

## CONCEPT OF UPDHATU IN AYURVEDA – A REVIEW ARTICLE

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### ABSTRACT

*Aahar* after ingestion is acted upon by *Agni* and helps in formation and nourishment of *Dhatu* along with *Updhatu* by *Poshana Karma* in their respective *Srotasas*. *Updhatus* are derived from *Dhatus* and resemble *Dhatu* in terms of structure, function and nature. *Updhatu* is a link between the three elements i.e. *Dosa*, *Dhatu* & *Mala* and essential for all physiological functions of human body. *Ayurveda*, the science of life which evolved about thousands of year ago, has explained the functions of human body under three elements viz. *Dosha*, *Dhatu* and *Mala*. *Updhatus* are important physiological units and radically engaged to design the structural architecture of the mortal. References about the *Updhatus* are very less and scattered in different *samhitas*. It is hard to get the opinion of all the *Acharayas* about this concept at a common place. So, it is crucial to illuminate on the concept and understanding of *Updhatu*. Thus, an effort is made to review this concept and collect the information regarding *Updhatu*. For this purpose of study all the relevant *samhitas* were studied in detail with their commentaries to get an elaborative knowledge of *updhatus*. This article revolves the details of *Updhatu* described in various texts of *Ayurveda*.

**Keywords:** *Updhatu*, *Dhatu*, *Agni*, *Bhutagni*, *Dhatvagni*, *Srotas*

### INTRODUCTION

*Ayurveda* is a practical science that deals with physiological and pathological status of human beings. Ancient seers of *Ayurveda* have classified the elements of the body under three fundamental components *Dosa*, *Dhatu* and *Mala*. The basic structural architecture of the body is formed by *Dhatus*. *Dhatu* are most stable constituents of the body & form the substratum of the body. They act as recipient for all the functions taking place in the body. Apart from the above said group, some undefined elements of body were also discovered later & were termed as

*Updhatus* by ancient seers. Grammatical understanding of the term shows that '*Updhatu*' consist of two parts prefixes '*Upa*' and the word '*Dhatu*'. Prefix *Upa* suggestive of 'proximity' and close resemblance to the term *Dhatu*. So, in nutshell, it could be said that *Updhatu* is derivative of *Dhatu* and has some resemblance in terms of structure, function and nature. They are important physiological units and radically engaged to design the structural architecture of the mortal. *Dhatu* form the Basic architecture of the body, they are not accomplished to execute

the functions of body without the support of *Updhatu*. *Updhatu* furnish a bridge between these fundamental entities. This bridge is also obligatory to ensure all the physiological functions. Their function commences since evolvement of mortal itself. The ultimate motto of the science is to achieve health of mortal. Hence it is necessary to explicate the knowledge of *Updhatu*.

### CONCEPT OF UPDHATU

In *Veda*, the references of *Updhatu* are found in dispersed manner. The number of *Asthi*, *Sandhi* and their types i.e. *Cala* and *Acala Sandhi* are quoted in *Rigveda*. *Ayurveda* is said as *Upveda* of *Atharvaveda*. The following references are found in *Atharvaveda*-The structure of *Sandhi* and their specific position in the body is quoted. "*Hira*" word is used for *Sira*; their number is mentioned to be *Sahasra*. '*Lohitavarna*' word is used for *Sukshma Sira*. References of *Twak* are found in relation with *Kustha*. '*Carma*' word is used for *Twak*. *Snayu* are also quoted. The references of '*Rajovahi Nadya*' are found. Word *Vasa* is quoted by the name of '*Vapa*'.

In *Samhitas*, *Caraka Samhita* was the first who had elucidated *Updhatu*s collectively in one *Sutra*. *Susruta* has given the description of the *Updhatu* components separately but not as a unit. *Astanga Sangraha* has mentioned these components under '*Prasadaja*' elements. During *Madhya kala* Commentator *Cakrapani* and *Dalhana* have elaborately explained the *Updhatu* concept. *Acarya Sarngadhara* has introduced a modified unit of *Updhatu*. In Modern Era the *Ayurvedic* scholars like P.S. Variyara, Dr. C. Dwarkanatha, and Ranajit Rai Desai have tried to explain these *Updhatu*s.

