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A Review of the Physiological function of *Pachak pitta* and it's correlation with contemporary science

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ABSTRACT

Tridosha theory is the foundation of *Ayurvedic* science. One of the three doshas, called *Pitta*, is very important for digestion and metabolism. There are five different varieties of *pitta dosha*: *Pachaka, Ranjaka, Alochaka, Bhrajak*a, and *Sadhaka*. Food digestion, *Sara* and *Kitta's Vibhajan*, and feeding the *Agneya* component of *Pitta*, which is distributed throughout the body, are all tasks carried out by the *Pachaka Pitta*. It also goes by the name *Jatharagni*. After aiding in food digestion, this *Agni* form *Pitta* divides the *Sara* and *Kitta Bhaga*. Due to its position, it nourishes and gives *Pitta* power to relax. It is amply demonstrated in our book that *Pachaka Pitta* is accountable for *Aahar Pachan*. On the other hand, modern science has established via numerous research that several digestive fluids are responsible for food digestion. All digestive enzymes, such as amylolytic, proteolytic, and lipolytic enzymes, can be compared to *pachaka pitta*, as suggested by the functions of this substance. The goals of digestive enzymes, gastrointestinal hormones, and local hormones can be linked to the actions of *Pachaka Pitta*.

Keywords-*Pachaka, Pitta, Shareera, Kriya*, Digestive Enzymes.

INTRODUCTION

A healthy person, according to *Ayurveda*, is one whose humours and metabolic condition are in balance, whose functional activities of the tissues and excretory products (i.e., physical state) are in balance, and whose soul, senses, and mind (i.e., the mental state of the body) are in good health[1]. A single substance or structure cannot adequately reflect a *Dosha*[2], and the concept of *Tridosha* is essentially only a notion. *Pitta* is one of the three *Doshas* and is in charge of digestion, metabolism, heat production, and other types of energy. Because of this, several acharyas refer to it as *Agni*. On the basis of location, the five types of *Pitta Dosha—Paachak, Ranjak, Saadhak, Alochaka*, and *Bhrajaka Pitta*—have been identified. Each of these five types of *Pitta Doshas* has a

unique location and purpose. *Pitta* comes in five different varieties: *Pachaka, Ranjaka, Sadhaka, Alochaka*, and *Bhrajaka*. Near *Jatharagni*, between *Pakwashaya* and *Amashaya*, is supposed to be the *Visesha Sthana* of *Pachaka Pitta*. It is believed that *Pachaka Pitta's* main function is to digest the food that has been consumed.[3] Grasp the physiology of *Pachaka Pitta* requires a brief understanding of the physio-anatomical structure of the gastrointestinal system with regard to chemical and physical digestion. Following oral consumption, food travels through various sections of the digestive tract where it is converted into small, absorbable components.[4] The mouth, Pharynx, Esophagus, stomach, and intestine make up the digestive system, or alimentary canal as it is also known.

Due to the variety of functions, *Pachaka Pitta* cannot always be represented by a single entity. Once more, *Ayurveda* is a discipline built around the idea of functional comprehension. Today's students, especially those in their first year of the Bachelor of *Ayurvedic* Medicine and Surgery programe, have a difficult time comprehending the fundamentals of *Ayurveda*. The mention of *Pachaka pitta* in *Ayurvedic* literature does not specifically support any current literature. To grasp the depth of *Ayurvedic* principles on the basis of contemporary medical research in an understandable manner, there is a greater need for *Ayurveda* science. We are attempting to identify anatomical structures in this review based on their physiological functions that have been retrospectively characterized under the function of *Pachaka Pitta*.

Location and utility of *pachaka pitta* by different *Acharya*

Acharya	**Location**	**Utility**
Sushruta Samhita[5]	Resides in between the *Amashaya* and *Pakvashaya*	Digests the food, separates the essence and wastes from it; it supports the other pitas located in different places
Astanga Hridaya[6]	Located in the interior of Pakvashaya and *Aamashaya*	Cooking the meal and separating it into its essence and waste gives the other pittas present there and the others grace (assistance) by giving them strength.
Astanga Samgraha[7]	Located between *Pakvashaya* and *Aamashaya*	Digestion, *dosha* separation, *Rasa, Mutra,* and *Purisha* support the other *Pitta Dosha* locations throughout the body by imparting fire-like qualities.

