

REVIEW ARTICLE

A Meticulous Sight on Agni and Obesity and Its Interrelation

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ABSTRACT

Ayurveda can be defined as a system, which uses the inherent principles of nature to maintain health in a person by holding the individual's body in perfect equilibrium with nature. *Ayurveda* has described an important factor of digestion & metabolism in our body as *Agni*. Healthy *Agni* helps to promote steady weight & in other side when *Agni* is in impaired condition weight deliberately changes. Health, sturdiness, strength & life itself depends on the digestion. Usual activity of digestion potential maintains good trim of health while unusual activity leads to illness. A person with good digestive potential will have good appetite; can digest even heavy food without having symptoms of indigestion. Imbalance of *Agni* (digestive fire) leads to begin obesity. In *Ayurvedic* texts, '*Charakacharya*' has described eight '*Nindya Prakraties*' (undesirable constitution) according to the body constitution. Among them he also mentioned obesity. Obesity is described as '*Medoroga*' in *Ayurved*. It is said that it is comparatively easy to help an underweight person, rather than an overweight person. The overweight problem can be due to an actual increase in the fat component (*Meda Roga*), or it can be due to malfunctioning. These, accordingly, will need different approaches. In very few cases it can be an offshoot of other metabolic disorders. It is clearly indicated in classical texts. So, this study revealed any relationship between *Agni* & *Sthoulya Roga* if any & for the prevention of this disease one should follow the daily regimens.

Key words: *Agni*, imbalance, *Sthoulya*, *Meda-Roga*, prevention, metabolic disorders.

INTRODUCTION

Ayurveda is a clinical science & the concept described in it has their respective practical utility. One of the valuable perceptions of *Ayurveda* is *Agni*. Being the biological fire that governs metabolism, *Agni* encompasses all the changes in the body and mind from the dense to the more subtle. Such changes include the digestion and absorption of food, cellular transformations, assimilation of sensory perceptions and mental and emotional experiences. *Agni* therefore covers whole sequences of chemical interactions and changes in the body and mind. Digestive abilities being related to the strength of *Agni*. *Agni* converts food in the form of energy, which is responsible for all the vital functions of our body. *Agni* is key factor in transformation of consumed *Ahara Dravyas* of *Vijatiya* (heterogeneous) nature to *Sajatiya* (homogenous) nature. *Agni* is derivative of *Tejas* (fire) *Mahabhuta*, it carries metabolic transformation in which the inherent

features is changed. A balanced *Agni* therefore is vital for health^[1]. The strength of the body to resist disease and also its physical strength are directly related to its heat energy determining the metabolic processes of the body. Disturbances to *Agni* are usually the chief causes of disease.

The concept of fire is critically important to our overall health. *Agni* is the force of intelligence within each cell, each tissue, and every system within the body. Ultimately, it is the discernment of *Agni* that determines which substances enter our cell and tissue, which substance should be removed as waste. In this way, *Agni* is the guard of life. *Ayurveda* identifies a vast range of functions for which *Agni* is directly responsible, but it also teaches us that impaired *Agni* is at the root of all imbalances and diseases. Hold on. Let's just let that drop in for a moment: impaired *Agni* is at the root of all imbalances and diseases! This resource is meant to help you understand why

Agni is so important, to learn to recognize the signs and symptoms of both healthy and impaired Agni, and to direct you to some practical tools for tending to your own Agni. The nation now has to deal with a new breed of developed world that is obesity. We can utilize this approach in the prevention and management of *Meda-Roga*, especially in the case of *Manda* or *Vishma* Agni persons, & make life pleasant & disorders free.

AIM AND OBJECTIVE

1. To work on the concept of Agni in context of Obesity.
2. To confirm & establish the interrelationship between Agni & obesity.

MATERIALS AND METHODS

1. Only textual materials have been used for this study, from which various references have been collected.
2. Modern texts & related websites have also been searched.

CONCEPTUAL STUDY

Concept of Agni:

Agni converts food in the form of energy, which is responsible for all the vital functions of our body. In Brahmasutra, Agni has been meant to be a sign of life in the body. Great value of Agni has been shown by classical literature. Acharya Yasaka has given the etymology of the term "Agni," which is as follows: Agni = A + G + Ni. The word "A" denotes root "I," meaning "to go"; "G" denotes the root "Agni," meaning "to glitter" or root "Agni," meaning "to burn" and "Ni" means "to carry."

