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## Physiological Approach Towards *Panchamahabhuta Theory*

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### ABSTRACT

As we know that each and every object in the universe is made up of *Panchamahabhutas* with predominance of one *Mahabhuta* along with other four *Mahabhutas*.<sup>1</sup> That's why all the objects in the universe are divided into *Akashiya*, *Vayavya*, *Agneya*, *Jaliya* and *Parthiva*.<sup>2</sup> Human body is a part of universe and it is also made up of *Panchamahabhutas*. *Ahara* that we eat and the *Dravyas* we administer to treat the *Vyadhis* also made up of *Panchamahabhuta*. In the human body *Panchamahabhutas* represents the *Dosha*, *Dhatu*, *Mala* etc. So, understanding of *Panchamahabhutas* at different levels are very important to understand basic composition, structure and functions of the universe and human body. *Panchamahabhutas* are also helpful in understanding and treating the disease successfully. So here an attempt is made to understand *Mahabhutas* at atomic, cellular level and their application at different fields and in the human body.

**Key words:** *Panchamahabhuta, atom, cell, chikitsa*

### Introduction

The *Panchamahabhuta* is a Sanskrit word which is composed of three words i.e. *Pancha*, *Maha* and *Bhuta*. Here *Pancha* means five, *Maha* means Great and *Bhuta* is the word which is derived from "*Bhu Sattayaam Dhatu*" means - which has Existence or which is real.<sup>3</sup> As per the statement "*Mahantibhutani Mahabhutani*" as they spread in all the movable and immovable objects of the universe, they are called as *Mahabhutas*.<sup>3</sup> The object which has specific quality of perceivability through external sense organs is known as *Bhutatva*.<sup>3</sup> Same is meant for *Mahabhutas*. *Panchamahabhutas* are the basic five elements of universe by which all living and non-living creatures are made up of.<sup>1</sup> *Acharya Charaka* has also placed these *Panchamahabhutas* under *Nava Karana Dravayas*- factors responsible for production of *Murta* and *Amurta Dravya*.<sup>4</sup> *Panchamahabhutas* are *Akasha*, *Vayu*, *Agni*, *Jala* and *Prithvi*, the *Shabda*(sound), *Sparsha*(touch), *Rupa*(form), *Rasa*(taste) and *Gandha*(smell) are their objects.<sup>5</sup> There is a fundamental harmony at the macrocosm level and microcosm level and our body is a very minute image of the universe. The only thing which differentiates living and non-living things is soul.<sup>6</sup> So human body is composed of *Panchmahabhutas* and food we eat is also *Panchabhautic*. When food undergoes digestion with the help of *Jatharagni* and *Bhutagni*. Symmetrical properties of *Panchmahabhutas* in the food give nutrition to corresponding symmetrical part of body (corresponding *Mahabhuta*).<sup>7</sup> This concept in *Ayurveda* is known as *Samanyam Vriddhi Karanam* e.g. *Parthiva* (*Prithvi* dominant) properties of food will nourish the *Parthiva* component of the body.<sup>8</sup> In the human body *Panchamahabhutas* understood with the help of *Dosha*, *Dhatu* and *Mala* etc. The equilibrium of these

five elements in the human body denotes the health while the imbalance of these denotes disease.<sup>9</sup> The *Dravya* used to cure the disease is also *Panchabhautic*.<sup>1</sup>

## UTPATTI OF PANCHAMAHA BHUTA

### A) According to *Taittiriya Upanishat*

From *Atma Tatva* first *Akasha Mahabhuta* is formed then *Vayu*, *Agni*, *Jala* and *Prithvi* is formed respectively.

