

Review Article

STUDY OF THE HUMAN PHYSIOLOGICAL ASPECT OF ALL COMPONENT OF MEDO DHATU

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KEYWORDS:Medodhatu,
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According to Ayurveda, human physiology is dependent on the balance of *Dosha*, *Dhatu*, and *Mala*. *Dhatu*s are regarded to be one of the body's most fundamental functioning and structural components. According to Ayurveda, human physiology consists of seven primary *Dhatu*s. *Medo Dhatu* ranks fourth among the seven *Dhatu*s. Lipids are discussed in terms of *Sneha Dravya* in Ayurveda, which includes *Meda*, *Vasa*, *Majja*, and so on. *Sneha* is the essence of our bodies. *Acharya Sushruta* states that the human body is made up of *Snehasara*, the most *Vishuddhatara* form of *Sneha*, and that *Prana* is dependent on it. *Meda* is mostly found in *Udara*, although it is also known as *Sarakta Meda* in *Anu* (little) *Asthi* and *Majja* in *Sthoola* (big) *Asthi*. *Mamsa* contains a pure form of *Meda* known as *Vasa*. Although these three are the most visible *Sneha* sites, *Meda Dhatu* is given special attention because of their relevance in lipid metabolism and participation in the development of numerous metabolic illnesses such as *Medoroga* and *Prameha*. The present review article focused on all physiological component of *Medodhatu* and its role in maintaining the physiology.

INTRODUCTION

Body is nothing but the combination of all *Dosha*, *Dhatu* and *Malas*.^[1] If these body constituents are in the equilibrium body will be in the healthy state. According to Ayurveda, human physiology consists of seven primary *Dhatu*s.^[2-3] *Medo Dhatu* ranks fourth among the seven *Dhatu*s. According to *Acharya Chakrapani*, all *Dhatu*s are classified into two parts on the basis of their *Poshana karma*. 1. *Sthayi* or the *Poshya Dhatu* 2. *Asthayi* or the *Poshaka Dhatu*.^[2] *Poshya Dhatu* supports the body by providing it with basic tissues, whereas the *Poshaka Dhatu* is seen to support the former by nourishing, sustaining, and maintaining them.

Vyutpatti: The word *Meda* is derived from root "*Jimida Snehne*" which stands for *Sneha*, fat, oil etc. (*Vachaspatyam*). It describes that the substances having the *Snigdha* as *Guna* are called "*Meda*."

Definition of Medo Dhatu: *Meda* is given smoothening on the body.

Synonyms of Meda Dhatu: *Mamsaj*, *Mamsateja* *Asthi*krita, *Ojas*, *Vasa* and *Vapa*.^[5]

Panchbhautika Swarupa of Meda Dhatu: *Meda Dhatu* is considered as *Sneha* dominant *Drava Dham* which is having *Guru* (heavy), *Snigdha* (oiliness), *Balakaraka* and *Brimhanam*^[5] properties and dominance of *Prithvi*, and *Apa Mahabhoota*.^[6,7]



Fig. 01: Composition of Medo Dhatu

Types of Meda Dhatu: According to Ayurveda classics two types of *Meda* (fat) can be described. 1. *Baddha* (bounded/unmovable) *Meda* and 2. *Abaddha* *Meda* (unbounded/movable).

1. ***Baddha* (bounded/unmovable) *Meda*:** Immobile nature (*Gativivarjita*), which is stored in *Medodharakala*. The site of *Medadharakala* is *Udara* and *Anuasthi*. *Udara*, *Sphika*, *Stana*, *Gala* are also depots of *Poshya Meda*. (Su. Sh. 4/12,13)

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2. **Abaddha Meda (unbounded/movable):** According to *Acharya Charaka, Bahudrava Shleshma* (*Kapha* that contains too much liquid) joins and affects *Meda*, causing it to become *Abaddha* (unbounded) in nature. It is mobile (*Gatiyukta*), which is circulated, in the body along with the *Rasa, Rakta Dhatu*, to

give nutrition to *Poshya Meda Dhatu*. Through different imaging techniques it can be visualized that lipids along with the cholesterol are being circulated with the blood are the examples of *Abaddha meda*.

