

## Effect of Om Chanting and Pranayama on Cholesterol Level of Obese Prediabetic Male and Female

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### Abstract

**Objective:** to test whether there was effect of om chanting and pranayama on cholesterol level of obese prediabetic male and female. **Methods:** 50 Male and female practiced om chanting and pranayama for 10 weeks. **Results:** In posttest there were significant mean differences on the mean score of Male Total Serum Cholesterol between the groups,  $F(1, 48) = 5.07$ ,  $p = 0.03$  in case of male whereas no significant mean differences on the mean score of Female Total Serum Cholesterol was found between the groups,  $F(1, 48) = 2.62$ ,  $p = 0.12$ . **Conclusions:** om chanting and pranayama should be practiced with Asanas.

**KEYWORDS:** Om Chanting, Pranayama, Obese etc

### Introduction:

WHO describes obesity as one of the most blatantly visible, yet most neglected public health problems that threaten to overwhelm both more and less developed countries. The problems of overweight and obesity have achieved global recognition only during the past 10 years, in contrast to underweight, malnutrition, and infectious diseases, which have always dominated thinking. WHO now accepts a body-mass index (BMI) of  $25.0 \text{ Kg/m}^2$  or higher as abnormal; the overweight category is classified as obese when the BMI is  $30.0 \text{ kg/m}^2$  or more. The risks of diabetes, hypertension, and dyslipidaemia (abnormal lipid profile) increase from a BMI of about  $21.0 \text{ kg/m}^2$ , thereby reducing life expectancy and greatly increasing the health and societal economic burden; excess body weight is now the sixth most important risk factor contributing to the overall burden of disease worldwide (Ezzati et al., 2002).

Obesity has a measurable and dramatic effect on several vital body parameters. Obesity increases blood cholesterol levels. Specifically, LDL (the "bad" cholesterol) has been shown to increase dramatically with progressive weight gain. A study of 400 high school age children with a variety of fitness and fatness levels showed that fatter youth had unfavorable lipid profiles, including higher levels of triglycerides and higher ratios of total cholesterol to the protective HDL cholesterol or high density lipoprotein. Medical College of Georgia researchers say there is evidence that fatter adults tend to have bad lipid profiles and that fitness and fatness influence those profiles. Science Daily (July 25, 2005) Abnormal levels of blood lipid associated with obesity. Approximately 38% of patients with BMI of 27 or greater are hypercholesterolemic. In addition, high density lipoprotein, levels and HDL/LDL ratios are typically decreased in obesity (whereas triglycerides levels are generally increased), leading to greater risk of atherogenesis (Pi-Sunyer FX, 1996). Pranayama is more important because it produces deeper effects as far as the physique is concerned. The effects of asanas are superficial in nature where as

the Pranayama is deeper as far as the outcomes are concerned. In simple words it could be said that asanas are more linked with muscular system, where as the Pranayama is concerned with nervous system of the body.

Yoga practice is associated with numerous health improvements, including reduced cardiovascular risk, body mass index and blood pressure. Yoga is also associated with improved respiration, psychological health and pain management. Studies have suggested the beneficial effects of yoga in the older population. (Chen KM, Tseng WS, Ting LF, Huang GF, 2007). The chanting of Om<sup>22</sup> drives away all worldly thoughts and removes distraction and infuses new vigour in the body. When you feel depressed, chant Om fifty times and you will be filled with new vigor and strength. The chanting of Om is a powerful tonic. When you chant Om, you feel you are the pure, all pervading light and consciousness. Thus, it was hypothesized that whether there is any effect of Om chanting and pranayama on serum cholesterol of pre diabetic obese male and female subjects.