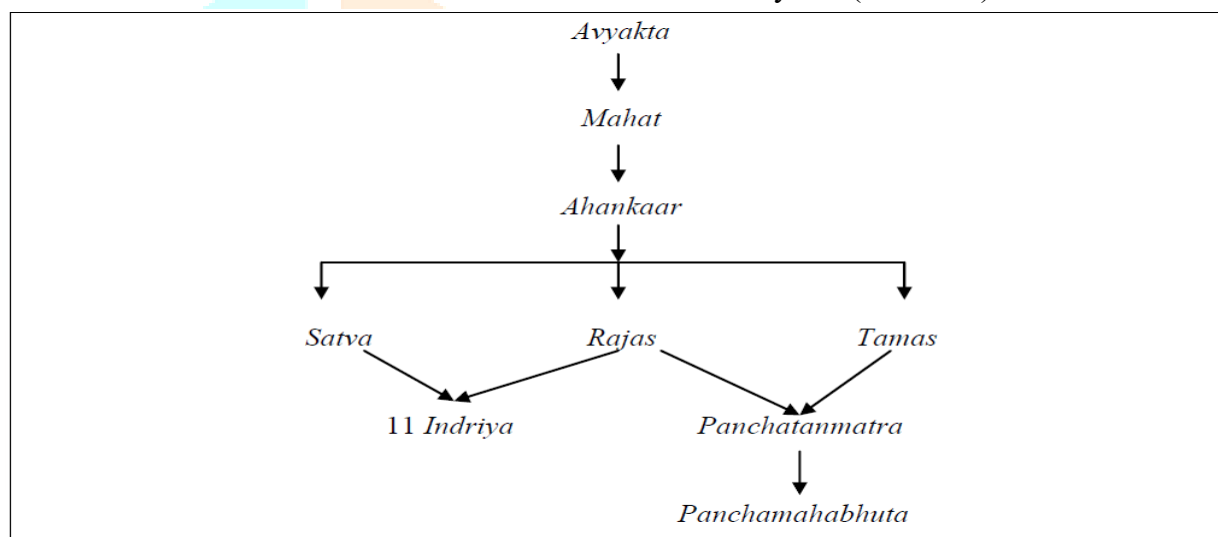


### B) According to *Sushruta*<sup>10</sup>

It takes place in 3 levels

- First level: Evolution of *Panchatanmatra* (Subtle elements)
- Second level: *Bhutantaranupravesha* (Imitative pervasion)
- Third level: *Panchikaran* (Reciprocal pervasion)

Table 1: Evolution of *Mahabhutas* from *Avyakta* (indistinct).<sup>11</sup>



## AYURVEDIC CONCEPT OF PANCHAMAHA BHUTA<sup>12,13,14,15</sup>

### *Akasha Mahabhuta*

It is the first *Karana Dravya* and 20<sup>th</sup> *Tatva* of creation. It is having *Satva Guna* predominantly. It is responsible for *Soushriya* (hollowness) and *Laghuta* (lightness). *Akasha Mahabhuta* structures in the body are- All body passages and cavities.

### *Vayu Mahabhuta*

It is the 2<sup>nd</sup> *Karana Dravya* and 21<sup>st</sup> *Tatva* of creation. It is having *Rajo Guna* predominantly. It is responsible for *Laghuta*(lightness), *Vaishadya* (transparency), *Vichara* (movements) and *Glani* (exhaustion). *Vayu* structures in the body are - Inspired air, Expired air, all movements in the body.

### *Agni Mahabhuta*

It is the 3<sup>rd</sup> *Karana Dravya* and 22<sup>nd</sup> *Tatva* of evaluation. It is having *Satva* and *Rajo Guna* predominantly. It is responsible for burning sensation, lusture, expression of color and digestion (Process of Transformation). *Agni Mahabhuta* structures in the body are- *Pitta*, temperature, lustre etc.

**Jala Mahabhuta**

It is the 4<sup>th</sup> *Karana Dravya* and 23<sup>rd</sup> *Tatva* of creation. It is having *Satva* and *Tamo Guna* predominantly. It is responsible for *Snehana* (lubrication), *Vishyandana* (secretions), *Kleda* (wet), *Prahladana* (Satisfaction) and *Bandha* (Binding). *Jala* structures in the body are- Body fluids, blood, fatty tissue, *Kapha*, *Pitta*, urine, stool, sweat, semen etc.

