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## Concept of *Guna* of *Tridosha* and Regulatory Mechanism

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### ABSTRACT

Ayurveda is a holistic system of health care which operates around certain principles and their applications. Ayurveda postulates that everything in this universe is made up of five *mahabhutas* (fundamental particles) and the configuration of *mahabhutas* leads to manifestations of some *gunas* (properties). The human living system is explained by *doshaa*, *dhatu*, *mala* complex. The *dhatu*s forms the basis to perform all physiological functioning of the body, whereas the *doshaas* regulates this function, and *mala* is the excretable waste products of this function. Each of these *doshaa*, *dhatu* and *mala* is attributed with a definite sets of *gunas*, for example, *vata* (air) has seven *gunas*- *ruksha* (dry), *sheet* (cold), *laghu* (light), *sukshma* (minute), *chala* (mobile), *vishada* (clear), *khara* (rough). Ayurveda opines that *guna* is the cause which leads to manifestation of an effect. There are 10 opposite pair i.e. 20 *shareer gunas* (qualities) that functions within the body. It is said that a *doshaa* performs specific functions on basis of particular *guna* and the opposite *guna* found in another *doshaa* regulates this function. The *doshaas* do not compete, but complement with each other in terms of their *gunas* for proper functioning of the body by regulating each other's functions to the optimum level.

### KEYWORDS

*Vata*, *Pitta*, *Kapha*, *Guna*, *Mahabhuta*



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## INTRODUCTION

Ayurveda is a scientific system of health care which has its own theoretical framework around which it operates. These principles are outcome of a supremely intelligent and unbiased set. And these observations have been subjected to repeated rigorous scientific scrutiny.

Ayurveda postulates each and every substance of this universe is made up of five basic particles termed as *mahabhutas* namely *aakash* (space), *vaayu* (air), *agni* (fire), *jala* (water), *prithvi* (earth)<sup>1</sup>. These *mahabhutas* form the structural functional basis of any substance. The predominance of a *mahabhuta* in any substance leads to manifestation of qualities and activities attributed to that *mahabhuta*<sup>2</sup>. Each *mahabhuta* has been attributed to an exclusive set of quality and activities to it for eg:<sup>3</sup> *prithvi mahabhuta* has been attributed to heavy, rough, hard etc. Various combinations and permutations of these *mahabhuta* give rise to *tridosha* i.e, *vata*, *pitta*, and *kapha*. According to Ayurveda, *guna* is considered as the *kaaran* (cause) which leads to any *karya* (effect). Therefore manifestation of *guna* in any substance predisposes the potentiality of an effect, if proper engagement under favourable conditions does happen.

The body comprises grossly of 3 components *doshaa*, *dhatu* and *mala*<sup>4</sup>. The *dhatu*s forms the basis to perform all physiological functioning of the body, whereas the *doshaa*s regulates this function and *mala* is the excretable waste products of this function. These *doshaa*, *dhatu* and *mala* as per *panchmahabhautic siddhant* (principle) are also formed by five *mahabhutas* (elements) and consequently they comprise of the qualities that are associated with the predominant *mahabhuta*. These *gunas* of *doshaa*, *dhatu*s and *mala* interplay with each other to regulate the functioning of the body with an objective to function at an optimum level.

As stated above the *doshaa*s are the primary factors responsible for regulatory mechanism of this body on the basis of their *gunas*. This article endeavors to revalidate the preceding statement by compiling, analyzing and critically reviewing the contextual information available in classical Ayurveda texts and other resources.

## MATERIALS AND METHODS

1. Compilation of information available in print and electronic resources.
2. Analysis and critical review of the compiled information vis-à-vis the hypothetical statement.



3. Discussion and drawing of conclusion regarding the validation of the hypothetical statement.

## OBSERVATION

As stated above, Ayurveda postulates that *guna* is the reason for any activity and action. These *gunas* are manifested in any substance owing to their respective *mahabhuta* configuration as illustrated below. It is pertinent to register here that each *mahabhautic* predominance is associated with certain sets of *gunas*.

Table 1: Guna of mahabhutas

The three *doshaas* i.e *vata*, *pitta* and *kapha* also comprises of *panchmahabhutas* and

Table 1 Guna of Mahabhutas

MAHABHUTA				GUNA					
<i>Prithvi</i> (earth)	<i>Guru</i> (heavy)	<i>Khara</i> (rough)	<i>Kathina</i> (hard)	<i>Manda</i> (dull)	<i>Sthira</i> (immobile)	<i>Vishada</i> (clear)	<i>Sandra</i> (semisolid)	<i>Sthula</i> (macroscopic)	<i>Gandha</i> (smell)
<i>Jala</i> (water)	<i>Drava</i> (liquid)	<i>Snigdha</i> (unctuous)	<i>Sheeta</i> (cold)	<i>Manda</i> (dull)	<i>Mridu</i> (soft)	<i>Picchila</i> (mucilaginous)			<i>Rasa</i> (taste)
<i>Agni</i> (fire)	<i>Ushna</i> (hot)	<i>Tikshna</i> (sharp)	<i>Sukshma</i> (minute)	<i>Laghu</i> (light)	<i>Ruksha</i> (dry)	<i>Vishada</i> (clear)			<i>Rupa</i> (sight)
<i>Vayu</i> (air)	<i>Laghu</i> (light)	<i>Sheeta</i> (cold)	<i>Ruksha</i> (dry)	<i>Khara</i> (dry)	<i>Vishad</i> (clear)	<i>Shukshma</i> (minute)			<i>Sparsh</i> (touch)
<i>Aakash</i> (space)	<i>Mridu</i> (soft)	<i>Laghu</i> (light)	<i>Sukshma</i> (minute)	<i>Slakshna</i> (smooth)					<i>Shabda</i> (sound)

