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## Bridging ancient wisdom and modern science: Exploring the symbiotic relationship between Agni and manas in Ayurveda and contemporary perspectives

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### Abstract

This paper examines the relationship between *Agni* (digestive fire) and *Manas* (mind) from both Ayurvedic and modern scientific viewpoints. Drawing upon the rich heritage of Ayurveda, it explores the intricate connections between *Agni* and *Manas*, emphasizing their role in maintaining holistic health. Ayurvedic literature elucidates how the state of *Agni* influences mental well-being and vice versa, underscoring the importance of balancing both for optimal health. Furthermore, the paper integrates modern scientific research to provide insights into the physiological mechanism underlying the *Agni* -*Manas* relationship, including the Gut-Brain axis and the influence of neurotransmitters on digestion and mood. Through this Contemporary understanding, offering avenues for holistic health promotion that resonate with both traditional wisdom and scientific evidence.

For this study, Review of classical Ayurvedic texts such as Charak Samhita, Sushruta Samhita and Ashtang Hridaya to understand the principles of *Agni* and *Manas*. Review of contemporary Ayurvedic literature and research articles focusing on *Agni*, *Manas* and scientific literature from books to understand relation between digestion and mental health.

To investigate how Ayurvedic principles describe the interconnectedness of *Agni* and *Manas* in influencing overall health well-being.

To understand how disruptions in *Agni* can manifest as disturbances in *Manas* and vice versa from both the viewpoints.

The study underscores importance of recognizing and nurturing the symbiotic relationship between *Agni* and *Manas* for promoting optimal health and vitality. By embracing insights from both Ayurveda and modern science, individuals can cultivate a holistic approach to well being that integrates ancient wisdom with contemporary knowledge.

**Keywords:** Agni; Mana; Manovikar; Gut -Brain Axis

### 1. Introduction

Our lifestyle and eating habits have a significant impact on our brain health. A balanced diet rich in nutrients can support cognitive function and regular physical activities also promotes brain health by improving blood flow and stimulating release of chemicals that enhance mood and cognition. Conversely poor dietary habits, sedentary behaviour, lack of sleep, stress impairs brain function and increases risk of developing conditions like Depression, anxiety and Alzheimer's

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diseases. And these conditions, behaviour and moods also has effect on metabolism. For eg Stress triggers the release of hormones like cortisol, which can lead to increased appetite and cravings for unhealthy foods high in sugars and fats, which disrupts normal metabolism.

According to Ayurveda, *Agni* is responsible for metabolizing food and maintaining physiological functions. The state of *Agni* is believed to influence not only physical health but also mental well-being. When *Agni* is balanced, it supports the proper digestion and absorption of nutrients. However, imbalances in *Agni* can lead to various health issues, including mental disturbances. *Manas vikar* (disturbances in mind) can also affect *Agni*. Therefore there is bidirectional relationship between *Agni* and *Mana*. Maintaining balanced *Agni* through proper diet, lifestyle and stress management techniques can support both physical and mental well-being. While addressing mental disturbances can help regulate *Agni* and promote digestive health.

According to large population based surveys, up to 33.7% of population are affected by anxiety disorder during their lifetime<sup>1</sup>. According to WHO 1 in every 8 people (970 million people) in the world live with a mental disorder. This numbers rose in the year 2020 significantly because of COVID -19. Almost 26%-28% cases increased respectively for anxiety and major depressive disorders in one year. Hence Studying the relationship between *Agni* and *Manas* or the connection between gut microbiota and mental well-being is important to understand that Ayurveda emphasizes on interconnectedness of mind, body and spirit. We can identify the risk factors as well early warning sign and this understanding can lead to better prevention strategies for mental disorders. Integrating knowledge from Ayurveda and modern scientific research allows for comprehensive approach to healthcare. By bridging the gap between ancient wisdom and contemporary science, we can harness the benefits of both systems to optimize health outcomes.

