

Classical ayurveda concepts and recent scientific trends in understanding the sthaulya (Obesity)

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The incidence of obesity is increasing at an alarming rate during the past few years, it has reached epidemic proportions and is a major contributor to the global burden of chronic diseases. Approximately 2,00,000 individuals throughout the world die every year. It is also affecting younger children and adolescent. It is already reported that approximately 61% adults are overweight and 28% obese, 14% adolescents and 13% children in the age 6 to 8 are overweight¹.

Obesity is a metabolic disorder in which excess body fat has accumulated to the extent that it may lead to major health problems. It is the result of taking in more calories in the diet than are expected by the body's energy consuming activities. Body mass index (BMI), a measurement which compares weight and height, defines people as overweight (pre-obese) if their BMI is between 25 and 30 kg/m², and obese when it is greater than 30 kg/m². The body can convert excess fuel to fat and store it in adipose tissues, or it can burn excess fuel by extra exercise and in another way it can waste fuel by diverting it to producing heat in uncoupled mitochondria. In mammals a complex set of hormonal and neuronal signals act to keep fuel intake and energy expenditure in balance².

As the prevalence of overweight and obesity have steadily increased over the past several decades, reversing the obesity epidemic has become of paramount importance in India and around the globe. How to do this has been the subject of much research and debate. What makes the problem so vexing is not only the enormity of the problem in terms of sheer numbers of affected individuals, but the complexity of multiple interacting forces that are working to drive the epidemic. Obesity is the starting point for heart ailments, joint pains, hypertension and other unwanted conditions detrimental from health point of view.

Some people are genetically predisposed to accumulation of fat tissue leading to obesity. The regional distribution of fat may be classified simply as whole body mass, android, and gynoid. Android obesity or accumulation of fat around the abdomen is risk for diabetes and cardiovascular diseases than other types of obesity. Gynoid obesity is when fat accumulates mainly in the hip and thigh regions.

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This is mostly seen in women. There are several methods of assessing body mass. An easy method is the waist to hip ratio where for women this ratio should not exceed 0.8 and for men 0.95.

In Ayurveda atiSthaulya or Morbid Obesity is described under one of the eight despicable (Asthauninditapurusha) conditions. Due importance is given by all Ayurvedic classics to detail the etiology, manifestation and management procedures of Sthaulya. It is also said that Sthaulya (obesity) management is relatively very difficult than the management of Karsya (leanness). AtiSthaulya is described under the following contexts in Ayurvedic Classics.

1. One of the Bahudoshalakshana and indicated for Sodhana³
2. One of the 20 shleshmananatmaja vikara⁴
3. Described undersantarpanotta vikara⁵
4. AtiSthaulya is the result of vitiated Meda⁶
5. As a Rasanimitaja Vyadhi⁷

A person in whom there is excessive accumulation of Meda (fat/adipose tissue) and Mamsa (flesh/muscle tissue) leading to flabbiness of hips, abdomen, and breast has been categorized as Atisthula⁸. Medas is body tissue predominant in Prithvi and ApMahabhutas similar to Kapha Dosha⁹. It is characterized by Snigdha (unctuous), Guru (heavy), Sthula (space occupying), Picchila (slimy), Mridu (tender/soft) and Sandra (dense) Guna (qualities)¹⁰. Sneha (oleation), Sweda (production of sweat), Drudhatva (compactness), and Asthipushti (nourishment of bones) are the main function of Medodhatu¹¹.

The etiological factors for atiSthaulya is described in Ayurvedic classics. They can be categorised as 1. Dietetic 2. Lifestyle. 3. Psychological 4. Genetic (Beejadoshath).

- 1. Dietetic causes:-** atisampooranam (over intake) of Guru (heavy to digest), shleshmalaaharasevinah (which cause kaphavridhi), Madhuraannarasah-praayah (food predominated by sweet taste), seeta (cooling), snigdha (unctuous). Consumption of this diet tend to accumulate calories in the body thus causing conversion into fat.
- 2. Lifestyle:-** avyayama (not doing physical exercise), avyavaya (abstinence from Sexual intercourse), diva swapna (day sleep). All the lifestyle factors are calory conservators thus causing fat accumulation.

3. **Psychological**:- harshanitya (uninterrupted cheerfulness), achinta (lack of mental exercise). These psychological factors facilitate elated mood and lacks serious thinking thus conserve the energy.
4. **Beejadosh**a:- beejaswabhavath (genetic). The advancements in the research of obesity give due importance to genetic factors for the development of obesity.