Table 2 Properties and Site of three Doshaas

DOSHAA	MAHABHUTA	GUNA	STHAAN
<i>Vata</i>	Vaayu+ Aakash	<i>Ruksh</i> (dry), <i>Sheeta</i> (cold), <i>Laghu</i> (light), <i>Shukshma</i> (minute), <i>Chala</i> (mobile), <i>Vishad</i> (clear), <i>Khara</i> (rough)	<i>Urahpradesh</i> (chest region)
<i>Pitta</i>	<i>Agni</i>	<i>Sneha</i> , <i>Ushna</i> (hot), <i>Tikshna</i> (sharp), <i>Drava</i> (liquid), <i>Amla</i> (sour), <i>sara</i>	<i>Amashaya</i> (stomach)

posses certain qualities attributed to the predominant *mahabhuta*, and perform specific functions at a particular place. These three *doshaas* are further divided into fifteen subtypes with five subtypes of each three with specific place and function in the body<sup>5, 6, 7</sup>.

Table 2: Properties and site of three *doshaas*.

Table 3: Subdivision of three *doshaas* according to their site.

Table 4: Constituents of *dhatu*s and their *karma* (action)<sup>8</sup>.

Table 5: Constituents of *mala* and their *karma*.



<i>Kapha</i>	<i>Jala+Prithvi</i>	<i>Guru</i> (heavy), <i>Sheeta</i> (cold), <i>Mridu</i> (soft), <i>Snigdha</i> (unctuous), <i>Madhura</i> (sweet), <i>Sthira</i> (immobile), <i>Picchila</i> (mucilaginous)	<i>Pakwaashaya</i> (intestine)
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**Table 3** Subdivision of three *Doshaas* According to their Site

<b>DOSHA</b>	<b>STHAAN</b>
<i>Praan vaayu</i>	<i>Murdha</i> (head), <i>Urha</i> (chest), <i>Kantha</i> (throat), <i>Jivha</i> (tongue), <i>Naasika</i> (nose)
<i>Udaan vaayu</i>	<i>Naabhi</i> (umbilicus), <i>Urha</i> (chest), <i>Kanth</i> (throat), <i>Naasika</i> (nose)
<i>Samaan vayu</i>	<i>Agnisamipasth</i> (near digestive fire), <i>Aampakwashaya</i> (deuodenum)
<i>Vyaan vaayu</i>	<i>Sarva shareera</i> (whole body)
<i>Apaana vaayu</i>	<i>Vrushan</i> (scrotum), <i>Basti</i> (bladder), <i>Medhra</i> (penis), <i>Naabhi</i> (umbilicus), <i>Vankshan</i> (pelvis), <i>Guda</i> (anus)
<i>Paachaka pitta</i>	<i>Pakwaamashaya madhya</i> (deuodenum)
<i>Ranjaka pitta</i>	<i>Yakrut</i> (liver), <i>Pleeha</i> (spleen), <i>Amashaya</i> (stomach)
<i>Saadhaka pitta</i>	<i>Hridaya</i> (heart)
<i>Aalochaka pitta</i>	<i>Netra</i> (eyes)
<i>Bhraajaka pitta</i>	<i>Twacha</i> (skin)
<i>Tarpaka kapha</i>	<i>Shir</i> (head)
<i>Avalambaka kapha</i>	<i>Urha</i> (chest), <i>Trik pradesh</i> (chest region)
<i>Bodhaka kapha</i>	<i>Jivha</i> (tongue), <i>Jivhamula</i> (palate), <i>Kanth</i> (throat)
<i>Kledaka kapha</i>	<i>Aamashaya</i> (stomach)
<i>Sleshmak kapha</i>	<i>Sandhi</i> (joints)

**Table 4** Constituents of Dhatus and their Karma (Action)

<b>DHATU</b>	<b>MAHABHUTA</b>	<b>KARMA</b>
<i>Rasa</i> (plasma)	<i>Jala</i>	<i>Preenan</i> (provides sense of satisfaction, nourishment to blood and body)
<i>Rakta</i> (blood)	<i>Jala + Agni</i>	<i>Jeevanam</i> (sustain life activities)
<i>Maamsa</i> (muscles)	<i>Prithvi + Jala + Agni</i>	<i>Lepan</i> (covers body and nourishes body and meda dhatu)
<i>Meda</i> (fat)	<i>Jala + Prithvi + Agni</i>	<i>Snehan</i> (provides moistness in eyes and other parts, lubrication and stability)
<i>Asthi</i> (bones)	<i>Prithvi + Aakash</i>	<i>Dhaaran</i> (supports body, helps for posture)
<i>Majja</i> (bone marrow)	<i>Jala + Vaayu + Prithvi</i>	<i>Pooran</i> (provides lubrication, strength, and fill cavities of bone)
<i>Shukra</i> (semen)	<i>Jala + Prithvi</i>	<i>Garbhautpaadan</i> (provides courage, strength, happiness, production of foetus)

**TABLE 5** CONSTITUENTS OF MALA AND THEIR KARMA

<b>MALA</b>	<b>MAHABHUTA</b>	<b>KARMA</b>
<i>Purish</i> (stool)	<i>Prithvi + Jala</i>	provides strength and support vayu, agni and pitta
<i>Mutra</i> (urine)	<i>Jala + Agni</i>	Fills urinary bladder
<i>Sweda</i> (sweat)	<i>Agni + Jala</i>	Provides moistness and softness to skin and support hair and regulates temperature of body.

