

# “EFFECT OF SURYA-NAMASKAR ON OBESITY OF AFFECTED INDIVIDUALS”

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**Abstract:** The purpose of the Study is to analyze effect of Surya-Namaskar on obese person of affected individuals, in Nagpur Municipal Corporation. A total 60 person examined and declared 50 of them were medically fit for this study and they were randomly divided in to two groups of Twenty five each, out of which group I (N-25) Underwent Surya-Namaskar, and group II (N-25) Underwent control group. Pre test were conducted for all two groups on BMI and waist & Hip Circumference. The experimental group participated in their respective Surya-Namaskar for a period of six weeks. Post test were conducted on the above mentioned dependent variables after six weeks of the training period. The t test was use to find out the ffect of Surya-Namaskar on obese person of affected individuals in society. The results of the study indicate that the daily Surya-Namaskar activity done by those people indicate that there was low BMI than the sedentary men. It's related weight problems can be higher in the sedentary people than those who do daily Surya-Namaskar activity. It reasons are listed below. In short the Post test study clearly indicates that there is a significant difference of BMI and waist & Hip Ratio than the pre test. It is finally concluded that the sedentary persons may get Weight and Obesity related problems due to insufficient exercise, Surya-Namaskar and other physical activities.

**Index Terms-** Surya-Namaskar, Weight Loss, waist & Hip Circumference, BMI and Obesity

## I. INTRODUCTION

The universal need and importance of daily Surya-Namaskar cannot be ignored at least in the present modern high-tech artificial world. Because of the inventions of the man-made machines the man himself has made its organs so weak that its survival has been in dangerous situation resulting less life span and many serious life killing diseases like Obesity, Blood sugar, Heart Disease etc. One of the major problems they are facing today is to control their body Wight due to inactivity. In order to overcome the above problem they adopt short cut and easy methods to reduce their weight by taking various medications or crash diets to lose unwanted fat and improve their health. Because of this phenomenon. The benefits of Surya-Namaskar have been overlooked. The most popular Surya-Namaskar helps to improve cardiovascular system and reduce fat and weight.

The present discussion is in relation to the control weight and obesity thought Surya-Namaskar only, Because Surya-Namaskar has surest remedies for man's physical as well as psychological ailments. It makes the organs of the body active in their functioning and has good effect of internal functioning of the human body. A part from being therapeutic, it is an exhilaration experience harmonizing the body, mind and spirit. The greatest advantage of these activities is that Surya-Namaskar the organs of our body like the lungs, glandular system, liver, and Pancreas, Thyroid, Genital and Urinary systems and maintains them in perfect health all through our life span. This reason I found positive way to control fat and weight without expenses and assess of the benefit of Surya-Namaskar on person suffering from abnormal Weight.

## What is obesity?

First symptom of obesity is increase in weight, body loses its shape and due to accumulation of fats in various parts of body sometimes body balance is affected. The obese person has to spend extra energy for any movement, So we need to control the weight from the beginning. For the daily work we spend calories, which we get from the food we eat. But if we take more calories and spend less than the calories are accumulated in the form of fats. Increase in fats reduces body movements, which again increases the weight. So as to reduce the fat one must control the food habits. Weight can increase because of digestive problems. Useful part of the food is absorbed in blood during the digestion. If there are some problems in this process then it may result in accumulation of fats. If the digestive problem is cured then obesity can reduce.

## What is Body Mass Index?

Body Mass Index (BMI) is a relationship between weight and height that is associated with body fat and health risk. Research has identified the health risks associated with a wide range of BMIs (both high and low values)

Less Than 18.5	18.5-24.9	25-29.9	More than 30-34.9
Underweight	Normal	Overweight	Obese

$$\text{BMI} = \text{Weight (Kg)} / \text{Height}^2 (\text{M})^2$$

Use this BMI formula for calculate over Body Mass Index

## What is Waist Circumference?

According to the National Institutes of Health, a high Waist Circumference (WC) is associated with an increased risk for type 2 diabetes, hypertension and cardiovascular disease when the BMI is between 25 and 34.9. (A BMI greater than 25 is considered overweight and a BMI greater than 30 is considered obese.) Waist Circumference can be useful for those people categorized as normal or overweight in terms of BMI

## Waist to Hip Ratio Calculator

Your waist to hip ratio is an important tool that helps you determine your overall health risk. People with more weight around their waist are at greater risk of lifestyle related diseases such as heart disease and diabetes than those with weight around their hips. It is a simple and useful measure of fat distribution.

