



# A PHYSIOLOGICAL STUDY OF MEDA DHATU W.S.R. TO OBESITY

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## ABSTRACT: -

Obesity is one of the *Santarapanajanya Vyadhi*, originated as a result of deteriorated life style which includes sedentary daily routine and junk food habits. it occurs when the consumption of calories becomes more than its expenditure. it serves as an etiological factor for many diseases. it has reached to the epidemic proportion, affecting majority of the urban population. obesity can be estimated by various scales among which body mass index (BMI) and skin fold measurements are most common. despite the fact that man has created sophisticated machines, medical technology, and powerful medicines, he still lacks proper health. in an effort to succeed people are adopting a poor lifestyle, increasing the risk factors for disease and stress in their lives by indulging in more worldly pleasures and luxury. this is the main cause of the current rise in lifestyle disorders. whereas the primary and underlying cause of many other lifestyle disorders is obesity. in ayurvedic literature, there is a detailed description of obesity by the name of *Sthaulya*, but the material is dispersed and there are conflicting opinions from various *Acharya*. *Ayurveda* treats the condition holistically by addressing Diet, Lifestyle, Medication and *Sodhanakarma*. as a result, the current study includes a detailed review of *Sthaulya* with the goal of illuminating the various management strategies for *Sthaulya* (obesity).<sup>1</sup>

**KEYWORDS:-** *Sthaulya*, *Santarapanajanya Vyadhi* Obesity & Lifestyle Disorders.

## INTRODUCTION: -

Technology has undoubtedly reduced the amount of physical labour required from the nevertheless, it has complicated matters and resulted in the development of lifestyle disorders. obesity is one of these disorders with the highest prevalence in the modern era. in addition to being a dangerous illness in and of itself, obesity also serves as the root cause of other disorders Like Diabetes, Hypertension, etc. obesity is a medical condition where excess body fat builds up to the point where it could be harmful to one's health. since 1975, the prevalence of obesity has tripled. over 1.9 billion adults aged 18 and older were overweight in 2016. over 650 million of these people were obese. it's essential to be familiar with this foe in the fight against obesity. ancient

scholars took note of this problem and described obesity as *Sthaulya* in a number of ways, including *Samhitas*. according to acharya *Bhel* in the 11th chapter of the *Sutrasthana*, "*Samashanaparighaniya Adhyaya*," obesity is primarily the result of *Medo Dhatu Dushti*, along with other complications like foul body odour, excessive sweating, excessive thirst, excessive sleeping, and 20 different types of *Prameha*.

### **ANATOMICAL & PHYSIOLOGICAL STUDY OF MEDA-DHATU: -**

It is unctuous like *ghee* and is known as *Meda Dhatu*<sup>2</sup>, a *Dhatu* that lubricates the body. in *ayurvedic* literature, *Meda Dhatu* is referred to by a variety of synonyms, including *Mamsaja*, *Mamsateja*, *Asthikrit*, *Vapa*, and *Vasa*<sup>3</sup>. after *Mamsa*, *Ahara Rasa* frames *Meda Dhatu*. *Dhatu* is later referred to as *Mamsaja* and *Mamsateja*. *Asthi Dhatu* is also known as *Asthikrit* because it is shaped like *Meda Dhatu*. Omentum is fatty, and fat in the *Mamsa Dhatu* is referred to as *Vasa*, whereas the peritoneum is referred to as *Vapa*. *Meda Dhatu* is obtained from the *Matrij* (maternal) *Garbhkarbhava* during pregnancy.<sup>4</sup>

### **ORIGIN OF MEDA DHATU: -**

When The *Poshaka Mamsa* (muscle tissue nutrients that form the fat tissue) are affected by the *Mamsa Dhatwagni* (muscle tissue tissue fire). the resulting *Meda Dhatu* is then further processed by *Meda Dhatwagni*. this causes *Poshya Meda Dhatu* to form, which feeds the nearby fat tissue. the remaining portion creates *poshaka medo dhatu*, which then creates *asthi dhatu mala*, or *Sveda* (sweat), is also produced during this process.<sup>5</sup>