Shabdakalpa Druma, 61 synonyms of Agni has been compiled. These synonyms help in explaining the nature and functions of the Agni, e.g., *Vaishvanara*, *Sarva Paka*, *Tanoonpata*, *Amivachatana*, *Damunasa*, *Shuchi*, *Vishwambhar*, *Rudra* etc.

SITE OF AGNI:

Grahni, which is the site of Agni is so called because of its power of restrain of food. It is located above the umbilical region, and is supported and nourished by the strength of Agni. Normally, it restrains the downward movement of undigested food and after the digestion; it releases the food through the sides of its lumen. In the abnormal condition, when it gets vitiated because of weakness of Agni, it releases the food in undigested form only.

The sixth *Kala* is called *Pittadhara –Kala* situated in between *Amashaya* and *Pakvashaya* considered as the site of Agni.

Types of Agni:

Agni is unnumbered because of its presence in every single *Dhatu Parmmanu* (cell) of the build. But, index of the number of Agnis varies in various classical *Ayurvedic* texts, as shown below

- *Charaka* has indicated about 13 Agnis. *Jatharagni* – 1, *Bhutagni* – 5, *Dhatvagni* – 7^[2].
- *Sushruta*, has indicated (5) Agnis viz. *Pachakagni*, *Ranjakagni*, *Alochakagni*, *Sadhakagni* and *Bhrajakagni*. However, there is an indirect reference of five *Bhutagnis* underlying in the brief description made to the transformation of food stuff^[3].
- *Vagbhata* has described different types Agni, viz. – *Bhutagnis* –5, – *Dhatvagnis* –7, –*Dhoshagni* –3 and –*Malagni* –3.
- *Sharangadhara* has recognized five pittas only (*Pachak*, *Bhrajak*, *Ranjak*, *Alochaka* and *Sadhak*)^[4]
- *Bhavamishra* has followed Acharya *Charaka* and *Vagbhata*^[5].

Agni has been divided into 13 types according to the function and site of action. These are:

1. *Jatharagni* – one Agni present in the stomach and duodenum.
2. *Bhutagni* – five Agni from five basic elements.
3. *Dhatvagni* – seven Agni present, one in each of the seven *Dhatu*s.

Accordingly, they are classified into three groups, namely *Jatharagni*, *Bhutagni* and *Dhatvagni*

JATHARAGNI:

Agni in our body is generally called as *Jatharagni*, which is considered to be the life of a living being^[6]. The metabolism of all the tissues of the body depends upon the *Jatharagni*. *Jatharagni* is also called as *kayagni* (that which is present in the body). The functional variations of digestive power can only be inferred by the digestive capacity of the individual. Agni is classified into 4 according to *Dosha* predominance^[7].

1. *Samagni*: *Samagni* is considered to be the normal Agni, which denotes the equilibrium of *Tridoshas* and a healthy digestive system.

2. *Vishamagni*: food gets digested normally on some occasions and poorly digested in other occasions though the food is taken normally. This occurs in case of predominance of *Vata*. Persons suffering from this type of Agni are more prone to *Vata Vyadhis*.

3. *Teekshanagni*: the person suffers from excessive hunger and thirst and is more prone to *Pitta* diseases as it occurs when there is predominance of *Pitta*.

4. *Mandagni*: the digestive power is very poor, that the person cannot digest even a small quantity of food. This type of Agni occurs when there is predominance of *Kapha*. Persons with this type of Agni are more prone to *Kapha Vyadhis* (eg *Meda-Roga*).

- *Mandagni* = Hyposecretion of digestive enzymes

- *Triksnagni* = Hypersecretion of digestive enzymes Pathological State of Agni

- *Vishmgni* = Irregular secretion of digestive enzymes

DHATWAGNI:

All the seven *Dhatu*s (seven element tissues of the body) contain their own *Agni* to metabolize the nutrient materials supplied to them through their own *Srotas*.

1. *Rasagni* present in the *Rasa Dhatu*.
2. *Raktagni* present in the *Rakta Dhatu*.
3. *Mamsagni* present in the *Mamsa Dhatu*.
4. *Medagni* present in the *Meda Dhatu*.
5. *Asthyagni* present in the *Asthi Dhatu*.
6. *Majjagni* present in the *Majja Dhatu*.
7. *Shukragni* present in the *Shukra Dhatu*.

