40.48	
Surya namaskar	Pre	120.50	42.33	5
	Post	109.39	28.56	
Control group	Pre	122.48	30.47	5
	Post	118.35	29.78	

Table 1 revealed that there were five subjects in each group. The mean and standard deviation of Pragya yoga group in pre-test and post-test were 119.47±31.50 and 131.46±40.48 respectively. The mean and standard deviation of Suryanamaskara group in pre-test and post-test were 120.50±42.33 and 109.39±28.56 respectively. The mean and standard deviation of control group in pre-test and post-test were 122.48±30.47and 118.35±29.78 respectively in LDL Cholesterol.

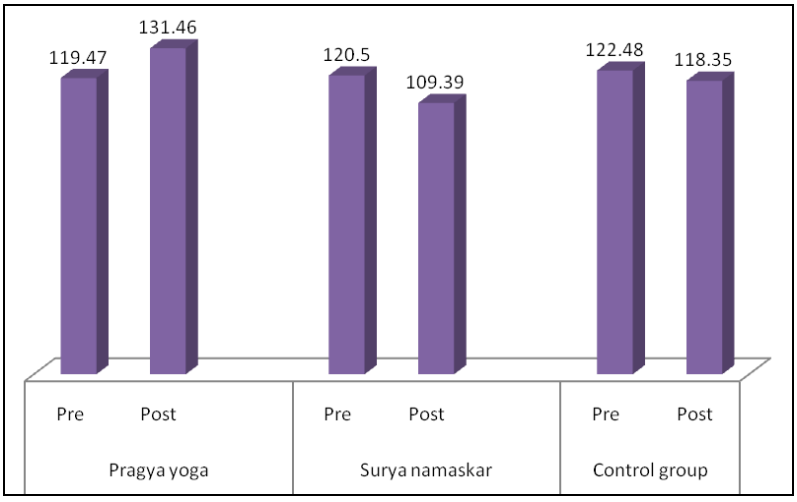

Fig 1: Means of all the three groups for Low-density lipoprotein

Table 2: Anova Table for Comparison of Ldl Cholesterol Among The Various Groups

Sources		SS	df	MSS	F	p-value
post	Between Groups	7118.552	2	3559.27	3.751	.054
	Within Groups	11386.522	12	948.877		
	Total	18505.074	14			
pre	Between Groups	4946.289	2	2473.14	2.428	.130
	Within Groups	12224.719	12	1018.72		
	Total	17171.008	14			

*Significant at .05 level
F value required to be significant at 2, 12 df = 3.88

Table 2 revealed that the obtained p-value (.054 and .130) was higher than .05 in post-test as well as pre-test respectively, thus indicating that no significant difference were found among the various groups at .05 level of significance in LDL Cholesterol.

Table 3: Univariate Tests

	SS	Df	MSS	F	Sig.
Contrast	1609.426	2	804.713	2.572	.121
Error	3441.660	11	312.878		

Table 3 revealed that the obtained p-value .121 was higher than .05, thus indicating that no significant difference were found among the estimated marginal means of the groups in LDL Cholesterol.

Discussion

The present study evaluated effect of one month yogic training on Low-Density Lipoprotein on sedentary male. The practice of Yoga works biochemically and biomechanically on human physiology. Biomechanically, the practice of Yoga, gives a feeling of wellbeing which reduces the stress and ultimately regulates the metabolic activities, hence reflect into biochemical changes as normal functioning of Human Body the findings of this study demonstrate that one month Suryanamsakar and Pragya yoga training have insignificant effect on Low-Density Lipoprotein. However, the pilot study had some limitation. Limitations of study were small sample size and short Yogic training period. The results of the study indicate that the Both Experimental Groups has shown low mean value in compression to Control group but no significant change in the both Pragya Yoga and Suryanamaskar groups as well as a result of the training

programme. It can be radiated that regular Yogic practices not only bring a harmony between body and mind but also act as preventive and supportive system of therapy for metabolic disorders like High Cholesterol.

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