

**A CONCEPTUAL STUDY OF UPADHATUS****Dr. Roshni K. P.\***

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**INTRODUCTION**

Human being has emerged as a very specialized species in the process of evolution. Ancient seers of Ayurveda have classified the elements of the body under three fundamental components Dosa, Dhātu and Mala. For the existence of body, two elementary factors are there, one that form structural configuration and second which control physiological aspects. Dosa and Mala are the principal physiological entities. These two elements are not structural one and stable. The basic structural architectures of the body are formed by Dhatus. They are most stable constituents of the body. Dhātu form the substratum, which bear and nourish other constituents of the body. Even though the basic elements are categorized under these three groups, some elements are left out

which were not defined. Ancient seers found it difficult to attribute their functions to the group of dhatus. Hence, they further defined specialized groups of entities termed as Upadhātu. According to Sanskrit grammar, 'Upadhātu' consists of two parts prefix 'Upa' and the word 'Dhātu'. Upa is explained as 'proximity' to something. So, in nutshell, it can be explained that Upadhātu is derivative of Dhātu and has some resemblance in terms of structure, function and nature. They are important physiological units and engaged to design the structural composition of the body. Dhātu form the basic structure of the body, they are not able to execute the functions of body without the support of Upadhatus. Upadhātu act as a bridge between these fundamental entities. Upadhatus are also involved in emergence of diseases and the knowledge is necessary to understand the pathological conditions.

**Etymology of Upadhathu**

The word 'Upadhātu' consists of two parts with Prefix "Upa" and the word "Dhātu". Various aspects of the word dhātu is explained below.

**Vyutpatti<sup>[1]</sup>**

The word 'Dhatu' is derived from the root "Dha" which means to support and nourish. Everything existing is supported by this or because they bear and support, they are termed as Dhatu.

**Nirukti<sup>[2]</sup>**

Which supports the growth of the body is termed as Dhatu. Dhatus are stable constituents, the basic elements of the body, which make the body exist. 'Upa' is a prefix attached to the word "Dhatu."<sup>[3]</sup> The literary meaning of "Upa" is towards, near to, by the side of, resemblance, nearness, with the idea of subordination and inferiority.

Hence the word Upadhatu,<sup>[4]</sup> means that shows close resemblance towards Dhatu.

Upadhatus are evolved from Dhatus.<sup>[5]</sup> Upadhatus are produced along with Dhatus.<sup>[6]</sup>

Those, which are derivatives of Dhatus, produced at complementary, subsidiary level, are known as Upadhatus.<sup>[7]</sup> Dhatus are the immediate cause of Upadhatu.

**Evolvement of Upadhatu**

Charaka while describing about the nutrition of body elements defines about a separate group of elements, but has not entitled them. Further while studying about this Commentator Cakrapani entitled them as Upadhatu. These seven components are Stanya, Rakta (indicative of Raja), Kandara, Sira, Vasa, Twak and Snayu. Cakrapani has also quoted the opinion of Bhoja in this regard. Bhoja has mentioned only five factors, which are Sira, Snayu, Raja, Stanya and Twak. Along with these two components, "Garbha" is mentioned under this category. Commentator Dalhana has termed these three as Upadhatus. Among the remaining components except Vasa all are mentioned under Vatavyadhi Nidana and Cikitsa. In Sutrasthana while explaining the nourishment of Dhatus in successive manner Susruta has used the term "Prajayate",<sup>[8]</sup> Here commentator has enlisted the same components as stated by Caraka and further added Sandhi to the list. Gayadasa's commentary on Susruta Samhita is available on Nidanasthana only, and while annotating on Nidanasthana's first chapter he has mentioned about Upadhatus.<sup>[9]</sup>

Bhoja has mentioned only five components as Upadhatu. Caraka has elucidated seven factors as Upadhatu. Astanga Sangraha adds Sandhi to the list. Commentator Dalhana accepted

it and thus the number of the Upadhatu becomes eight. The author of medieval period Sarngadhara considers Sweda, Danta, Kesa and Oja under Upadhatu.