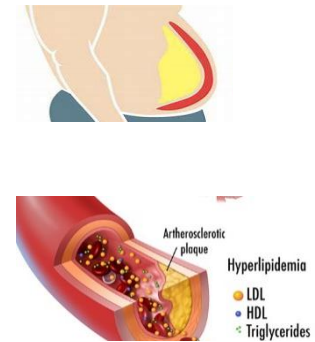
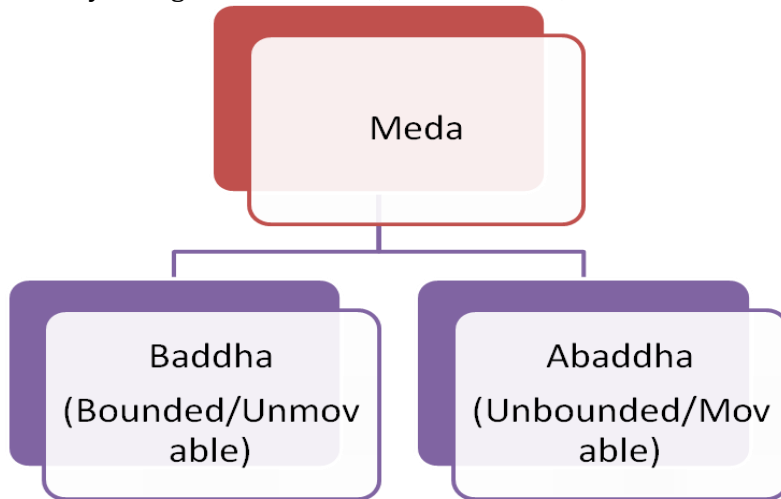


Fig 02: Types of Meda Dhatu

Pramana of Meda Dhatu: The total quantity of *Meda* is two *Anjali*^[8] and that of *Vasa* is three *Anjali*.^[9] Thus, the total *Medas* content of the body enumerates to five *Anjali*. The *Meda* content to be roughly 1/11th of total body weight which is in accordance with the total amount of body fat (1/12th of body wt.) according to modern science which may vary in *Medoraga*.

Updhatu of Meda: *Snayu* is the *Updhatu* of *Meda*.^[9] According to *Vaidhyaka Shabda Sindhu*, *Snayus* are the *Nadis* that conduct *Vayu*. *Snayus* bind the *Deha Mamsa* (muscles), *Asthi* (bones), *Medas* (adipose tissue) and strengthens the joints. The body is sturdy because of the *Snayus*.

Mala of Meda: *Sweda* is the *Mala* of the *Meda Dhatu*.^[10]

Karma of Meda Dhatu: *Dhatu* is concerned with the two functional aspects i.e., *Dharana* and *Poshana* of the body. The term *Dharana* refers to the architectural support of the body provided by the various *Dhatu*, which are in turn constantly formed, destroyed and reformed by the appropriate nutrients provided to them by the *Poshaka Dhatu*. According to *Acharya Sushruta, Snehana* (oiliness luster of skin, hairs and eyes etc.), *Sweda* (sweat), *Dridhatva* (strength), *Asthipusti* (strengthening of bones) are the main functions of *Meda Dhatu*.^[11] Again *Netra* and *Gatrasnigdhatu* are the additional functions of *Meda* mentioned by *Astang Sumgraha*.^[12]

Medodhara kala: *Kalas* are the fine structures which separates the *Dhatu* from their *Ashayas*.^[13] *Medodharakala* is the 3rd *Kala* in the body and it supports the *Medo Dhatu*.^[14] In describing this *Kala*, *Acharya Sushruta* has made an interesting and far-reaching suggestion that, the *Medas* that fills up the

shaft of long bones is known as *Majja* and that which is presents in the *Anuasthi* is to be treated as *Sarakta Medas* i.e. blood cum fat.^[14]

Meda Sara Purusha: According to *Acharya Charaka. Medasara Purusha* has lustrous skin, deep and appealing voice, shiny eyes, nails, hairs, glistening teeth, unctuous and moist lips, oily urine and feces. A *Medasara Purusha* is blessed with wealth, dignity in society, happiness, luxury, righteousness, generosity, delicacy.^[15]

Medovaha Srotas: *Srotas* are the channels in the body through which the *Poshaka Dhatus* and *Malas* pass to and from the *Sthayi Dhatus*. *Srotas* excise a selective discrimination as regards the supply of nutrition to the *Dhatu*. The channels, which give nutrition to the *Meda Dhatu* or the *Srotas* carrying the nutritive material up to the site of *Meda Dhatu* can be considered as *Medovaha Srotas*. According to Dr. C. Dwarkanath, the channels through which nutrition is transported to the adipose tissue are *Medovaha Srotas*.^[16] Therefore *Medovaha Srotas* are the channels through which the *Poshaka* or *Asthayi Meda Dhatu* circulates in the whole body mixed with *Rasa* and *Rakta*, thereby nourishing the *Sthayi Meda Dhatu*. Vitiating of *Medovaha Srotas* takes place in *Medodushti* or *Medoroga*.