## What is Surya Namaskar?

Surya Namaskar (Sun salutation) is an ancient Indian method of offering prayers to the rising Sun in the morning along with a series of physical postures with regulated breathing aiming at range of physical, mental and spiritual benefits. Facing east, in the early hours of morning, one standing with serene mind offers prayer to Lord Sun (Surya in Sanskrit) with Surya-Namaskar. Along with physical postures, Surya-Namaskar has specific spiritual connotations attached to it. Surya-Namaskar is a graceful combined sequence of twelve positions along with regulated breathing and relaxation.

According to the scriptures, if performed correctly, Surya-Namaskar does not strain or cause injury. If performed in the morning, it relieves stiffness, revitalizes the body, refreshes the mind and purifies subtle energy channels Though the greatness of Surya-Namaskar has been described in scriptures extensively, not much research has been done to understand its benefits

## Steps in Surya-Namaskar

The participants were trained to perform Surya-Namaskar in a slow manner so that each of the 12 poses was held for duration of 30 seconds. Each round took 6 minutes to complete and 5 rounds were performed in 30-40 minutes. Surya-Namaskar pre training was given for seven days by a yoga trainer and the performance of Surya-Namaskar was analyzed using performance chart. Practice started at (6.00 am) on an empty stomach in a clean,

## Purpose of the study

The purpose of the study is to study the effect of Surya-Namaskar on obese person of affected individuals Including BMI and waist & Hip Circumference of affected individuals in society and control general people Weight without expenditure. Because Surya-Namaskar are very effective in throwing our body exec fat and in activating our glands and to cure the various disease

## Hypotheses

It is hypothesized that there must be some effect of Surya-Namaskar on different on obese person of affected individuals.

## Significance of the study

The present study would be important for national health as the results of this study will fight on the complicated disease as well as obesity and beneficial for control general people weight without expenditure be given a positive results for society.

## Sources of data

To execute this investigation the investigator randomly selected forty five men in Nagpur Municipal Corporation only belonging to the age group of 45-50 years They were divided in to two equal groups of fifteen subjects each and assigned as a Experimental Group-I, and Control Group.

## Selection of variables

for this study following variable were selected 1) BMI 2) waist & Hip Ratio

Dependent variables 1) BMI – Weight (Kg) / Hieght<sup>2</sup> (M)<sup>2</sup>

2) Waist & Hip Ratio –test

Independent variables 1) Experimental Group-I –Surya-Namaskar

## Experimental Design

The study was formulated as a true random group consisting of pre test and post test for this purpose in Nagpur Municipal Corporation 60 person examined and declared 50 of them were medically fit for this study and they were selected by lot method and they were divided randomly in to two groups of Twenty five each, out of which group I (N-25) Surya-Namaskar and group II (N-25) remained as control .pre-test were conducted for all two groups on BMI, Waist & Hip Ratio. The experimental group participated in their respective Exercise for a period of six weeks. Post test were conducted on the above mentioned dependent variables after six weeks of the training period. The training programmed was scheduled at morning 6.00 a.m. to 7.00 a.m. and evening 6.00 p.m. to 7.00 p.m. Collection of data for measuring BMI and waist & Hip Circumference, A digital weighing scale that could measure to the nearest 0.1kg was used to record weight, and height was measured to

the nearest centimeter using a stadiometer, in the Frankfurt plane position. The Body Mass Index is calculated by dividing the body weight in kilograms by the body height squared in meters. in pre and post training session.

### Statistical technique

The Analysis of mean values and 't' test was used. A significance level of  $P < 0.05$  was considered significantly different. Data was analyzed using SPSS. 't' test statistical techniques was use to find out the effect of Surya-Namaskar on Obesity of affected individuals in society.

Table-1: Comparison of Experimental Group pre-training and post-training BMI – Weight (Kg) / Hieght2 (M) 2 and Waist & Hip Ratio

Variables	Test	N	Mean	SD	M. D.	S.E.	t' Ratio	Required 't' Ratio
BMI – Weight (Kg) / Hieght2 (M) 2	Pre-Training	25	27.66	1.70	8.32	2.62	3.1706*	2.0106
	Post -Training	25	25.66	2.28				
Waist & Hip Ratio	Pre-Training	25	1.14	0.14	5.6	0.483	4.5931*	2.0106
	Post -Training	25	0.71	0.13				

Significant at 0.05 levels

An examination of the table 1 revealed that the mean of BMI in pre-training is 27.66 and SD 1.70 and in post training mean is found 25.66 and SD 2.28 similarly an examination of same table revealed that there is significance difference in the mean for BMI of Pre-training and Post training as the obtained 't' ratio value 3.1706 is more than the required 't' ratio value 2.0106 at 0.05 level.