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## 2. AGNI

*Agni*, according to Ayurveda, refers to digestive fire or metabolic energy responsible for transforming food into nutrients that the body can assimilate and use for various physiological functions. It is considered one of the most important principles in Ayurveda governing not only digestion but also metabolism, absorption and assimilation of nutrients.

### 2.1. Definition of *Agni*

According to Charak Acharya, *Agni* is the transformative principle responsible for the digestion, absorption and assimilation of food. It encompasses various physiological processes involved in breakdown of ingested food into smaller molecules that the body can utilize for energy and tissue repair.

### 2.2. Types of *Agni* – *Agni* is of 13 types

**DHATVAGNI** – The term *dhatvagni* means the fraction of *agni* that functions at various body components (*dhatu*) for nourishment and metabolism. There are 7 *dhatvagni* for seven *Dhatus*. The *dhatvagni* assimilates and synthesizes the *dhatu* or tissues of human body. It is located in the respective *strotas* of the particular *dhatu*<sup>2</sup>. *Dhatvagni* responsible for the transformation of one *dhatu* into another.

**BHUTAGNI** – *Bhutagni* is the one that is present in *Panchmahabhuta*. There are five *Agnis* in each of the five basic elements namely -*Nabhas*, *Vayu*, *Apya*, *Teja* and *Parthiva*.

**JATHARAGNI**<sup>3</sup> – *Jathargni* is the *agni* or bioenergy present in the *jathara*. According to Ashtang Hridya, *jathargani*, the seat is *grahani*. *Jatharagni* is considered to be most important because each and every nutrient that one ingests first comes to the *jathara*. It is responsible for separation of the food material into the essence portion and the waste products (*saar-kitta vibhajan*)

There are four types of *jatharagni* according to predominance of *Tridoshas*<sup>4</sup>.

- *Vishmagni* – When *agni* is affected by *Vata dosha* it causes change between digesting food quickly and slowly.
- *Tikshanagni* – *Tikshanagni* is a state of very quick digestion of food, regardless of the type of food. In this *agni* is affected by *pitta dosha*.
- *Mandagni* – This *agni* is affected by *Kapha dosha*. *Mandagni* is slow digestive power. According to Dhanvantari in *Mandagni*, *agni* digest least amount of food In the greatest amount of time.

*Samagni* – The *samagni* digest and assimilates food properly at the proper time. Thus increases quality of *Dhatus*.

### 3. MANAS

*Mana*, *Aatma*(soul) and *Sharir* together leads to healthy life of an individual. *Mana* and *aatma* are inseparable during lifetime. *Mana* is described among the nine karan dravyas.

According to Amarkosha<sup>5</sup>, mind is the entity through which the knowledge is obtained, which is closely related with *Aatma* (soul) through which one can perceive and the seat of *Mana* is Hridaya (heart).

Site of *Mana* According to Charaka, Hridaya holds Saguna *Aatma*, *Chet* and its *Artha*. He also describes that Hridaya is the site where the *Rasa*, *Vatadi Dosha*, *Sattva*, *Buddhi* and the senses remain along with *Aatma*<sup>6</sup>. *Shir* is also mentioned as *Sthana* of *Mana* along with *Prana* and *Indriya*<sup>7</sup>. Sushruta and Vagbhata<sup>8</sup> have clearly mentioned that location of *Sattva* is Hridaya. So heart can be considered as place of *Mana* but functions of *Mana* are related to brain.

*Manovaha Strotas* In Charak Samhita *Manovaha Strotas* has been mentioned. Hridaya and *Dasha Dhamanis* taking origin from heart are the *Moolasthanas* of it

Manas Roga Samanya Samprapti<sup>9</sup> (Pathophysiology):-*Sharir* and *Manas Dosha* vitiation leads to metabolic and somatic disturbances respectively. *Mana* is stated to be under the control of Vata. It has been stated that *Mana* and Vata work as synergism. Thus it is clear that vitiated *Mana* will cause vitiation of Vata and vice versa producing pathologies

### 4. Relation between Agni and manas

The Gita<sup>10</sup> accepts that food has major role in physiological and psychological growth. The Gita classifies food into three categories *Satvika*, *Rajsika*, *Tamsika*. *Mana* is also categorised in these three. *Mana* has all these three Gunas, but it shifts between these three frequencies according to the deeds person does frequently.