Adoption of above type food and lifestyle result in excessive nourishment of Medas while other bodily elements (Dhatus) are deprived of nourishment. Disproportionately increased Medas is accountable for several serious consequences as reported in Caraka Samhita like Ayushohrasa (decrease of life span), Javoparodha (decrease in enthusiasm and activity), Krichravayavayata (difficulty in sexual act), Dourbalya (decrease of strength), Dourgandhya (bad odor), Swedabaddha (excess perspiration) and KshutPipasadhikya (excessive hunger and thirst)¹².

The etiopathogenesis of AtiSthaulya is described in Carakasamahita as” Due to the obstruction of the passage by the medas, the movement of vata is specially confined to koshtha resulting in stimulation of the digestive power and absorption of the food. So the patient digests food quickly, becomes a voracious eater. If he doesn't get food when he needs it, he can be subjected to many diseases of serious nature¹².

Susruta has narrated the aetiopathogenesis of Sthaulyaroga on the basis of an endogenous entity being caused due to “Dhatvagnimandya”. The course and complications of the disease along with line of treatment are discussed at various places in Sushruta Samhita¹³.

Caraka Samhita, in the context of Sthaulyaupadrava (Complications of Obesity) it is explained in terms of simile like the forest fire burns the forest i.e: in the event of disproportionate increase of fat, diseases of very serious types are caused by the vaishamyata of vata and agni which may lead to instantaneous death.

Susrutha, mentioned that the Sthula person is likely to be afflicted with any of the following diseases Pramehapidaka, Jwara, Bhagandara, Vidradi, Vatavikara and these attacks are invariably found to terminate in death.

In Bhavaprakasha, Yogaratnakara and Vangasena it is mentioned that in AtiSthula if the diseases like Kustha, Visarpa, Bhagandara occur are said to be difficult to cure. In addition, enlisted that in AtiSthula diseases like Jwara, Atisara, Meha, Arshas, Shleepada, Apachi, Kamala may also develop.

Management of Sthaulya:-

Avoidance of cause is prime mode of treatment in Ayurveda. Thus aetiological factors as quoted above need to be avoided.

Caraka Samhita mentions that drugs which are having Guru guna and Apatarpana in action should be administered to treat Sthaulya. Administration of Guru and Apatarpana substances which possess additional Vata, Shleshma and Medonashaka properties is considered as an ideal for Samshamanotherapy. Chakrapani while commenting on the principle has explained that Guru Guna is sufficient to alleviate vitiated Agni and excessive hunger. Apatarpana property provides less nourishment and thus leads to depletion of Meda. For example Honey possess Guru and Ruksha properties, hence it is ideal for management of Sthaulya. Gangadharas interpreted that Guru Property is suitable to alleviate Tikshnagni and vitiated Vata especially Kosthagata Vata which ultimately reduces excessive hunger and Apatarpana property causes reduction of Meda.

शिलाजतुगुग्गुलुगोमूत्रं त्रिफलालोहरजोरसाञ्जनं मधुयवमुद्गरदूषकश्यामा।

कोदालकादीनां विरूक्षणच्छेदनीयानां च द्रव्याणां विधिवदुपयोगो व्यायामो लेखनबस्त्युपयोगश्चेति॥

(Susruta.Su.14:32)

Susrutha elaborated that, the things or conditions which faster the growth of abnormal fat should be avoided and accordingly medicated compositions, consisting of such drugs shilajatu, guggulu, gomutra, triphala, loharaja, rasanjana, madhu, yava, mudhga, koradushaka, shyamaka and uddhalaka which are virukshaniya and chedaniya in nature are to be used as well as Vyayama, Lekhana Basti should be prescribed in the management of Sthaulya.

According to Vagbhata, Shodhana should be administered for those who are very obese, strong and having predominance of pitta and kapha. Those who are moderately obese should administer first with Deepana-Pachana drugs, later with Shodhana therapies. Those who are slightly obese should be managed by kshut, trishnanigrahana (Controlling the thirst and hunger)

It is said in the context of atisthaulya chikitsa by adopting srama (physical exertion), chinta (mental activity), vyavaya (sexual act), adhva (brisk walk), kshaudra (honey), jagarana (waking in the night) and consumption of food containing yava (barley) & shyamaka are going to surely reverse the atisthaulya.

