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A Review Article

### Title of Article: Exploring the Physiology of Prana Vayu and Pranavaha Srotas in the Context of Pranamaya Kosha

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#### ABSTRACT

The concept of *Prana* is a crucial part of ancient Indian philosophy, *Ayurveda*, and *Yoga*. *Prana* is believed to be the life force or vital energy that flows through specific channels known as *vayus*, sustaining and regulating various physiological and psychological processes in the human body. This research paper aims to explore the physiology of *Prana Vayu* and *Pranavaha Srotas* from the perspective of *Pranamaya Kosha* to provide a deeper understanding of their interplay and their influence on overall health and well-being. Understanding the physiology of *Prana Vayu* and *Pranavaha Srotas* from the perspective of *Pranamaya Kosha* holds significant implications for holistic health practices. This knowledge contributes to a more comprehensive understanding of the subtle energetic aspects of human physiology, relevant in therapeutic interventions such as Ayurvedic medicine, *Yoga*, and meditation. It can enhance our experience of mind-body interactions and optimize overall well-being, opening new avenues for integrative healthcare approaches encompassing traditional wisdom and modern scientific perspectives. The *Taittiriya Upanishad*, while describing *Pranamaya Kosha* under *Panchakosha*, says that the Gods live and breathe under the dominion of *Prana* and men and all these that are beasts; for *Prana* is the life of created things. For this reason, they name it the life stuff of all. Those who worship the eternal as *Prana* attain mastery of life to the uttermost; for *Prana* is the life of created things, and therefore they name it the life stuff of all.

**Keywords:** *Prana vayu, Pranavaha srotas, Pranamaya Kosha, ambara piyusha, agni, moksha.*

## INTRODUCTION

There is a concept of *panchakosha* described in *Taittiriya Upanishad* (TU). This comes under the section '*Brahmananda Valli*' of TU. The original text successfully attempts to discriminate the layers or sheaths, which are known as *Kosha*, in order to find *Brahmatatva* hidden in the cave (*guha*) or situated within these sheaths (1).

The TU describes *brahmhana*, or the Self, as "hidden in the cave." The 'cave' is made up of the five sheaths (*Kosha*), namely

- *Annamaya* or the one composed of food- physical sheath
- *Pranamaya* or the one composed of vitality- the sheath of the vital airs or energies
- *Manomaya* or the one composed of thought(s)- the mental sheath
- *Vijnanamaya* or the one composed of intelligence- the sheath of the intellect
- *Anandamaya* or the one composed of bliss- the sheath of bliss

*Pranamaya* Kosha is a part of *sukshma sharira* as it is a subtle and functional body. Movement of the *Prana* happens through *nadi* and *Pranavaha* srotas. *Prana* is vital energy. As long as it exists in organisms, life continues. This sheath is responsible for our physiological functions, including (but not limited to) breathing, digestion, metabolism, circulation, and transmission of nerve impulses.

## MATERIAL AND METHODS:

This study employs a comprehensive review of classical Ayurvedic texts and clinical observations to gather relevant information on *prana*, *pranamaya kosha*, and *pranavaha srotas*. The selected text includes ancient Ayurvedic treatises *Taittiriya Upanishada*. The information obtained from these sources are analyzed to gain insights into the nature and functions of *prana*, *pranamaya kosha*, and *pranavaha srotas*.

The objective of this study is to explore the physiology of *Prana Vayu* and *Pranavaha Srotas* from the perspective of *Pranamaya Kosha* and its impact on holistic health practices. *Prana*, which is the essential life force, is considered to be a crucial element in traditional healthcare systems. However, its physiological basis is not well understood in the context of western scientific framework. This work will utilize a literature review to achieve a comprehensive understanding of *prana vayu* and *pranavaha srotas*. This will help in bridging the gap between traditional knowledge and contemporary science, thereby contributing to the development of effective holistic health practices.