*Satvika* food increases vitality, energy, health, joy and cheerfulness known as *Satvika* food. Food which are bitter, sour, saline, over hot, pungent, dry are *Rajasika* food and produce pain, grief and sadness.

Food which are stale, tasteless, stinky, cooked overnight and impure are *Tamasika*. *Satvika* food promotes *Satvika* nature. And *Rajsika* and *Tamsika* food promote their respective nature.

- PRAKRUTA AGNI KARMA<sup>11</sup>

आयुर्वर्णो बलं स्वास्थ्यमुत्साहोपचयौ प्रभा । ओजस्तेजोऽग्नयः प्राणाश्चोक्ता देहाग्निहेतुकाः ॥ शान्तेऽग्नौ म्रियते, युक्ते चिरं जीवत्यनामयः । रोगी स्याद्विकृते, मूलमग्निस्तस्मान्निरुच्यते ॥

*Dehagni* or *Jatharagni* (power of digestion and metabolism) is the reason for *Ayu* – life, *Varna* colour, complexion *Bala* strength and immunity *Swasthya* good health *Utsaha* energy, enthusiasm *Upachaya* bulk, shape, plumpness of body *Ojas* – immunity, disease resisting power, *Tejas* aura, complexion, radiance Maintenance of other varieties of *Agni* and *Prana*, Vital breath.

- SATITATION OF SENSE ORGAN BY FOOD<sup>12</sup>

Intake of delicious and wholesome food that has pleasant appearance, smell, colour, touch and sound nourishes and satiates the sense organs – nose, eyes, skin, tongue and ears.

- AJIRNA LAKSHANAS<sup>13</sup>

*Vishtambha* – abdominal distension *Sadana* felling of prostration, *Shira ruk* headache, *Murcchha* – fainting, *Bhrama* giddiness, *Prshta kati graha* -stiffness of the back and lumber region, *Jrumbha* – yawning, *Anga marda* – malaise, *Trshna* morbid thirst, *Jwara* fever, *Chardi* vomiting, *Pravahanam* – tenesmus *Aruchi* anorexia and *Avipaka* indigestion of food. This is a serious condition called *Anna Visha* – food turning into poison.

- MANOVIKARJANYA AJIRNA<sup>14</sup>

भवति चात्र- मात्रयाऽप्यभ्यवहृतं पथ्यं चान्नं न जीर्यति ।

चिन्ता शोक भय क्रोध दुःख शय्या प्रजागरैः ॥

It is said: Wholesome food taken even in proper quantity do not get properly digested when the individual is afflicted with grief, fear, anger, sorrow, excessive sleep and excessive vigil.

- TRIDOSHA AND MANA

Functions of balanced and imbalanced Tridoshas and their effect on Manas has been explained in Charka Samhita, sutrasthan Vatakalakaliya adhyay. It is as follows :

- Balanced or Prakruta Vata<sup>15</sup> initiates all the actions and speech.
- *Niyanta Praneta Cha Manasaha* – Vata controls and directs the mind.
- *Sarva Indriyanam Udyojakaha* – it coordinates, stimulates all the sense organs.
- *Sarva Indriya Arthanam Abhivoda* – it controls all the objects of sense faculties.
- Imbalanced Vata<sup>16</sup> perturbs the mind: affects all the sense organs and sense faculties. Vata causes fear, anxiety, bewilderment, humility and delirium.

According to Achaya Marichi<sup>17</sup> – *Agni* is alone represented by pitta in the body which brings about good or bad effects according to is normal or imbalanced states.

