

## A PROSPECTIVE RANDOMIZED CLINICAL TRIAL FOR THE EFFECT OF DIET AND YOGA IN STHAULYA (OBESITY).

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### ABSTRACT

*Sthaulya* (Obesity) occurs when people regularly eat and drink more calories than they use. Besides a person's eating behavior, a number of factors can contribute to obesity, including a lack of physical activity, a lack of sleep, genetics and the use of certain medications that can cause weight gain or water retention, such as Corticosteroids, antidepressants. Health education, life-style or behaviour modification i.e. changing eating habits, increasing physical activity, exercise, dietary habits, behaviour modification, Yoga *sadhana* play the preventive as well as therapeutic part in the management of Obesity. 15 Subjects fulfilling the inclusion criteria are advised for lifestyle modification with diet and Yoga practices. It is seen that both change in diet and practicing yoga regularly is very effective in Obesity.

**KEYWORDS:** *Sthaulya*, Obesity, BMI, Diet, Yoga, *Asanas*, *Pranayama*.

### INTRODUCTION

According to the World Health Organization (WHO), Obesity is one of the most common, public health problems in both developed and developing countries. Worldwide, 2.8 million people die each year as a result of being overweight or obese, and an estimated 35.8 million (2.3%) The growing rate of obesity. Overweight and obesity lead to adverse metabolic effects on blood pressure, cholesterol, triglycerides and insulin resistance in India is making India an

unhealthy nation, as Indians become increasingly affected by many obesity related problems such as diabetes, hypertension, heart disease etc. Mortality rates increase with increasing degrees of overweight, as measured by body mass index. To achieve optimum health, the median body mass index for an adult in the range 18.5 to 24.9 kg/m<sup>2</sup>.

At fundamental level, obesity occurs when people regularly eat and drink more calories than they use. Besides a person's eating behavior, a number of factors can contribute to obesity, including a lack of physical activity, a lack of sleep, genetics and the use of certain medications that can cause weight gain or water retention, such as Corticosteroids, antidepressants or some seizure medications.

According to CDC, obesity increases the risk of developing a number of potentially serious health problems, including Coronary heart disease, High blood pressure, Stroke, Type 2 diabetes, Dyslipidemia, Gallstones, osteoarthritis etc.

Population should be in range of 21 to 23 kg/m<sup>2</sup>, while the goal for individuals should be to maintain BMI Causes of rising obesity in India includes eating habits, fast foods, lack of physical activity, lack of awareness, etc. Health education, life-style or behaviour modification i.e. changing eating habits, increasing physical activity, exercise, dietary habits, behaviour modification, Yoga *sadhana* play the preventive as well as therapeutic part in the management of Obesity. Obesity is a condition in which a person has excess of body fat that could impair health. Obesity increases an individual's risk for various diseases, disabilities and death. The conscious effort to alter diet habits and changed lifestyle by Yoga and physical exercises are the best methods to manage obesity. *Yogic* management is based on controlled and balanced diet, Yoga postures or *Asanas* and breathing techniques. Consuming only the amount of food that we really need, along with regular exercise, performing pranayama and Yoga *Asanas* can give relief to overweight and obese people.

As the prevalence of obesity all over the world is rising day by day, it is necessary to find out the ways to deal with it and its the related complications. Yoga and life style management is one of the best ways to treat the obesity as well as to keep a healthy person fit and away from being overweight.

**AIM:** To study The Effect of Diet and Yoga in *Sthaulya* (Obesity).

**OBJECTIVES**

1. To study etiopathogenesis & symptoms of *Sthaulya* (Obesity) as per *Ayurveda* & modern medical science.
2. To study the effect of Diet and Yoga in *Sthaulya* (Obesity).

**Inclusion Criteria**

- 1) As per clinical signs & symptoms of *Sthaulya* described in classical Ayurveda text.
- 2) Patient had been selected from 16-60 years of age of either sex.
- 3) Patients who have not taken any treatment before the trial.
- 4) Patients willingly participating in study trial.

**Exclusion criteria**

- 1) Patients fulfil the inclusion criteria but have H/O abdominal surgery.
- 2) Patients having liver disorders.
- 3) Patients who are not willing for the trial.

**Withdrawal Criteria**

- 1) The patient is not willing to continue the trial or not giving regular follow- up.
- 2) Evidence of any other illness which may interrupt the treatment.