Each *Dhatvagni* or the bioenergy present in each *Dhatu* synthesizes and transforms the essential *Rasa Dhatu* required for that particular *Dhatu* or cell from the basic nutrients present in the *Anna Rasa* or essence of the diet that we consume. Each *Dhatvagni* has got a specialty to synthesize and transform the constituents suitable to its particular *Dhatu*. This action is a sort of selective action. *Acharya Charaka* has mentioned the fact that that the 7 *Dhatu*s that are a support of the body contain their own *Agni*, and by their own *Agni* they digest and transform the materials supplied to them to make the substances alike to them for assimilation and nourishment [8].

Location of Jatharagni:

Grahani is the location where *Jataragni* is situated and hence called as *Agniaashaya* (the one that holds *Agni*). It is called *Grahani* since it holds

the food for digestion. *Ayurvedic* scholars have universally accepted that the *Dhatu*'s Role of *Agni* in formation of *Dhatu*s: all the (tissues) are nourished one after another from first *Dhatu* (*Rasa*) to the seventh *Dhatu* (*Sukra*) and food is the main source for the nourishment of all the *Dhatu*s. Digestion of food is important as transformation of *Dhatu*s depends on proper digestion of food. *Dhatu*s play an important role in maintaining the equilibrium (health) of the body. Hence digestion (*Agni*) has a vital role in the proper transformation of *Dhatu*s. *Agni* is praised as God itself in *Ayurveda*. *Agni* is subtle in nature and transforms the food substance sun unexplainably to suit the physiological and psychological requirements of the individual. Maintenance of health depends upon the power of digestion, as proper digestion of food only can form proper formation of seven *Dhatu*s and *Tridoshas*, which are the composition of the body. The food that we take should be properly digested by the power formation of the composition of the body. The food that we take should be properly digested by the power of digestion – the *Agni* that could help in proper formation of the composition of the body. Improper digestion will lead to improper formation of *Dhatu*s, which further lead to many diseases in the body. Moreover, if digestion is good, only then proper assimilation and absorption of food can happen. In case of any disease the power of digestion is taken into account for proper assimilation and absorption of medicine that is administered, to serve the purpose. Hence *Agni* is important in every individual for healthy long life.

CONCEPT OF OBESITY

Sthaulya is included under eight undesirable conditions *Ashtau Nindita*, *Shleshma Nanatmaja*, *Samtarpana Nimittaja*, *Atinindita*, *Ati Brihmana Nimittaja* and *Bahu Dosha Janita Vikara* [9].

Moreover *Sushruta* has emphasized on metabolic disturbances (*Dhatvaagnimandya*) in the etiopathogenesis of *Sthaulya* [10]. The patient of *Sthaulya* exhibits very strange phenomenon. Their appetite is excessive and whatever they eat is quickly digested, which indicates hyperfunctioning of the *Jatharagni*. Besides this, the patient suffers from laziness, may be due to under supply of energy, which may be due to hypofunctioning

of *Bhutaagni*. Further *Dhatvaagni* also seems to be disturbed, as in *Sthaulya* patient mainly *Medo-Dhatu* is formed and there is deficiency of

other *Dhatu*. Hence, it can be inferred that in *Sthaulya*,

Jatharaagni is *Tikshna*, *Bhutaagni* is *Manda* and *Dhatvaagni* is disturbed in their respective functions. The oldest metabolic disorder is *Sthaulya* (obesity). *Sthaulya* (obesity) is demoralize the society for social as well as medical reason.

As per *Bhavaprakash*, a person having heaviness and bulkiness of the body due to excessive growth, especially in abdominal region is termed as *Sthula* and the state of *Sthula* is called as *Sthaulya* ^[11]. According to modern concept 'Obese' means 'Extremely fat' whose Synonym is fat. On the same case Obesity means "Abnormal amount of fat". The word Obesity is derived from Latin word "Obesus" from "Ob" by reason of and "endo" I eat which means having eaten.

DEFINATIONN OF STHAULYA

Maharshi Charaka was the first person to give the appropriate and precise definition of *Sthaulya*. He defined *Atisthaulya* as, a person who on account of the inordinate of *Meda* & *Mamsa*, having Pendulous Buttocks, Abdomen and Breasts; whose increase bulk is not matched by a corresponding increase in energy. In other words the person is called as over obese, due to excessive increase of fat and muscles, has pendulous buttock, abdomen & breast and suffers from deficient metabolism and energy ^[12].

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 & obesity in adults. Few years' hindmost National Institute of Health Consensus conference defined Obesity as BMI greater than 27kg. /m². But now a day Obesity is defined as BMI $\geq 25\text{kg/m}^2$.