### ETYMOLOGY:

One should apply the grammatical understanding of the term to derive the in depth meaning of the word.

The word '*Updhatu*' consists of two parts i.e. Prefix "*Upa*" and the word "*Dhatu*".

'*Upa*' is a prefix attached to the word "*Dhatu*". Prefix changes the meaning of the word with which it is acting. The literary meaning of "*Upa*" is "*Anugatini / Anukampa / Adhikyam / Hinah / Samipyam*." Which refers to: Towards; near to; by the side of; resemblance, nearness; with the idea of sub ordination and inferiority.

**VIYUTPATTI:** That shows close resemblance towards *Dhatu*.

**NIRUKTI:** *Updhatu*s are evolved from *Dhatu*s. *Updhatu* are produced along with *Dhatu*s. Those, which are derivatives of *Dhatu*s, produced at complementary, subsidiary level, are known as *Updhatu*s.

### PHYSIOLOGY OF UPDHATU FORMATION:

Food after digestion takes two forms viz. the *Prasadaja* and the *Kitta*. Depending upon the nourishment from above two forms, the tissue elements are described of two types the *Prasadakhya* and *Malakhya*. *Updhatu*s are also nourished from the *Suksma Bhaga* of *Prasadaja* part.

### EMERGENCE OF UPDHATU:

*Sarirasthana* of classics have illustrated this subject in "*Garbhavakranti Sarira*" and "*Garbhavyakarana Sarira*." Emergence of all the body constituents takes place at embryological stage. *Acarya Cakrapani*, while explaining the nourishment of *Dhatu* has mentioned that *Updhatu* receive nourishment by the process of *Poshana Karma* of *Dhatu*. Their emergence supervenes at gestational period itself. *Acarya Vagbhata* has explained *Nitya Bhava* and *Anitya Bhava*. *Dhatu* and *Updhatu* are *Nitya Bhava* as they are present since birth like *Snayu*, *Sira* and *Twak*. *Updhatu Rajas* and *Stanya* are exceptions, since they emerge few years after birth, also not continue throughout life and are known as *Anitya bhava*.

**Table 1:** Review of the *Classics*

Century Used the term "Updhatu"	Names of Revered Acaryas	Mentioned the Updhatus Collectively as a Unit		Used the term "Updhatu"	
		Yes	No	Yes	No
4-6th	Caraka	+			+
4-6th	Susruta		+		+
4-6th	Vridhha Vagbhata	As Prasadaja Elements			+
4-6th	Laghu Vagbhata				
11th	Bhoja	+		+	
11th	Gayadasa	+		+	
11th	Cakrapani	+		+	
12th	Dalhana	+		+	
13th	Indu, Arundatta, Hemadri		+		+
14th	Sarngadhara	Modified Unit		+	
16th	Bhavaprakasa			+	
17th	Yogatarangini			+	

**Table 2:** Characters of Updhatu

S.No	Characters of Dhatu	Characters of Updhatu
1.	<b>Dhatvantara Posakatva:</b> Dhatu nourishes Successive Dhatu.	<b>Dhatvantara Aposakatva:</b> Updhatu do not nourish successive Dhatu or Updhatu.
2.	<b>Gativivarjita -</b> This property is not found in Dhatu.	Updhatu possesses Gativivarjitva in relation with Dhatu.
3.	<b>Dhatu Sneha Parampara: -</b> 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 Updhatus.
4.	<b>Sarira Posakatva: -</b> It is present in Dhatus.	It is present in Updhatus too.
5.	<b>Sarira Dharanatva: -</b> Dhatus bear the body elements.	In Updhatus this function is supportive to Dhatus.
6.	Dhatu functions right from conception till the end of life.	Some Updhatus (Raja & Stanya) function for specific time only.
7.	Some Dhatu (i.e. Sukra) produces a like body elements. It is having reproductive capacity.	Updhatus do not have reproductive capacity. Function of Raja & Stanya is supportive to reproduction.
8.	Dhatus 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 & act as 'Mala Bhava' for the body if not expelled after specific time.

