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## An insight of Asthi sharira according to Ayurveda

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### Abstract:

Sharira in Ayurveda, which deals with the description of organs and structures of the human body, is basically the soul of Ayurveda. Bone is one of the seven Dhatus in the body and serves as the body's major support system. Ayurveda consider the bones to be 360 and Shalya Tantra mentions them to be 300 only. There are various types of Asthi i.e., Kapala, Valaya, Taruna, Nalika and Ruchaka Asthi. These different Asthi found in various parts of body. The muscles, tendons and ligaments are attached to bones and constitute extra-articular apparatus. Bones supports muscle, tendons and ligaments and gives shape to our body.

**Key words:** Sharira, Asthi, Body, Bone, Dhatus

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**INTRODUCTION:**

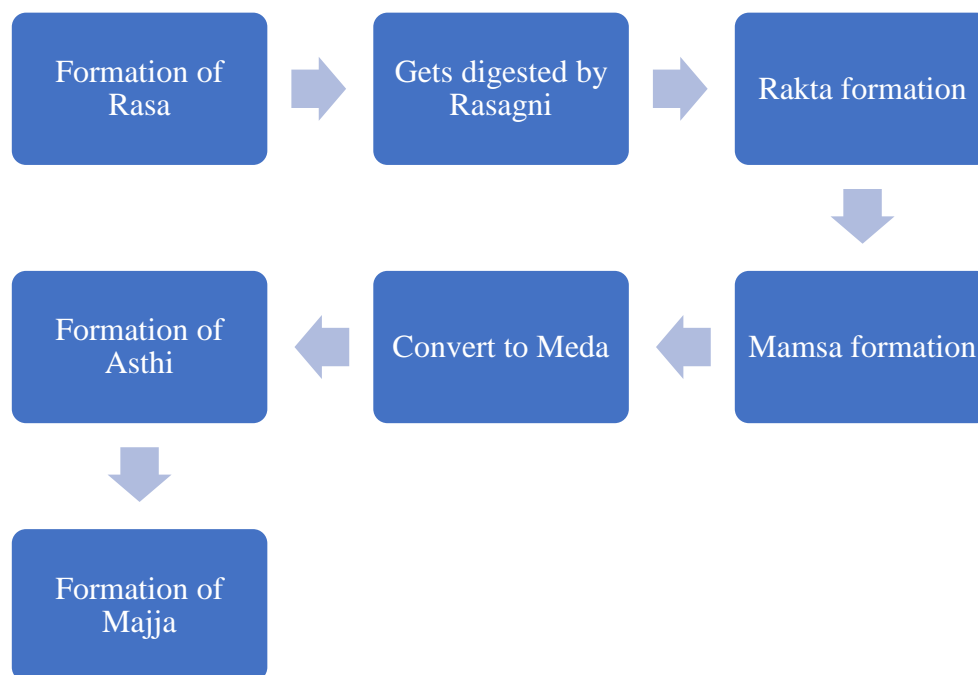
The toughest and most fundamental structure of the human body is Asthi (bone). It is made up of three elements: Dasha, Dhatu, and Mala. It is one of the seven Dhatus in the body that is involved with the Shareera Dharana (Rasa, Rakta, Mansa, Meda, Asthi, Majja, Shukra). Because of its hardness, it aids in the construction of a correct body structure. Even if a person's flesh and skin are destroyed, the bones do not decay or collapse; the fleshy organs are held to the bones by large Siras and muscular bands, and as a result, the organs are properly secured and do not slip away<sup>[1]</sup>. The marrow (Majja) is also supported by the bones. Vata is found in bones, according to Astanga Hridaya. The name Asthi comes from the Sanskrit phrase "Asyathe ithi asthi"<sup>[2]</sup>. It implies that Asthi is a material that does not degrade as quickly as other bodily parts such as muscles, arteries, and so on<sup>3</sup>. Even after a lengthy period of time following death, it stays in the same state. As a result, the bones have been given the name Asthi.<sup>[3]</sup> Bone is the material that makes up the body's skeleton. Calcium phosphate and calcium carbonate make up the majority of it. The skeleton is the body's bone and cartilaginous structure.<sup>[4]</sup> Asthi