### **LOCATION OF MEDA-**

Aside from a few locations like the testicles and eyelids, nearly every part of the body contains *Medaodhara Kala*, which is located above the *Mansadhara Kala* and beneath the layers of skin. specially placed in the *Vapavahan* of the belly, which is possibly related to the omentum. additionally, it is deposited as mesentery, pericardium, and superficial fascia. a sufficient amount of *Meda* is deposited around the kidneys. to shield the large blood vessels and the eyes from shocks, it is deposited around these areas. sitting is comfortable thanks to the *Meda* deposited in the pelvic area.

### **PANCHABHAUTIKA CONSTITUTION: -**

The nature of *Medadhatu* is fluid, unctuous, and heavy. additionally, *Meda* is the location of the kapha dosha. therefore, it is obvious that jala () and prithvi () mahabhuta dominate. additionally, given the manner in which it is produced and transformed, a sizeable quantity of teja mahabhuta () is needed to keep it in a fluid state. as a result, the main components of *Meda dhatu* are prithvi, jala, and teja mahabhutas.<sup>6</sup>

## FUNCTIONS OF MEDA DHATU: -

the body's *Medadhātu* serves a variety of purposes. it is primarily in charge of keeping all systems lubricated to ensure their unhindered smooth operation and energy conservation. below is a list of the various roles that *Meda Dhātu* plays.<sup>7</sup> maintains the body's hydration, softness, and oil balance with *snehanam* (lubrication). *swedanam* (sweating)- it regulates sweat production and thus indirectly contributes to maintaining the body's temperature. *drudhatvam* (stability) protects the body from extreme cold or heat while also giving other body organs the strength support they need to function properly by reducing friction and heat generation. the term "*Asthipushti*" (nourishing bone tissue) the body takes on the proper shape when *Meda Dhātu* is properly nourished.

### **MEDOVAHA SROTAS:**

-*Medovaha Srotas* are tiny channels that carry the nutrients that feed *Meda dhātu*. *Acharya Charak* asserts that the *Vrkkau* (kidneys) and *Vapavahana* (Greater Omentum) are the *Mula* (root) of the *Medovaha Srotas*<sup>[8]</sup>, whereas *Acharya Sushruta* claims that the *Vrkkau* (kidneys) and *Kati* (waist) are the *Mula* of the *Medovaha Srotas*.<sup>9</sup> *Avyayama* (lack of physical activity), *Divasvapna* (daytime sleep), *Meda Atibhakshana* (excessive consumption of fatty food substances), and *Varuni Atisevana* (excessive wine consumption) are all risk factors for developing *Medovaha Srotodushti*<sup>10</sup> when the aforementioned *Nidanas* (causes) affect the *Medovaha Srotas*, *Purvarupas* (prodromal symptoms) of *Prameha* (diabetes mellitus), such as *Jatilibhavam Keshesu* (hair matting) and *Madhuryam Asyasya* (sweetness in mouth), may occur. *Kara Pada Suptata Daha* (hands and feet feel numb and burning), dry mouth, throat, and palate (*Mukh Talu Kanth Sosha*), *Alasya* (laziness), *Pipasa* (thirst), *Malam Kaye* (excessive buildup of waste throughout the body, particularly in the tongue, teeth, throat, and palate), excreta adhering to body orifices is known as *Kayah Chhidresu Upadeham*. *Paridaha Suptata Cha Angesu*, which translates to "burning sensation and body numbness," *Bhischa Shatpadpipilika* bee and ant accumulation over the body and urine, abnormal urine, a fleshy odour coming from the body, excessive sleep, and *Nindra Cha Tandra* are examples of *Sariramutrabhisaranamdrowsiness*.<sup>11,12</sup> there are also the effects of obesity, such as *Ayusho hraso* (shorter life span), *javoprodhā* (restricted movement), and *krucchravayata*. reduced sex, *Daurbalayam* (Debility), *Daurgandhya* (Bad Odour), *Svedaabadham* (Excessive Sweating), *kshudatimatram* (excessive hunger), and *pipasati* (excessive thirst). *acharya sushruta viddha* (injury) on *Medovaha Srotas* causes symptoms like *Sweda Agamanam* (excessive sweating), *Snigdhangata* (unctuousness of body parts), *Talu Sosha* (dryness in palate), *Sthula Shophata* marked swelling), and *Pipasa* (profuse thirst), according to him.<sup>13,14</sup>