## OBSERVATIONS AND RESULT:

- **Understanding the *Pranamaya Kosha*** - Beyond the physical body, there exist multiple levels of existence. The first level is *annamaya*, which pertains to the body's anatomy. The second level, *pranamaya*, refers to the physiological system subtler than the body, dealing with transcendental functions. It is a power that is always subtler than the object exhibiting the power and is within the *annamaya* but subtler than it.

*Pranamaya* is considered *atma* at this stage and only becomes a *kosha* when *manomaya*, the *atma* in the next stage, is introduced. As per the *Taittiriya Upanishada*, the solid physical body (*annamaya*) has its shape (*purusha akara*), while *Pranamaya*, being the physiological function (energy body), takes on the shape of the physical body it is in - either *purusha* or *manushya akara*. The *Pranamaya* has a human-like form while it remains within the body. Once the body dies, the *Pranamaya* takes on the shape of the next body, which is determined by the *annamaya*. The content of *Pranamaya* takes on the shape of a human container (2). The *Pranamaya* in human form consists of five parts: the head, right side, left side, middle, and lower portion.

The *Pranamaya atma* comprises five components, namely *Prana*, *apana*, *vyana*, *samana*, and *udana*. Among these components, the respiratory system, or *Prana* is considered the most important. The circulatory system or *vyana* is responsible for transporting materials throughout the body and is located on the right side. On the other hand, the excretory system or *apana* eliminates waste from the body and is found on the left side. The digestive system, or *samana*, occupies the center of the body and is responsible for manufacturing nutrients from food. *Udana* becomes active only in certain situations and has been left out. The lower part of the body, the *prthivi devata*, supports it, using gravitational force to retain air (*Prana*) within the body.

All living beings, including humans, animals, and gods, rely on the blessing of *samasthiPrana* to survive. This refers to the macrocosmic pranic energy present in all living beings. Various healing practices, such as Reiki, are based on the principle that diseases are caused by disturbances in this energy. Healers are believed to absorb *samasthiPrana* into their hands and transfer it to the patient. The sun or *suryadevata* is said to be the source of all *Prana* energy. One re-energizes oneself through *samdhya vandana* by worshipping and invoking the sun's *Pranatatvam*.

### ● *Prana vayu* –the life force

*Prana vayu* is the life force behind *tridoṣa* (biological humors), which are principal factors determining the foundation and constitution of our body, mind, and overall personality. These three *doṣa* are responsible for maintaining health. Also, the deviation in any of these is accountable for causing a disease. The term *Prana* indicates the vital power in the body and is mostly related to *vayu* (one among *tridoṣa*). But if we see it minutely, it is connected to all the gross and subtle components of the body (and mind as well). The disturbances in the functioning of *Prana* can be distressing and can have an effect on the physical body (*annamaya Kosha*) and mental body (*manomaya Kosha*) also. Respiration (*śvasana*) is the process of obtaining oxygen necessary for the performance of all vital activities. This is brought in from the environment to the inside body. 'The lungs can expand and contract in two ways: through the movement of the diaphragm which lengthens or shortens the chest cavity, and by the elevation and depression of the ribs which increases and decreases the anteroposterior diameter of the chest cavity. Normal breathing is primarily accomplished through the first method, which involves the movement of the diaphragm. When the diaphragm contracts during inhalation, it pulls the lower surfaces of the lungs downwards. During exhalation, the diaphragm relaxes and the elastic recoil of the lungs and chest wall, as well as abdominal structures, compresses the lungs and expels air. However, during heavy breathing, the elastic forces may not be powerful enough to cause rapid expiration, so the abdominal muscles contract to push the abdominal contents upward against the diaphragm, thereby compressing the lungs. The second method for expanding the lungs involves raising the rib cage (3). Its transport in the form of *Prana* is essential to produce energy (*kriya śakti*). *Ayurveda* observes this process from a spiritual point of view. The act of breathing, i.e., inspiration (*niśvasa*) and expiration (*ucchvasa*), has been considered a vital sign of life and characteristic of *atma*.