**Methods:**

The subjects of the study were selected from Varanasi. 50 male and female were selected as the subjects. Total serum cholesterol was measured in mg/dl. Height was recorded to the nearest centimeter. Weight was recorded nearest to half kilogram. Obesity was determined by measuring body mass index. Obesity was considered if the BMI is equal to 30 or greater than 30. Data was taken at the diabetic centre of Varanasi when the patients are not busy and have enough time to spare for testing. Necessary instructions were given to the subject before the administration of each test. The data were collected before the starting of experimental treatment (pre-test) and the end of training period (post-test). Two groups i.e. Experimental group and Control group were formed in which the experimental group performed Bhastrika Pranayama, Ujjayi Pranayama and Om chanting. The training programme was conducted for a total duration of ten weeks. Omkara (Om Chanting) was performed in padmasana pose or ardhpadmasana pose with the hand on the knee, spine erect. Deep breath was taken in and produce a low pitch sound of the word OM till the last breath and was repeated.

**Results**

Analysis of Co-Variance (ANCOVA) of One Experimental Group and One Control Group in Relation to Male Total Serum Cholesterol

Tests	Mean		SOV	SOS	df	MSS
	Exp. Group	Control Group				
Pre	168.78 (27.92)	163.21 (31.02)	A	217.29	1	217.29
			W	22650.71	48	871.18
			Total	22868.00	49	
Post	171.28	150.71	A	2962.29	1	2962.29

	(25.28)	(23.00)	<b>W</b>	15193.71	48	584.37
			<b>Total</b>	18156.00	49	
<b>Adjusted Mean</b>	171.60	150.41	<b>Cov_Pre</b>	278.87	1	278.87
			<b>A</b>	3113.137	1	3113.137
			<b>W</b>	14914.84	47	596.59
			<b>Corrected Total</b>	18156.00	50	

SoV- Source of variance, SoS – sum of square, df- degree of freedom, MSS - mean sum of square, \* Significant at 0.05 level of significance, A = Among Means variance, W = Within Group variance, F = Ratio needed for significance at 0.05 level of significance =  $df(1,48) = 4.04$ ,  $df(1, 47) = 4.04$

In pre test a statistically insignificant difference was found among the Experimental Group (Om Chanting & Pranayama training) on the Total,  $F(1, 48) = 0.25, p = 0.62$ . As shown in Table-1 the mean score in Male Total Serum Cholesterol was 168.78 for Experimental Group and 163.21 was for control groups. This shows that at initial level the groups were similar in nature. Likewise, in posttest there were significant mean differences on the mean score of Male Total Serum Cholesterol between the groups,  $F(1, 48) = 5.07, p = 0.03$ . Further, there was significant difference in the Om Chanting & Pranayama Training and Control Group on the adjusted mean score of Male Total Serum Cholesterol of the subjects after controlling the effect of pretest score,  $F(1,47) = 5.22, p = 0.03$ .

Table2  
Analysis of Co-Variance (ANCOVA) of One Experimental Group and One Control Group in Relation to Female Total Serum Cholesterol

Tests	Mean		SOV	SOS	df	MSS	F-ratio (p)
	Exp.  Group	Control Group					
<b>Pre</b>	171.09 (18.59)	151.00 (26.67)	<b>A</b>	2220.05	1	2220.05	4.20 (0.05)
			<b>W</b>	10572.91	48	528.65	
			<b>Total</b>	12792.96	49		
<b>Post</b>	151.90 (26.35)	166.90 (15.83)	<b>A</b>	1237.50	1	1237.50	2.62 (0.12)
			<b>W</b>	9453.82	48	472.69	
			<b>Total</b>	10691.32	49		
<b>Adjusted Mean</b>	152.57	166.25	<b>Cov_Pre</b>	45.67	1	45.67	0.09 (0.77)
			<b>A</b>	850.605	1	850.605	1.72 (0.21)
			<b>W</b>	9408.15	47	495.17	
			<b>Corrected Total</b>	10691.32	50		

SoV- Source of variance, SoS – sum of square, df- degree of freedom, MSS - mean sum of square, \* Significant at 0.05 level of significance, A = Among Means variance, W = Within Group variance, F = Ratio needed for significance at 0.05 level of significance =  $df(1,48) = 4.04$ ,  $df(1, 47) = 4.04$

In pre test a statistically insignificant difference was found among the Experimental Group Om Chanting & Pranayama training) on the Total,  $F(1, 48) = 4.20, p = 0.05$ . As shown in Table-17 the mean score in Female\_Total Serum Cholesterol was 171.09 for Experimental Group and 151.00 was for control groups. This shows that at initial level the groups were similar in nature. Likewise, in posttest there were no significant mean differences on the mean score of Female\_Total Serum Cholesterol between the groups,  $F(1, 48) = 2.62, p = 0.12$ . Further, there was a no significant difference in the Om Chanting & Pranayama Training and Control Group on the adjusted mean score of Female Total Serum Cholesterol of the subjects after controlling the effect of pretest score,  $F(1,47) = 1.72, p = 0.21$ .