The mean of Waist & Hip Ration in pre-training is 1.14 and SD 0.14 and in post training mean is found 0.71 and SD 0.13 similarly an examination of same table revealed that there is significance difference in the mean for Waist & Hip Ration of Pre-training and Post training as the obtained 't' ratio value 4.5931 is more than the required 't' ratio value 2.0106 at 0.05 level.



**Table-II: Comparison of Control Group pre-training and post-training BMI – Weight (Kg) / Height<sup>2</sup> (M)<sup>2</sup> and Waist & Hip Ratio**

Variables	Test	N	Mean	SD	M. D.	S.E.	t' Ratio	Required 't' Ratio
BMI – Weight (Kg) / Height <sup>2</sup> (M) <sup>2</sup>	Pre-Training	25	27.50	1.59	7.08	14.76	0.4795	2.0106
	Post -Training	25	27.22	1.90				
Waist & Hip Ratio	Pre-Training	25	1.10	0.14	-5.2	31.43	0.1654	2.0106
	Post -Training	25	1.07	0.16				

Significant at 0.05 levels

An examination of the table II revealed that the mean of BMI in pre-training is 27.50 and SD 1.59 and in post training mean is found 27.22 and SD 1.90 similarly an examination of same table revealed that there is significance difference in the mean for Body Mass Index of Pre-training and Post training as the obtained 't' ratio value 0.47 is less than the required 't' ratio value 2.0106 at 0.05 level.

An examination of the table II revealed that the mean of total Waist & Hip Ratio in pre-training is 1.10 and SD 0.16 and in post training mean is found 1.07 and SD 0.16 similarly an examination of same table revealed that there is not significance difference in the mean for Waist & Hip Ratio of Pre-training and Post training as the obtained 't' ratio value 0.16 is less than the required 't' ratio value 2.0106 at 0.05 level.

## DISCUSSION

The effect of Yoga on different parameters observed in our study correlate with the findings of Tundwala V. et al. i.e., a significant decrease in the parameters of obesity like BMI, significant decrease in both systolic and diastolic blood pressure and improvement in various lipid profile parameters i.e., with a 40-day Yoga regimen among type 2 diabetics Schwickert et al. and Frumkin et al. considered yoga to be a relaxation technique that is highly effective in reduction of elevated BP and management of stress

### Findings of BMI result

There was a significant difference between pre and post training. The Experimental Groups BMI is decreased because they are physically more active and their endocrine secretion is more suitable. As the sedentary person is physically less active their secretion of endocrine gland is less, automatically Surya-Namaskar, the organs of our body like the lungs, glandular system, liver, Pancreas, Thyroid, Genital and Urinary systems and maintains them in perfect health all through our life span

### Findings of the research

Finding indicated that Obesity related problems can be higher in the sedentary people than the trained person and the reasons are listed below. Within the limitation of the study the following conclusion were drawn

1. Result shows that there was significant reduction in BMI due to training.
2. Study indicates the duration of training and changes in Waist & Hip Ratio

## CONCLUSION

From our study we observed a significant decrease in BMI, both systolic and diastolic blood pressures in subjects who were practicing Surya-Namaskar for a period of six week. Surya-Namaskar mean certain Asana's have beneficial effect on certain cardiovascular risk factors like obesity, hypertension and dyslipidemia. Randomized controlled trials are needed to confirm and elucidate the effects of standardized yoga programs.

There is a need to provide a better recognition of yoga by the health care community as a complement to conventional medical care. It was concluded that the Surya-Namaskar can BMI and Waist & Hip Ratio decrease significantly. If the sedentary person follows the Surya-Namaskar training will improve.

1. Regular Surya-Namaskar can help decrease BMI and Waist & Hip Ratio
2. Change of lifestyle also can help in decrease BMI and Waist & Hip Ratio
3. Eat a healthy diet, get regular physical activity and avoid smoking
4. Lifestyle changes are the first line of defense against weight gain.

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