## PHYSIOLOGICAL REGULATION THROUGH GUNA

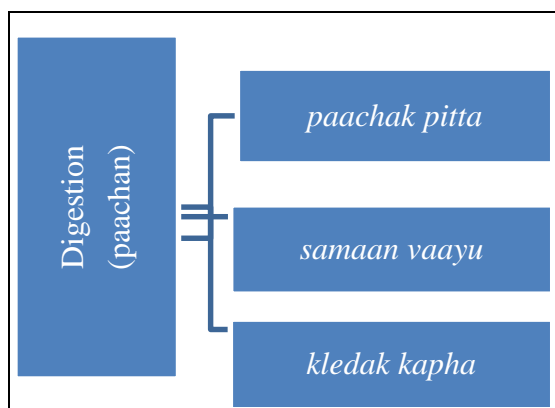
### 1. Digestion Process (*paachankriya*)<sup>9</sup>

Figure 1: Digestion

The digestion process is carried out with contribution from all the three *doshaas*. As long as the *doshaas* are operating in balanced manner the digestion process is optimum. Any disbalance in any of the



*doshaas* will lead to improper indigestion. In other words each *doshaa*, specifically its certain *guna* regulates certain *guna* of another *doshaa* in order to keep the digestion process in balance.

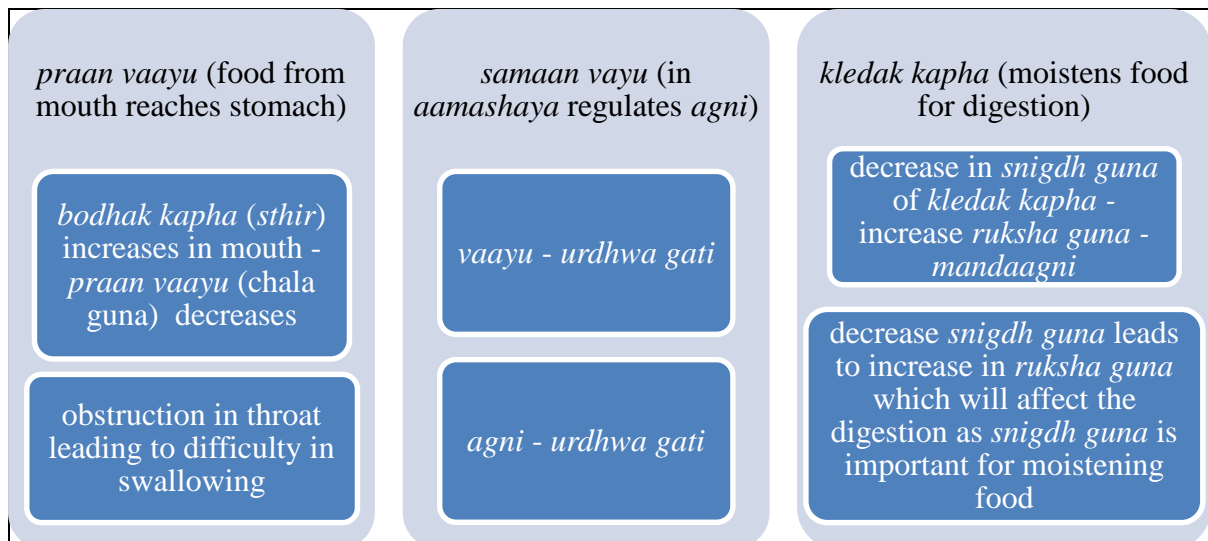


**Fig 1** Digestion

*Chala guna* of *vaayu* is responsible for ingestion and gastric movements of the food material. This *chala guna* is regulated by the *sthira guna* of *kapha* i.e. the food

ingested reaches the stomach with the help of *chala guna* of *praana vaayu*<sup>10</sup>. But if the opposite *guna* of *chala* i.e *sthira guna*, which is attributed to *kapha doshaa* increases in that region, it will decrease the function of *chala guna* and the normal functioning of *praana vaayu* will be affected. E.g. in *valaya* and *galaugh*<sup>11</sup> disease, accumulation of *kapha* in throat region creates obstruction and difficulty in swallowing food as the *sthira guna* of *kapha doshaa* dominates the *chala guna* of *praana vaayu*<sup>12</sup>. Similarly, if there is *kapha kshaya* within stomach then there will be hyperactivity of *chala guna* leading to quicker gastric emptying.

