

ANATOMICAL IMPORTANCE AND FUNCTIONS OF DHATUS: AN AYURVEDA  
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## ABSTRACT

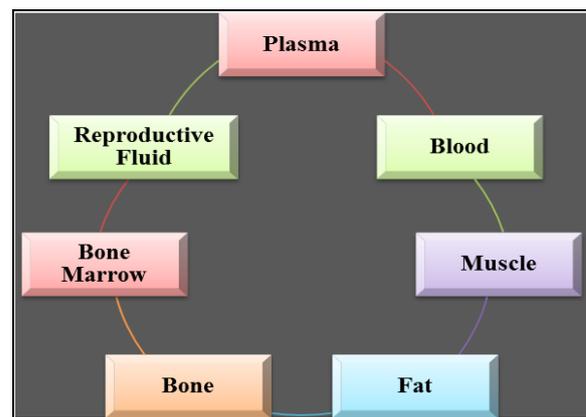
The physiology of human body as per Ayurveda works around homeostasis of Dosha, Dhatu and Mala. These are described as roots of our body; Dosha acts as subtle entity that governs function of human body while Dhatu acts as structural components and give strength to the body. Ayurveda described seven Dhatus in human body namely; Rasa, Rakta, Mamsa, Meda, Asthi, Majja and Shukra. Rasa Dhatu resembles plasma of body, Rakta Dhatu is referred to blood, Mamsa Dhatu correlated with muscular components of body, Meda Dhatu denotes adipose tissue, Asthi Dhatu resembles bones and cartilage tissue, Majja Dhatu referred for bone marrow while Shukra Dhatu described for sperm and ovum responsible for reproduction. These Dhatus not only forms structural components of body but also performs many functions including nourishment of body, circulation of biomaterials, holding up the organs, reproduction and maintenance of body frame, etc.

**KEYWORDS:** Ayurveda, Dhatu, Anatomy, Doshas.

## INTRODUCTION

Ayurveda mentioned theories of *Tridosha*, *Saptadhatu* and *Mala* which govern physiological functioning of body and helps to maintain general health. The equilibrium of these three is very important for healthy physical and mental state. The imbalance in *Doshas* and *Dhatus* leads pathological manifestation in body. Amongst them the concept of *Dhatu* is very essential for describing structural and physiological components of body.<sup>[1-4]</sup>

Ayurveda elaborated seven types of *Dhatus* namely; *Rasa Dhatu*, *Rakta Dhatu*, *Mamsa Dhatu*, *Meda Dhatu*, *Asthi Dhatu*, *Majja Dhatu* and *Shukra Dhatus*. These *Dhatus* develop sequentially in body and nourishes each other i.e.; *Rasa Dhatu* is very important for the formation of *Rakta Dhatu* which further nourishes *Mamsa Dhatu*.<sup>[3-6]</sup> The modern science described these seven *Dhatus* in the form of tissue as depicted in **Figure 1**.

**Figure 1: Seven types of Dhatus as per modern science.**

*Avarana* in *Srotas* leads deformity in the formation of tissue therefore functioning of *Srotas* is important for formation and development of *Dhatus*. Ayurveda described concept of *Dhatu Pushiti Nyaya* as theories of tissue formation and development, these theories are *Khale Kapota Nyaya*, *Kedara Kulya Nyaya*, *Ek Kala Dhatu Pushiti Nyaya* and *Ksheera Dadhi Nyaya*. *Dhatvagni* play vital role in the nourishment process from *Rasa* to *Shukra Dhatu*, in this way it divides into three fractions; *Sukshma*, *Sthula* and *Mala Bhaga*.<sup>[6-8]</sup>

## Descriptions of Dhatus

### 1. Rasa Dhatu

*Rasa Dhatu* dominant with *Jala Mahabhuta* thus possess *Vata's* mobility and circulates nutrients and other biomaterials from one place to another. *Rasa* (plasma) replenishes all the tissues. *Rasa dhatu* mainly composed of water element thus easily performs functioning of movement. As per modern science it resembles plasma and extra cellular fluid of body that helps to transport essential elements of body from one place to another. The anatomical deficiency of *Rasa dhatu* leads dryness of skin, person seems to be dull, lean and easily get tired. The excess of *Rasa dhatu* causes anorexia, excessive salivation, nausea, laziness and heaviness, etc.

### 2. Rakta Dhatu

*Rakta Dhatu* is predominant to *Agni* and presence of *Pitta* gives red shade of *Rakta Dhatu*. It mainly transports *Prana* (oxygen) and nutrients throughout the body. *Rakta* maintain life by transporting oxygen to the all tissues. As per modern science it can be compared with bloods. It provides complexion, nourishes *Mamsa dhatu* and regulated by *Pitta dosha*. The depletion in *Rakta dhatu* affects functioning of *Pitta dosha* and causes loses of luster. The anatomical deficiency of *Rakta dhatu* is responsible for condition like anemia, constipation, dullness and muscular fatigue. The excess of *Rakta dhatu* increases quality of *Pitta dosha* and induces heat in body. This increases frequency of bowel movements and also increases urination frequency.

### 3. Mamsa Dhatu

*Mamsa Dhatu* covers all organs and provides strength as well as stability. *Mamsa Dhatu* facilitates movements of bones & joints. *Mamsa dhatu* made up of earth element thus gives rigidity. It strengthens body, builds muscle tissue and nourishes *Meda dhatu*. *Mamsa Dhatu* regulated by *Kapha dosha*. The anatomical deficiency of *Mamsa dhatu* causes emaciation, debility of senses, joint pain and physical weakness. The excess of *Mamsa dhatu* is responsible for enlargement of lymph glands, increase in size of fatty organs and tumors may also observed, etc.