Pachakagni and *Pachakapitta*

Without comparing *Pachkagni* to *Pachakapitta*, the discussion of *Pachkagni* cannot be concluded. The characteristics and roles of *Pachakagni* and *Pachakapitta* appear to be identical to one another. There is no *Pachkagni* without *Pachakapitta* since the *Ushna Guna* of *Pachakapitta* causes the body to digest and burn food more quickly. As a result, *Pachakagni* is also treated with *Aahara* & *Vihara*, which are contrary to *Pachakapitta*.[8] According to *Caraka*, only *Pachakagni*, which is located in *Pachakapitta*, can have positive or negative effects depending on whether it is working normally or abnormally. Since *Pitta* performs *Dahana* (burning or oxidation), *Pachana* (digestion), and other similar acts to those performed by Re, *Pitta* is known as *Antaragni*, according to *Acharya Sushruta*. *Acharaya Maarich* has also underlined that when *Pachakagni* is normal, it can have either good or harmful results in the *Pachakapitta*.[9]

AHARA PACHANA AND *AHARA RASA* FORMATION

The cause of *Aahara Pachana* is *Agni*. Ancient literature describes 13 different varieties of *Agni*. *Jatharagni*, *Bhutagni*, and *Dhatavagni* are these. Following the ingestion of *Panchabhoutika, Ahara Agni* reacts with it, causing the *Dhaatus* to form and be fed. The food consumed is transported to the *Koshtha* by the *Prana Vata*[10].

The liquids cause the meal to break down, while the mucous substances cause it to become soft. *Kledaka Kapha* carries out this action. The *Pachakagni* (digestive enzymes) are intensified by the *Samana Vata*, which also ensures adequate food digestion[11]. The *Agni* is intended for *Jatharagni*, *Pachakagni*, or *Pachaka pitta* in this instance. Between *Pakwashaya* and *Amashaya* is where *Pachaka Pitta's* seat is located. *Grahani Pradesh* where *Anna Pachana* occurs also called *Pittadhara Kala* is stated as the main *Sthana* of *Pachaka Pitta*.

The process of digestion is what breaks down complicated food particles into simpler ones. The digestive process starts in the mouth, but because food stays there for a shorter period of time, complete digestion does not happen. In the stomach, incomplete digestion also does not take place. The small intestine is where digestion ends. The small intestine is where food products that have been digested are absorbed most fully. The duodenum, where the majority of digestion takes place, can be linked to the *Grahani* in *Ayurveda*. The digestion of protein, carbohydrates, and fat is aided by a variety of hormones and digestive enzymes.

Digestive Enzymes and their Action

Part of the Body	Name of the enzyme	Action on food
Stomach	Pepsin	Convert protein into peptide
Small intestine Duodenum	Trypsin	Act on proteins-peptones and proteases to produce peptides and amino acid
	Amylopectin	Act on starch to produce maltose
	Steapsin	Acts on emulsified fats to produce fatty acid glycerol
Small intestine-ileum	Erepsin	It acts on proteins and peptide to produce amino acid
	Maltase	Act on maltose to produce glucose
	Sucrase	Act on sucrose to produce glucose and fructose
	Lactase	Act on lactose to produce glucose and galactose
	Lipase	Act on fat to produce Fatty acid and glycerol

VIBHAJANA OF *SARA* AND *KITTA*

It refers to the process of separating the nutrients from the waste products produced during food digestion. The digestive enzyme *Pachaka Pitta* is started by *Samman Vayu* for hydrolysis. Following that, garbage and nutrients are separated. With the assistance of *Samana Vayu*, nutrient products are absorbed, and *Apana Vayu* removes waste materials.[12]

CONCLUSION

After a thorough examination of *Pachaka Pitta*, it became apparent that each notion related to *Pachaka Pitta* had its own significance and was difficult to achieve on a single point. Before food is swallowed, the teeth chop and grind it, and then the stomach and small intestine's smooth muscles churn it. Food molecules softened and thoroughly combined with digestive enzymes as a result. The large protein, nucleic acid, and carbohydrate molecules in food are split into smaller ones by hydrolysis during chemical digestion. The functioning of digestive

enzymes and gastrointestinal hormones can be connected to *Pachaka Pitta's* goals. The duodenum and *Pakvaamashaya Madhya* are the *Sthana* of *Pachaka Pitta*, respectively.

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