Figure 2: Digestion process



**Fig 2** Digestion Process

*Samaan vaayu* residing besides the *paachaka pitta* in *amashaya* enhances its strength and helps in proper digestion. Any vitiation of *samana vayu* naturally would affect the digestive capacity of the *pachaka*

*pitta*. Therefore, the activity of *Pitta* is regulated by *Vata*. Similarly the *kledak kapha* is responsible for moistening and lubrication of the ingested food owing to its *Drava* and *Snigdha guna*. If the opposite



*guna* of *snigdha (ruksha)* *guna* increases, which is attributed to *vata doshaa* it will lead lack of moistening and lubrication and consequently to disturbance in digestion. Hence *kapha doshaa* is also regulated by *vata doshaa* <sup>13</sup>.

The *ushna guna* of *Paachaka pitta* is primarily responsible for the digestion. But this activity is regulated by the *sheet guna* of *kledaka kapha*. Any vitiation of *kledaka kapha* leads to improper digestion.

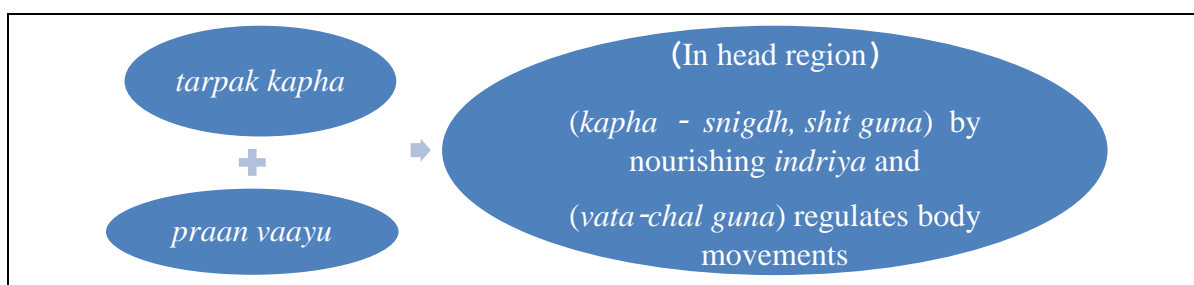
Therefore, it is evident that the digestion process is mainly carried out by *pitta* but is regulated by *vata* and *kapha* so that the *pitta* functions at an optimal level.

## 2. Sensory Function

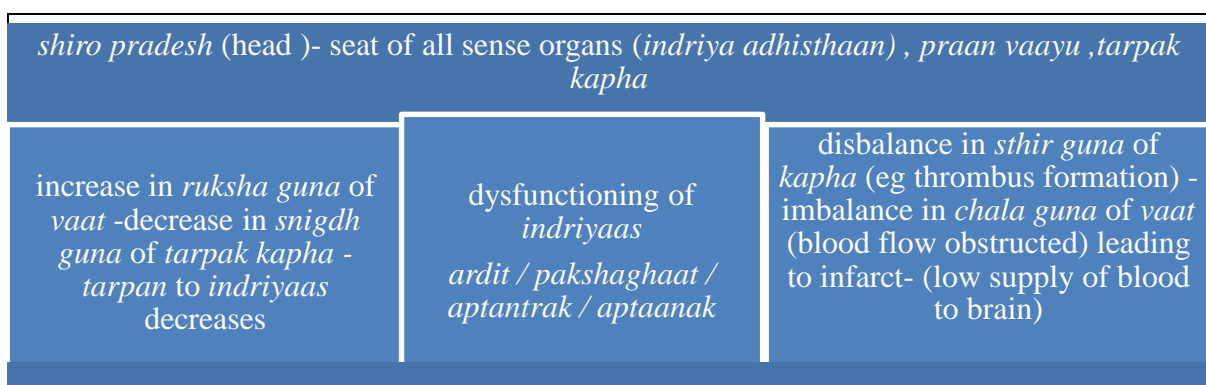
Head is seat of all sense organs (*indriyas*) which is nourished by *Tarpak kapha*. *Tarpak kapha* with its *snehan* and *santarpan* effect nourishes *indriyadhistaan shir* (head) for the proper functioning of all sense organs <sup>14</sup>. Thus, it can be said that *kapha* is the structural basis of the *shira*. But the functions of the *indriyas* are performed by, *vata (praana vaayu)* <sup>15</sup>.

Figure 3: *Indriya adhisthaan (doshaas in shiropadesh)*

Figure 4: *Indriyagrahan (physiology and pathology)*



**Fig 3** *Indriya Adhisthaan (Doshaas in Shiropadesh)*



**Fig 4** *Indriyagrahan (Physiology and Pathology)*

Any structural morbidity i.e. change in the status of *Kapha* as seen in necrosis in the brain subsequent to cerebro-vascular

accident leads malfunctioning of the sensory compartment i.e the functions of *vata dosha*. Therefore, it can be observed



that though *vata* is effector but its functions are regulated by *kapha*.

### 3. Joint Movements (*pravartak chestanaam*)

*Chala guna* of *Vata dosha* is responsible for all the *chestas* (movement) done by body.

Body joints are the main seat of *sleshmak*

*kapha*. *Sleshmak kapha* provides the greasing effect by its *snigdha guna* for soft and unrestricted movements of all joints <sup>16</sup>.