Susruta's quote of "Vyayama (optimum exercise regulary) is the best and unparallel treatment in the management of sthaulya" is still scietificly validated by contemporary medicine.

शरीरायासजननं कर्मव्यायामसञ्ज्ञितम्।

नचास्तिसदृशंतेन किञ्चित्स्थौल्यापकर्षणम्॥ (Su.Ci.24:38-41)

Intake of prasatika, priyangu, syamaka, yavaka,yava, jurnahva, kodrava, mudga, kulattha, mudgaka, adhaki along with patola and amalaka as food, followed by honey water indicated in overweight / obesity (Ca.Su.21:25-26)

Individuals desirous of reducing over corpulence (santarpanjanyaroga) should take recourse to habitual exercise, intake of food like yava and wheat only after the digestion of the previous meal. (Ca.Su.23:25)

Bhavaprakashnighantu has described yava in shukadhanyavarga along with morphological characters and therapeutic uses. It is considered to be having lekhana property, so can be useful in obesity. It is also traditionally used as a dietary solution in obesity. Since yava is easily available and cost effective¹⁴. To prevent the obesity people can use this cereal as daily food and will not gain weight.

Modern literature reveals that beta glucan present in barley is responsible for antihypercholesterolenic activity and also helpful in reducing total lipid profile. The physiologic effects are probably related to the gel forming properties of beta glucan which increase viscosity of intestinal chyme and increased viscosity disturbs micelle formation, which may inhibit cholesterol absorption, slow cholesterol transfer across the unstirred layer and increase bile acid excretion by inhibiting bile acid reabsorption¹⁵

Lekhana in context of Basti:- Among the various types of Basti (medicated enemas), Lekhana Basti is one type. As it contains tikshnadrahyas mainly indicated for Aparpana. As Acharyas have advised to use Basti having drugs opposite to the gunas of vitiated doshas, drugs having kharaguna can be used for preparation of the Lekhana Basti.

Common drugs used in LekhanaBasti are Triphala, gomutra, kshaudra, yavakshara, ushakadigana, lekhaniamahakashaya etc.Lekhanavasti is indicated in Sthaulya and Kapha-MedaAvaranaJanyaVyadhi.

Anuvasana Basti in Sthaulyaroga:- As Anuvasana Basti is one among the brimhana therapies, where assantarpannothanidana is prime factor for Sthaulya, thus AnuvasanBasti is contraindicated. But the snehadrahyaspossesing the qualities of

ushna, tikshna, medohara and kaphaharagunas can be used for Anuvasana Basti. Based on this, classics have mentioned Triphaladitaila under Sthauladhikara for Basti.

Udvardana as external therapy:- Massaging the body with pressure by using medicated powders. It is very ideal external therapy to liquify the medodhatu and kapha.

उद्वर्तनंवातहरं कफमेदोविलापनम्।

स्थिरीकरणमङ्गानां त्वक्प्रसादकरं परम्॥ (Su.Ci.24:52)

Research on herbs having anti-obesity or anti-lipidemic effects:- Recently, Yun et al.¹⁶ reported a systematic literature survey describing the anti-obesity activity of natural products derived from various plants and microorganisms including bacteria, fungi, and mushrooms. He showed antiobesity activity of individual compounds divided the detailed mechanisms of action into 5 categories:

- i. Lipase inhibition effect,
- ii. Suppressive effect on food intake,
- iii. Inhibitory effect on adipocyte differentiation,
- iv. Lipid metabolism, and
- v. Combined effects using in vivo and in vitro results¹⁶

Musta:- *Cyperus rotundus* has been attractive for multiple health benefits. Bernard et al.¹⁷ reported the anti-obesity activity of *C. rotundus* tuber extracts for the control of body weight in a rat model. The administration of the hexane extracts during 2 months can produce significant reduction of body weight without any food consumption or expected toxic effects. Thus, it can contribute to stimulate the hydrolysis of lipids in fat cells, and therefore appears to be a promising herbal supplement for controlling body weight in obesity. However, further scientific evidence is still needed before it can be considered as an alternative drug for obesity therapy²⁰.