### Upadhatus According to Different Acharyas

Names of Revered Acharays	Name of the Upadhatus	Numbers
Bhoja	Stanya, Raja, Sira, Twak, Snayu	5
Charaka, Gayadasa, Chakrapani	Stanya, Raja, Kandara, Sira, Vasa, Twak, Snayu	7
Vagbhata, Dalhana	Stanya, Raja, Kandara, Sira, Vasa, Twak, Snayu, Sandhi	8
Sarngadhara, Bhavamisra, Trimalla Bhatta	Stanya, Raja, Vasa, Sweda, Danta, Kesa, Oja	7

### Names of Upadhatus Accepted by Different Acharyas

Name of Acharya	Stanya	Raja	Kandara	Sira	Vasa	Twak	Snayu	Sandhi	Sweda	Danta	Kesa	Oja	Total
Charaka	+	+	+	+	+	+	+	+	-	-	-	-	8
Gayadasa	+	+	+	+	+	+	+	+	-	-	-	-	8
Chakrapani	+	+	+	+	+	+	+	+	-	-	-	-	8
Bhoja	+	+	-	+	-	+	+	-	-	-	-	-	5
Ashtanga Sangraha-kara	+	+	+	+	+	+	+	+	-	-	-	-	8
Dalhana	+	+	+	+	+	+	+	+	-	-	-	-	8
Sarngadhara	+	+	-	-	+	-	-	-	+	+	+	+	7
Bhavamisra	+	+	-	-	+	-	-	-	+	+	+	+	7

### Characters of Upadhatu

All the Classics have explained the concept of Upadhatu in correlation with Dhatus. Upadhatus are derived from Dhatus. Acarya Charaka has explained their specific correlation for the upadhatus.<sup>[10]</sup>

Dhatu related Upadhatus are Rasa- Stanya, Raja, Rakta- Kandara, Sira, Mamsa- Vasa, Twak Meda- Snayu, Sandhi First four Dhatus are related with Upadhatus. Dalhana in Sutrasthana elucidates the reason behind this.<sup>[11]</sup> In the context of nourishment of Dhatus, Acarya Susruta has specified the term "Prajayate" for first four Upadhatus only. Dalhana has clarified that to specify the distinct function of these Dhatus the term "Prajayate" is used for them. Further he explains that we cannot find out the cause behind this, the only logic is "Swabhava." The characters of these Upadhatus are listed below.

### 1) Upadhatus - Produced at Complementary level

Upadhatus are produced from Dhatu metabolism, but they are produced at subsidiary level, secondary level. The word "Upajayante "indicates that they are the by products of Dhatu metabolism.

### 2) Gativivarjita<sup>[12]</sup>

Commenting on the above opinion of Bhoja, Chakrapani further clarifies the view that they are not having the property to produce successive elements.<sup>[13]</sup>

Chakrapani has stated that as they do not have the function of nourishing the Dhatus, they are termed as Upadhatus. They will not get transformed in to further components. Acharya Bhoja has explained this character of Upadhatu as "Gativivarjita". Commentator Sivadasa Sen further confines the meaning of this term as that Upadhatu do not have any action to nourish successive Dhatu.<sup>[14]</sup>

### 3) Sarira Posakatva

But Cakrapani specifies that even though Upadhatu do not nourish Dhatu, they nourish other components of the body.

To understand the precise concept of Upadhatus and their role in body physiology it is necessary to know the characters of Dhatus on the basis of which Upadhatus are described in classics.

### Difference in Characters Between Dhatus and Upadhatus

	Character of Dhatu	Character of Upadhatu
1	Dhatvantara Posakatva Dhatu nourishes successive Dhatu	Dhatvantara Aposakatva Dhatu do not nourish successive Dhatu or Upadhatu
2	Gativivarjita This property is not found in Dhatu	Upadhatu possesses Gativivarjitva in relation with Dhatu
3	Dhatu Sneha Parampara Dhatu nourishes successive as well as former Dhatu. They are connected to each other through nourishing pool	Such type of inter relation is not present in Upadhatu
4	Sarira Posakatva It is present in Dhatu	It is present in Upadhatu also
5	Sarira Dharanatva Dhatu bear the body elements	In Upadhatu this function is supportive to Dhatus
6	Dhatu functions right from conception and continue	Some Upadhatus (Raja & Stanya)

	throughout the life	functions for specific time period only
7	Some Dhatu (i.e. Sukra) produces alike body elements. It has reproductive capacity	Upadhatus do not have reproductive capacity. Function of Raja and Stanya is supportive to reproduction
8	Dhatu do not act as Mala Bhava for body. Only Sukra is ejaculated from the body by means of specific function of reproduction	Some (Raja & Stanya) of them are excretory in nature and act as Mala Bhava for the body if not expelled after specific time period