**The Value of Meda Dhātu in Maintaining Health and Wellbeing:** -A typical person engages in a variety of daily activities to survive. only when the body has the right amount of moisture, lubrication, and unctuousness can all these activities be carried out without difficulty. this promotes the efficiency and protection of the body systems. so long as there is enough *Meda dhātu* in the body, all of this is possible. *asthi* (bones) are held together by *snayu*, which are thought to be metabolic byproducts of *Meda* and are therefore

invariably related to Meda. thus, only when the body's Meda dhatu is in good condition can this be accomplished and locomotor movements be carried out smoothly. a human body must maintain a certain internal temperature in order to perform all essential bodily functions at their peak. if this temperature is out of the ordinary, efforts are made to return it to the previous normal, which is typically accomplished by sweating, as in fever cases. sweat typically serves to hydrate skin and nearby tissues and, when necessary, takes part in the process of controlling body temperature. thus, maintaining skin texture and controlling temperature are just a couple of the crucial processes governed by Meda, which makes it a crucial element for maintaining health and wellbeing. therefore, Meda dhatu is a crucial component of the body's homeostatic system, and without the right quantity and quality, a person cannot function properly.

## DEFINITION:

### WHO-

Overweight And obesity are defined as abnormal or excessive fat accumulation that may impair health. body mass index (BMI) is a simple index of weight for height that is commonly used to classify overweight and obesity in adults. it is defined as a person's weight in kilograms divided by the square of his height in meters ( $\text{kg}/\text{m}^2$ )



Classification	BMI( $\text{kg}/\text{m}^2$ )	
	Principal cut-off points	Additional cut-off points
<b>Underweight</b>	<b>&lt;18.50</b>	<b>&lt;18.50</b>
Severe thinness	<16.00	<16.00
Moderate thinness	16.00 - 16.99	16.00 - 16.99
Mild thinness	17.00 - 18.49	17.00 - 18.49
<b>Normal range</b>	<b>18.50 - 24.99</b>	<b>18.50 - 22.99</b>
		<b>23.00 - 24.99</b>
<b>Overweight</b>	<b><math>\geq 25.00</math></b>	<b><math>\geq 25.00</math></b>
Pre-obese	25.00 - 29.99	25.00 - 27.49
		27.50 - 29.99
<b>Obese</b>	<b><math>\geq 30.00</math></b>	<b><math>\geq 30.00</math></b>
Obese class I	30.00 - 34.99	30.00 - 32.49
		32.50 - 34.99
Obese class II	35.00 - 39.99	35.00 - 37.49
		37.50 - 39.99
Obese class III	$\geq 40.00$	$\geq 40.00$

Source: Adapted from WHO, 1995, WHO, 2000 and WHO 2004.

**SYNONYMS:** -Over Weight, Enormity, Oily Dropsy, Plumpness, Adiposity.... Etc.

## SPECIFIC CRITERIA FOR DIAGNOSIS OF OBESITY:

-Normally obesity can only be detected by looking at the patient, thus it's important to know how lethal it is. the final form of obesity may only be definitively determined by many forms of diagnosis, making it very difficult to distinguish between the natural state of obesity and the distorted condition. modern medical science has described a number of parameters, including the following.