Shareera, according to Ayurveda, is the study of the human body in terms of bone anatomy. It is essential to number the components of the body that are present in order to distinguish them from abnormalities. In the 7<sup>th</sup> chapter of Charaka Samhitha Shareera Sthana, it is stated that a physician skilled in the enumeration of the body parts is required. In the seventh chapter of Charaka Samhitha Shareera Sthana, it is said that a physician who is well-versed in the enumeration of bodily parts would not be confused during practice. 7 The fifth chapter of the Sushruta Samhita Shareera Sthana, Shareera Sankhya Vyakarana, focuses on the numbering of the body's Anghas and Prathyangas.<sup>[5]</sup> Asthi is formed from Meda, according to the law of consecutive Krama Parinama Nyaya; Prithvi Guna is considerably more prevalent in bone. Vayu creates sponginess of the interior of bones which is filled with Sneha obtained from Meda; this is also known as Majja i.e. Marrow; Meda creates a compact mass of Prithvi, Agni, etc. with its own heat and forms the bones; Meda creates a compact mass of Prithvi, Agni, etc. with its own heat and forms the bones; Vayu creates sponginess of the interior of The spongy material is created by Vayu, Akash, and others

[6]. Asthi is strong and heavy and as per qualities of Vayu Mahabhuta, Asthi is dry and rough. Thus, both these Mahabhuta give characteristic qualities like toughness, roughness, dryness and hardness. The bones are a gift from the father to the foetus. Due to a parent's faulty seed, a foetus with no bones or with underdeveloped bones appears. The

marrow or fat is found on the inside of the huge and long bones; however, the marrow found in the flat and little bones is combined with blood and is referred to as Sarakta Meda (sanguineous fat). Osteoporosis, giddiness, and other symptoms can occur when majja is lacking.<sup>[7]</sup>

#### Formation of Asthi Dhatu



**Figure 1- Flow chart representing formation of Asthi Dhatu**

According to Ayurvedic scriptures, every subsequent Dhatu receives nutrition from the Dhatwagni of the preceding Dhatu and supplies from the preceding Dhatu throughout its creation. Vayu is responsible for Ghanatava and Kharatava, whereas Jala is responsible for Snighatava, and so on.

According to Acharya Kasyapa, Asthi and Mamsa of the embryo develop from the Shukra and two Snayu. Medodhara Kala is found in Udar (abdomen), Anuasthi (short bones), and Majja in Mahat Asthi, according to Sushruta (long bones). According to Hindu mythology, Asthi is Ashraya and Vata is

Ashrayee. In the case of Vata and Asthi, the relationship is inversely proportional. A substance that induces a rise in Asthi will result in a reduction in Vata, and vice versa. Snayu (ligaments) are tied with Asthi (bones) in body. Ligaments are covered by Mamsa (muscles) which are nourished continuously by the Dhamani and Sira (vessels) and then whole body is covered by Twacha (skin). This indicates that Asthi is meant for playing anchorage role in forming frame work of body and is supported effectively by Snayu, Mansa, Dhamni and Sira.<sup>[8]</sup>

### Asthi prakara (Type of bones)

Asthi are of major five kinds such as Kapala (flat), Rucaka, Taruna (cartilage), Valaya (curve) and Nalaka (tubular) Asthi.<sup>[9],[10]</sup>

- Kapala asthi are flat in nature which covers and protects the brain and other organs. They are found in the knee, pelvis, scapula, cheek, palate, temple and head.
- Ruchaka asthi are utilized to chew food and enjoy the taste. These are for taste sensation. They form the teeth.
- Taruna asthi are soft in nature which may have not fully developed i.e., ossified. They are found in the nose, ear, neck and the eye orbit.

