



## A CRITICAL REVIEW OF STRESS AND ITS EFFECT ON AGNI AND ASSOCIATED METABOLIC DISORDERS

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### ABSTRACT

In day-to-day life, people face many types of personal and social stress. In *Ayurveda*, stress can be correlated with *Chinta* and *Dhyan*. The appropriate level of stress motivates one to complete the task, but chronic stress can cause serious mental and physical illness. Acute stress on the one hand is usually associated with diet suppression and weight loss. Hypothalamic - pituitary – adrenal (HPA) axis and corticotrophin-releasing hormone (CRH) may partially explain the anorexic effects of acute stress. CRH stimulates the sympathetic nervous system and releases catecholamine, and in the condition of hypophagia and weight loss, it has an effect on the liver and white and brown adipose tissue. On the other hand, prolonged stress can lead to overeating (especially delicious food), increase intestinal excitability, and weight gain. In *Ayurvedic* texts, 13 types of *Agni* are explained and *Jathragni* is responsible for digestion. Much research shows that people with anxiety are prone to GERD, heartburn, or acid indigestion. In metabolic disorders metabolic process may be impaired due to enzyme insufficiency, nutrition deficiency, dysfunction of organs like the liver, pancreas, endocrine gland, genetic factors, and sometimes due to stress. This review article is in order to correlate stress, *Agni*, and metabolic disorder.

**Keywords:** Stress, Metabolic disorder, *Agni*.

## INTRODUCTION

Stress can be defined as the force acting against some resistance<sup>(1)</sup>. In the era of the 21<sup>st</sup> century almost everyone is going through some kind of stress it may be due to feelings of competition, workload, loss of jobs, death of a loved one, accident, etc. Higher and long-term stress may cause many disorders such as obesity, heart disease, diabetes, gastrointestinal disorders, etc. A metabolic disorder is a cluster of the same disorders such as cardiovascular disorder, insulin resistance, diabetes mellitus, and vascular and neurological complications. In *Ayurveda*, the metabolic disorder can be correlated with *Santarpana* and *Aptarpana Janya Vyadhi*. According to *Acharya Vagbhata* the manifestation of all disorders occurs due to *Mandagni*. Stress affects the GI system through the gut-brain axis and causes enzyme impairment which again leads to abnormal chemical reactions and the body's metabolism gets disturbed. This concept is explaining the *Ayurveda* quote quoted by *Acharya Charaka* in which they say if even the food is wholesome and taken in an inappropriate quantity but still, it may cause indigestion due to psychological factors such as *Chinta*, *Shoka*, *Bhaya*, *Krodh*, etc.

*Agni* is the prime concept of *Ayurveda*, it plays a significant role to maintain homeostasis, functioning, and metabolism. The importance of *Agni* can be understood by the verse *Shanteagnau Mriyate Yukte Chiram Jivatyanamyā*.<sup>(2)</sup> *Ayu* (life span), *Vrana* (complexion), *Bala* (strength), *Swasthya* (health), *Utsaha* (excitement), *Upachayau* (anabolism & catabolism), *Prabha* (lustre), *Oja* (immunity), *Teja*, etc. all depends on *Dehaagni*.<sup>(3)</sup> Importance of *Agni* can be predicted by the etymology of the word *Kayachikitsa* which literary signifies the treatment of biological fire.<sup>(4)</sup> In *Bhagwat Geeta* there is the verse where lord *Krishna* says *Aham Vaishvanaro Bhutva*, here *Agni* is referred to as God.<sup>(5)</sup> Even *Acharya* says that if a person gets diseased the root cause of the disease will be *Agni* only, so *Agni* plays an important role in disease manifestation and also in treatment, one should choose appropriately suitable treatment

for any disorder. The food that nourishes our body, gets converted into the biological form through thirteen attributes of *Agni*. To get proper benefits of food it is mandatory that it should be in the proper amount and should be taken with good psychological status. Grief, fear, anger, sorrow, and stress hamper digestion of even wholesome food.

**Aim:** - To visualize the effect of stress on *Agni* and metabolism.

**Material and methods:** All *Ayurvedic Samhitas* and commentaries were searched. Contemporary information was collected from modern books, journals, and authenticated websites on the internet.

