



**ROLE OF AAHARA PARINAAMAKARA BHAAVA IN DIGESTION**

<sup>1</sup>Dr. Vinay Bhardwaj and <sup>2</sup>Dr. Niharika Sharma

<sup>1</sup>Assistant Prof., P.G. Department of Kriya-Sharir, Govt. Ay. College, Raipur (C.G.).

<sup>2</sup>Assistant Prof., Department of Kriya-Sharir, Mahaveer College of Ayurvedic Science, Sundra (C.G.).

\*Corresponding Author: Dr. Vinay Bhardwaj

Assistant Prof., P.G. Department of Kriya-Sharir, Govt. Ay. College, Raipur (C.G.).

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**ABSTRACT**

*Aahara Parinamakara Bhava* are the factors present in body which are responsible for complete digestion & metabolism of ingested food. These are six in number viz. *Ushma*, *Vayu*, *Kleda*, *Sneha*, *Kala* and *Samyoga*. The factor specifically or directly responsible for digestion of food is *Ushma*, rest of five factors are helping agents. *Vayu* stimulates *Pachaka Pitta* (*Agni*) and bring down food near *Agni* or make food available for digestion. *Kleda* loosens the ingested food and that looseness is acquired by *Aadrata* (moisture/water content). *Kledaka* and *Bodhaka Kapha* turn solid ingested food into sticky, soluble chyme on which *Agni* or *Pachaka Pitta* (digestive juices) can act effectively *Sneha* is the *Snehans* of food taken i.e. oils, ghee or fatty part of diet which lubricates or softens the food. *Kala* is time taken for complete digestion of food or time at which hunger arises. *Samayoga* means collection i.e. proper collection or wholesomeness of food along with user. *Samyoga* can be correlated with balanced diet, hygienic and healthy methods of intake of meals.

**KEYWORDS:** *Aaharparinamakara Bhava*, *Usha*, *Vayu*, *Kleda*, *Sneha*, *Kala*, *Samayoga*.

**INTRODUCTION**

*Aahara*- Substances which are required to replenish or to maintain or for renewal of constantly deteriorating body is called *Aahara*.<sup>[1]</sup> *Acharya Sushruta* has explained that *Panchabhautika* substance consumed, which after *Vipaka* (digestion) nourishes respective *Guna* of *Panchamahabhuta* in body is called *Aahara*.<sup>[2]</sup>

*Parinama*- Final stage or complete process of digestion (and metabolism) of ingested food is *Parinama*.<sup>[3]</sup>

*Bhava*- Factors present in body are called as *Bhava*.<sup>[4]</sup>

Thus, factors present in body which are responsible for complete digestion & metabolism (i.e. stage at which ingested food can replenish body) of food are called *Aahara Parinamakara Bhava*. As the digestion is mainly done by *Agni*, but some other factors also help in the digestion. They are six in number viz. *Ushma*, *Vayu*, *Kleda*, *Sneha*, *Kala*, *Samyoga*.<sup>[5]</sup>

**Ushma**- '*Ushma pacht*' i.e. the factor specifically or directly responsible for digestion of food is *Ushma*. Rest of five factors are helping agents. '*Ushma*' basically is *Pachaka Pitta* or *Pachaka Agni* which nourishes rest of 12 *Agni* of *Sharira* (i.e. *Dhatwagni* & *Bhutagni*).

*Pachaka Pitta* is present in between *Amashaya* and *Pakvashaya*. Despite of its *Panchbhautika* nature, it is dominated by '*Tejas*' *Guna*. For digestive function it

gives up its *Dravata* (*Kshapita somagunam, tyakta dravatvam*). Thus, *Pachaka Pitta* digests all types of ingested food, discriminate *Dosha*, *Rasa*, *Mutra* & *Purish* (i.e. helps in assimilation or absorption of final products of digestion), nourishes all other metabolic activity of body, maintain core body temperature.<sup>[6]</sup>

As per the description of *Pachaka Pitta* in classical texts of ayurveda, it can be related to digestive juices of G.I.T. and basic temperature or pH required in different parts of GIT for proper functioning of respective enzymes.