**Prithvi Mahabhuta**

It is Derived from *Jala Mahabhuta* and having an inseparable relation with *Gandha Guna*. It is having *Tamo Guna* predominantly. It is responsible for *Guruta* (Heaviness), *Sthairya* (Stability), *Sanghata* (Compactness) and *Upachaya* (Growth) in the body. *Parthiva* structures in the body are- Nails, bones, tendons, teeth, muscles, skin, hair, etc hard structures.

**PANCHAMAHABHUTA AND THEIR PHYSICAL QUALITIES**Table 2: Showing *Panchamahabhuta* and their physical quality. <sup>16</sup>

<b>Mahabhuta</b>	<b>Physical properties</b>
<i>Akasha</i>	<i>Apratighata</i> (free from friction or no resistance)
<i>Vayu</i>	<i>Chalatva</i> (Motion)
<i>Agni</i>	<i>Ushnatva</i> (Heat and Temperature)
<i>Jala</i>	<i>Dravatva</i> (Liquidity)
<i>Prithvi</i>	<i>Kharatva</i> (Hardness)

**PANCHAMAHABHUTA AND THEIR SPECIAL QUALITIES**Table 3: Showing *Panchamahabhuta* and their special quality. <sup>16</sup>

<b>Mahabhuta</b>	<b>Special qualities</b>
<i>Akasha</i>	<i>Shabda, Laghu</i>
<i>Vayu</i>	<i>Sparsha, Ruksha</i>
<i>Agni</i>	<i>Rupa, Teekshna</i>
<i>Jala</i>	<i>Rasa, Snigdha</i>
<i>Prithwi</i>	<i>Gandha, Guru</i>

**DISCUSSION****A) UNDERSTANDING OF PANCHAMAHABHUTA AT ATOMIC LEVEL**

Atom is the basic components of all matter. It is the smallest particle of an element that has all the properties of that element.<sup>17</sup> Atoms consist of nucleus of protons and neutrons surrounded by electrons.<sup>17</sup> It is also composed of all the *Panchamahabhutas* in the following manner. Any atom to stay in the universe or earth, requires space which is provided by *Akasha Mahabhuta*. Movements to the electrons is given by *Vayu Mahabhuta*. The energy or the force which keeps these electrons to revolve in a fixed orbit is provided by *Agni Mahabhuta*. Neutrons bound together with other neutrons and protons in atomic nucleus with the help of *Jala Mahabhuta*. *Prithvi Mahabhuta* provides shape, molecular weight and compactness to the atoms.

**B) UNDERSTANDING OF PANCHAMAHABHUTA AT CELLULAR LEVEL**

Cell is defined as the structural and functional unit of the living body.<sup>18</sup> Each of the five elements forms different structures in the cell and in the body. As we know that cell is the basic unit of body and it require some space to occupy or to stay. So that space is given by the *Akasha Mahabhuta*.

As we know that without movement nothing will occur. *Jala Mahabhuta* provides the medium for the movement in the cell. But to move in a particular direction *Vayu* is necessary. So, *Vayu Mahabhuta* provides movements and direction in the cell. As it is responsible for movements, it helps in the transportation across the cell membrane like ionic exchange between ECF and ICF, transportation of genetic information, impulses etc.

*Agni* in the body act as bio-transformer by transforming from one form to another form. This *Agni* located in the body is made up of mainly *Agni* and *Jala Mahabhuta* which promotes all the biotransformation process. Similarly in the cell, processes like transcription, translation and protein synthesis etc are done with the help of *Agni Mahabhuta*.

70 percentage of body consist of water.<sup>19</sup> In the cell cytoplasm made up of *Jala Mahabhuta*. Transportation across the cell membrane requires medium for the transportation which is provided by *Jala Mahabhuta*.

Each and every cell in the body has a particular shape or structure. So *Prithvi Mahabhutas* gives particular shape to each cells Examples – Simple Cuboidal epithelium, Columnar epithelial cells, different shape of cell organelles.

**Example -Protein synthesis** -For the synthesis of protein genetic information (DNA) has to form in the nucleus and then it is converted into mRNA. This mRNA will move from nucleus to ribosome with the help of *Jala Mahabhuta* which provides medium for the movement of mRNA and *Vayu Mahabhuta* provides proper direction and movements. After reaching ribosomes processes like transcription, translation and protein synthesis takes place with the help of *Agni Mahabhuta*. Once protein is formed it has to get proper shape and compactness which is provided by *Prithvi Mahabhuta* and the space that is needed for protein to stay in the cell is provided by *Akasha Mahabhuta*. So, all *Mahabhutas* are necessary for each process in the cell and the body.