Also As *Pachak pitta* responsible for *pachan*, resides at *Grahani sthan* which is *sthan* of *Jatharagni* and *Sadhak pitta* resides in Hridya (heart ) which is said to be *sthan* of *Mana*, *Oja* and *prana*. Hence *pitta* is mainly responsible for *Manobhav*, *manovikara* eg – *Shourya* -valour, *Bhaya* – fear, *Krodha* anger and *Harsha* – joy, bewilderment and happiness and such other pairs of opposite qualities.

Normal or imbalanced *Kapha*<sup>18</sup> causes *Gyanam -agyanam*.

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## 5. Gut microbiota and brain axis

The Gut brain axis is a bidirectional communication network that links the enteric and central nervous systems. This network is not only anatomical, but extends to include endocrine, humoral, metabolic and immune routes of communications as well. The autonomic nervous system, hypothalamic -pituitary -Adrenal (HPA) axis and nerves within the gastrointestinal tract all link the gut and the brain, allowing the brain to influence effector cells and the gut to influence mood, cognition and mental health.

The enteric microbiota extensively and profoundly influences the gut brain relationship i.e. mental state, emotional regulation neuromuscular function and regulation of HPA.

In addition research has demonstrated that the composition of gut bacteria appears to be influential in fetal and neonatal development<sup>19</sup> and diet has been shown to influence the gut microbiome's impact on cognitive function<sup>20</sup>.

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## 6. Pathways of the gut -brain axis<sup>21</sup>

### 6.1. Neurological pathway

This pathway involves several components like

Vagus Nerve – longest cranial nerve carries signals bidirectionally between the gut and the brainstem.

Enteric nerves- Often referred as SECOBD BRAIN. The ENS is a complex network of neurons within GI Tract that operate independently and communicates with CNS.

### 6.2. Neurotransmitters

Chemical messengers such as serotonin, dopamine and gamma -aminobutyric acid GABA play key roles in transmitting signals along the gut brain axis, influencing mood, behaviour, and gastrointestinal functions.

### 6.3. Hormones

Hormones like leptin and cortisol produced by the gut and other organs, also contribute to the communication between the gut and the brain, regulating appetite, metabolism and stress responses.

### 6.4. Immune system

Immune cells and cytokines produced in the gut can communicate with the brain, impacting inflammation and neurological function.

### 6.5. Humoral / Metabolic Pathway

Bacterial metabolites short chain fatty acids SCFA (Produced by the bacterial fermentation of dietary carbohydrates) are decisive humoral influencers. It affects nutrition of enterocytes, exerts hormone like activities and immunomodulatory properties. Microbiota derived from SCFA are able to cross blood brain barrier and have been shown to regulate microglia homeostasis and involved in behaviour modulation<sup>22</sup>.

### 6.6. Epithelial Barrier

Intestinal permeability defects have been associated with number of gut related disorders, such as IBS, necrotizing enterocolitis, obesity, diabetes, stress etc. Supplementation with probiotics influences intestinal tight junction integrity and thus support resolution of such conditions<sup>23</sup>.

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## 7. Conclusion

In conclusion, the research demonstrates a clear relationship between Agni and Manas, as elucidated by both Ayurvedic Principles and modern scientific understanding. Ayurveda emphasizes the intricate connection between digestive fire i.e. Agni and Mental faculties i.e. Manas. Suggesting that disturbances in agni can impact Manas and vice versa. This bidirectional interaction is supported by emerging evidence from studies on the gut-brain axis, which highlights the influence of gut health on mental well being and cognitive function. Integrating Ayurvedic wisdom with contemporary research findings underscores the importance of considering both physical and mental aspects of health in a holistic framework. Further exploration of the relationship between Agni and Manas holds promise for advancing personalized approaches to health optimization and disease management.

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## Compliance with ethical standards

### *Disclosure of conflict of interest*

No conflict of interest to be disclosed.

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