

## AGNI: PRIME FACTOR FOR HEALTH AND DISEASE ORIGIN

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### Abstract

Agni is the digestive and metabolic fire of the body. Ayurveda emphasises that all the diseases are the result of weak state of Agni. Improper functioning of Agni leads to various gastrointestinal disorders as well as various metabolic disturbances. Therefore, main principle of treatment of all diseases as per Ayurveda is to restore and to strengthen the Agni. The aim of this article is to review the important role Agni plays in managing the health of a healthy individual as well as in interpreting the disease process and planning the line of management of a disease. A closer view leads to a conclusion that vitiated Agni and ama, the unwanted by-products of digestion and metabolism forming and accumulating in body of a patient with weak Agni are the root cause of disease genesis. Thus restoring the same is the key to wellness.

**Key words:** Agni; Ama; Digestion in Ayurveda; Metabolism.

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## INTRODUCTION

In Indian ancient literature, man is considered a replica of the universe. Whatever is found in the universe is present in human body also. This living body which is made up of Panchamahabhuta (five fundamental categories of matter) always undergoes 'wear and tear' phenomenon because of essential daily activities. In other words, two processes are continuously going on continuously in our body- Chaya (Anabolism) and Apachaya (Catabolism). Their balance keeps dhatu (basic tissues) in equilibrium and keeps diseases away. For this constant process of change either for yielding energy (catabolism) or synthesizing tissues (anabolism), an inherent factor exists, termed as Agni. It is responsible for all biochemical transformations in the body. It is the prime and ultimate factor in the process of maintenance of life.<sup>[1]</sup> Concept of Agni is one of the basic principles of Ayurveda.

### Physiological aspect of Agni

Agni literally means a factor which is capable of penetrating into minute spaces or which brings changes in a substance. It comprehends various factors which participate and regulate the course of digestion and metabolism or any transformation in the tissue of an organism. The term metabolism (literally means 'change') is used to refer to all the chemical and energy transformations that occur in the body, which is nothing but the function of Agni.<sup>[2]</sup> Agni is a form of energy which is produced by various organelle under influences of many exogenous and endogenous factors to yield energy either to store (growth/anabolism) or expand (function/catabolism) for the purpose of survival of human being.<sup>[3]</sup> So, all the functions attributed to the Agni can be summed into two aspects - Dhatu nirmana (tissue formation) and Dhatu karma (tissue function). Where the first is storage of energy, synthesis or anabolism for growth and the

second is of yielding the energy by breakdown or catabolism.<sup>[4]</sup> Agni implies or indicates a form of energy and it is always a functional unit, not a structural one.<sup>[5]</sup>

Pittadhara kala situated between amashaya and pakvashaya (area between pylorus to ileocecal region) is considered as the site of Agni.<sup>[6]</sup> This anatomical location is known as Grahani. It is nourished and supported by Agni, so it gets vitiated when there is low strength of Agni.<sup>[7]</sup> In the skeleton of Dosha Dhatu Mala theory of Ayurveda, the functions of Agni are attributed to Pitta dosha. Pitta acts as substratum for Kayagni. Pitta is the factor, which regulates all thermodynamic, chemodynamic (enzymes & hormones) activities in the body, in which functions of Agni are a part. Agni has got similar functions to that of Pitta in aspects of digestion and metabolism. Acharya Marichi<sup>[8]</sup> has also emphasized that Agni itself in the form of pitta gives rise to favorable or untoward outcome in the body as per its normal or abnormal state but Chakrapani<sup>[9]</sup> has clarified that the above statement only refers to the phenomena of heat associated with Pitta. Also, Agni in delivering its functions is not only under the influence of Pitta, but also of other doshas and factors. Samana vata has got predominant role in regulating Jatharagni and its moieties in the entire process of digestion, absorption and metabolism.<sup>[10]</sup> Hence Agni is to be considered as a distinguished factor.

Agni is basically divided into three categories: Jatharagni, Bhutagni and Dhatvagni. Jatharagni is also named as Kayagni, Kosthagni, or Pachakagni. It is the Agni located in gastrointestinal tract and makes the digestion of food taken followed by absorption of saarabhaga (nutrients) through intestinal villi and mucosa to enter into lymph or blood, and elimination of kitta bhaga (mutra, purisha/urine, stool) in the process. It comprehends various digestive chemicals and enzymes produced in or poured in the gastrointestinal tract which participate in the

course of digestion and absorption.<sup>[11]</sup> Unless the saarabhaga produced by jatharagni is qualitative, it will not be suitable for further process of Bhutagni and Dhatvagni paka whereby their function get disturbed. Hence Jatharagni is important for better functioning of other Agni in the body.<sup>[12]</sup> According to its performance of digestion as per influence of Tridosha, four functional states of Agni have been envisaged.<sup>[13]</sup> Due to dominance of kapha, when Agni is unable to digest even a small quantity of easily digestible food can be called as Mandagni. The state of Agni influenced by pitta dosha is Tikshnagni. Here, even a very heavy diet is digested in a short span of time again leading to hunger. When action of Agni is erratic and irregular due to predominance of vata dosha, it is referred as Vishmagni. State of Agni due to equilibrium of three dosha can be taken as Samagni. It represents normal functional state of Agni. Only Samagni is the physiological state while remaining three are the abnormal states of Agni leading to various disorders.