### C) ROLE OF PANCHAMAHABHUTAS IN THE GARBHA FORMATION<sup>19</sup>

*Mahabhutas* play vital role during *Garbha* formation. When sperm and ovum unite together a zygote is formed. All five *Mahabhutas* act on this zygote and also helps in the formation of *Prakrithi* of an individual. Among *Panchamahabhutas*, *Vayu* performs function of *Vibhajana* (cell division/ multiplication) of *Garbha* into *Dosha*, *Dhatu*, *Mala*. *Vayu* also controls the movement of gases, impulses and nutrients from mother to the foetus. *Agni* carries function of *Pachana* (metabolism). *Jala Mahabhuta* provides moistness and nourishment to dividing cells and helps in growth of tissues in foetus (*Kledana*). *Prithvi* carries function of *Samhanana* (providing compactness or formation of mass). *Prithvimahabhuta* also provides *Rupa* (structure) and *Akara* (shape) to the *Garbha*. *Akasha Mahabhuta* provides space for *Garbha* in the mother womb and it also provides spaces in the cells for their multi-dimensional development (*Vivardhana*). So, *Shareera*(body) is formed normally if *Mahabhutas* perform their functions properly at the time of conception and in the intra uterine life.

### D) APPLICATION OF PANCHAMAHABHUTAS IN HUMAN BODY.

As we know that *Dosha*, *Dhatu* and *Malas* are the *Moolas* of the *Shareera* just like a root of tree which are responsible for origin, sustenance and destruction of body i.e. *Sambhava*, *Sthiti* and *Pralaya* of *Shareera*.<sup>20</sup> These *Moolas* also made up of *Panchamahabhutas*. So, in the human body, *Panchamahabhutas* are explained in terms of *Doshas*, *Dhatu*s and *Malas* and in drugs and dietary substances they represent the *Rasas*, *Guna*, *Virya* and *Vipaka*. Now the question is how these all factors connected? What is the base for this connection? And the answer is, factors which connects *Mahabhutas* with universe and human body are *Dravya*, *Guna* and *Karma Samanyata* between them. This *Dravya*, *Guna* and *Karma Samanyata* between *Panchamahabhuta* and body and universe is the base for this connection. Following table explains about composition of *Dosha*, *Dhatu* and *Malas*.