- Valaya asthi are round in shape or particularly hemi circle in shape found in the flanks, the back and the thorax.
- Nalaka asthi are long like tubes and hollow from within.

### Asthi Sankhya :

According to various texts, total number of Asthi present in body are 360 but there is difference in number of Asthi divided into Shakha, Madhya Sharira and Kostha.<sup>[11],[12],[13]</sup>

- According to Charak Samhita, total number of bones are 360 in which 128 are present in Shakha, 140 in Madhya Sharira and rest 92 are present in Kostha.
- According to Sushruta Samhita, total number of bones are 300 in which 120 are present in Shakha, 117 in Madhya Sharira and rest 63 are present in Kostha.
- According to Ashtang Hridaya, total number of bones are 360 in which 140 are present in Shakha, 120 in Madhya Sharira and 100 are present in Kostha.

According to “Sharire Shushrut Shreshthah” distribution of Asthi is as follows:

### Shakha -120 (total 30 Asthi in each Shakha)

- 3 in each Padanguli =15
- Padatala, Padakurcha, Gulpha =10
- Parshni=1
- Jangha=2

- Janu=1

- Uru=1

**Madhya Sharir- total 117**

- Shroni-5

- Parshva-36 (total 72)

- Prishtha-30

- Uras-8

- Amsa Phalak – 2

**Urdhava Jatrugata- total 63**

- Griva-9

- Dant-32

- Prishtha-30

- Talu-1

- Hanu-2

- Nasa-3

- Kanthanadi-4

- Siras-6

- Ganda, Karna, Sankha- 1 in each (total 6)

**Discussion:**

The human body is made up of numerous Dhatus, and Asthi is one of them. Asthi is a structural component of the human body that not only provides structural support but also provides stiffness. Bone tissue is a crucial structural component of the human body, and defects in Asthi can lead to a variety of orthopaedic issues. Among the Acharyas, there are differing viewpoints about the number of bones. It is mostly based on the

imaging of various bone elements. Sushruta has offered 300 Asthi as a count. In terms of counting the number of bones and categorising them, his opinion on Asthi Sankhya appears to be more exact than Charaka and Vagbhatta's. Asthi Sankhya, according to Charaka and Vagbhatta, has 360 numbers. Sushruta's interpretation of Asthi Sankhya appears to be closer to contemporary anatomical explanations. In the mature human skeleton, there are 206 bones, according to anatomy. Asthis will be in Mrudu form during Balyavastha. It will not be properly formed. As a result, the single bone seems to be divided into two or three parts. When you reach maturity, these two merges into one. This might be the cause of the Asthi Sankhya's alteration. As per Ayurveda there are various types of Asthi i.e., Kapala-Asthi, Valaya-Asthi, Taruna-Asthi, Nalika-Asthi and Ruchaka-Asthi. The Asthi dhatu is primarily concerned with the human body's fundamental structure. All of the cartilaginous components of the human body are included in Asthi dhatu. By being processed in Asthivaha srotas by dhatwagni, macronutrients in medadhatu nourish the Asthi dhatu. Both dhatvagni and bhutagni provide weight and hardness to the ground

material that makes up the bone. When medodhatu flows into the Purishdharakala and is digested by Asthi-agni, Asthidhatu is created in an unstable state. Aside from Asthi, secondary tissues such as upadhatu of Asthi and danta (teeth) are generated. Kesha and nakha are the malas of this metabolic pathway.

### Conclusion:

Asthi is one of the seventh Dhatu in the body and is the main support for all others and also supply the nutrition and support and sustain the body. According to the classics, Asthi is the seat of Vata and Asthi acts as Ashraya and Vata acts as Ashrayee. In the body, Snayu (ligaments) are linked to Asthi (bones). Ligaments are covered by Mansa (muscles), which are continually supplied by Dhamani and Sira (vessels), and subsequently Twacha covers the entire body (skin). This suggests that Asthi is intended to serve as the body's anchor and is well supported by Snayu, Mansa, Dhamni, and Sira.

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