'Yoga and *Ayurveda* recognize five forms of *vayu*: *Prana* as its basic propulsive force; *udana* as its ascending and motivating energy; *vyana* as its expanding and circulating energy; *samana* as its contracting, centering and balancing force; and *apana* as its downward and outward movement. These five *vayus* are the subtypes of *vata doṣa* in *Ayurveda* crucial in both the diagnosis and treatment of disease(4). Also, there are ten principal *seats* (*daśa praṇayatana*) in which the life forces are established (5). Among these, *Prana* plays a principal role as far as the diagnosis of a disease and planning treatment of a disease

is concerned. Whatever activities (functions) 'we see or experience in' or 'related to' the *annamaya Kosha* are because of the flow of *Prana*. If the *Prana* is not there, it will stop functioning. These activities include the process of breathing, consuming foods (including drinking and eating), and even the reception of thoughts. The *Pranamaya Kosha* significantly impacts the sensory and motor functions of the body, mind, and intellect due to its extensive presence and influence on various organs and systems. A person knowledgeable about the functions of our senses, intelligence, consciousness, and diseases is considered a valuable companion for our vitality.'

The physician must ensure his treatment does not work against *Prana*. For this, the knowledge of the seats of *Prana* and the immediate and long-term effects of treatment is of utmost importance to the physician. Any injury to the seats of the life forces needs to be attended to promptly. Treatments succeed only when two factors are managed in the background. One is *Prana*, and the other is *bala*. Life is dependent on *Prana*, and strength is dependent on *udana*.

In *Caraka Samhita*, it is mentioned in the *trimarmiya siddhi adhyaya* that the *maha marma* should be protected with utmost vigilance. Protecting the *maha marma* - the brain, heart, and bladder are known as *maha marma paripalana*. A thorough knowledge of the seats of the life force, as well as the interventions to protect them, enables the physician to preserve the life and strength of the patient, without which no treatment will succeed. The body is the seat of the life forces. However, the ten seats described here are of utmost importance. It is not difficult to understand why these ten locations are considered special seats of the life forces. 'The aggravated and the imbalanced *doṣa* circulate in the body and accumulate in the frail organ or tissue of the body, and there the disease develops.'(6). For this circulation also, the *vayu* is responsible.

### ● The process of respiration – import and circulation of *Prana*

The *Prana vayu*, which is in the *nabhi*, touching the *hṛdaya*, comes out through the *kaṇṭha* to drink *Viṣṇupada-amṛta*. After drinking the *ambara piyusha*, it comes back quickly into the body to nourish the whole body and revitalize the digestive fire in the stomach (*jaṭharanala*). *Dīpikā* (7) explains that *Prana*, including *agni*, *soma*, etc., are at *nabhi*. The *Prana*, which is of *pañcabhūta*, spreads through the body. Ultimately, *Prana* residing at *nabhi* is dependent on *pañcabhautika anna*. The process of explanation of *punarayati vegataḥ* is

intended to kindle the *agni* and bring out energy for life. When diet is wrong, medicine is of no use. When diet is correct, medicine is not needed. '*Prana*' means energy. This *Pranamaya Kosha* is the vital life force that moves through the body. It consists of the breath and the five *Pranas* mentioned earlier. These forms of *Prana* control various functions within the physical body, and without *Prana*, the body would be lifeless and unable to move or think. *Pranavaha srotas* has its origin is the *hṛdayam* as well as the *srotas*. The symptoms appearing when afflicted include too long, too short, aggravated, shallow, or frequent breaths with sound and pain. This indicates the affliction of *Pranavaha srotas*. (8). 'Breathing is solely dependent on the cyclical stimulation of the diaphragm and intercostals (muscles) by their respective motor nerves. These muscles are classified as skeletal muscles and will only contract when stimulated by the nerves. Inspiration is initiated by a burst of action potentials in the spinal motor nerves to inspiratory muscles, followed by a relaxation of these muscles and recoil of the elastic lungs during expiration.' (9).