Figure -5: *Doshaas* in joint movements

Figure- 6: *Manyastambha*

Figure -7: *Sandhigatvaata* (painful joints)

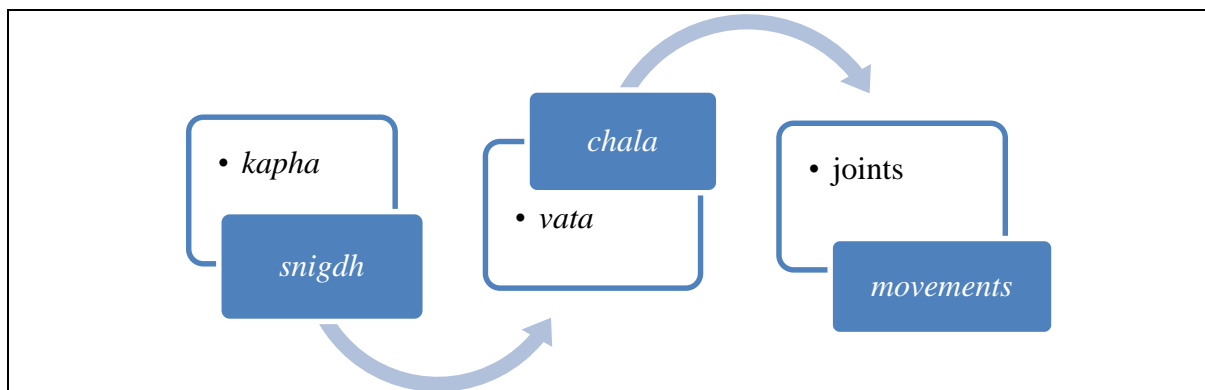


Fig 5 *Doshaas* in Joint Movements

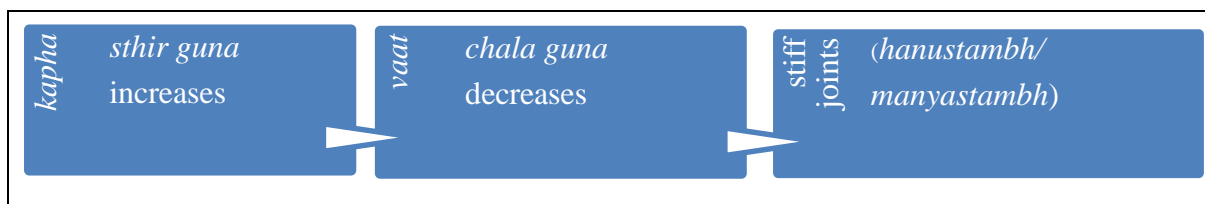


Fig 6 *Manyaastambha*

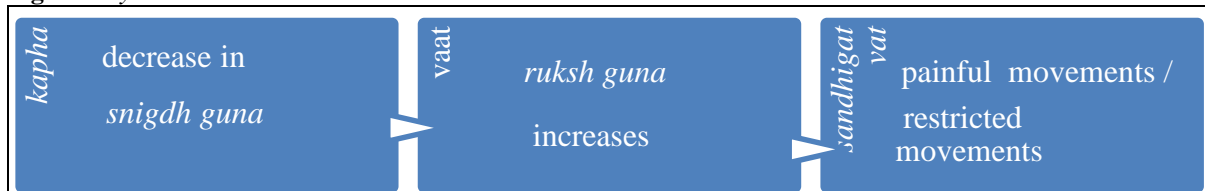


Fig 7 *Sandhigatvaata* (Painful Joints)

Mobility of joints is due to *chala guna* of *Vata dosha* whereas *Sthira*, the opposite *guna* of *chala*, which is attributed to *kapha* regulates this function. If *sthir guna* of *kapha* is affected then there is imbalance in the activity of *chala guna* and vice a versa. Also absolute *kshaya* (decrease) of *snigdha guna* in joints leads to the fusion of joints,

which is also the function of *kapha* (*sanghaat*). This is evident that for proper or improper functioning of joints, *kapha dosha* regulates *vata dosha* <sup>17</sup>.

### 4. Circulatory System

Figure 8: Blood circulation <sup>18</sup>

*Avlambaka kapha* helps in *avalambana* (provides strength and nourishment – by



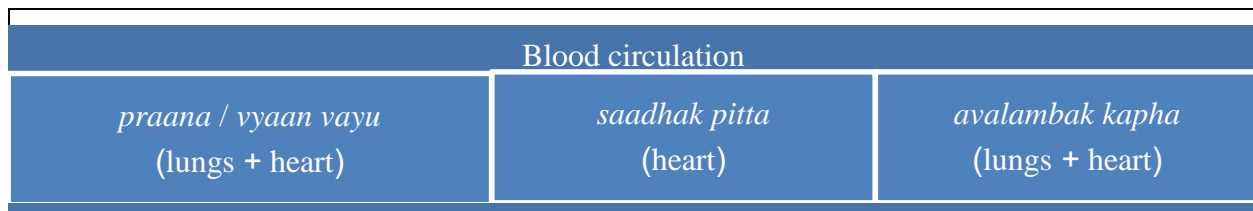


*sthira* guna of *kapha*) to *hridaya* (heart) and *phupphusa* (lungs), whose main functions are performed by *vata*. The following instances reflect how vitiation of *kapha* leads to malfunctioning of *vata*.