Asthisamhari:- Reportedly, it was demonstrated that *Cissus quadrangularis* formulations also produce significant reductions in body weight, body fat, and the levels of total cholesterol and triglycerides, while serum lipids and glucose concentrations were decreased¹⁸. For instance, the combined treatments using *C. quadrangularis* and *Irvingia gabonensis* in a human model were also studied by the

same group¹⁹. It was found that these combined extracts resulted in significant results, such as decreases in body weight, body fat, total cholesterol concentration (plasma and LDL cholesterol), and glucose levels in blood during 10 weeks. Because these extracts could have included not only one of the bioactive compounds (a lead substance), but also not-active compounds (non-lead substances or synergistic players), their distinct molecular mechanisms might involve multi-functional interactions with synergistic effects on the target molecules. Although much effort has been expended to isolate numerous active compounds and identify their chemical.

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Vrikshamla:- *Garcinia cambogia*(GC), a fruit native to south-eastern Asia and Western Africa, has beneficial effects on body weight and fat loss in both experimental animals and human. Its main component is hydroxycitric acid (HCA) which not only inhibits ATP-citrate lyase, the enzyme response for de novo fatty acid synthesis, but also increases hepatic glycogen synthesis, reduces food intake by suppressing appetite and decreases body weight gain. The genus *Garcinia* includes more than 300 species and belong to the family clusiacea. The plant of genus have various applications in pharmaceutical industries. It is also present in some ayurvedic preparations in combination and alone for curing various pathophysiological disorders. It is marketed as Super citrimaxR as a weight loss supplement. It is a calcium, potassium salt of (-)hydroxycitric acid which is isolated from the fruit rind of *Garcinia cambogia*. It also enervated the increase in oxidative stress inflammation, insulin resistance and effect on body weight in developing obese zucker rats. HCA is a highly unstable salt of and therefore extracted as a salt of preferably as calcium or potassium. The plant contains various chemical constituents such as xanthenes, benzophenones, garcinol and plants acids like hydroxyl citric acid, malelic acid, citric acid. The fruit of *Garcinia cambogia* has been used traditionally used in food preparation and cooking as a flavouring agent. It had gathered a lot of attention as natural weight loss aid. The fruit rind of *Garcinia cambogia* combined with salts and other organic acid can help to lower the pH thus it also provides a bacteriostatic effect in curing fish.

Active constituent of *Garcinia cambogia*: The main constituent hydroxyl citric acid of *Garcinia cambogia* has gathered reputation for using as a weight loss aid through two mechanisms appetite suppression and by reducing the body's ability

to form adipose tissue. It inhibits an enzyme that helps to synthesize body fat for storage in adipose tissue. It promotes energy which inhibits lipogenesis and lowers the production of cholesterol and fatty acids. It increases the glycogen level in the liver and increases the body's production of heat by activating the process thermogenesis. In appetite suppression process HCA inhibits the enzyme ATP citrate lyase. It is an extra mitochondrial enzyme which is involved in catalyzing the cleavage of citrate to oxaloacetate and acetyl COA. Finally the availability of two carbon units was limited which is needed during the beginning of fatty acid synthesis and cholesterol synthesis as a result consumed carbon source was diverted to glycogen synthesis in liver. Then a signal was sent to the brain due to its change in metabolic system which results in the serotonin concomitant level. Previously a study was conducted in obese rats which have reported that HCA caused a significant reduction in appetite weight loss, plasma Leptin level, concomitant with an increase in serum serotonin level. Its mechanism also involvement of serotonin for appetite suppression. Serotonin plays an important role in regulation of appetite and feeding behaviour. It was first established in the 1970s that the brain serotonin (5-HT) system was involved in the control of eating. Nowadays molecular pharmacology has become more advanced in the development of selective 5HT receptor ligands. It has clarified the role of 5HT in the regulation of appetite. Hydroxy citric acid is also acts on 5HT ligands as, it interfere with the pathways of 5HT which send signals to brain.²¹⁻²⁵

Camellia sinensis:- Green teas widely used worldwide for prevention of various chronic disorders including obesity. It is the most popular beverage across the world it also has anti-inflammatory and immunomodulatory action. Caffeine and catechins are active ingredients which are responsible for its activity. The leaves of *Camellia sinensis* did not affect promptly on weight reduction. It acts by mechanism of thermogenesis and also stimulates fat oxidation, thus enhancing the metabolic rate by 4% without affecting the heart rate. A study on human concluded that, the active component of green tea epigallocatechin-3-gallate burned more calories as compared to placebo group in men's. Thermogenic effects also play a wide role in controlling obesity.²⁶⁻³⁹