## DISCUSSION

*Prana* is in the form of vital, mental, psychic, and spiritual energy. The *Prana* makes the blood flow and carries impulses through the nerves from our body to the brain and back. *Prana* also circulates between the physical body and the different sheaths through the agency of the *naḍī*. It allows us to travel from gross to subtle and causal bodies. To make this happen continuously, the *Prana* should get constant nourishment. This is achieved by the process of respiration wherein the *Prana vayu* and *Pranavaha srotas* play essential roles. According to *Acharya Śaraṅgadharma*, respiration involves the interaction between two main factors: *Prana* (life force) which resides at the *nabhi*, and *vayu* (vital energy). *Prana* is the vital life force that sustains all living beings. It is responsible for various functions in the body, including respiration. He describes *Prana* from the spiritual perspective also and also as the energy that governs inhalation and exhalation. *Vayu* is divided into five subtypes or forms having specific functions and governing different aspects of respiration.

This can be understood by knowing how precise and applied the process of respiration is! *Nabhisthaḥ Prana pavanaḥ* indicates deoxygenated blood in the inferior and superior vena cava. Even though this blood is deoxygenated, it still has significant oxygen, which may be termed *Prana*. It has some carbon dioxide which the body wants to get removed. It (*Prana*) wants to get more *Prana* into it, as it has become weak (*kshīṇa*)

because some of the oxygen is utilized by the cells and tissues which are working continuously. Respiratory activity affects venous return through changes in right atrial pressure, an essential component of the pressure gradient for venous return. This dynamism and pressure changes in the chambers of the heart are necessary for collecting and circulating the blood from and to the organ system and lungs (*tatra Pranavahanam srotasam hṛdayam mūlam mahasrotaśca*). Increasing right atrial pressure impedes venous return while lowering this pressure facilitates venous return. The CO<sub>2</sub> (along with O<sub>2</sub>) is exhaled through the lungs, but it first travels into the heart and then is sent to the lungs (*spṛṣṭva hṛtkamalanantaram, kaṇṭhad bahiḥ viniriyati*). This is the gaseous exchange of CO<sub>2</sub> from the pulmonary vessels into the alveoli by the law of diffusion and the eventual expiration of CO<sub>2</sub> to the atmosphere. This comprises the O<sub>2</sub> also with relatively low PO<sub>2</sub>. The air filled with O<sub>2</sub> (*patum viṣṇu padamṛtam-pīṭva ca ambara pīyūṣam*) returns rapidly (*punarayati vegata*). This explains the diffusion of vital oxygen into the alveolar capillaries from the alveoli and its subsequent circulation in the body. This paper discusses the importance of *Prana*, which plays a crucial role in maintaining balance and harmony in the body. The findings suggest that understanding and harnessing *Prana* can contribute to holistic health. The paper also delves into the significance of *Pranamaya Kosha* and *Pranavaha srotas* in Ayurveda and their impact on human health. It reveals that *Prana* is a physiological force and influences the mind and consciousness. *Pranamaya Kosha* bridges the physical body and the more subtle aspects of existence, integrating *Prana* with other sheaths.

*Śabda parikṣa* is a diagnostic method used in *Ayurveda* to evaluate a patient's well-being by analyzing their voice. It helps identify imbalances in the doshas and their impact on the body. It also helps in getting insight into the diagnosis of systemic diseases. It is affected by the strength and quality of *Prana* and the vital forces nourished by *Prana*. *Udana vayu* is supported by the *Prana*, hence it influences the *śabda* in a healthy and a diseased.

## CONCLUSION

In *Ayurveda*, respiration is not only about exchanging gases but also involves spiritual aspects. The dynamic activities of the *Pranamaya Kosha*, such as the dynamism of *Prana vayu* and the processes in the *Pranavaha Srotas*, must be considered by physicians when treating patients. They must ensure that their treatment does not work against the *Prana* and have knowledge of the seats of

*Prana* and the immediate and long-term effects of treatment. Any injury to the seats of the life forces must be attended to promptly. The success of therapy depends on dealing with two factors in the background, which are essential for the sustenance of life. *Pranayama* can help remove the covering on the inner illumination, allowing the mind to enter the field of *dharana*, a higher practice of *yoga* that helps to concentrate mental energies on inward activities. This can lead to realizing our true nature and attaining *moksha*.

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