### Concept of Sarngadhara About Upadhatu

Sarngadhara has not accepted the opinion of the former Acharyas. He had introduced a modified version of Upadhatu.<sup>[15]</sup> Sarngadhara has described Stanya, Raja, Vasa, Sweda, Danta, Kesa, and Oja as Upadhatu. Acarya Bhavamisra has agreed with the opinion of Sarngadhara.<sup>[16]</sup> According to this school of thought, Dhatus are related with Upadhatus in following manner.

### Modified Concept of Upadhatu of Acarya Sarngadhara

	Relate Upadhatu		
Dhatu	Accepted Upadhatu as previously mentioned	Newly introduced Upadhatu	Excluded Upadhatus
Rasa	Stanya	-	Raja
Rakta	-	Raja	Kandara, Sira
Mamsa	Vasa	-	Twak

Sarngadhara has not mentioned Kandara, Sira, Twak, Snayu, and Sandhi. Instead of these he added Sweda, Danta, Kesa and Ojas to the list of Upadhatu. All the seven Dhatus are mentioned in relation with Upadhatus.

- 1) Sweda - Charaka and Susruta have referred it under "Dhatu Mala" of the body. Sweda is originated from Mala portion of the Medo Dhatu. Acharya Sarngadhara and Bhavamisra have mentioned it under Upadhatu and Dhatu Malas also.<sup>[17]</sup>
- 2) Danta – Ancient Acharyas have not mentioned Danta under Dhatu Mala. All body elements are grouped under Prasadaja or Mala categories. Chakrapani has added that Danta receives its nutrition from Mala portion of Asthi Dhatu. Danta is included under Asthi by Charaka. Susruta has termed it as "Rucakasthi". Susruta has not explained Danta under "Dhatu Mala".
- 3) Kesa - Charaka and Astanga Sangraha-kara have included Kesa under Dhatu Mala. Sarngadhara had mentioned it as an Upadhatu of Majja.

- 4) Oja - It is elixir of all the Dhatus starting from Rasa to Sukra.<sup>[18]</sup> Chakrapani has quoted few statements in this regard. Some are of the view that Oja is a specialized form of Sukra since it doesn't nourishes the mind. Some opine it as eighth number of Dhatu. In this context one statement supports the view of Sarngadhara which considers the Ojas as Upadhatu. The reason behind this is explained that like other Dhatus though it sustains the body but does not nourish it. Ahcarya Bhavamisra in this context states this entity as essence of all the Dhatus.<sup>[19]</sup> Chakrapani while commenting on Upadhatus narrated his opinion that Oja should not be considered as Dhatu or Upadhatu. It cannot be separated from Dhatus, as it is elixir of the dhatus.<sup>[20]</sup> While commenting on Upadhatu, author of Gudhartha Dipika, Kasiram Vaidya has expressed his opinion. He raised a question regarding the consideration of Upadhatu of Rasa and Rakta in males. During this discussion he opines that when improperly transformed Rasa Dhatu come out of the body it is called as Upadhatu of Rasa. Due to vitiation of Pitta, the vitiated Rakta when it goes upward is to be termed as Upadhatu of Rakta. Further he has given a meaning for Upadhatu also.<sup>[21]</sup> According to him vitiated form of Dhatu is to be termed as Upadhatu.

### **Physiology of Upadhatu Formation**

Dhatu metabolism is a nourishment mechanism of all the body constituents. Through this pool all elements including upadhatus get their nourishment .Upadhatus are sustained being fed by their nourishing factor. Food after digestion takes two forms viz. the Prasada part (essence) and the Kitta part. Depending upon their nourishment from Prasadaja or the Kitta, the tissue elements of the body are described of two types, the pure one "Prasadakhya" and waste product "Malakya". From Prasadaja portion all the Dhatus are formed in progressive order. Upadhatu are also nourished from this Prasadaja part. Ahara Rasa when goes to the abode of one Dhatu after the action of that particular Srotasagni it is transformed into two parts Prasadaja and Kitta. Prasadaja portion is further divided into two parts. The main portion of it provides nourishment to that Dhatu and the subtle portion (Suksma Bhaga) is meant to provide nourishment to two elements, by its further division. The major portion of it goes to the site of next Dhatu and the subtle of it provides nourishment to the Upadhatu. Third waste portion nourishes the Mala of the respective Dhatu. In this way from the Prasadaja part of Ahara Rasa Upadhatus derive their nourishment in progressive order.