Digestive juice includes Gastric juice, Pancreatic juice & Bile. Gastric juice contains enzymes like pepsin, rennin, gastric lipase, gelatinase & urase, which help in the digestion of proteins & carbohydrates (negligible) by hydrolysis. Gastric juice is strongly acidic with pH of 0.9 to 1.5. Pancreatic juice is alkaline in nature with pH 8-8.3. Enzymes present in pancreatic juice like trypsinogen, chymotrypsinogen, carboxypeptidases, nucleotidases, elastase, collagenase, pancreatic lipase, lecithinase, cholesterol esterase and amylase, phospholipase A & B; colipase helps in the digestion of ingested food. Intestinal juice (*succus entericus*) with pH 6.3-9, contains digestive enzymes which help in the final digestion of food like peptidases, Amylase, sucrase, maltase, lactase, lipase, dextrinase & trehalase. Bile contains bile salts & high bicarbonates which help in the digestion & absorption of fats.

As *Ushma* is present in between *Amashaya* and *Pakwashaya*, seems very close to all digestive juices. *Ushma* is predominated by *Tejas Guna* and despite being *Drava* works by virtue of *Tejas Ghan* (solid) part<sup>7</sup>. Also digestive juices are secreted in liquid (watery) form but work by its solid enzymatic part.

### Vayu

“*Vayu Apakarshati*”. ‘*Apakarshana*’ here is explained by *Acharya Chakrapani* as ‘stimulation of *Pachaka Pitta* (*Agni*) and to bring down food near *Agni* or making food available for digestion.

*Prana Vayu* brings down food into *Amashaya* (site of *Pachaka Pitta*), also maintains food in different parts of *Mahastrotas* (GIT) for specific time required (*Chakrapani*). *Samana Vayu* stimulates *Agni*. *Apana Vayu* expels or propagates food in to succeeding parts of *Mahastrotas* and finally expels undigested rest part of food as fecus.

As per description of *Vayu* and its function “*Apakarshana*” in context of digestion, it can be clearly co-related with process of deglutition, movements of GIT with its regulating factors and nervous stimulation of digestive juices.

Deglutition is a process by which masticated food (bolus) passes from the mouth to stomach. It is a reflex process (nervous mechanism) that is triggered by afferent impulses in trigeminal, glossopharyngeal and vagus nerves. There are three types of motility in stomach-  
1) Hunger contractions 2) Gastric peristalsis 3) Gastric emptying

Peristalsis is intrinsic reflex elicited by mechanical or chemical excitation of gut wall, depends on integrity of Auerbach’s and Meissner’s plexus. Movements of small intestine are regulated by neural & hormonal mechanisms. Peristaltic movements of stomach help to mix the food thoroughly with gastric juice and macerate the food which is softened by digestive juices. Also propels the food through the pylorus into the intestine.

Movement of small intestine mix the food thoroughly, bring intimacy with the absorptive surface and propel the content slowly down the alimentary canal. There are three types of movements in small intestine 1) *Segmental contraction* 2) *Tonic contractions* 3) *Peristalsis*. Six types of movements in large intestine are seen:-1) *Segmental contractions* 2) *haustral contraction* or *churning* 3) *kneading movements* 4) *pendular movements* (*peristalsis cum aperistalsis*) 5) *Peristalsis* 6) *Mass peristalsis*

*Vata* also stimulates the *Agni* (correlated with digestive juices) to digest food.

*Gastric secretion*- It has 3 phases of secretion 1) cephalic (nervous) 2) Gastric (chemical non nervous) 3) Intestinal

(chemical). These phases are closely interrelated. Cephalic phase initiates appetite juices (i.e. ignite or stimulates *Agni*) which digests proteins partly. From these products of digestion gastrin is manufactured which initiates second phase (gastric). When gastric phase completes initiates intestinal phase. That means all these phases directly or indirectly stimulated by nervous mechanism (*Vayu*).

*Pancreatic secretion*- In two phases 1) Nervous 2) Chemical. Nervous is unconditioned reflex. Chemical phase is due to hormone called secretin and pancreozymin.

*Bile secretion*- stimulated by chemical stimuli.

*Intestinal secretion*- stimulated by mechanical & chemical stimulation.

### Kleda

“*Kleda saithilyam apadyati*” also ‘*Klednam Aadrabhavam*’.<sup>[8]</sup> Thus, *Kleda* loosens the ingested food and that looseness is acquired by *Aadrata* (moisture/water content). *Kleda* is a ‘*Kapaja bhava*’. *Kledaka Kapha* present in *Amashaya* and *Bodhaka Kapha* present in mouth (*Jihva mool*) are collectively included in ‘*Kleda*’ mentioned here.

*Kapha* is substance originated from ‘*Ka*’ i.e. *Jala* (water). Thus, *Kapha* (*Kledaka* & *Bodhaka* here) is nourished or replenished by water content of food. *Kapha* or *Shleshma* has a property of stickiness, by virtue of this property *Kledaka* and *Bodhaka Kapha* turns solid ingested food into sticky, soluble chyme on which *Agni* or *Pachaka Pitta* (digestive juices) can act effectively.