**Review of literature:** -

*Ayurvedic Samhitas* are great textbooks for medicine but the deep and hidden meanings of these *Samhitas* and their concepts are tough to understand that's why *Acharya* explained the concept of *Tantra Yukti*. There are two *Prayojanas* for *Tantra Yukti* one is *Vakya Yojana* and another is *Arth Yojna*.<sup>(6)</sup> Here *Tantra Yukti* is a tool to know whether there is any relation between stress, *Agni*, and metabolic disease. The stress can be correlated with *Dhyan*, *Chinta* in *Ayurvedic Samhitas*. While explaining the causative factors of *Rasa Pradoshaja Vikaras Acharya* ends the verse with *Chityanama Cha Atichintanat*.<sup>(7)</sup> Again, during explaining the disorders of *Rasa Pradoshaja Vikara*, *Acharya* starts the verse with *Ashrdha* and *Aruchi*.<sup>(8)</sup> In *rasavimanaadhyah Acharya* indicated 13 etiquettes of food intake at that time, *Acharya* mentioned the term *Tanmana Bhunjita*<sup>(9)</sup> otherwise the food will not digest properly and benefits of food will not be obtained (*Agni Dushti*). These two concepts clearly connect *Agni* and stress. Iron deficiency anemia (*Pandu*) is a symptom of *Rasa Pradoshaj* by this concept, which is connecting stress and metabolic disorder. *Oja* is the prime concept of *Ayurveda* which literary means *Vyadhikshamata* the cause of *Ojakshaya* is *Dhyan* (stress)<sup>(10)</sup> and among many symptoms of *Ojakshaya*, one is *Doshchayawana* during *Sansraavastha*, the unavailability of *Dosha* on their site of action hamper's normal function.<sup>(11)</sup> Dur-

ing the process of digestion *Tridosha* plays an important role. With the help of *Samagni* food get proper digestion and further leads to *Adhyarasa* formation, the *Sthoulaya* and *Karshya* depend upon *Rasa*,<sup>(12)</sup> during the description of the management of *Atikrasha* person *Acharya* has indicated to distress the patient.<sup>(15)</sup> These two concepts again connect *Agni* and stress. Hyperthyroidism is an abnormal metabolic condition described in modern medical science where a patient shows symptoms like severe weight loss (*Atikarshya*) and feels an increase in appetite (*Tikshnagni*). According to modern medical science, hyperthyroidism is commonly associated with stress. In *Ayurveda*, metabolic disorders can be correlated with *Santarpana* or *Aptarpana Janya Vyadhis*. One example of *Santarpana Janya Vyadhi* is *Pramilaka* which is nothing but *Satatadhyana* (Chronic stress).<sup>(13)</sup> GERD (gastroesophageal reflux disorder) gets triggered by stress; the root cause of GERD is incontinence of esophageal stricture. Likewise in *Ayurveda* causes of *Ajirna* are both physical and mental factors too and also the same symptoms appear in the condition of *Amajirna* is *Hrudyaashudhhi*.<sup>(14)</sup> According to *Rachna Sharir Hrudya* is the *Pradesh* in the human body from which lies between *Nabhi* to *Stanantara*.<sup>(15)</sup> *Mandagni* produces an improper metabolic toxic substance in the body, called *Ama*, this *Ama* is sticky in nature and causes resistance in *Srotas*, if it obstructs the pathway of insulin, it may cause insulin resistance, if it causes obstruction in the flow of a particular enzyme it may cause enzyme insufficiency, similarly improper digestion of food does not nourish the body so it may lead to nutrition insufficiency.

## DISCUSSION

Physical and mental *Doshas* affect each other, vitiated *Vata*, *Pitta*, and *Kapha* lead to vitiation of *Rajas* and *Tamas* and vice-versa. Stress is very common nowadays. Stress reduces neuroendocrine activity and contributes to the development of metabolic syndrome similarly patients with metabolic syndrome show higher levels of cortisol and normetanephrine output. Adrenocortical dysfunction can have an im-

pact on hepatic lipoprotein metabolism and insulin sensitivity in target organs. This concept can easily be understood with *Ayurvedic Samhitas* as stress cause *Ama Dosha* with obstructing the channels and enzymes don't get a chance to reach the site of action. *Agni* is an important factor of our body which is the causative factor of complexion, lusture, health, nourishment, *Oja*, *Teja*, and *Prana*. Factors that cause *Durbalagni* to produce a number of unwanted unripe by-products at the gross to the molecular level, these by-products are the basic cause of *Sanchaya-vastha* of *Shadkriyakala*. Hence it is proved that *Agni* is the main factor of *Dosha Dushti*, *Agni* itself can be vitiated by psychological factors, or vitiated *Agni* can cause vitiation of physical *Doshas* which further leads to vitiation of *Rajas* and *Tamas*.

## CONCLUSION

This review provides in-depth knowledge of stress, coupled with its *Ayurvedic* aspect and its effect on *Agni* (digestive fire). Inappropriate action of vitiated digestive fire produces toxins and causes vitiation of *Doshas*. The great psychiatrist Richard Davidson has quoted that “the key to a healthy life is having a healthy mind”. Similarly, great author Manly Palmer Hall wrote that “An unhealthy mind, even in a healthy body, will ultimately destroy health”. All these examples signify the fact that psychological *Doshas* affect physical health by affecting *Agni* and cause multiple metabolic syndromes (*Santarpana* and *Apatarpana Janya Vyadhi*).

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