Moola of Medovaha Srotas: Each and every *Srotas* has two parts or endings one is from which the *Srotas* is originated i.e., the *Moola* and another is through which nutritive material travel to their respective places in the body. *Acharya Chakrapani* has explained the term "*Moola*" as the site of origin.

The *Medovaha Sroto Moola* means the organs which may be closely related to *Medo Dhatu* functions

or which are important sites related to beginning or ending of the channels of *Medo Dhatu*. The three *Acharya* have considered commonly *Vrikka* as one of the *Moola* of *Medovaha Srotas* while *Vapavahana*, *Kati* and *Mamsa* are mentioned as second *Moola* separately.

Vrikka are formed by the *Prasada Bhaga* of *Rakta* and *Meda Dhatu*. They correspond to the kidney as per the modern science. *Acharya Sharangadhara* states that the *Vrikka* provide nourishment to the *Meda Dhatu* present in the abdominal part.

Table 1: Moola of Medovaha Srotas

Moola	Charaka ¹⁷	Sushruta ¹⁸	Astang Sangrah ¹⁹
Vrikka (Kidney)	+	+	+
Vapavahana (Omentum)	+	-	-
Kati (Waist region)	-	+	-
Mamsa (Muscles)	-	-	+

Formation of Medo Dhatu: According to *Acharya Charaka*, the *Rakta Dhata* is combined with *Teja*, *Apa* and made solid by the *Agni* so that it gets convert into *Mamsa*, that again being digested by its own *Agni Medodhatwagni* and stirred up by the *Agni* and getting combined with the quality of *Apa* and unctuous substance and finally gets converted into *Medodhatu*.^[20]

Lipid (Meda) Metabolism in Ayurveda: According to *Ayurveda*, *Agni* has important role to play in maintain physiological functions of the body. *Agni* provides *Bala* (strength and immunity), *Arogya*, *Ayu* (long life), *Prana*, *Swasthyam*, *Varnam* (complexion), *Utsaha*, *Prabha*, *Oja* and *Teja* to the body.^[21] The normal **Pathological conditions pertaining to Meda Dhatu**

activity of the *Agni* maintained healthy state while its abnormal state produces pathology and its absence causes of death that why *Agni* is known as *Moola* or vital force.^[21] Human body is derived from food, and the healthy and disease conditions of the body results due to the status of digestion. Digestion is to be performed by three types of *Agnis* viz., *Jatharagni*, *Dhatvagni* and *Bhutagni*. *Jatharagni* is the chief metabolic principle responsible for giving strength to the *Bhutagnis* as well as the *Dhatvagnis*. *Agni* digests the four types of ingested *Ahara* and provides energy for sustaining life. It protects body from wear and tear. Hence *Agni* performs the functions of digestion and metabolism both.



Fig. 03: Pathological conditions pertaining to Meda Dhatu

Medo Pradoshaja Vikara: The prodromal symptoms of *Prameha*^[22] (*Jatilibhava Keseshu*, *Mukha Madhurya*, *Kara-Pada Suptata* and *Daha*, etc.) and the *Ashtonindita*^[23] personalities (*Atideergha*, *Ati-hrasva*, *Ati-loma*, *Aloma*, *Atikrishna*, *Atigaura*, *Atisthula*, *Atikrishha*). *Granthi*, *Medovrididhi*, *Galganda*, *Arbuda*, *Medojanya Osthaprakopa*, *Madumeha*, *Atisthaulya*, *Atisweda* etc diseases are also developed due to *Dushti* of *Meda Dhatu*.

Symptom of Meda Vrididhi: Excessive formation of *Meda Dhatu* leads to oiliness in body parts, increased abdominal girth, cough, dyspnea on exertion and foul body odor.^[24]

Symptom of Meda Kshaya: Deficient *Meda Dhatu*, below normal levels, is characterized by crepitations in the joints, weakness of the five-sense organ, easy fatigability, sunken abdomen, splenomegaly, dryness and a liking towards fat-rich non-vegetarian's diet.^[25]

CONCLUSION

Meda is not the same as *Vasa* because *Meda* is a *Dhatu* that bears the body, but *Vasa* is an *Updhatu* and that part of the *Sneha* of the body that is not required for immediate energy generation and hence is kept in the body. Understanding the *Medodhatu* through the perspective of *Ayurveda* helps in diagnosis and prevention of lifestyle disorders.

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