*Bodhaka Kapha* present in *Jihvamoola* is responsible for perception of taste of food, which can clearly be co related with serous and mucous secretion of salivary gland. *Kledaka Kapha* present in *Aamashaya* provides *Klinnata* or *Adrata* to ingested food, which can co-relate with gastric mucous secretion.

Thus, ‘*Kleda*’ can collectively be taken as serous mucous secretion of salivary gland, gastric mucous secretion and water content of food. Mucin content of saliva helps in lubricating food. Helps in masticating food and facilitates swallowing. It keeps mouth moist and act as a solvent for food and stimulates the taste bud. Taste helps us what to eat and influences how efficiently we digest these foods.

### Sneha

‘*Sneha Mardavam Janayati*’. *Sneha* lubricates or softens the bolus (ingested masticated food). *Sneha* is the *Snehans* of food taken i.e. oils, ghee or fatty part of diet. As per *Acharya Charak* “*Bhuktam Cha Unudeerna Agnim Udiryat*” *Sneha* can ignite unignited *Agni* i.e. catalyse the process of digestion.

*Sneha* (fatty content of diet as well as of body) is very important for survival of human being. Fat aids in digestion, fat is not soluble in blood, so bile acids produced from cholesterol (fatty content of body) in liver emulsify it along the way to make it bio available. As fats need more time to get digested so keep satiated. Also fats are necessary for integrity of every cell of body, transport and absorption, hormone synthesis, intact nervous system.

Also ingestion of fats (*Sneha*) specially stimulates contraction of gall bladder to produce bile (*Agni*) which support the fact *Sneha* ignites *Agni*.

### Kala

“*Kala Paryaptamabhinivartiyati*” *Paryaptam* means sufficient and *Abhinivartiyati* means change or transformation. *Kala* (time) induces sufficient transformation of ingested food i.e. food is sufficiently transformed to absorbable nutritive form.

Here, *Kala* refers in two meanings first is “*Kala Iti Pakakala Nishavasanadi Rupa*<sup>[9]</sup>” i.e. *Kala* is time taken for complete digestion of food (in form of hours, day or night). Food or chyle resides in every part of G.I.T. for a particular time so that digestive juices can act properly and absorption of digested food can act sufficiently. This whole time taken is *Kala*. Second is ‘*Kala Iti Bhubhuksha Kala*<sup>[10]</sup>’, i.e. *Kala* is time at which hunger arises. By this explanation, concept of *Adhyasana* came into light i.e. food ingested before digestion of previous meal. One should never do *Adhyasana*. If food is taken at time of hunger, then it is digested properly due to proper nervous stimulation of digestive juices.

Hunger contractions occur three hour after a meal. So there should be at least gap of 3 hrs. between two meals. Also, it takes 3 to 4:30 hour for the stomach to empty a mixed meal. If next meal is taken before this (3-4:30 hr) time, then content are propelled faster this reduces proper mixing of digestive juices and impairs digestion. Food enters the caecum 4 hours after a meal and is mixed and propelled slowly along the colon. The colonic transit time is as follows:

Ileum- 8 hrs. after a meal

Caecum and ascending colon- 13-17 hrs.

Sigmoid colon- 18 hrs.

Rectum- 24 hrs. which is followed by defecation

There is a specific transit time of chyme from all parts of G.I.T., which is very important for proper functioning of digestive system.

### Samayoga

“*Samyogatu Esham Parinama Dhatu Samyakara Sampadyati*<sup>[11]</sup>”

*Sama* means proper and *yoga* means collection i.e. proper collection or wholesomeness of food along with user. *Acharya Chakrapani* explains meaning of *Samyoga*

(wholesomeness) by “*Astaahara Vidhi Visheshayatana*” which includes *Prakrati* (natural qualities of food stuff), *Karana* (preparation of food), *Samyoga* (combination of food), *Rashi* (quantity of food), *Desha* (habitat of food as well as user & compatibility of both), *Kala* (time at which food is taken), *Upyoga samstha* (rules of use), *Upyokta* (one who intakes food).

If each and every component of this *Astaahara Vidhi Visheshayatana* is in its proper form, then food ingested will lead to “*Samyavastha* of *Sharira* i.e. *Sama Dosha, Dhatu, Mala*”. *Samyoga* can be correlated with balanced diet hygienic and healthy methods of intake of meals.

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