

**AN AYURVEDIC MANAGEMNT (DIET& YOGA) IN CASE OF OBESITY****Gupta Rashmi<sup>1</sup> Gupta Gopal Das<sup>2</sup> Agrawal Ram Kumar<sup>3</sup>**<sup>1</sup>PhD Scholar, Dept. of Shalya Tantra, Faculty of Ayurveda, IMS BHU, Uttar Pradesh, India<sup>2</sup>Consultant kayachikitsa- Jeevak Ayurved Medical College & Hospital Chandauli, Uttar Pradesh, India<sup>3</sup>Assistant Professor, Dept of Swasthvrit, Govt. Ayurvedic College, Jabalpur, M.P, India**ABSTRACT**

Obesity has reached epidemic proportions in India in the 21st century, with morbid obesity affecting 5% of the country's population. India is following a trend of other developing countries that are steadily becoming more obese. Obesity is a major risk factor for cardiovascular disease and NGOs such as the Indian Heart Association have been raising awareness about this issue. Obesity is affecting many countries in the world and if action is not taken to stem the pandemic, millions of people will develop non communicable diseases. Obesity is now well recognized as a disease which is largely preventable through changes in life style especially, diet & physical activity. Recent studies have shown that overweight and obesity affect over half the adult population in many countries. The prevalence of obesity in adults is 10 to 25% in most countries of Western Europe and 20% in some countries in the Americans. A number of factors influence body fat including age, sex, race, socio-economic class etc India, which is already is the third most obese country in the world, is showing increasing incidence of over-weight children and adolescents in urban areas. Latest estimates show prevalence of obesity among adolescents (13-18 years) has grown from 16% to 29% over the last five year

**Keyword:** Obesity, physical activity, diet, yoga, *Apathya-Pathya*.

**INTRODUCTION**

Obesity has reached epidemic proportions in India in the 21st century, with morbid obesity affecting 5% of the country's population<sup>1</sup>. Excess deposition of adipose tissue in the body is known as obesity. Obesity exists when body weight is 20% above ideal body weight. A National Institute of Health Consensus Conference defined obesity as Body Mass Index greater than 27 kg/m<sup>2</sup><sup>[2]</sup>. Now a day's obesity is defined at or greater than 25

Kg/m<sup>2</sup> BMI. Park defined obesity as an abnormal growth of adipose tissue due to an enlargement of fat cell or an increase in number of fat cell or a combination of both.<sup>[3]</sup>

**FACTORS RESPONSIBLE FOR OBESITY**

Obesity is most commonly caused by a combination of excessive food intake, lack of physical activity, and genetic susceptibili-

ty.<sup>[4][5]</sup> A few cases are caused primarily by genes, endocrine disorders (Cushing's syndrome, Hypothyroid Disease, Polycystic ovarian syndrome etc.), medications (oral contraceptive pills, hormone replacement therapy & Long-term use of steroid in the treatment of Asthma etc.) or mental illness.<sup>[6]</sup> Evidence to support the view that obese people eat little yet gain weight due to a slow metabolism is not generally supported.<sup>[7]</sup> On average, obese people have a greater energy expenditure than their thin counterparts due to the energy required to maintain an increased body mass.<sup>[7][8]</sup>

### ASSESSMENT OF OBESITY

Obesity can be assessed by following tools:

- Body Mass Index
- Waist circumference
- Waist / Hip ratio
- Relative Weight (Rw)
- Skinfold thickness

### BODY MASS INDEX:

Body mass index or BMI is a simple and widely used method for estimating body fat mass.<sup>[9]</sup> The B.M.I. is the actual body weight divided by the height squared ( $\text{kg}/\text{m}^2$ ). This index provides a satisfactory measure of obesity in people who are not hypertrophied athletes. The most commonly used definitions, established by the World Health Organization (WHO) in 1997 and published in 2000, provide the values listed in the table at right.<sup>[10]</sup>

Under weight -  $<18.5 \text{ kg}/\text{m}^2$

Normal weight -  $18.5 - 24.9 \text{ kg}/\text{m}^2$

Over weight -  $25 - 29.9 \text{ kg}/\text{m}^2$

Obesity (Class-I) -  $30 - 34.9 \text{ kg}/\text{m}^2$

Obesity (Class-II) -  $35 - 39.9 \text{ kg}/\text{m}^2$

Morbid Obesity (Class-III) -  $> 40 \text{ kg}/\text{m}^2$

### WAIST CIRCUMFERENCE:

Waist circumference measurement becomes helpful to assess the risks associated with obesity. In the United States a waist circumference of  $>102 \text{ cm}$  ( $\sim 40''$ ) in men and  $>88 \text{ cm}$  ( $\sim 34.5''$ ) in women<sup>[11]</sup>. In the European Union waist circumference of  $94 \text{ cm}$  ( $\sim 37''$ ) in men and  $80 \text{ cm}$  ( $\sim 31.5''$ ) in non-pregnant women are used as cut offs for central obesity.<sup>[12]</sup> Men who have waist circumference more are at higher risk of D.M., hypertension and cardiovascular disease because of excess abdominal and visceral fat.

