



## A PHYSIOLOGICAL UNDERSTANDING ON THE CONCEPT OF SLESHAKA KAPHA

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### ABSTRACT

*Dosha, Dathu, Mala* together forms the basis of the body. The balance of these entities represents the healthy state and imbalance will cause various diseases. By mentioning the various *Sthana* of the each *Dosha* the different function performed by individual *Dosha* in different sites has been emphasised. The sub-types of *Dosha*, its location and function have also been mentioned.

There are five types of *Kapha* namely *Bodhaka, Sleshaka, Tarpaka, Avalambaka, Kledaka*. The *Visesha Sthana* of *Sleshaka Kapha* is said to be *Sandhi*. The main function of *Sleshaka Kapha* is said to be nourishment & lubrication of joints.

Synovial fluid secreted from synovial membrane is necessary for normal joint function. Synovial fluid moves into the cartilage when a joint is resting and moves out into the joint is active, particularly when the joint is engaged in a weight bearing activity such as exercise. Synovial fluid lubricates the joints & permits smooth movement. It also provides important nutrients to the structures involved in joint formation.

The functions of *Sleshaka Kapha* can be related to the functions of synovial fluid which is responsible for the lubrication & nourishment of joints.

**Keywords:** *Sleshaka, Kapha, Shareera, Kriya, synovial fluid, Joints*

### INTRODUCTION

The individual is an epitome of the universe. All the material & spiritual phenomenon of the universe are present in the individual. Similarly all those present in the individual are also contained in the universe<sup>1</sup>.

Originating in cosmic consciousness, this wisdom was intuitively received in the hearts of the ancient scholars. They perceived that consciousness was energy manifested into the five basic principles or elements. Man is microcosm of the nature and so the five basic elements present in all matter also exists within each individual. Thus out of the womb of the five elements, all matter is born. The five basic elements exist in all matter. Water provides the classic example: - the solids of iced water are manifestation of the *Prithvi Mahabhuta* (earth principle). Latent heat in the ice (*Agni*) liquefies it, manifesting into *Jala Mahabhuta* (water principle). And then eventually it turns into steam expressing the *Vayu Mahabhuta* (air principle) the steam disappears into *Akasha* or space<sup>2</sup>. *Bhuta* is

that which is not born out of something, but out of which something is born. It is the material cause of substances in the world. When we say *Bhuta* we mean that subtle level of existence, where as *Mahabhuta* refers to gross level of existence<sup>3</sup>. *Panchikarana* is the process through which invisible *Bhutas* combine with each other and form the visible *Mahabhutas* in such a way that all *Bhutas* are present together in each *Drisyah Bhuta* in varying degrees of predominance. Thus in the physical world everything is a combination of *Pancha Mahabhutas* & we cannot see them independently<sup>4</sup>.

Body is comprised of *Dosha, Dathu, Mala*<sup>5</sup>. The balance of these entities represents the health and imbalance will cause diseases<sup>6</sup>. In normalcy, *Dosha* will be performing their own functions and individual *Dosha* will be having their own specific site. By mentioning the various *Sthana* of the each *Dosha* the different function performed by individual *Dosha* in different sites has been emphasised. The sub-types of *Dosha*, its location and function have also been mentioned<sup>7</sup>.

Regarding the *Sthana* of various *Dosha* authors have different opinion. Later authors have added some more *Sthana* of *Dosha*. For example, ears among the location of *Vata*; umbilicus, eyes and skin among the location of *Pitta*; *Kloma*, nose, tongue among the location of *Kapha*<sup>8</sup>.

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Brief Physio- anatomical understanding of the joint with reference to synovial fluid is necessary to understand physiology of *Slesha kakapha*.

Joints are classified structurally, based on their anatomical characteristics, and functionally, based on the type of movement they permit. The structural classification of joints is based on two criteria: (1) the presence or absence of a space between the articulating bones, called a synovial cavity, and (2) the type of connective tissue that binds the bones together. Structurally, joints are classified as one of the following types: Fibrous joints: There is no synovial cavity, and the bones are held together by dense irregular connective tissue that is rich in collagen fibers. Cartilaginous joints: There is no synovial cavity and the bones are held together by cartilage. Synovial joints: The bones forming the joint have a synovial cavity and are united by the dense irregular connective tissue of an articular capsule, and often by accessory ligaments. The functional classification of joints relates to the degree of movement they permit. Functionally, joints are classified as one of the following types: Synarthrosis: An immovable joint. The plural is *synarthroses*. Amphiarthrosis: A slightly movable joint. The plural is *amphiarthroses*. Diarthrosis: A freely movable joint. The plural is *diarthroses*. All diarthroses are synovial joints. They have a variety of shapes and permit several different types of movements<sup>10</sup>.

The synovial membrane secretes synovial fluid, a viscous, clear or pale yellow fluid named for its similarity in appearance and consistency to uncooked egg white. Synovial fluid consists of hyaluronic acid secreted by fibroblast-like cells in the synovial membrane and interstitial fluid filtered from blood plasma. It forms a thin film over the surfaces within the articular capsule. Its functions include reducing friction by lubricating the joint, absorbing shocks, and supplying oxygen and nutrients to and removing carbon dioxide and metabolic wastes from the chondrocytes within articular cartilage<sup>11</sup>.

Synovial fluid also contains phagocytic cells that remove microbes and the debris that results from normal wear and tear in the joint. When a synovial joint is immobile for a time, the fluid becomes quite viscous (gel-like), but as joint movement increases, the fluid becomes less viscous. One of the benefits of warming up before exercise is that it stimulates the production and secretion of synovial fluid; more fluid means less stress on the joints during exercise. We are all familiar with the cracking sounds heard as certain joints move, or the popping sounds that arise when people crack their knuckles. According to one theory,

when the synovial cavity expands, the pressure of the synovial fluid decreases, creating a partial vacuum. The suction draws carbon dioxide and oxygen out of blood vessels in the synovial membrane, forming bubbles in the fluid. When the bubbles burst, as when the fingers are flexed (bent), the cracking or popping sound is heard<sup>12</sup>.

## AIMS & OBJECTIVES

To critically analyze the *Sleshaka Kapha*

## MATERIALS AND METHODS

The *Bruhat Trayi* were scrutinised regarding the references for the *Guna* and *Karma* of the *Sleshaka Kapha*. Later, physiologico-anatomical aspects of the joint with reference to synovial fluid were studied from modern physiology books. Later, supportive correlation was done between *Ayurvedic* and modern views to build valid and reliable hypothesis regarding *Sleshaka Kapha* relation to the various anatomical and physiological aspects of the joint with reference to synovial fluid.

## DISCUSSION

There are five types of *Kapha* namely *Bodhaka*, *Sleshaka*, *Tarpaka*, *Avalambaka*, *Kledaka*. The *Vishesha Sthana* of *Sleshaka Kapha* is said to be *Sandhi*. The main function of *Sleshaka Kapha* is said to be nourishment & lubrication of joints.

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## CONCLUSION

There are five types of *Kapha* namely *Bodhaka*, *Sleshaka*, *Tarpaka*, *Avalambaka*, *Kledaka*. The *Visesha Sthana* of *Sleshaka Kapha* is said to be *Sandhi*. The main function of *Sleshaka Kapha* is said to be nourishment & lubrication of joints. Nourishing & lubricating property of the synovial fluid can be related to the *Sandhi samlesha Karma* (nourishment & lubrication) of *Sleshaka Kapha*. The phagocytic function by the synovial fluid can be related to *Vyadhikshamatva* property of *Bala* of *Prakruta Kapha*.

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