Overweight 25-29.9 kg/m²

Obesity (class-1) 30-34.9 kg/m²

Obesity (class-2) 35-39.9 kg/m²

Obesity (class-3) > 40 kg/m²

It is defined as a person's weight in kilograms divided by the square of his height in meters (kg/m²). (WHO) ^[13]

The WHO definition is:

- A BMI greater than or equal to 25 is overweight.
- A BMI greater than or equal to 30 is obesity.

Ark defined Obesity as an abnormal growth of adipose tissue which is in three ways:-

(a) Hypertrophic Obesity – Enlargement of fat cell in size.

(b) Hyper plastic Obesity – Increase the no. of fat cells.

(c) Combination of both.

This is a condition of excessive accumulation of fat in fat depots. This is an important nutritional disorder in the rich communities of the world and is not a problem in our country. ⁽¹⁴⁾ Obesity, are increasing to epidemic proportions globally. There are 400 million clinically obese adults worldwide. The global impact of these disorders is immense in terms of human suffering and economic burden. Obesity increases the likelihood of various diseases, particularly heart diseases, type 2 DM, obstructive sleep apnea, certain types of cancer, and osteoarthritis. Obesity is most commonly caused by the combination of overeating, excessive intake of heavy or cold food and drinks, oversleeping, lack of exercise, frequent snacking, eating processed food and leftovers, eating while multi-tasking and eating food that is not suitable to one's body type, although a few cases are caused primarily by genes, endocrine disorders, medications and psychiatric illness. Evidence to support the view that some obese people eat little yet gain weight due to a slow metabolism is limited. On average, obese people have greater energy expenditure than their thin counterparts due to the energy required to maintain an increased body mass.

Obesity is a leading preventable cause of death worldwide, with increasing rates in adults and children. Authorities view it as one of the most serious public health problems of the 21st century. Obesity is stigmatized in much of the modern world (particularly in the Western world), though it was widely seen as a symbol of wealth and fertility at other times in history and still is in some parts of the world. In 2013, the American Medical Association classified obesity as a disease.

Interrelationship between obesity and Agni:

Ayurveda is 5000 year old and has a holistic approach to life. In *Ayurveda*, obesity is regarded as *Medoroga*, a disorder of *Meda Dhatu*, which includes fat tissue and fat metabolism. According to *Ayurveda* obesity begins with imbalance of *Doshas* (*Vata*, *Pita*, and *Kapha*), an imbalance of *Agni* (digestive fire), an imbalance of the *Malas* (waste products) or an imbalance of *Shrotas* (microcirculatory channels). This collection of imbalances then interferes with the formation of

tissues or *Dhatu*s and leads to a tissue imbalance that we experience as excess weight. Classics perspective, the key cause is found in lifestyle and diet choices that disrupt balance. Views weight imbalance and obesity as something that should be corrected before it can contribute to other health problem.

Ayurveda word for digestion and metabolism is *Agni*. *Agni*, when loosely translated means fire. It actually signifies something much than just fire & includes the idea of a precise & powerful functioning intelligence. *Agni* has remarkable transformative qualities. All the food we take in must be transformed into that which can be made useful by the body (nutrients) & that which is not needed (waste). The nutrients, or most refined products of our *Agni*, are used to create the body's tissues (*Dhatu*s).

Manda Agni:

In which the *Dhatu*'s (tissue elements) are stated to undergo *Vridhi* (increase, growth or hypertrophy) is comparable to hypo metabolism, usually associated with, a) hypo-thyroidism , b) Simmonds disease, hypo-metabolism associated with hypo-thyroidism is stated to occur due to low thyroidism availability. It will be recalled that thyroxin activates cellular oxidative process throughout the body. Thus, in the condition, under reference, there is seen to be a reduction in the oxidative reactions & the basal metabolic rate has been shown to fall to – 25. It exhibits the following symptoms:- the development of myxedema, reduction the mental & bodily vigor, abnormal thickening of the skin, as if much water has been accumulated in it- oedema *Shotha* which latter leads to an increased body-weight, since less of food is burnt in the cells & much of it is stored up as fat – a condition which closely resembles the description of *Medo-Vridhi*.