Bhutagni, with the help of Jatharagni makes exogenous food components to endogenous form for assimilation. Bhutagni ansha already exist in the panchbhautika aahara (diet) itself whereas their action surfaces after subjecting to Jatharagni in the body. Hence, the essential factors supplemented through food for synthesis of this panchbhautika sharira (human body) can be considered as Bhutagni amsha like vitamins, essential fatty acids, and essential amino acids.<sup>[14]</sup> Bhutagni function starts after absorption i.e. portal circulation to liver and before assimilation by delivering asthaya dhatvamsha (precursors of dhatu) into circulation through hepatic vein. Hence liver is considered as centre of Bhutagni functions.

Agni, by means of which ahararasa (nutrient molecules of food) undergoes further transformation till it takes status of particular dhatu is termed as Dhatvagni. These Agni are controlled and regulated by Jatharagni.<sup>[15]</sup> They are seven in number handling

mechanism of seven dhatu. Their functions have two aspects i.e. synthesis of new protein (anabolic) and to yield energy for tissue function (catabolic). Hence Dhatvagni are the chemical or humoral factors essential for changing the sequence of bases at DNA upto formation of functional protein for the purpose of tissue synthesis and enzymatic factors essential to yield energy for tissue functions.<sup>[16]</sup>

Life, strength, health, enthusiasm, complexion, lustre, immunity, body temperature, and vitality all depend on the normal state of Agni.<sup>[17]</sup> It is the foremost sign of life in human body and is the only factor whose presence is survival and absence is death. Its proper maintenance leads to a long healthy life and its impairment give rise to disturbed metabolism resulting in diseased state.<sup>[18]</sup>

### Physiological factors affecting Agni

- **Prakriti (Biological Constitution)**

Prakriti makes a difference in the state of Agni. Kapha prakriti person has diminished state, pitta prakriti person has comparatively illuminated and vata prakriti person has uncertain increase and decrease of Agni.

- **Diurnal variation**

Agni performs best functions in second prahara of day (before noon) and first prahara of night (late evening). So food should be taken in these timings only. Moreover, it tells us about the rhythmic increase and decrease in the range of Agni.

- **Age**

In adult state, it is on the peak and in old age, it diminishes gradually.

- **Ritu (Season)**

Agni is at peak in Hemanta ritu (early winter) and lowest in Varsha ritu (rainy season).

- **Diet**

Agni gets increased or decreased on the basis of diet it has to digest.

- **Physical activity**

Sedentary lifestyle, excessive sleep decreases and exercise elevates Agni.

- **Bala (Physical Strength)**

Rate of metabolic reactions (Agni) depends upon bala or body strength.

- **Requirement of nutrition by dhatu**

Rate of metabolism is directly affected by need of dhatu for nutrition for their normal status.

### Assessment of strength of Agni

Assessment of Agni bala (strength) is essential for proper choice of diet, medicines and sanshodhana (bio-purification) procedures. A person should consume type and quantity of food on the basis of strength of Agni. A physician must advice diet and medicines as per the strength of Agni of patient. It means the type of formulation and drugs along with time of medicine administration is decided by Agni bala of patient. Also, before administering samsodhana procedures like basti (medicated enema), assessment of Agni is essential to achieve desired results. Recovery from any disease depends upon the good strength of Agni. Assessment of Agni bala can be made by the following parameters:-

- **Aahar shakti (appetite) and Jarana shakti (digestive ability)**

By knowing how much a person can eat, and how much he can actually digest, his Agni bala can be estimated.

- **Symptoms**

Indigestion, flatulence, anorexia, constipation, heaviness in body, letharginess, excessive salivation, lack of energy etc. indicates poor strength of Agni.

- **Tongue**

Tongue is considered a mirror of our body especially the digestive system. A pale, coated tongue is indicative of poor strength of Agni leading to ama formation.

- **Mutra pariksha (urine examination)**

Lowered strength of Agni causes presence of ama (unwanted by-products) in urine which can be reflected as increased frequency, sedimentation and turbidity of urine. This may be due to accumulation of various metabolic end products in circulation due to hypofunctioning of Agni thereby putting more load on kidney to eliminate them.