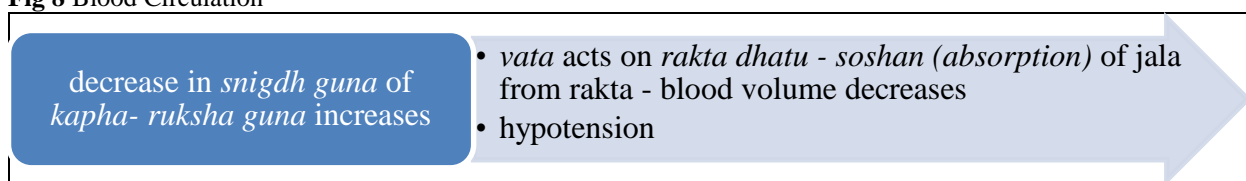
Figure 9: Eg: Hypotension <sup>19</sup>

Figure 10: Eg: *Hridshool*<sup>20</sup>/ Angina pectoris

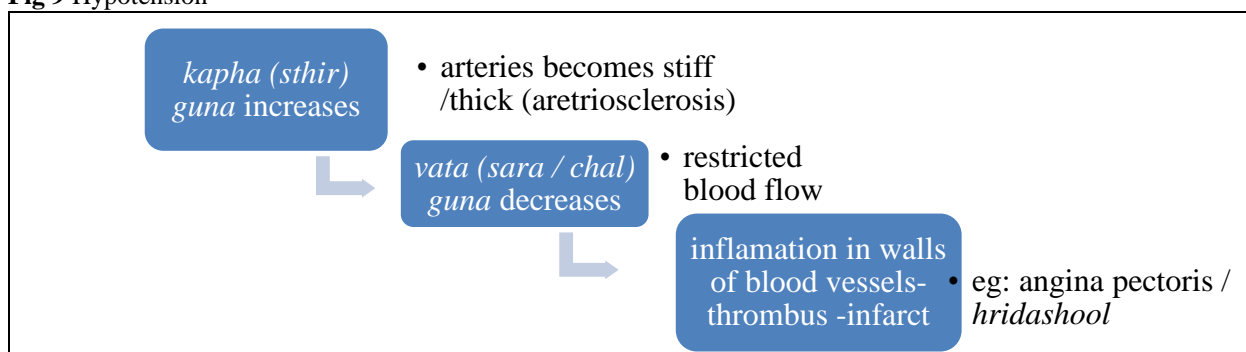
Figure 11: Eg: *siragatvata*<sup>21</sup> / Hypertension



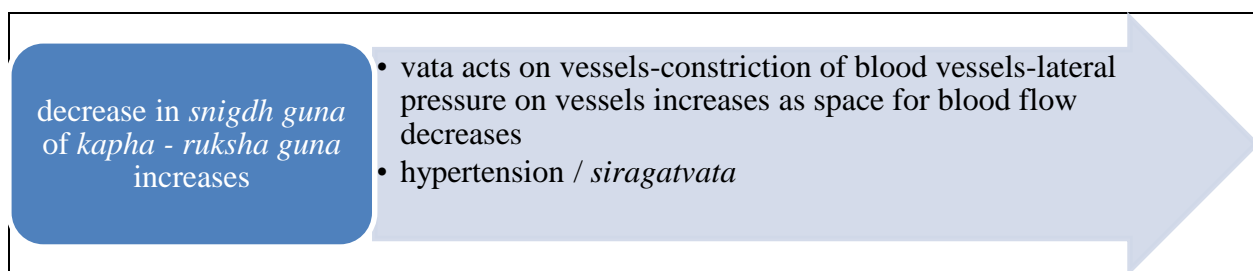
**Fig 8** Blood Circulation



**Fig 9** Hypotension



**Fig 10** Hridashool



**Fig 11** Siragatvata

## 5. Respiratory System

Upper Respiratory Tract

Figure 12: Upper respiratory tract

*Praan vaayu* takes up oxygen rich air from nostrils to lungs via pharynx and trachea. If the *chala* guna of *vata* is hampered by the

*sthira* guna of *kapha* it will obstruct the pathway leading to dysfunctioning in inhalation process as seen in *balaas*, *satghni* and *galaugh* diseases<sup>22</sup>.