In nature, middle aged men are typically 12% fat and middle-aged women are typically 12% fat. natural fat content is 25%; however, when it reaches 20% in men and 30% in women, it is referred to as obesity.

## OBESITY CLASSIFICATION: -

Classification of obesity in modern medical sciences according to numerous criteria micro pathology based on malignancy based on aetiology, for example (histopathology) among other things, are presented....

1. On the basis of causes; -

- 1). Exogenous-overnutrition
- 2). Endogenous-endocrine gland pathology.

2). On the basis of severity: -

- i.) Mild
- ii.) Moderate.
- iii.) Pravar (gross or severe)

3.) On the basis of histopathology

- I.) Obesity
- ii.) Hyperplastic obesity.

4.) On the basis of waist to hip ratio.

- I.) Android obesity
- ii.) Gynoid obesity.

4.) On the basis of etiological factors

- i.) Durum's disease
- ii.) Physiological obesity
- iii.) Water salt retention obesity





## DIAGNOSIS OF OBESITY-

Although there is currently no good clinical classification for obesity, some information that is through to be crucial to understanding the origins of obesity is provided. Because obesity which results from an inappropriate balance between calorie intake and expenditure, is caused by this diagnosis. These diagnoses typically have internal and secondary exterior cause. Internal cause includes endocrine variables and any aberration in the body natural process of metabolising salt and water. Overnutrition is the root cause of an excessive calorie diet, overeating, and other undesirable behaviours.

A part from these two reasons, there are other diagnosis which are the reason for the increase in body weight, which will be included in the classification under the name of other reason thus the diagnosis of obesity can be divided into three categories.

### **Modern medical science states the becoming obesity: -**

(Obesity pathogenesis) according to the fundamental principles of physiology, greater functional demands prompt cells to multiply (hypertrophy) or proliferate (hyperplasia) depending on the case. Because of this, the size of the body's adipose cell is larger in extremely obese individuals and increases in population due to function demand brought on by age or sex -specific factors such hormonal changes, mental factors side effect of treatment for other diseases etc. Even after inpatient treatment, there may be a noticeable in the quantity of freshly created cells. When hypertrophy happens, it often so in does so in a young adult where the number of cells increases very little. The size of those organs that serve as flour storage locations. Such as sub tissue, sacs etc. Typically increases. Even in organs where there is no fat in a healthy state, excessive fatness causes build-up of fat. *Meda* over abundance accumulation, reduced lipid mobilisation and lower lipid utilisation these three factors account for the majority of these

- 1.) Excess accumulation
- 2.) Diminished lipid mobilization
- 3.) Diminished lipid utilization.

## DISCUSSION

The seven dhatus' emergence and exhaustion are connected. Therefore, it is essential to maintain all of the dhatus in their ideal quantities by eating a sufficient diet in order to prevent the condition of *Sthaulya*, rather than focusing solely on the factors affecting the quantity of *Meda Dhatu*. The likelihood of future obesity is higher in children of obese parents. They need to be regularly checked for signs of obesity and special care needs to be taken when creating their diet plan. By burning extra fat, enhancing circulation, encouraging sweating, clearing obstructions in many channels, influencing endocrine secretions, and boosting lung capacity, yoga and *Pranayam* help to control obesity. Yoga, *Pathya Aahar-Vihar*, and *Langhan Dravyas* introduction and the *Yukti* of administration should be taken into account when performing the *Dravyas* that were previously mentioned. It is necessary to follow the *Padanshik* method when accepting new schedules and rejecting ones that are not necessary. The risk factors for obesity, such as diabetes, hypertension, and depression, should be avoided at all costs. Being a lifestyle disorder, obesity is easily beaten if fought with tenacity and persistence.