### WAIST / HIP RATIO:

the waist-hip ratio (the circumference of the waist divided by that of the hips of  $>0.9$  for men and  $>0.85$  for women) are used to define central obesity.<sup>[13]</sup> From studies it is evident that men and women, who have a high ratio of waist / Hip circumference, have increased risk of death, blood pressure and serum lipid levels.

### AVERAGE VALUE IS AS FOLLOW:

- WHR in men is about 0.93 with a range of 0.75 to 1.10
- In women is about 0.83 with a range of 0.70 to 1.0

Waist circumference is the minimum circumference between the costal margin and iliac crest, measured in the horizontal plane, with the subject standing. Hip circumference is the maximum circumference in the horizontal plane, measured over the buttocks. The ratio of the former to the latter provides an index of the proportion of intra-abdominal fat.

### RELATIVE WEIGHT:

- The RW is actual weight divided by the desirable weight (derived from acceptable weight tables)
- RW > 120 % - Obese
- RW > 200 % - Morbid obese.

### SKIN FOLDS THICKNESS <sup>[14]</sup>:

The thickness of the adipose tissue which is lying in subcutaneous layer is measured by skinfold thickness. The four most commonly site used for skinfold measurement are Biceps, Triceps, subscapular and suprailiac. The method is inexpensive, but requires a skilled observer and is not applicable to very obese people whose skinfolds would not fit between the jaws of the measuring caliper. This is not a reliable method for estimating intra-abdominal fat.

### CLINICAL FEATURES OF OBESITY

The following are the most common symptoms that indicate an adolescent is obese. However, the patient's appearance is sufficient to arrive at a diagnosis in most cases, determined by the persons BMI (body mass index) depending on weight to height, though each adolescent may experience symptoms differently. Symptoms may include <sup>[15]</sup>-

- Large body frame
- Difficulty in doing daily activities
- Lethargy
- Breathlessness
- Disproportionate facial features

- Breast region adiposity - (sagging fat cells) in boys
- Big belly (abdomen), sometimes marked with white or purple blemishes
- Male external genitalia may appear disproportionately small
- Flabby fat in the upper arms and thighs
- Knock-knees (Genu valgum) is common

### MANAGEMENT OF OBESITY-

#### **PATHYA –APATHYA <sup>[16,17]</sup>:**

Practicing appropriate Pathya, Apathya alongwith the treatment of disease is one of the unique characteristics of Ayurvedic science. Acharya Charaka has defined that the food articles, drugs and regimen which do not affect the body and mind adversely are regarded as Pathya and in the same way which adversely affect the body & mind are considered as Apathya. Acharya Lolimb Raj has highlighted the importance of Pathya-Apathya by registering that –

**iF;slfrxnkrL;ZfdekS'k/ksfu'ko.ksA**

**iF;s-lfrxnkrL;ZfdekS'k/ksfu'ko.ksAA**

(Vaidyajivan)

It means that if the person is following the Pathya-Apathya rulesthanno need of the medicine and there is no effect of medicine for the one who is not following the Pathya-Apathya rules. Keeping in view, pathological factors, the ancient Acharyas have listed numerous Pathya-Apathya for obesity (Sthaulya) given below <sup>[29,30]</sup>-

**TABLE-1**

<i>Ahara Varga</i>	<i>Pathya</i>	<i>Apathya</i>
1. <i>SukaDhanya</i> (Cereal grains)	<i>PuranShali, Kodrava, Shyamak, Yava, Priyangu, Laja, Nivara, Koradushaka, Jurna, Prashatika, Kanguni</i>	<i>Naveen Dhanya (Shali)</i>
2. <i>ShamiDhanya</i> (Pulses)	<i>Mudga, Rajamasha, Kulatha, Chanaka, Masur, Adhaki</i>	<i>Masha</i>
3. <i>ShakaVarga</i> (Vegetables)	<i>Patol, Patrashaka, Shigru, Vrutaka, Katutikta Rasatmak etc. Vastuka, Trapusha Vartaka, Evaruka, Adraka,</i>	<i>Kanda Shaka, Madhura</i>
4. <i>PhalaVarga</i> (Fruits)	<i>Kapittha, Jambu, Amalki, Ela, Bibhitaki, Haritaki, Maricha, Pippali, Erand Karkati, Ankola, Narang, Bilvaphala</i>	<i>MadhuraPhala</i>
5. <i>Drava Varga</i>	<i>Honey, Takra, Ushnajala, Tila &amp; Sarshapa Tail, Ashava Arista, Surasava, Jeerna</i>	<i>Milk Preparations, (Dugdha, Dhadhi, Sarpi)</i>

**PATHYA - APATHYA VIHAR (PHYSICAL REGIMEN)****TABLE-2**

<i>Pathya</i>	<i>Apathya</i>
<i>Shrama</i>	<i>SheetalJalaSevan</i>
<i>Jagarana</i>	<i>Diwaswapa</i>
<i>NityaBhramana</i>	<i>Avyavaya</i>
<i>AshwaRohana</i>	<i>Avyayam</i>
<i>HastyavaRohana</i>	<i>AtiAshana</i>
<i>Vyavaya</i>	<i>SukhaShaiya</i>