Figure 13: Pathophysiology in upper respiratory tract

Figure 15: eg :Swaraghna<sup>23</sup> / Emphysema

Figure 16: Asthama

Figure 14: Lower respiratory tract

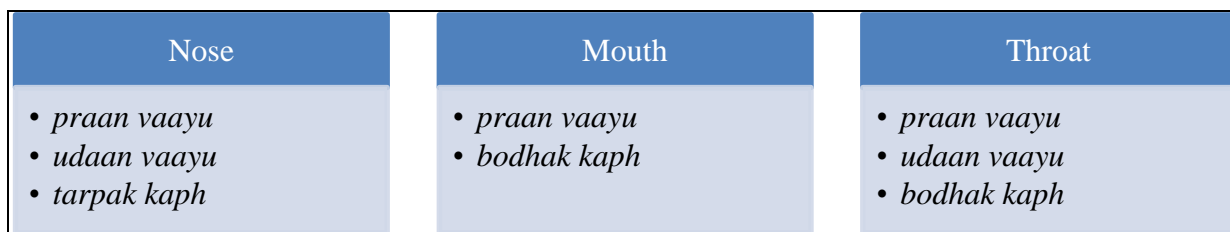


Fig 12 Upper Respiratory Tract

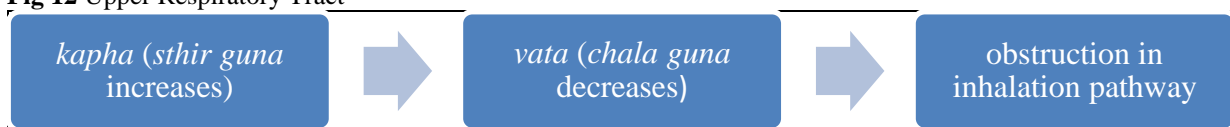


Fig 13 Pathophysiology in Upper Respiratory Tract

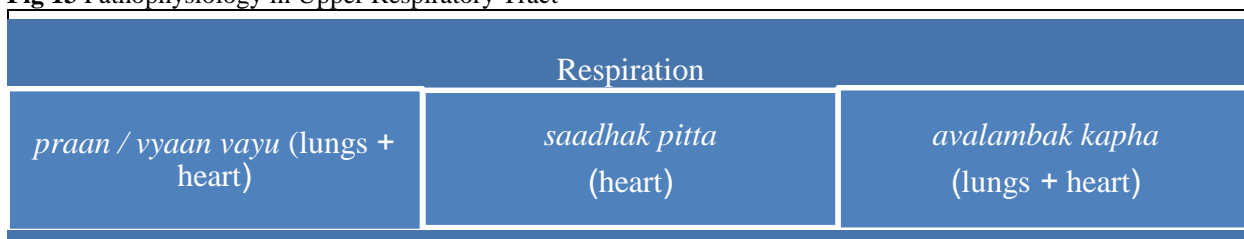


Fig 14 Lower Respiratory Tract

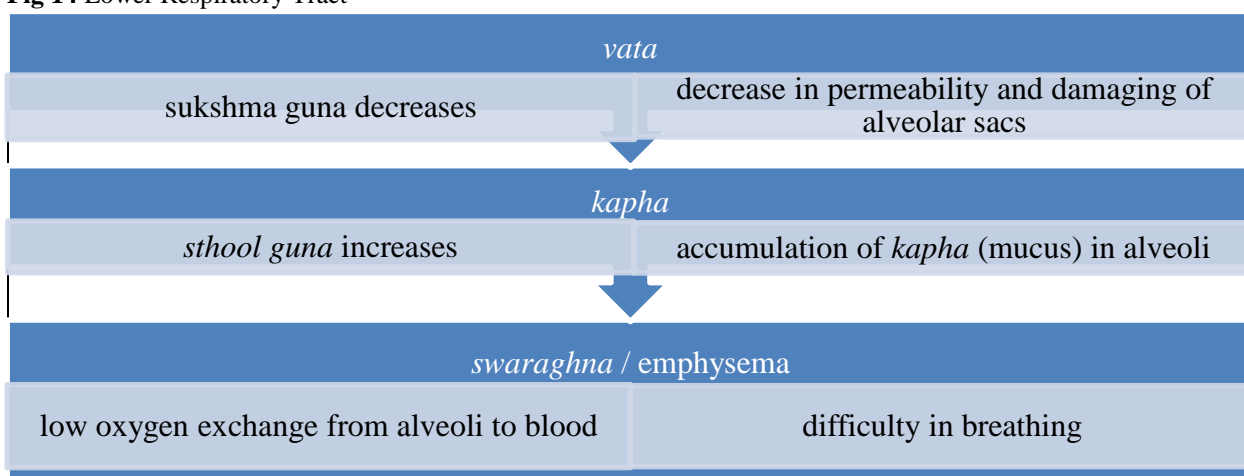


Fig 15 Swaraghna

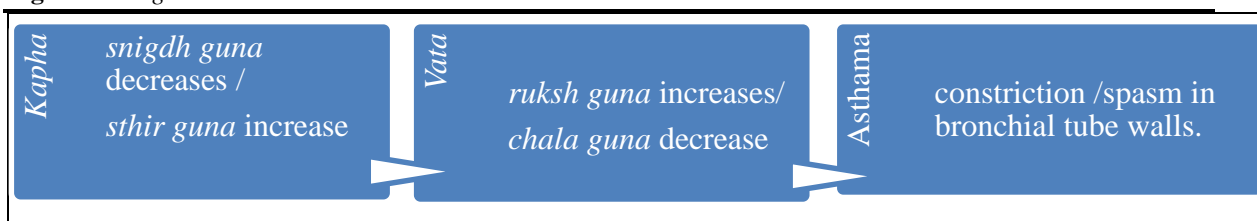


Fig 16 Asthama

## 6. Concept of Oja Vriddhi

Figure 17: Concept of *langhana* and *ojavriddhi*

*Oja* is defined as the quintessence of all seven *dhatu*s. It is also known as the superlative degree of *kapha*. According to



*Ashtang Hriday Sutrasthan 14/15 langhan* (a therapeutic regimen leading to lightness of the body, usually done by fasting or administration of light diet) leads to *ojavriddhi*. *Langhana* is effectuated by *Laghu guna*. But *oja* can be produced from *dhatu*, which needs *guru guna* for their increase. Thus, it is evident that *guru guna*, to perform, optimally needs optimal *laghu guna*.