Guggulu (Commiphoramukul):- Vagbhata quotes about the importance of guggulu as the best herb for mitigating medas and pacifying vata. To date, there have been 9 published human clinical trials evaluating the hypolipidemic effect of guggul extracts. However, only 5 studies used a standardized guggul extract (guggulipid), only 2 of these were randomized, and only 1 was placebo-controlled. In the randomized studies, guggulipid reduced levels of total cholesterol by 11%, of

low-density lipoprotein cholesterol (LDL-C) by 12%, and of triglycerides by 15%. Guggulipid received regulatory approval in India in 1987 for use as a lipid-lowering drug, and it is available in the United States as a dietary supplement. Guggulipid is marketed in the United States to maintain normal levels of serum cholesterol, and as part of multiherbal supplements for “heart health,” weight loss, and arthritis. Annual retail sales of guggulipid in the United States increased by 72% in 2002 and accounted for approximately \$1.3 million in sales that year (C. Gardner, SPINS/AC Nielsen, written communication, May 2003).

Researches supporting Ayurvedic principles:-

Infertility and obesity:- Ayurveda says that Obesity causes infertility. The contemporary studies quotes that one of the major contributing factors to the rising trend of male infertility is obesity, said Prof. Sandro Esteves, a reproductive specialist, and director of Androfert, a referral centre for male reproduction in Brazil. The higher the body mass index, the lower the sperm count. The two are inversely proportional and directly linked. In India, 18 per cent of men in the reproductive age are obese, which makes for a huge problem. Prof. Esteves states that even if they are not obese, if they are overweight, their chances of infertility are higher.

The biological clock too, is important for men. “The quality of the sperm decreases once a man hits 45. Also, the older the man is, the greater are the chances of birth defects”. Prof. Esteves also explained the importance of analysing the sperm’s DNA to find out what lay behind infertility. At most infertility clinics, only a semen analysis is done. This checks the sperm count, the motility (ability to move spontaneously) of the sperm and its morphology (form and structure). But even if all these factors are normal, there could be abnormalities in the sperm’s DNA, leading to difficulties in conceiving.

Emotions and obesity:- Emotional eating refers to when people use food as a response to an emotional trigger like boredom, stress, fatigue, tension, depression, anger, anxiety, or loneliness. This makes it impossible for them to remember what true hunger feels like. Instead they eat to comfort and soothe themselves.

Obesity and early puberty:- Girls of all races are entering puberty earlier than ever before, and U.S. research out Monday suggests that obesity may a contributing factor, particularly for Caucasians. Early puberty has been linked to a number of medical conditions, including increased risk of breast and ovarian cancer, as well as high blood pressure and depression. A higher body mass index, or ratio of height and weight, was “the strongest predictor” of early breast development across

all races in the study. African-American girls continued to develop at earlier ages than whites and Asians, as previous studies have also found, though no earlier than was observed in prior studies from the late 1980s and 1990s.

Obesity and obstructive sleep apnea:- There is a definite correlation between very severe obstructive sleep apnea and obese people.” He says that nearly 70 per cent people with OSA were either overweight or obese. In obese people, the extra fat in the neck presses the tube carrying air from the nose to lungs, eventually leading to the obstruction. Women are more prone in post-menopausal period, especially if they have low thyroid hormone.

Early life nutrition and obesity in adult life:- Obesity must be prevented right from the young age. Breastfeeding is the first step and children should have good intake of vegetables. Parents should never offer unhealthy food as rewards to their children. Epidemiological studies in humans and controlled intervention studies in animals have shown that nutrition in early periods of life programs a number of metabolic and physiological functions throughout life.⁴³ In this sense, gestation and lactation are disclosed as critical periods. Continuous food restriction during these stages, for instance, may lead to permanent adaptations with lasting effects on offspring metabolic mechanisms; they may alter the propensity to different chronic diseases, such as obesity and other features of the metabolic syndrome. However, the different outcomes of these adaptations on later health appear to depend on factors such as the type, duration, period and severity of the exposure to energy restriction conditions, and they are, at least in part, gender specific. A better understanding of the factors and mechanisms involved in metabolic programming, and their effects, may contribute significantly to the prevention of obesity.⁴³

Intestinal flora and Obesity:- There are many reasons for obesity, such as lack of physical activity, increased calorie intake, genes, environment and intestinal bacteria. The endotoxin released by the bacterium can activate a gene that helps generate fat and it also deactivates a gene that consumes fat.” Intestinal bacteria play an indispensable role in the genesis and development of chronic diseases, such as obesity, diabetes and coronary heart disease”.