**Table 3:** Relation of Dosa with Updhatu

Dosa	Related Updhatu
Vata	Kandara, Sira, Snayu, Sandhi, Twak
Pitta Raja	Twak
Kapha	Stanya, Vasa

**Table 4:** Importance of *Updhatu* in Pathogenesis

<i>Updhatu</i>	Disease Status
<i>Raja, Stanya</i>	Concern with female physiology.
<i>Kandara, Sira, Snayu, Sandhi</i>	Distinctly related with <i>Vatavyadhi</i> & involved in chronic stage of other diseases.
<i>Sira</i>	Conveyance of <i>Dosa</i> to the place of " <i>Kha Vaigunya</i> ", thus involved in pathogenesis of many diseases.
<i>Twak</i>	Many underlying pathological conditions manifest on skin.

**Table 5:** Relation with *Rogamarga*

<i>Updhatu</i>	<i>Rogamarga</i>
<i>Raja, Stanya</i>	<i>Bahya</i>
<i>Kandara, Sira, Snayu, Sandhi</i>	<i>Madhyama</i>
<i>Vasa</i>	<i>Bahya</i>
<i>Twak</i>	<i>Bahya</i> .

**Table 6:** *Updhatu*s accepted by *Acaryas*

Name of <i>Acarya</i>	<i>Stanya</i>	<i>Raja</i>	<i>Kandara</i>	<i>Sira</i>	<i>Vasa</i>	<i>Twak</i>	<i>Snayu</i>	<i>Sandhi</i>	Newly introduced by <i>Sarngadhara</i>				Total
									<i>Sweda</i>	<i>Danta</i>	<i>Kesa</i>	<i>Oja</i>	
<i>Caraka</i>	+	+	+	+	+	+	+	+	-	-	-	-	8
<i>Gayadasa</i>	+	+	+	+	+	+	+	+	-	-	-	-	8
<i>Cakrapani</i>	+	+	+	+	+	+	+	+	-	-	-	-	8
<i>Bhoja</i>	+	+	-	+	-	+	+	-	-	-	-	-	5
<i>AstangaSangraha</i>	+	+	+	+	+	+	+	+	-	-	-	-	8
<i>Dalhana</i>	+	+	+	+	+	+	+	+	-	-	-	-	8
<i>Sarngadhara</i>	+	+	-	-	+	-	-	-	+	+	+	+	7
<i>Bhavamisra</i>	+	+	-	-	+	-	-	-	+	+	+	+	7

**MODIFIED CONCEPT OF SARNGADHARA**

Eminent oracle *Sarngadhara* has not accepted the opinion of the former *Acaryas*. He introduced a modified unit of *Updhatu*. *Sarngadhara* has asserted *Stanya, Raja, Vasa, Sweda, Danta, Kesa*, and *Oja* as

*Updhatu*. *Acarya Bhavamisra* concurred with the opinion of *Sarngadhara*. According to this school of thought, *Dhatu*s are related with *Updhatu*s in following manner:

**Table 7:** Relation of *Dhatu* and *Updhatu*

<i>Dhatu</i>	Related <i>Updhatu</i>		
	Accepted <i>Updhatu</i> s as previously mentioned	Newly Introduced <i>Updhatu</i> s	Excluded <i>Updhatu</i> s
<i>Rasa</i>	<i>Stanya</i>	-	<i>Raja</i>
<i>Rakta</i>	-	<i>Raja</i>	<i>Kandara, Sira</i>
<i>Mamsa</i>	<i>Vasa</i>	-	<i>Twak</i>
<i>Meda</i>	-	<i>Sweda</i>	<i>Snayu, Sandhi</i>
<i>Asthi</i>	-	<i>Danta</i>	-
<i>Majja</i>	-	<i>Kesa</i>	-
<i>Sukra</i>	-	<i>Oja</i>	-

