

## AYURVEDIC CONCEPT OF MUSCLES W.S.R. TO THEIR ANATOMICAL AND PHYSIOLOGICAL ASPECTS

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### ABSTRACT

In Ayurveda, the human body is supported essentially by some vital constituents including *Dhatu* and *Doshaa*. Among them *Dhatu*s are significant in the maintenance of body structure and integrity. There are seven *Dhatu*s and *Mamsa Dhatu* is one of them which referred to muscle and related structures according to modern science. It gives shape and support to the body; thereby play key role in structural and physiological perspective of human body. Its *Moola Sthana* is the *Twacha* and *Snayu*. *Mamsa Dhatu* (muscles) is mainly the one that has a major contribution to physical power as well as immunity. Development and maintenance are based on proper functioning of *Mamsadhatwagni* and *Mamsadhara Kala*. Muscles are considered responsible for solidity, strength, mobility and enveloping of internal organs. Taking into consideration of significance of muscular tissue this article emphasizes Ayurvedic concept of muscles with special emphasis to their anatomical and physiological aspects.

**KEYWORDS:** *Mamsa Dhatu, Muscles, Anatomy, Twacha, Snayu.*

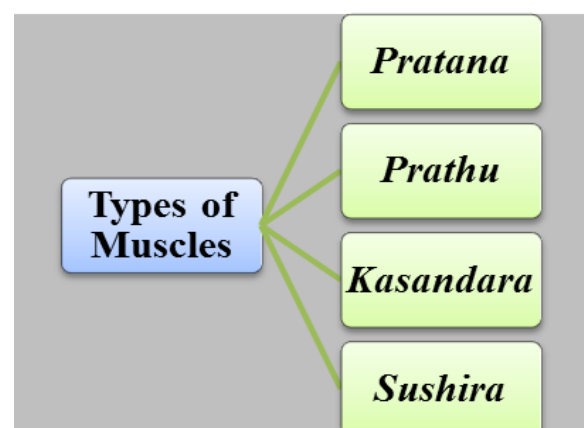
### INTRODUCTION

In Ayurveda, *Mamsa Dhatu* is somewhat related to the muscles but not merely only to muscle tissue. It personifies strength, toughness and provides structural integrity. It is the physical vessel by which body expresses not just individual physical built up, but also overall framework of body. Muscle tissue is constituted mainly from the *Prithvi*, *Agni* and *Vayu Mahabhutas*. Earth gives the fundamental structure and mass, while fire energizes metabolism and meaningful action. Muscle, as a metabolically active tissue, depends on fire to transform and function.<sup>[1-4]</sup>

### Anatomical descriptions

There are four types of muscular structures according to Ayurveda as mentioned in **Figure 1**. As mentioned in Figure, *Pratana* describes rectus or straight muscles that are usually linear and elongated to facilitate movement and posture. *Prathu* describes round muscles that are round in shape and are generally used in the creation of force via contraction. *Kasandara* are tendon-like structures looking like tendons, which are mainly responsible for linking muscles to bones and enabling

movement of the joints. Finally, *Sushira* stands for empty muscles that have the special feature of contracting and relaxing, which is very important in dynamic body functions like breathing and digestion.



**Figure 1: Types of muscles.**

*Mamsa Dhatu* or muscular tissue develops from *Rakta Dhatu* due to the action of *Mamsadhatwagni*, the unique

metabolic fire associated with muscular tissue. Any discrepancy at this phase not only damages the *Mamsa Dhatu* but also influences the generation and quality of the subsequent *Dhatu*s. Functionally, it is mostly of the *Prithvi Mahabhuta*, which provides solidity, stability and strength to the body. *Moola Sthana* of *Mamsa Dhatu* is located in *Twacha* and *Snayu*. Its *Upadhatus* or its accessory tissues are *Vasa* and skin layers, its waste product termed as *Kha Mala*, which is eliminated out through the eyes, ears and nose. Person having *Mamsa Dhatu Sara* (state of excellence of muscle tissue) exhibits certain qualities like firm and stable joints, a well-developed and sturdy body, and commendable mental qualities like patience, forgiveness, and a calm mind.<sup>[3-5]</sup>