When Ahara Rasa comes to the abodes of Rasa Dhatu, by the action of Rasadhatvagni it get transformed into two parts, the Prasadaja portion and the Mala portion. The Prasadaja part

again gets divided into two parts. Sthula Bhaga and Suksma Bhaga. Sthula portion of it supplies nourishment to the Rasa Dhatu and Suksma portion of it again divided into parts. The major portion of it goes to the abodes of Rakta Dhatu and subtle part provides nourishment to Stanya and Raja. In the same manner the subsequent Upadhatus are derived from their respective Dhatus.

The process of Dhatu metabolism goes on continuously like the passage of time (Kalavat Anavasthitatva). If all the Dhatvagnis, Vayu and Srotases are unimpeded they play a pivot role in continuation of Dhatu metabolism. These components are closely related with Upadhatus too.

### **(1) Importance of Vayu**

#### **a) Illumination (Sandhuksana)<sup>[22]</sup>**

Vayu is responsible to maintain the normal status of Dhatvagnis. Vayu is called as "Agnisakha" by the classics. It illuminates the Dhatvagnis.<sup>[23]</sup>

#### **b) Separation (Vivecana)**

Vayu is responsible for appropriate allocation of nutritional materials to every element of the body.<sup>[24]</sup>

#### **c) Conveyance (Gati)**

Nutritional need of each element is transported to its required area by the action of Vayu. Upadhatu receives their specific nutrients from Rasadi Dhatus which are conveyed to them by the action of Vayu.

### **(2) Importance of Srotas**

Srotases play an important role in Dhatu metabolism. They are channels of transportation and transformation. "Parinama Apadyamana" means Dhatus, which are under the process of transformation from their previous state. Srotases convey such Dhatus from the abodes of previous Dhatu to successive one. The former Dhatu nourishes successive one and for this purpose transformation is essential which supervene at the level of Srotas. The transformed nutrients are conveyed through these channels. All the structural entities are having their separate channels of transportation. Dhatus are situated in different parts of the body so each of them should have separate Srotas to carry their particular nourishment. One canal cannot irrigate trees situated in different places. The same principle is applied to the nourishment of

body elements. After separation of nutrients of Upadhatus, Srotases are essential to convey the nutrients to respective Upadhatus. Classics have not clearly mentioned the Srotas for all the Upadhatus. Acharya Susruta has mentioned Stanyavaha and Artavavaha Srotas in their respective contexts Chakrapani has stated one principle to understand the knowledge about unexplained Srotases.<sup>[25]</sup>

For every transformation the Srotasas are required. Any substance undergoes metamorphic changes within the Srotas.<sup>[26]</sup> In the above reference, Chakrapani has specially explained that metamorphosis phenomenon distinctly occurs at Srotas level. This suggests that Agni is particularly concerned with Dhatu metabolism and resides at Srotas.

### (3) Importance of Dhatvagni & Bhutagni

Dhatvagni plays an important role in the formation of Upadhatus. Status of Dhatvagni inevitably affects condition of Upadhatu. Transformation process of Upadhatus is explained upto the level of Dhatvagnis only. Further transformation is not described anywhere in the classics. Commentator Chakrapani adds reference to prove the presence of Upadhatu Agni.<sup>[27]</sup>

Agni, which resides at Upadhatu and Mala, is a type of Bhutagni. By knowing the role of Bhutagni explained by Acharyas one could assess its function."Bhutagni Vyapara" is explained at following levels of metabolism.

1) Initially their role is mentioned after the action of Jatharagni, which supervenes in the Kostha. Bhutagni resides inside the bhootas itself. Jatharagni illuminates them.