Table 4: Gunas of Doshas, Dhatus, Malas and Panchamahabhuta

<b>Dosha, Dhatu and Malas</b>	<b>Panchamahabhuta predominance</b>	<b>Mahabhuta Gunas according to Astangahrdaya<sup>21</sup></b>	<b>Gunas of Mahabhutas according to other reference<sup>22</sup></b>
Vata	Vayu	Ruksha+Laghu+ Vishada+ Sparsha+	Khara+Chala+Sukshma+ Vishada+Sheeta+Vyavayi+Vikasi
	Akasha	Laghu+ Shabda	Mrudu+ Sukshma+Laghu+ Vishada+ Khara+ Sheeta+ Vyavayi
Pitta	Agni	Teekshna+Ushna+Ruksha+ Vishada+Suksma	Laghu
Kapha	Jala	Snigdha + Guru+Drava+ Sheeta + Manda+ Sandra	Mrudu+ Sara+ Guru+ Pichhila
	Prithvi	Guru+Manda+Sandra+Kharatva	Sthira+Kathina+Sthula+ Vishada
Rasa	Jala	Snigdha+Guru+Drava+ Sheeta + Manda+ Sandra	Mrudu+ Sara+ Guru+ Pichhila
Rakta	Agni	Teekshna+Ushna+Ruksha+ Vishada+Suksma	Laghu
	Jala	Snigdha+Guru+Drava+ Sheeta + Manda+ Sandra	Mrudu+ Sara+ Guru+ Pichhila
Mamsa	Vayu	Ruksha+Laghu+Vishada +Sparsha	Khara+Chala+Sukshma+ Vishada+Sheeta+Vyavayi+Vikasi
	Jala	Snigdha+Guru+Drava+ Sheeta + Manda+ Sandra	Mrudu+ Sara+ Guru+ Pichhila
	Agni	Teekshna+Ushna+Ruksha+ Vishada+Suksma	Laghu
Meda	Jala	Snigdha+Guru+Drava+Sheeta + Manda+ Sandra	Mrudu+ Sara+ Guru+ Pichhila
	Agni	Teekshna+Ushna+Ruksha+ Vishada+Suksma+	Laghu
	Prithvi	Guru+Manda+Sandra+ Kharatva	Sthira+Kathina+Sthula+ Vishada
Asthi	Prithvi	Guru+Manda+Sandra+ Kharatva	Sthira+Kathina+Sthula+ Vishada
Majja	Jala	Snigdha+Guru+Drava+ Sheeta + Manda+ Sandra	Mrudu+ Sara+ Guru+ Pichhila
Shukra	Vayu	Ruksha+Laghu+Vishada +Sparsha	Khara+Chala+Sukshma+ Vishada+Sheeta+Vyavayi+Vikasi
	Agni	Teekshna+Ushna+Ruksha+ Vishada+Suksma	Laghu
	Prithvi	Guru+Manda+Sandra+ Kharatva	Sthira+Kathina+Sthula+ Vishada
	Jala	Snigdha+Guru+Drava+ Sheeta + Manda+ Sandra	Mrudu+ Sara+ Guru+ Pichhila
Shakruth	Agni	Teekshna+Ushna+Ruksha+ Vishada+Suksma	Laghu

	Vayu	Ruksha+Laghu+Vishada +Sparsha	Khara+Chala+Sukshma+ Vishada+Sheeta+Vyavayi+Vikasi
	Prithvi	Guru+Manda+Sandra+ Kharatva	Sthira+Kathina+Sthula+ Vishada
Sweda	Jala	Snigdha+Guru+Drava+ Sheeta + Manda+ Sandra	Mrudu+ Sara+ Guru+ Pichhila
	Agni	Teekshna+Ushna+Ruksha+ Vishada+Suksma	Laghu
Mutra [Human]	Jala	Snigdha+Guru+Drava+ Sheeta + Manda+ Sandra	Mrudu+ Sara+ Guru+ Pichhila
	Agni	Teekshna+Ushna+Ruksha+ Vishada+Suksma	Laghu

Based on the *Gunas* and *Panchamahabhoutic* composition one can select a *Yogas* or *Dravya* to balance the vitiated *Doshas*. And we also know that ayurvedic treatment methodology is mainly based on the *Samanya* and *Vishesha Sidhantha* in which *Samanya* and *Vishesha Dravyas* or *Gunas* or *Karmas* are used to treat the *Vridhi* and *Kshaya* (of *Dosha*, *Dhatu* and *Mala*) respectively. Following are the examples to understand the above concept,

1) In case of *Vata Vruddi* we will administer, *Sneha* like *Tila Taila* having predominantly *Jala* and *Prithvi Mahabhuta* as a *Dravya Vishehsa*, *Ahara* or *Aoushada* having predominant *Snigda, Guru, Ushna, Manda* etc qualities as *Guna Vishesha* and *Divaswapna* as *Karma Vishehsa*.

2) In case of *Rakta Dhatu Kshaya*, we will administer, *Rakta* (blood transfusion) having predominantly *Jala* and *Prithvi Mahabhuta* as a *Dravya Vishehsa*, *Ahara* or *Aoushada* having predominant *Ushna, Teekshna, Drava, Visra* etc qualities as *Guna Vishesha*.

3) *Shukra Kshaya* – usage of milk helps to correct the *Kshaya* of *Shukra Dhatu* by its *Madhura, Snigda* etc *Gunas*.

4) *Kapha Khaya* is corrected using *Sneha* as *Dravya Samanaya*, *Ahara* or *Aoushada* having predominant *Snigda, Sheeta, Guru, Manda* etc qualities as *Guna Samanya* and *Divaswapna* as *Karma Samanya*.