### Discussion of Findings

The present study showed that no significant difference was found after an OM chanting and Pranyama practice of 10 weeks in female whereas significant difference was found in case of male participants. Acharya, Upadhyay and Kumar (2010) demonstrated that Pranayama and Yogasana were helpful in regulating sugar level. The efficacy of Pranayama and Yogasana sequences on blood lipid profiles in normal healthy footballers. Yogasana can be used as supportive therapy in patients with lipid disorders, heart diseases, hypoglycemia, and so on. There is a need for conducting the experiments on a larger number of participants, to explore the results and mode of action. Kumar and Elangovan (2011) Study suggest, that asana and suryanamaskar are beneficial for selected physiological variables among diabetic patients. Bhimani, Kulkarni, Kowale and Salvi (2011) The Pranayama training has an effect on Stress and Cardiovascular Autonomic Tone & Reactivity. Ankad, et al. This study showed beneficial effects of short term (15 days) regular pranayama and meditation practice on cardiovascular functions irrespective of age, gender, and BMI in normal healthy individuals. Veerabhadrapa, et al. (2011) It can be concluded that Mukh Bhastrika has beneficial effect on cardiac autonomic reactivity, if practiced for a longer duration. Muzumdar and Suryavanshi (2010) - The present study stated that ujjayi and bhastrika pranayama only effects the vital capacity and positive holding time of physically challenged students. Hewett(2010) This information can be used to further the understanding of mind-body based programs, and how Bikram yoga may give people the tools to decrease perceived stress, potentially having an effect on chronic stress-related illnesses. Jerath, Edry, Barnes and Jerath(2010) : This theoretical description describes a common physiological mechanism underlying pranayama and elucidates the role of the respiratory and cardiovascular system on modulating the autonomic nervous system. Along with facilitating the design of clinical breathing techniques for the treatment of autonomic nervous system and other disorders, this model will also validate pranayama as a topic requiring more research. Pramanik, Pudasaini, and Prajapati (2010) The result indicated that slow pace Bhramari pranayama for 5 minutes, induced parasympathetic dominance on cardiovascular system. Acharya,

Upadhyay, Upadhyay, and Kumar (2010) This demonstrated that Pranayama and Yogasana were helpful in regulating sugar level .The present study demonstrates the efficacy of Pranayama and Yogasana sequences on blood lipid profiles in normal healthy footballers. Yogasana can be used as supportive therapy in patients with lipid disorders, heart diseases, hypoglycemia, and so on. There is a need for conducting the experiments on a larger number of participants, to explore the results and mode of action. Nikam, et al. (2010)The study suggests that practicing of these five pranayama with drug therapy increases the activity of antioxidant enzymes and reduces the lipid peroxidation and heart profile enzymes which prevents cellular damage due to free radicals in CAD. Suba and Shyamala Valve cardiac and pulmonary mechanisms are linked, and improvement in one vagal limb might spill over into the other. Baroreceptor sensitivity can be enhanced significantly by slow breathing (supported by a small reduction in the heart rate observed during slow breathing and by reduction in both systolic and diastolic pressure). Slow pace bhastrika pranayama (respiratory rate 6/min) exercise thus shows a strong tendency to improving the autonomic nervous system through enhanced activation of the parasympathetic system.

Thus different authors reported that there was benefit of Pranayama on overall health of the humans but as far as obese prediabetic patients are concerned on significant effect was found on cholesterol after 10 week practice of Om chanting and Pranayama. This means that if Om chanting and Pranayama would have been practiced with Asanas , there might have been difference in cholesterol level. Thus, it is recommend to practice Astang yoga along with Om chanting.

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