**DIETARY MANAGEMENT:**

The main treatment for obesity consists of dieting and physical exercise.<sup>[18]</sup> Diet programs may produce weight loss over the short term,<sup>[19]</sup> but maintaining this weight loss is frequently difficult and often requires making exercise and a lower food energy

diet a permanent part of a person's lifestyle<sup>[20,21]</sup>

In the short-term low carbohydrate diets appear better than low fat diets for weight loss.<sup>[22]</sup> In the long term; however, all types of low-carbohydrate and low-fat diets appear equally beneficial<sup>[22,23]</sup> A 2014 review found that the heart disease and diabetes

risks associated with different diets appear to be similar.<sup>[24]</sup> Promotion of the Mediterranean diets among the obese may lower the risk of heart disease.<sup>[22]</sup> Decreased intake of sweet drinks is also related to weight-loss.<sup>[22]</sup> Success rates of long-term weight loss maintenance with lifestyle changes are low, ranging from 2–20%.<sup>[25]</sup> Dietary and lifestyle changes are effective in limiting excessive weight gain in pregnancy and improve outcomes for both the mother and the child.<sup>[26]</sup> Intensive behavioral counseling is recommended in those who are both obese and have other risk factors for heart disease.<sup>[27]</sup>

Low-calorie diets usually produce an energy deficit of 500–1,000 calories per day, which can result in a 0.5 kilogram (1.1 lb) to 1 kilogram (2.2 lb) weight loss per week. The National Institutes of Health reviewed 34 randomized controlled trials to determine the effectiveness of low-calorie diets. They found that these diets lowered total body mass by 8% in the short term, over 3–12 months.<sup>[28]</sup> Women doing low-calorie diets should have at least 1,200 calories per day. Men should have at least 1,800 calories per day.

#### **NORMAL DIET SHOULD CONTAIN:**

- Protein – 50 gm fat – 20gm
- Carbohydrate – 100gm Supplement of vitamin A & C
- Mineral like Iron & Calcium salts Fluid – 2 liter

#### **PLANNED DIET RULES:**

- Eat when you are hungry
- Diet should contain liberal amount of salad, fresh fruits and vegetables and dietary fibers.

- Daily required calorie should not less than 500 kcal.
- Reduce the amount of sugar and salt.
- Calorie Requirement should be adjusted with type of physical activity.

#### **YOGA THERAPY:**

Yoga is also easy and inexpensive tool requiring little in the way of equipment or professional personnel, with some studies indicating excellent long-term adherence and benefits.<sup>[31,32]</sup> A complex set of interrelationships occur between life style, anthropometric, psychological and physical activity variables<sup>[33]</sup> of particular interest is the apparent relationship between physical and mental health.<sup>[34,35]</sup> Increasing physical activity has the dual benefit of increasing physical fitness and alleviating depression and anxiety.<sup>[35]</sup> Even without the physical health benefits, increasing physical activity may block negative thoughts, distract people from worries, increase social contact and change the brain chemistry to improve mood.<sup>[36]</sup>

A growing number of research studies have shown that Hatha yoga can improve strength and flexibility, and may help control physiological variables such as blood pressure, lipids,<sup>[37]</sup> respiration, heart rate and metabolic rate to improve overall exercise capacity.<sup>[38,39]</sup>

The yoga group practiced a set of yoga techniques daily, in the form of asana (postures) and deep relaxation technique, pranayama (breathing techniques) and meditation.<sup>[40]</sup> Yoga practices included: Stretching techniques; *Ardhakatichakrasana*; *Padahasthasana*; *Ardhachakrasana*; *Sarvangasana*; *Dhanurasana*; *Supta-vajrasana* *Matsyendra (ardhamatsyendra)*; *Kapalabhati pra-*

*nayama; Anuloma Viloma Pranayama and Shavasana.*

Research shows that exercise for 10 minutes at a stretch 4 to 5 times a day is as beneficial as exercise for 40-50 minutes at a time. Exercise in the morning is suggested for keeping metabolism higher all the day. Studies shows that an exercise induced metabolism boost can last 24 hours or Longer. Patient should be Emphasized to start with light exercise, gradually increase it and then maintain it regularly.

#### ADVANTAGES OF YOGA:

- It accelerates the rate of weight loss.
- It affects body composition by increasing the loss of adipose tissue & minimizing the amount of body cell mass.
- It decreases S. triglyceride level
- It increases S.HDL cholesterol.
- It improves physical work capacity
- In addition increased physical activity may help to reduce body fat and prevent the decrease in muscle mass often found during weight loss.

#### CONCLUSION

Now a day's obesity is a worldwide problem. In *Ayurveda* Acharya Sushrut define it in a separate chapter as *sthaulya*. He was given diet & exercise regimen in term of *pathya-apathya*. If person can follow *pathya-apathya* regimen it will be manageable & also prevent so many diseases which are arises due to obesity. Yoga plays an important role in prevention of obesity. If person perform daily yoga in life, it is very useful not only for obesity even that physically, mentally, spiritually well being for humans.

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