### 4. Meda Dhatu

*Meda Dhatu* is predominant with *Jala* and *Prithvi* element, *Meda Dhatu* is responsible for solidity and firmness due to the presence of *Prithvi* element. *Meda Dhatu* provides site for the storage of excess of fat in the body. As per modern science it resembles adipose tissue and maintains lubrication of body, also responsible for oiliness of the tissues. *Meda dhatu* nourishes *Asthi dhatu* and it is regulated by *Kapha*. The depletion of *Medas dhatu* leads enlargement of spleen, restrict joint movements, causes emaciation of body and responsible for lean body frame. The excess of *Medas dhatu* is causes obesity and lethargies. Excess of *Medas dhatu* leads excessive sweating and shortness of breath, etc.

### 5. Asthi Dhatu

*Asthi dhatu* gives stability to the body and makes person strong, it is nourishes by nutrient of *Ahara*. As per modern science *Asthi dhatu* can be correlated with bones and cartilage which provides support to the body and acts as connective tissue. Structurally it is predominant with air and space elements. It nourishes *Majja dhatu* and regulated by *Vata dosha*. The depletion of *Asthi dhatu* causes pricking pain in bones, weakness of teeth, diminishes strength of bones and bones become porous and fragile. The excess of *Asthi dhatu* leads abnormal growth of bones.

### 6. Majja dhatu

*Majja dhatu* associated with nervous system and govern metabolic process in the spinal cord. As per modern science *Majja dhatu* can be correlated with bone marrow that fills bony spaces. *Majja dhatu* made up of water element thus imparts good intellectual property and memory. It is regulated by *Kapha dosha* and makes joints stronger. The depletion of *Majja dhatu* causes weakness of joint, symptoms of vertigo and giddiness.

### 7. Shukra dhatu

*Shukra dhatu* is considered as essence of the *Dhatus* and responsible for reproductive activities. It gives life and vitality; it resembles sperm in males and ovum in females. The optimum level of *Shukra dhatu* provides strength and reproductive power. *Shukra dhatu* is regulated by *Kapha dosha* and made up of water elements. The diminish strength of *Shukra dhatu* leads loss of reproductive power, pain in testicles, weakness in body and thirst. The excess of *Shukra dhatu* increases desire of sexual activities and stone in the *Shukravaha strotas* may also occur.<sup>[8-11]</sup>

## CONCLUSION

The Ayurveda theory of *Saptadhatu* referred for seven bodily tissues, these tissues support body and gives structural frame. Ayurveda described seven *Dhatus* in human body namely; *Rasa, Rakta, Mamsa, Meda, Asthi, Majja* and *Shukra*. *Rasa Dhatu* resembles plasma of body, *Rakta Dhatu* is referred to blood, *Mamsa Dhatu* correlated with muscular components of body, *Meda Dhatu* denotes adipose tissue, *Asthi Dhatu* resembles bones and cartilage tissue, *Majja Dhatu* referred for bone marrow while *Shukra Dhatu* described for sperm and ovum that are responsible for reproduction. *Saptadhatu* provides nourishment, maintain growth and development of body, give structural constitution and connects different parts with each other. These *Dhatus* governed by one of the *Doshas* amongst three biological humors. As per Ayurveda the nutrients of *Ahara* first provides strength to the plasma (*Rasa Dhatu*) which further nourishes other tissues. The depletions and excess of *Dhatus* causes imbalance in physiological activities.

**REFERENCES**

1. Sharma PV. CharakaSamhita, Vol.1. reprint edition,Chaukhambha Orientalia;Varanasi, India. (Jaikrishnadas Ayurveda Series No.36).Cha.Vi., 2011; 8/94: 375.
2. Sharma PV. CharakaSamhita, Vol.1. reprint edition, Chaukhambha Orientalia;Varanasi, India. (Jaikrishnadas Ayurveda Series No.36).Cha.Vi., 2011; 8/102- 106: 378.
3. Murthy KRS. Sushruta Samhita, Vol.1: Chaukhambha Orientalia;Varanasi, India Su.Sutra, 2008; 35/16: 245-246.
4. Tewari PV VriddhaJivaka, KashyapaSamhita, Sutrasthana, reprint ed. ChoukhambhaVisvabharati, Varanasi, Kashyapa Su., 2002; 28/36-37: 86.
5. Sharma PV. CharakaSamhita, Vol.1. reprint edition, Chaukhambha Orientalia; Varanasi, India. (Jaikrishnadas Ayurveda Series No.36). Cha.Vi., 2011; 8/108-111: 379.
6. Sharma PV. CharakaSamhita, Vol.1. reprint edition,Chaukhambha Orientalia;Varanasi, India. (Jaikrishnadas Ayurveda Series No.36).Cha.Vi., 2011; 8/112-115: 380.
7. Dr. SubhashRanade,R.Deshapande Sharir Kriya Vidanan, Vol. II, ,Choukhamba Sanskrit Prathisthan, Reprint, 2014; 10: 71.
8. Dr. P.S.Byadgi Ayurvediya Vikrti – Vijnana and Roga Vijnana, Vol.1.,Choukhamba Bharti Academy, Reprint, 2017; 19: 449.
9. Dr. Nandini Dhargalkar, Sharir Kriya Vidanan, Vol. II, Choukhamba Bharti Academy, Reprint, 2008; 7.2: 363.
10. Tirtha SS. The Ayurveda encyclopedia: Natural secrets to healing, prevention, and longevity. Sat Yuga Press, 20
11. Benitah SA, Frye M. Stem cells in ectodermal development. [Last accessed on 2013 March 22]; J Mol Med (Berl), 2012; 90: 783–90.