The Savage Cycle:

There are seven *Dhatu*s, and they are created sequentially. The creation of *Dhatu*s is an ongoing complex process. The key word is sequential. If at any stage there is an imbalance, this disrupts the whole sequence of tissue formation. The *Shrotas* or channels play a big role, because they carry the information required to properly form the tissues step by step. If blockages occur in the *Shrotas* due to toxins (*Ama*), an imbalance starts. According to *Ayurveda* to maintain balance and health strong *Agni* and clear *Shrotas* are essential. From *Ayurvedic* perspective the cause of weight gains is

cyclical. It begins with balance reducing choices in diet and lifestyle that weaken the digestive fire, which in turns increases toxins, clogging the communication channels *Shrotas* and thereby disrupting the formation of tissues. The poorly formed tissue layers increases *Meda Dhatu* and an imbalance in *Kapha Dosha*. This in turn increases accumulation of toxins (*Ama*), which leads to imbalance in *Meda Dhatu*.

Accumulation of *Ama* in *Shrotas* causes an imbalance in naturally-flowing *Vata* energy. Restricted or imbalanced *Vata* energy ends up increasing *Agni* –the digestive fire–leading to an increase in appetite and thirst. This leads in turn to an increase in *Kapha Dosha* and *Meda Dhatu* and the whole cycle starts again.

To break the cycle, the *Ayurvedic* expert determines the unique nature of the individual (*Prakriti*) and the nature of imbalance (*Vikriti*). The essence of recommendation is generally comes down to addressing a few core issues: strengthening digestion (balance *Agni*), removing *Ama*, improving dietary habits and adjusting inappropriate daily routines for which *Agni* stables so that *Ahara Pachana* occurs properly without any hurdle due to *Agni Vikriti*.

DISCUSSION

Ayurveda takes into account an individual in his entirety & advices to follow daily regimens & adopt fixed rules conduct of life accordingly. But today's irregular & fast lifestyle, irregularities in diet, sleep, high stress levels at the workplace & emotional factors can enhance indigestion factor which leads to metabolic disorders like overweight. It occurs due to deficiency in quality & quantity of digestive juices, which is termed as *Mandagni* (deficient digestive fire). Obesity is a complex disorder involving an excessive amount of body fat. Obesity isn't just a cosmetic concern. It increases your risk of diseases and health problems such as heart disease, diabetes and high blood pressure.

In *Ayurvedic* compendia, relation between *Meda-Roga* & *Agni* is not quoted directly as in *Manda* or *vishma Agni*, if it quoted indirectly (*Anukta*) elsewhere in *Ayurvedic* texts then it should be enlightened. Hence the concept of *Agni*, *Shoulya* its inter-relation is vital factors which are to be studied in detail for wellbeing of a person. 'Ahara' as most common pathogenic factor for *Medovridhhi*. On the other hand *Ama Dosha*. Because of obstruction of *Srotas* by *Meda*, the *Vata* moving mainly into stomach, whips up the

Agni and absorbs the food. The obese person digests food speedily and craves for food inordinately. Over eating produces more *Upadana Rasa* which causes over growth of *Medo Dhatu*, leads to *Sthulata*. *Aama Rasa* is produced due to *Kapha Vardhaka Ahara, Adhyasan, Avyayama, Divaswapna*. The *Madhur Bhava Ama Rasa* moves about within the body. The *Snigdhanasha* of that *Ama Rasa* causes *Medo Vriddhi*, which produces excessive stoutness. Following points can be concluded on the basis present article.

- *Sthaulya* is a metabolic disorder, described by *Charaka* in *Astauninditiya* chapter. Habits of junk food, sedentary life style, *Achintanata, Diwaswapna* etc. along with genetic predisposition play a major role in etiopathogenesis of *Sthaulya*.

- One more thing cause of obesity is changing now: Increasing stress, dependability on machine, faulty dietary habits are becoming the cause of obesity.

- *Sthaulya* is a *Dushya* dominant disease.

- Etiological factors mainly vitiate *Kapha-Meda*. This vitiated *Meda* obstruct the path of *Vata* and causes its *Avarana* which results into provocation of *Vata*. Thus remaining in the *Kostha*, *Vata* causes *Atikshudha* which is the major cause of *Sthaulya*.

- *Meda Dhatvagni Mandhya* leads to excessive *Meda Dhatvagni Mandhya* leads to excessive formation of improper *Meda Dhatu* and ultimately *Sthaulya*.

-For preventive measures mindful full eating, *Agni Vardhakabhav Dravya* in food, free & good thoughts, exercise so that *Agni* remains normal & activity of biological fire remains helpful for average weight. In order to be healthy and increase the digestive power (*Agni*) while losing weight, the following steps should be followed: Eat according to your body constitution, eat fresh seasonal fruit, from all this *Agni* is helpful to built new *Dhatu's* & give strength. For *Agni* level *Yoga* helps to attain energy level & helps to lose weight. Above all, people need a sense of his self awareness.

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