## CONCLUSION

In addition to giving the body solidarity, *Meda Dhatu* engaged in body oil work. The energies are gathered and stored by *Meda Dhatu* for use by the body later on. *Ashryaashrayi Bhav* causes the *Kapha Dosha* to assist *Meda Dhatu*. For the *Asthi* and *Majja Dhatu* to develop or be created, *Meda Dhatu* is essential. The adipose tissue provides bone support and body oil. The arrangement of the body's important structural elements, *Sira* and *Snayu*, depends on the right *Meda Dhatu*. Sweating is an interaction that gives the skin its delicacy, removes flaws from the body through the skin, and regulates internal heat. *Sweda* creation is also dependent on *Meda Dhatu*.

## REFERENCES

1. [https://en.m.wikipedia.org/wiki/abnormal\\_basal\\_metabolic\\_rate](https://en.m.wikipedia.org/wiki/abnormal_basal_metabolic_rate).
2. Shastri s n, vidyotini hindi commentary, charak samhita.
3. a textbook of *Kriya Sharira* of prof. Dr. Subhash ranade & prof. Dr. R. R. Deshpande, 2nd part, reprint – 2014, *Chaukhamba Sanskrit Pratishthan*, delhi, p – 183
4. *Charak Samhita* of agnivesa with ayurved dipika hindi commentary, by vd. Harish chandra singh kushwaha, 1st part, chaukhambha orientalia, varanasi, Sarira Sthana, chapter 3, 2016, verse 6, p 770
5. *Charak Samhita* of Agnivesa with Ayurved Dipika Hindi commentary, by vd. Harish chandra singh kushwaha, 1st part, chaukhambha orientalia, varanasi, *Chikitsa Sthana*, chapter 15, 2018, verse 15-16, p 382-383-384
6. *Ashtanga Hrudayam (Sutrasthanam Adhyaya 12 Sutra 3)*

7. *Sushruta Samhita (Sutrasthanam Adhyaya 15 Sutra 5*

8. *Charak Samhita of Agnivesa with Ayurved Dipika Hindi Commentary*, By Vd. Harish Chandra Singh Kushwaha, 1st Part, *Chaukhambha Orientalia*, Varanasi, *Vimana Sthana*, Chapter 5, 2016, Verse 8, P 631.

9. *Sushruta samhita of maharshi sushruta with nibandh sangraha of dalhanacharya and nyayachandrika of gayadasacharya*, by dr. Keval krushna thakara, 2nd part, reprint - 2017, *chaukhambha orientalia*, varanasi, *sarira sthana*, chapter 9, verse 12, p 136-137.

10. *Charak Samhita of Agnivesa with Ayurved Dipika Hindi commentary*, by vd. Harish chandra singh kushwaha, 1st part, *Chaukhambha Orientalia*, varanasi, *Vimana Sthana*, chapter 5, 2016, verse 16, p 633.

11.. *Charak Samhita Of Agnivesa with Ayurved Dipika Hindi Commentary*, By Vd. Harish Chandra Singh Kushwaha, 1st Part, *Chaukhambha Orientalia*, Varanasi, *Nidana Sthana*, Chapter 4, 2016, Verse 47, P 553.

12. *Parameswarappa's Ayurvediya Vikrti – Vijnana & Roga Vijnana* of dr. P. S. Byadgi, volume 2, *chaukhambha publications*, chapter 41, 2013, p 359.

13. *Charak Samhita of Agnivesa with Ayurved Dipika Hindi Commentary*, By Vd. Harish Chandra Singh Kushwaha, 1st Part, *Chaukhambha Orientalia*, Varanasi, *Sutra Sthana*, Chapter 28, 2016, Verse 15, P 475.

14. *Sushruta samhita of maharshi sushruta with Nibandh Sangraha of Dalhanacharya and Nyayachandrika of Gayadasacharya*, by dr. Keval krushna thakara, 2nd part, reprint - 2017, *Chaukhambha Orientalia*, varanasi, *Sarira Sthana*, chapter 9, verse 12, p 137