- **Mala pariksha (stool examination)**

Bulky foul smelling stool with unripe materials is suggestive of lowered state of Agni with ama dosha. This type of stool settles down in water due to gurvadi properties of ama dosha.

- **Pulse**

Amplitude, volume and rate of pulse varies with the state of Agni.

### Factors causing vitiation of Agni

- Dietetic indiscretions – excessive fasting, over eating, irregular eating, heavy, cold, dry, dehydrated, putrid food, excess liquid intake.
- Dietetic incompatibilities – Diet not compatible to habitat, climate, body constitution, digestive capacity, combination, quantity etc.
- Improper administration of shodhana therapies esp. vamana, virechana, vasti, snehana.
- Suppression of manifested natural urges
- Sedentary lifestyle (Lack of physical activity)
- Psychological factors – Mental tensions, emotional instabilities like anger, anxiety, fear, lust, greed, jealousy, depression etc.<sup>[19]</sup>
- Incompatible activities – Exercise after snigdha (unctuous) diet, exercise or sexual indulgence during indigestion.
- Unhygienic conditions and emaciation as a result of chronic disease affliction.

### Agni vitiation: Prime factor for disease origin

Normalcy of all mechanisms of the body is totally dependent upon the normal functioning of Agni. If due to any etiological factor, Agni gets vitiated resulting in start of pathological events, it eventually, leads to diseased condition of the body. As described in Ayurveda, almost all diseases are due to mandagni<sup>[20]</sup> (low strength of agni) especially Udara roga (diseases causing abdominal distension), Arsha (haemorrhoids), Atisaara (diarrhoea), Grahani roga (enteropathy) etc. When the Agni becomes weak, a number of unwanted by-products of digestion start forming known as 'Ama'. This ama on further stasis attains toxic qualities, vitiates doshas and leads to increased impermeability and sluggishness of srotas i.e. body channels. This blockade of channels i.e. srotorodha is the commonest factor in the manifestation of any

disease. This whole pathological event inhibits further process of digestion and absorption, thereby causing various gastrointestinal disorders like hrillasa (nausea), chardi (vomiting), amlapitta (acid peptic disease), atisaara (diarrhoea), visuchika (gastroenteritis), alsaka (intestinal obstruction due to acute indigestion) etc. Further the ama aahararasa which crosses the intestinal villi and enters the circulation i.e. sukshma ama rasa impairs the bhutagni due to its gurvadi properties, and reduces its function. Due to Bhutagni impairment, the vijatiya (heterogenous) ahara rasa will not be able to become sajatiya (homogenous) and act as antigen in circulation, thus causing anaphylactic reaction and allergic disorders like urticaria, hay fever, allergic rhinitis, etc.<sup>[21]</sup> Again, the by-products like lactic acid, ketones etc. which does not attain finality in the metabolic process due to hypofunctioning of Bhutagni and Dhatvagni lead to disorders like madhumeha (diabetes mellitus), medoroga (obesity and dyslipidemia), vatarakta (gout), amavata (rheumatoid disease).<sup>[22]</sup> Free radicals may also be considered as ama substance in circulation as it does not undergo final change in configuration thereby causing damage to proteins, vitamins and lipids. All hormonal and enzymatic deficiencies like hypothyroidism may also be considered to occur due to hypofunctioning of Dhatvagni.

So, most of the diseases like gastrointestinal disorders, allergic and auto-immune diseases, and various metabolic disorders have hypofunctioning of Agni and ama formation as primordial factor in their manifestation. This shows primacy of Agni vitiation in occurrence of disease. Initial line of treatment in such conditions is administration of pachana (which digests ama) drugs followed by deepana (which improves agni strength) drugs to digest the existing Ama and ignite Agni followed by disease specific treatment if required. These diseases show marked improvement when the strength of Agni is increased.

## CONCLUSION

The concept of Agni is a physiological approach but to understand Ama which is a pathological entity, in a better manner, knowledge of Agni is essential and inevitable. The entire range of digestive and metabolic activity of the body takes place with the help of biological fire of the body known as Agni in Ayurveda. Normal state of Agni should be maintained by consuming suitable diet and behaviour because longevity and strength depends on the healthy state of Agni. When the agni get vitiated, unwanted unripe by-products of digestion and metabolism i.e. ama start forming and accumulating in the body at different levels from local (gastrointestinal) level to the systemic level. These pathological events ultimately lead to various gastrointestinal, allergic, auto-immune, and metabolic disorders. Hence, preservation and promotion of Agni is the first and foremost step to be taken in every therapeutic endeavour and management of a patient. So, it is important to understand the concept of Agni to manage the health of a healthy individual as well as to interpret the disease process and planning the line of management of a disease.

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