**Assessment Criteria****A] Subjective Criteria**

Chala Sphik-Udara-Stana

1.	<b>Absence of chalatva</b>	<b>0</b>
2.	Little visible movement after rapid movement	1
3.	Little visible movement after moderate movement	2
4.	Movement after mild movement	3
5.	Movement even after changing posture	4

**Angagandha (Bad odour)**

1.	No odour	0
2.	Bad odour but not offensive	1
3.	Strong odour but can be lessened by use of deodorants or perfumes	2
4.	Very strong odour even after using fragrances	3

**Swedadhikya (Perspiration)**

1.	Sweating after heavy work and fast movement or in hot weather	0
2.	Profuse sweating after moderate work and movement	1
3.	Sweating after little work and movement	2
4.	Profuse sweating after little work and movement	3
5.	Sweating even at rest or in cold weather	4

**Overall assessment criteria****Table 6: Shows overall assessment criteria.**

Sr. No.	Statistical improvement	Result
1.	No results in parameters	No improvement
2.	Result in 1- 2 parameters	Mild improvement
3.	Result in 3 – 4 parameters	Moderate improvement
4.	Result in 5 parameters	Marked improvement

**METHODS AND MATERIALS****Sample size**

Effect of Diet and Yoga on 20 Subjects of Sthaulya (Obesity).

**Period of trial:** Total 30 days period.

**20 Subjects fulfilling the inclusion criteria are selected and advised for diet and yoga as follows. After 30 days the symptoms are seen.**

**Diet (Pathya-apathya Ahara)**

Ahar varga	Pathya	Apathya
Shuka dhanya	Purandhanya	Navanna
Shimbi dhanya	Mudga, masura, kullatha, adhaki	Masha, tila
Shaka varga	Vrintaka, patrashaka, patola	Madhurphala
Dugdha varga	Takra, Godugdha	Dadhi, Ghrita
Mamsa varga	Aja mamsa, matsya	Kukkut mamsa
Jala varga	Ushnodak	Sheet jala
Itar dravya	Madhu	Ikshu

**Pathya-apathya vihara**

<b>Shrama</b>	<b>Sheet jalasana</b>
<b>Ratrau jagaran</b>	<b>Diwaswap</b>
<b>Vyavay</b>	<b>Avyavaya</b>
<b>Langhan</b>	<b>Avyayama</b>
<b>Chintana</b>	<b>Achintan</b>
<b>Shoka, krodha</b>	<b>Nitya harsha</b>

**Daily Practice Programs**

No.	Asana	Duration in minutes
1.	Shithilikaran kriya	5
2.	Omkar chanting	5
3.	Suryanamaskara (30 repetitions)	8-10
4.	Dhanurasana	2
5.	Bhujangasana	2
6.	Ushtrasana	2
7.	Ardhamatsyendrasana	2
8.	Paschimottanasana	2
9.	Pavanmuktasana	2
10.	Halasana	3
11.	Shavasana	2

**Follow up**

- 0<sup>th</sup> day & 20<sup>th</sup> day

Collection of data with the help of complete CRF - with follow-up.

**Place of study**

OPD of the Institutional Hospital.

**Statistical Analysis**

The difference between before and after intervention of each symptom w.r.t. symptom scores of 20 Subjects of Obesity (Sthaulya) by Wilcoxon signed rank test.

**Table 1: Difference in before and after treatment on Chala Sphik-Udara-Stana**

	Mean	S.D.	S.E.	W value	P value
<b>BT</b>	1.750	0.7864	0.1758	153	<0.0001
<b>AT</b>	0.8500	0.8127	0.1817		

P<0.05, significant.

**Table 1: Difference in before and after treatment on Angagandha:**

	Mean	S.D.	S.E.	W value	P value
<b>BT</b>	1.300	0.6569	0.1469	153	<0.0001
<b>AT</b>	0.4500	0.6048	0.1352		

P<0.05, significant.

**Table 1: Difference in before and after treatment on Swedadhikya:**

	Mean	S.D.	S.E.	W value	P value
<b>BT</b>	1.850	0.8127	0.1817	171	<0.0001
<b>AT</b>	0.9500	0.8256	0.1846		

P<0.05, significant.

**DISCUSSION**

There is significant difference in before and after given lifestyle modification i.e. diet and yoga to the subjects. The symptoms of Obesity i.e. Chala Sphik-Udara-Stana, Angagandha, Swedadhikya are lowered after lifestyle modification. Yoga techniques i.e. Asanas and Pranayama causes medovilayana.

**CONCLUSION**

Lifestyle- modification i.e. dietary counselling and adoption of yoga is effective in Obesity (Sthaulya).

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