As compared to *Caraka*, *Sarngadhara* schools are having separate views on following points: *Acarya Sarngadhara* has not mentioned *Kandara*, *Sira*, *Twak*, *Snayu*, and *Sandhi*. Instead of these he added *Sweda*, *Danta*, *Kesa* and *Oja* to the list of *Updhatu*. All the seven *Dhatu*s are mentioned in relation with *Updhatu*s. Acquiring the knowledge of newly introduced *Updhatu*s: -

*Sweda* – *Acarya Caraka* and *Susruta* has referred it under "*Dhatu Mala*" of the body. *Sweda* is derived from *Mala* portion of the *Meda Dhatu*. *Acarya Sarngadhara* and *Bhavamisra* have mentioned it under *Updhatu* and *Dhatu Malas* too.

*Danta* - Ancient seer has not mentioned *Danta* under "*Dhatu Mala*". All body elements are categorized under *Prasadaja* or *Mala* entities. Commentator *Cakrapani* has explained in this context that *Danta* receives its nutrition from *Mala* portion of *Asthi Dhatu*. *Danta* are included in *Asthi* by *Acarya Caraka*. *Acarya Susruta* has termed it as "*Rucakasthi*". *Susruta* hasn't referred *Danta* under "*Dhatu Mala*".

*Kesa* – *Acarya Caraka* and *Astanga Sangraha* have included *Kesa* under *Dhatu Mala*. *Acarya Sarngadhara* mentioned it as an *Updhatu* of *Majja*.

*Oja* - It is elixir of all the *Dhatu*s starting from *Rasa* to *Sukra*.

**Table 8:** Updhatu quoted by *Acaryas*

Names of Revered <i>Acaryas</i>	Names of the <i>Updhatu</i> s Mentioned	Number
<i>Bhoja</i>	<i>Stanya</i> , <i>Raja</i> , <i>Sira</i> , <i>Twak</i> , <i>Snayu</i> .	5
<i>Caraka</i> , <i>Gayadasa</i> , <i>Cakrapani</i>	<i>Stanya</i> , <i>Raja</i> , <i>Kandara</i> , <i>Sira</i> , <i>Vasa</i> , <i>Twak</i> , <i>Snayu</i> .	7
<i>Vridha Vagbhata</i> , <i>Dalhana</i>	<i>Stanya</i> , <i>Raja</i> , <i>Kandara</i> , <i>Sira</i> , <i>Vasa</i> , <i>Twak</i> , <i>Snayu</i> , <i>Sandhi</i>	8
<i>Sarngadhara</i> , <i>Bhavamisra</i> , <i>Trimalla Bhatta</i>	<i>Stanya</i> , <i>Raja</i> , <i>Vasa</i> , <i>Sweda</i> , <i>Danta</i> , <i>Kesa</i> , <i>Oja</i> .	7

## DISCUSSION

Historical review reveals that though some references are available in *Vedic* literature, concept of *Upadhatu* is not available in a sense in which *Ayurveda* comprehends it. In *Samhita Kala*, revered *Acarya Caraka* mentioned the components of *Upadhatu* collectively as a unit. This forms a good platform for commentators to develop this concept. *Acarya Bhoja* and *Gayadasa* who belong to 11th century, one among the two might have introduced the term '*Upadhatu*' for first time.

The commentators of 11th and 12th century like *Cakrapani* and *Dalhana* contribute significantly to elaborate the concept. *Sarngadhara* introduced new components as *Upadhatu*, which is accepted by the *Acarya* of 16th century i.e. *Bhavamisra*. *Astanga Sangraha* adds *Sandhi* as a *Prasadaja* entity, which is accepted by *Dalhana*. *Sarngadhara* has introduced a new Unit of *Upadhatu*s.

He added *Sweda*, *Danta*, *Kesa* and *Oja* to the list and deduct *Sira*, *Kandara*, *Twak* and *Snayu*. 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 *Dhatu*s hence it is not an *Upadhatu* entity. *Upadhatu*s are bi-product of *Dhatu* metabolism. They are produced from *Dhatu* but at secondary and subsidiary level. *Dhatu*s are different from *Updhatu*s in the following context:

- Updhatu*s are by product of *Dhatu*s.
- Updhatu*s have no fate to get transformed into another component.
- Updhatu* does not have any fate to nourish *Dhatu*s.
- Some *Updhatu*s function for specific time only like *Rajas* and *Stanya*.

e. Some of the *Updhatus* act as *Mala Bhava* for the body like *Kesha*, *Nakha*.