"Jatharagni Paka" results in the breakdown of food into five distinct physico-chemical groups of substances which have dominance of each Mahabhuta. They are further acted upon by each Bhutagni, which leads to changes in its qualities termed as "Vilaksana Guna." Thus substances are ready for process of Dhatvagni, which takes place at various Dhatu levels. There we can see the reference of seven Dhatvagnis at different levels. Dhatus occur in two forms i.e. 'Posaka' and 'Posya'. These terminologies are used by Cakrapani to explain the Dhatu metabolism. The former nourishes later. The action of Dhatvagni forms two types of material substances viz. Prasadaja and Mala as explained before.

At Dhatu level also, Bhutagni works in the similar manner as they work at Jatharagni level. Bhutagnis are also present at Upadhatu and Mala level as stated by Chakrapani. Thus after the action of Dhatvagni the Prasadaja portion which nourishes Dhatu and Upadhatu, and the

Kitta portion which nourishes Mala, are further subjected to the action of Bhutagni, where the changes in the qualities takes place. In this way these substances are refined at every level of Agni. The final Bhautika configuration of each nutrient, which is homologous with Posya element, supervenes only after the action of Bhutagni. The newly formed compounds, which are results of metabolic reactions performed by Dhatvagni and finally configured by Bhutagni, are utilized for two purposes.

1. For newer growth of elements
2. To compensate the wear and tear of the already working cells.

At the level of Upadhatu, after the action of Bhutagni no further residue is formed. The Upadhatu are the final product of metabolism. They do not nourish successive Dhatu or Upadhatu. They are finalized forms. They are motionless, final products of Dhatu metabolism.

#### **Utpatti (Emergence) of Upadhatu**

Sarirasthana of Susurthasamhitha and Charakasamhitha have illustrated this subject in "Garbhavakranti Sarira" and "Garbhavyakarana Sarira."<sup>[28]</sup> Emergence of all the body constituents takes place at embryological stage.<sup>[29]</sup> While commenting on the reference regarding the nourishment of Dhatu, Chakrapani has clearly mentioned that all the Dhatus manifest during gestational period itself. Their further nourishment is achieved by Dhatu metabolism. Further while explaining the nourishment of Upadhatu from Dhatus he has very clearly stated that the way of nourishment of Dhatus is described in this context. Vagbhata has clearly explained the emergence of Upadhatu in "Garbhavakranti" Sarira as follows.<sup>[30]</sup>

During sixth month of gestational period emergence of Snayu, Sira and Twak takes place. The characters, which are present since birth, are termed as "Nitya Bhava." All the Dhatus and Upadhatu are termed as "Nitya Bhava" of the body. Upadhatu Raja and Stanya are exceptions for this, since they emerge few years after birth and also not continue throughout the life. Such entities are called as "Anitya Bhava".

#### **DISCUSSION**

Historical review reveals that though some references are available in Vedic literature, concept of Upadhatu is not available in particular sense in which Ayurveda explains it. In Samhita Kala Acharya Charaka mentioned about the Upadhatu collectively as a unit. This created a good platform for commentators to develop this concept. Bhoja or Gayadasa who

belong to 11th century, might have introduced the term 'Upadhatu' for the first time. The commentators of 11th and 12th century like Cakrapani and Dalhana had significantly elaborated the concept. Sarngadhara introduced new components as Upadhatu, which is accepted by the Acarya of 16th century Bavamisra.

Etymological meaning reveals close resemblance between Dhatu and Upadhatu. There is reference for four Dhatus to which Upadhatu belongs in specific order. Astanga Sangraha adds Sandhi as a Prasadaja product, which is accepted by Dalhana and included it under previous list of Upadhatu. Hence the number becomes eight. Sarngadhara has introduced a new list of Upadhatu. He added Sweda, Danta, Kesa and Ojas to the list and deducted Sira, Kandara, Twak and Snayu. Among these newly introduced entities Sweda and Kesa are nourished from "Mala" portion of Dhatus. Danta too receive its nourishment from Mala portion of Asthi Dhatu. Because of hard consistency of Danta, which resembles with Asthi, Sarngadhara might have considered it as Upadhatu of Asthi. Sarngadhara has included sweda as one of the mala and under the category of Upadhatu too.