## E) APPLICATION OF PANCHAMAHABHUTAS.

### a) Role of *Panchamahabhutas* in *Chikitsa*.

As we know that whatever the *Vyadhis* occurring in the body, there should be involvement of *Tridoshas*, just like how the shadow of a bird follows the bird wherever it flies.<sup>25</sup> So, when *Doshas* in normalcy will maintain the health of an individual and if they undergo any vitiation will leads diseases if not taken care.<sup>26</sup> Here to treat those *Vyadhis* produced due to vitiated *Doshas*, one should have clear knowledge about *Dosha* and its *Panchabhautic* composition to administer *Dravya*, *Guna* and *Karma* to bring back the normalcy of *Doshas* they're by curing the disease by bringing back to vitiated *Doshas* into normalcy.

### b) Role of *Panchamahabhutas* in *Shodhana Karma*.

As we know that *Shodhana Karma* helps to eliminate the *vitiated Doshas* out of the body. To achieve this one should have a proper knowledge about *Panchamahabhoutic* composition and qualities of *Shodhana Dravyas*. So that we can select a proper drug to *achieve aim of Shodhana therapy and helps to maintain the health of an individual*.

<b>Shodhana drugs</b>	<b>Mahabhutas predominance<sup>23</sup></b>	<b>Predominant qualities (Vaisheshik Darshan)</b>	<b>Other qualities of Vamana and Virechana Dravyas<sup>23</sup></b>
<i>Vamana</i> Eg-Madhanaphala	<i>Agni and Vayu</i>	<i>Laghu and Urdhwagami</i>	<i>Ushna+Teekshna+Suksma+Vyavayi+Vikasi</i>
<i>Virechana</i> Eg-Trivrt	<i>Prithvi and Jala</i>	<i>Guru and Adhopatana</i>	<i>Ushna+Teekshna+Suksma+Vyavayi+Vikasi</i>

### b) Role of Panchamahabhutas in Dhatu Samyata.

One of the objectives of *Ayurveda* is to make *Dhatu Samyata*.<sup>24</sup> As we know that food and medicine we take are also made up of *Panchamahabhuta* so in order to bring *Dhatu Samyata* in the body we have to administer the *Dravya, Guna and Karma* which is similar or opposite based on the *Samanya Vishesh Siddantha*.

Example- In case of *Mamsa Kshaya*, we will administer *Mamsa Yukta Ahara, Masha* with *Ahara and Brahmana Taila Abhyanga* as *Dravya Samanya, Guna Samanya* and *Karma Samanya* respectively to improve the *Ksheen Mamsa Dhatu* and treat *Mamsa Kshaya*.

### F) Superiority among Panchamahabhutas

As we know that anything in this universe requires space for its stay or existence. So, among *Panchamahabhutas* first *Mahabhuta* formed in this universe is *Akasha* and it provides space for each and everything in this universe so if space itself is not there means there is no existence of other *Mahabhutas* and other objects in this universe. Taking this into account we may state that *Akasha Mahabhuta* is superior among *Panchamahabhuta* from evolution point.

### CONCLUSION

Influence of *Mahabhuta* play a vital role in *Garbha Utpatti* and it is carried out throughout the life. In the human body, *Panchamahabhutas* are explained in terms of *Doshas, Dhatus* and *Malas* and in drugs and dietary substances they represent the *Rasas, Guna, Virya* and *Vipaka etc.* Equilibrium of these five elements in the body denotes health and their imbalance or disturbance denotes disease. As we know that cell is the structural and functional units of body and atom is the basic components of all matter. So, cell and atom itself is having all *Panchamahabhuta Tatvas* that indicates the whole body and all world is also made up of *Panchamahabhuta*. So, it important to know in detail about *Panchamahabhutas* in order to understand the whole world and body constitution. With proper knowledge of *Panchamahabhuta* one can understand an appropriate way to approach a disease and hence be able to achieve the success in treating the diseases and also achieve the aim of ayurveda which is preserving the health of a healthy individual and making the patient free from disease.

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