*Dhatvagni*, *Vayu* and *Srotas* plays significant role in proper nourishment of *Upadhatu*. *Vayu* is responsible for conveyance of specific amount of nutrient to a *Upadhatu*. *Srotas* are the channels of transportation and transformation. "*Parinama Apadyamana Dhatus*" are traversed through *Srotas*. *Agni* is essential for any type of transformation. So, it is concluded that *Dhatvagni* of each *Dhatu* resides at *Srotas*, which is responsible for *Parinama* of *Dhatu* from one state to another. *Dhatvagni* is closely related with *Upadhatu*. Deteriorated status of *Dhatvagni* affects the normal functions of *Upadhatu*. To convey the nourishing material to the abodes of *Upadhatu* *Srotas* is necessary. Hence it is stated that *Upadhatu* are also having their own *Srotas*, through which they receive their nutrients. *Agni* present at *Upadhatu* level is a type of *Bhutagni*.

## CONCLUSION

*Acarya Charaka* has introduced the concept of *Upadhatu*. Commentators have contributed significantly to illustrate the concept. *Upadhatu* are closely related with the *Dhatus*. First four *Dhatus* exhibit a distinct role in derivation of *Upadhatu*. *Upadhatu* do not nourish any successive *Dhatu*, but they nourish other constituents of the body. *Stanya*, *Raja*, *Kandara*, *Sira*, *Twak*, *Vasa*, *Snayu* & *Sandhi* are the components of *Upadhatu* unit.

*Sarngadhara* has introduced a modified unit of *Upadhatu*. Among newly introduced components *Sweda*, *Kesa* and *Danta* is "*Dhatu Mala*" while *Oja* is elixir of *Dhatus*. Hence these cannot be accepted as *Upadhatu*.

*Upadhatu* are by product of *Dhatu* metabolism. They are nourished from that *Sukshma Prasadaja* portion of *Dhatus*, which also nourishes successive *Dhatu*. Due to this property, they show close resemblance with successive *Dhatu*. They are end, finalised products of *Dhatu* metabolism. *Dhatvagni*, *Vayu* and *Srotas* play a pivotal role in proper nourishment of *Dhatu* and *Upadhatu*. *Upadhatu* pos-

sesses their distinct *Srotas* through which they receive their nourishment. Normal functioning of *Upadhatu* is directly concerned with status of *Dhatvagni*. *Bhutagnis* are present at *Upadhatu* level. They supervise final molecular configuration of nutrients homologous to *Upadhatu*. *Upadhatu* are of two type i.e. structural entities & functional entities.

*Kandara*, *Sira*, *Snayu*, *Sandhi* and *Twak* are principally involved to design the structural architecture of the body. *Sira* is *Upadhatu* of *Rakta*. They are channels for conveyance of material constituents from one part of the body to other. They provide substratum for various functions of *Dosa*. *Sira*, *Snayu* and *Sandhi* forms physical mortal of *Marma*.

*Kandara* & *Snayu* show anatomical and functional resemblance. *Kandara* is *Upadhatu* of *Rakta* while *Snayu* is *Upadhatu* of *Meda*. *Snayu* is an important structural entity evolved to bear the body weight. *Vasa* is the *Upadhatu* of *Mamsa*. It is a lubricating agency placed for smooth functioning of muscles. *Twak* mantles the whole body, it also provides platform for various functions of *Vayu* and other *Dosa*. *Sandhis* are *Upadhatu* of *Meda*. They are articulating joints of the body. All the movements of body are practiced due to presence of this entity. *Upadhatu* have great importance in pathogenesis of disease. *Kandara*, *Sira*, *Snayu* and *Sandhi* are included in *Madhyama Roga Marga*, which are intricate for treatment.

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