Influence of the microbioma:- Interest has surged in the last years regarding the possible role of the intestinal microbiota as potential novel contributors to the increased prevalence of obesity, metabolic syndrome, and type 2 diabetes. Mechanisms by which the gut microbiome may influence metabolism and energy homeostasis include regulation of energy uptake from diet, interaction with signalling

molecules involved in host metabolism, modification of gut permeability, release of gut hormones, and low-grade, chronic inflammation, the latter being a hallmark of obesity related diseases. For instance, changes in the composition and metabolic function of the gut microbiota in obese individuals have been described which appear to enable the “obese microbiota” to extract more energy from the diet. Additionally, various host pathways, mainly emanating from epithelial cells, have been characterized in the last years that might mediate the effects of microbiota on metabolism, including Fiaf, Ampk, Gpr41, Gpr43, Glp2, and the endo-cannabinoid system, among others.⁴⁰⁻⁴²

Recent advances in microbial DNA sequencing technologies have enabled the application of whole-genome sequencing technologies for metagenomic DNA analysis of complex ecosystems such as the human gut. Dietary factors and caloric intake appear to affect the composition of the gut microbiome, which also appears to be shaped by genetics and other environmental factors. However, this research is still in its infancy. Additionally, most findings in the field of microbiome and obesity are based on rodent studies, and the relevance to human biology requires further investigation. Challenges are to gain a proper understanding of genetic and environmental influences on the microbiota and of the consequences of structural and functional changes within the microbiota on metabo-inflammatory diseases. It will also be important to reveal potential long term consequences of antibiotic therapies at various ages of life, which could contribute to some forms of iatrogenic obesity.

The connections between obesities and associated clinical alterations and pathologies:- Many alterations and pathologies related to diet and lifestyle associate with obesity, including insulin resistance, diabetes, hypertension, dyslipidemias, cardiovascular disease and non-alcoholic fatty liver disease, which together are hallmarks of the metabolic syndrome, but also osteoarthritis of weight and non-weight bearing joints, several types of cancer, neurodegenerative and autoimmune diseases such as Alzheimer’s disease, and others. Biological mechanisms underlying the relationship between obesity and these alterations/pathologies begin to be understood, with inflammatory, oxidative and endoplasmic reticulum stress in critical tissues including the adipose and key humoral mediators playing in general a prominent role. The main challenge is to get further insight into the molecular and cellular mechanisms linking obesity to these different forms of stress, and the later to pathologies, with the aim of understanding the system and developing therapeutics. Obesity is well-defined and classified by the WHO as one of the leading causes of major human chronic diseases.

Main challenges in relation to obesity relate to key aspects including its causes and mechanisms, the physiological processes affected, and possible treatments and preventive measures, and the definition of the main objectives to face for progress in these areas in upcoming years. These objectives can be grouped in 6 main blocks, which are very much interrelated and include many collateral aspects:

- 1) Basic aspects of obesity and the strategies for its control.
- 2) Food and lifestyle as determinants of body weight and its alterations.
- 3) The connections between obesities and associated clinical alterations and pathologies.
- 4) Social challenges in relation to environment, lifestyle and the prevention of obesity.
- 5) Economical and business challenges in relation to healthy food production and the improvement of diet.
- 6) Technological challenges in obesity research and management.

Despite advancement in understanding aetio-pathogenesis of obesity its management is still not at reach. Multiplicity of factors needs individualistic approach in dealing with obese patients. No medical system in the world has so far come up with safe, effective remedies to completely revoke the phenomena of obesity. Global demand for safe and effective remedies from traditional medicines has paramount importance to project the potential of Ayurveda in tackling the world menace. Ayurveda offers safe remedies which comprises of special diet, lifestyle modifications and medical management with drugs and sodhan procedures. It has potential resources of preventing as well as curing the hypernutritive disorder of contemporary period. The life style and dietetic tenets of Ayurveda need to be redefined and brought to the use of present society to prevent the lifestyle disorders which are rampant in the present era.

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