Since these three are "Mala Posaka" entities of the body, it cannot be included under Upadhatu because Upadhatu were nourished by Prasadaja part of Dhatu. Oja is also considered as Upadhatu by Sarngadhara. It is an elixir of all the Dhatus hence it is not coming under Upadhatu entity. Upadhatu are by products of Dhatu metabolism. They are produced from Dhatus but at secondary and subsidiary level. They have no fate of nourishing further Dhatu or Upadhatu. The former Dhatu nourishes successive Dhatus and the reverse nourishment is also present at Dhatu level. They are produced in a cyclic manner. The nourishing pool connects all the Dhatus with each other. Such type of interrelation is not observed at Upadhatu level. Once they are formed, they do not nourish any former or successive entity. This proves their 'Gativivarjitatva' though they do not nourish Dhatu, but they are an important unit of body. 'Sarira Posakatva' is present in them. Upadhatu are nourished from Prasadaja portion of Dhatus. They receive their nourishment from that Suksma Prasadaja portion of Dhatu which provides nourishment to the next Dhatu. This can be the reason that the structural configuration of Upadhatu show close resemblance with successive Dhatus. Dhatvagni, Vayu and Srotas plays significant role in proper nourishment of Upadhatu. Vayu is responsible for transportation of specific amount of nutrient to the particular Upadhatu. Srotases are the channels of transportation and transformation. "Parinama Apadyamana Dhatus" are transported through Srotases. Agni is essential for any

type of transformation. So it is assured that Dhatvagni of each Dhatu resides at corresponding Srotas, which is responsible for transformation of Dhatu from one state to another. Dhatvagnis are closely related with Upadhatu. Diminished status of Dhatvagni affects the normal functions of Upadhatu. To convey the nourishing material to the abodes of Upadhatus Srotases are necessary. Hence it is stated that Upadhatu are also having their own Srotas, through which they receive their nourishment.

Agni present at Upadhatu level is a type of Bhutagni This homologous nourishing portion is used for the development of Upadhatu or it replaces the former molecules of that Upadhatu to compensate wear and tear phenomenon to of the body. Once the Upadhatu nourishing portion comes to Upadhatu it cannot be circulated to another Dhatu or Upadhatu. They are end product of Dhatu metabolism. Emergence of all the Upadhatus except Raja and Stanya takes place during gestational period only. Raja and Stanya emerge after few years of development and hence they are named as 'Anitya Bhava' of the body.

## CONCLUSION

The concept of Upadhatu is traced from ancient literature under Historical review. Though the entities of Upadhatu were known since many years before, Acharya Charaka first started using the terminology. Upadhatus are mentioned along with Dhatus. They are related with Dhatus in a very specific manner. Sarngadhara has introduced a modified version of Upadhatu. Condition of Upadhatu depends upon the status of Dhatvagnis. Their pivotal role in the physiology of formation of Upadhatu is also explained. Bhutagni plays an important role to derive final Bhautika molecular configuration of components. Some Upadhatus act as a physiological entity. Others are principally involved in anatomical configuration of human body. There are many vital structures, which are related with Upadhatus. Upadhatus are having specific relation with Dosa. Upadhatu are involved in emergence of diseases.

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24. Susrutasamhita of Susruta with the Nibandhasangraha commentary of Sri Dalhanacharya and the Nyayachandrika Panjika of Sri Gayadasacharya on Nidanasthana edited by Vaidya Jadavju Trujamji Acharya Nidanasthanam, 1/12,1/18.
25. Charaka Samhita by Agnivesa revised by Charaka Vimanasthanam, 5/6-7.
26. Charaka Samhita by Agnivesa revised by Charaka Vimanasthanam, 5/3.
27. Charaka Samhita by Agnivesa revised by Charaka Chikitsaasthanam, 15/30-39.
28. Susrutasamhita of Susruta with the Nibandhasangraha commentary of Sri Dalhanacharya and the Nyayachandrika Panjika of Sri Gayadasacharya on Nidanasthana edited by Vaidya Jadavju Trujamji Acharya Sareerasthanam, 3/15.
29. Charaka Samhita by Agnivesa revised by Charaka Chikitsaasthanam, 15/16.
30. Astangahrdaya of Vagbhata, with the commentaries 'Sarvangasundara' of Arunadatta and 'Ayurvedarasayana' of Hemadri, Sareerasthanam, 1/51.