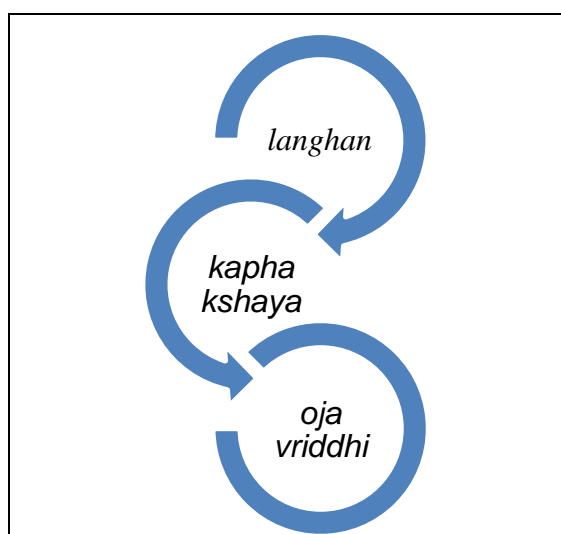


Fig 17 Concept of *Langhan* and *Ojavriddhi*

## GUNA PAIRS AS REGULATORY MECHANISM

### DISCUSSION –

Ayurveda postulates *Guna* as the reason for any activity or action. In (Ca.Su:1, Ca.Su:26), there are different types of *Gunas* described in Ayurveda. 10 pairs or 20 *Gunas* are termed as *Shareera gunas* i.e. these *gunas* are observed in the body. Each pair of *Guna* contains opposite *gunas*, one is known as *Santarpaka guna* and the other one is *Apartarpaka* e.g *Guru* (heavy) –

*santarpaka* and *Laghu* (light) - *apatarpaka*. Such a classification and further enumeration is done against the background of classifying the entire universe as *Agni / Ushna / Surya* (hot) and *Soma / Sheeta / Moon* (Cool). The manifestation of *Guna* is attributed to the *Mahabhuta* and their respective configuration within the substance. Each and every component of the body is expressed in terms of its *Gunas*, eg. *Vata dosha* as *chala, ruksha*, etc, *Rasa dhatu* as *drava, snigdha* and so on. The structure-functional status of a component is thus decided and influenced by its *gunas*. In other words anatomy, physiology and pathology of any body component is due to its *guna*.

It is interesting to notice that the *shareera gunas* are described in opposite pairs. What could be the basis of such pair classification? We compiled the *guna* – activity instances from the classical texts, modern medicine literature and available experimental information and subsequently endeavoured to find the link between the activity causing *guna* and its opposite *guna*. These linkages are discussed below.

1. It was observed from the digestion process that *Chala guna* of *Vayu*, which is responsible for the movement of food within the GIT (effector *guna*) is regulated by the *Sthira guna* of *Kapha* (regulator *guna*). Similarly *snigdha guna* of *Kapha*,



which facilitates the breakdown of the food particles is regulated by *Ruksha guna* of *Vata*. The *ushna guna* of *Pitta*, which is responsible for the digestion is regulated by the *Sheeta guna* of *Kapha*. Any change in the regulatory *guna* produces hyper or hypo or mal functioning of the effector *guna*.

2. The *sthira guna* of *Kapha* in a joint act as the regulator *guna* for the balance functioning of the effector *chala guna* of *Vata dosha*. Any imbalance in the regulator *guna* will affect the effector *guna* by either leading to painful and restricted movements or joint stiffness.
3. Head is the main seat of *tarpak kaph* which act as the regulator *guna* for the effector *chala guna* of *Vata* by nourishing the *indriyas*. Any dearrangement in the regulator *guna* of *kapha* affects the normal functioning of *chala guna* of *vata doshaa* which is responsible for the responses of sensory organs.
4. In the circulatory system *sthira guna* of *kapha* regulates the effector *chala guna* of *vata*. For eg; If *sthira guna* increases in the blood vessels (cholesterol deposition) leading to narrowing of blood vessels this results in Hypertension. Hence the *kapha* regulates the effect of *vata doshaa*.
5. In respiration process *snigdha guna* of *kapha* is regulated by the *ruksha guna* of *vata doshaa* as *kapha* provides strength to

heart and lungs which are main organs of respiration.

6. *Laghu guna* regulates the optimum utilization of *Guru guna* as seen in *langhana*. Thus, after fasting light food is advised because the *laghu guna* facilitates higher utilization of *guru guna*.

It could be observed from the above examples that each *guna* regulates its opposite *guna* i.e. a *guna* performs its optimum activity under the regulation of its opposite *guna*. It can be seen that without any change in the effector *guna*, the activity can increase or decrease if the opposite *guna* is decreased or increased. These observations was found in classical texts (*aptopadesha*), can be observed in human body (*pratyaksha*) and could be interpreted (*anumana* and *yukti*). Therefore, all the four *pramanas* suggest that inter-regulation is one of the inherent concepts in the pair classification of *shareera gunas*. This regulation maintains the optimum intensity of any activity which contributes to the balanced state of functioning i.e. health.

## CONCLUSION

In the pair classification of *Shareera gunas*, one *guna* of the pair is the effector *guna* and the other one is the regulator *guna*. The balance of *tridosha* is of prime important



for the normal body physiology. These *doshaas* complements each other by keeping their *gunas* in a balance form. These opposite pairs of *guna* of *doshaas* act as the effector and the regulator. Any change in the *guna* of regulator *doshaa* affects the *guna* of effector *doshaa*.

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