*Mamsa Dhatu*'s health is directly connected with the movement of *Prana* through three important *Chakras*; *Muladhara Chakra*, *Muladhara Chakra* and *Vishuddha Chakra*. *Muladhara Chakra* regulates *Prana* with earth qualities to feel grounded in our physical body and attached to the planet. Grounding is required for the feeding and correct formation of muscular tissue. *Manipura Chakra*; is linked with the element of fire, stimulates digestion and metabolism, supporting will power and vitality, both are critical to maintaining muscular strength. *Vishuddha Chakra* is less engaged in the creation of *Mamsa Dhatu*, it has an important role in its expression. It is the center of *Udana Vayu*, the energy of upward movement and self-expression, allowing our muscles to perform purposeful and articulate action.<sup>[4-6]</sup>

#### Dosha correlation

- ✓ Those with *Kapha* constitution usually have plenty of *Mamsa Dhatu* and thus are more likely to get excess than deficiency.
- ✓ *Vata*-dominant persons are generally thinner in constitution and are most prone to depletion of muscle tissue due to lack of tissue stability.
- ✓ The individual with a *Pitta* constitution generally has a balanced level of muscle tissue but can be depleted by heat and overwork.

Ayurveda connects *Mamsa Dhatu*, *Ojas* and *Vyadhikshamatva* to *Kapha Dosha*, as they possess common qualities like stability and firmness. Maintenance of the favorable factors for *Kapha Dosha* can feed *Mamsa Dhatu*, thereby ultimately strengthening immune strength. Meanwhile, it's critical to preserve harmony in *Agni*, especially *Dhatwagni* in order to promote optimal growth and uniformity of all body tissues. The *Sthira Guna* present in *Kapha* as well as in *Mamsa Dhatu* is also evident at the mental level in a person with *Mamsa Dhatu Sara*.<sup>[5-8]</sup>

#### Regulation of muscles physiology

Efficient operation of *Mamsa Dhatu* occurs only when the *Doshas* are in concordant proportion. An uneven state can throw the quality or quantity of *Mamsa Dhatu*

off balance, hence impairing one's capacity to live their life with some purpose. Recovery of *Mamsa Dhatu* is accomplished by bringing about the proper balance of earth and fire elements, based on *Prakriti* of individual. Muscles tissue performs following important functions:

- ✓ *Mamsa Dhatu* gives strength & structural support
- ✓ *Mamsa Dhatu*, is analogous to muscular tissue gives bulk, shape to the body and stamina.
- ✓ It along with *Pitta Dosha* involve in metabolism such as protein construction and energy generation.
- ✓ Responsible for movement and flexibility inside the body.
- ✓ Provides sustaining framework and hold body structures.

#### Pathological Aspects and Management

*Mamsa Dhatu Vriddhi*, or excess buildup of muscle tissue, is indicated by such signs and symptoms as lips, cheeks, arms, and chest hypertrophy, as well as heavy body movements and a feeling of heaviness, with higher susceptibility to the formation of benign tumors. Treatment for the condition usually involves fasting, preventing strenuous physical exertion, and having a light, vegetarian diet to alleviate the excess buildup.

Contrastingly, *Mamsa Dhatu Kshaya* or wasting away of the muscular tissue, takes the form of sunken cheeks, painful locomotion, emaciation of limbs and chest, painful movements, lethargy, dryness and debility, etc. Therapeutic management lies in restoring nutrition and vigor through a well-balanced diet composed of well-cooked meat, wheat, lentils, and nuts, etc.<sup>[8-10]</sup>

#### CONCLUSION

*Mamsa Dhatu* occupies a crucial position amongst the various *Dhatu*s of human body. Muscles are identified as important centers of cellular respiration where glycogen deposited there is converted into energy when the body is in motion. An excellent muscular structure is an indicator of good nutrition and overall well-being. This tissue not only imparts body strength and stamina, but also contributes to the body's immunity and resistance to diseases. The person with optimal state of muscular tissue is exhibits qualities such as; *Kshama*, *Dhruti*, *Alaulya* and *Arjava*, etc. Individuals with properly nourished *Mamsa Dhatu* tend to achieve great success in physically exhausting occupations like sports, athletics, and physical labor. *Mamsa Dhatu* is considered as an important tissue because of its direct role in strength and endurance. *Mamsa Dhatu*, is analogous to muscular tissue gives bulk and shape to the body. It's responsible for movement and flexibility, provides sustaining framework and hold body structures.

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