



DASHA VIDHA VATA: THE ORCHESTRATORS OF HUMAN PHYSIOLOGICAL REGULATION

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ABSTRACT

Ayurveda is based on the basic concept of *Tridosha*, where the basic driving force, or *Tantra Yantra Dhara*, is the *Vata Dosha*, which is the root cause for all the dynamic and neurological functions occurring in the body. Whereas the basic texts of the *Brihat Trayi* essentially discuss the Five Major Life-Force Energies (*Prana*, *Udana*, *Samana*, *Vyana*, and *Apana*) known as the "*Pancha Maha Prana*", the later texts, the *Sharangdhara Samhita* and *Yogasutras*, refer to the five accessory forces or "*Pancha Upa Pranas*" (*Naga*, *Kurma*, *Krikara*, *Devadatta*, and *Dhananjaya*), making up the "*Dasha Vidha Vata*" or the ten forms of *Vata*. This article tries to fill the gap between the physiological ideas of Ayurvedic thought and the advances that have been achieved in the field of Neurobiology. The "*Maha Pranas*" essentially regulate the process of "homeostasis" or respiratory, circulatory, digestive, and eliminative functions, and the "*Upa Pranas*" regulate the basic defensive reflexes like sneezing, yawning, and blinking and the integrity of the cell. This article, therefore, critically appraises the ten "*Vayus*" and tries to establish the linkage with the "Autonomic Nervous System, Brainstem Reflexes, and the Enteric Functions".

KEYWORDS: *Ayurveda*, *Dasha Vidha Vata*, *Pancha Prana*, *Upa Prana*, Neurophysiology, Autonomic Nervous System.

INTRODUCTION

Ayurveda is an ancient medical science that has evolved over time and has given proven concepts that can be ascertained in today's modern era as well. The basic concepts of Ayurveda lie in the principles of "Preventive and Promotional Health" under the theory of "Tridosha". The basic "Bio-Energies" have been categorized into three: *Vata*, *Pitta*, and *Kapha*. Of these, *Vata Dosha*, consisting mainly of the "*Akasha* and *Vayu Mahabutas*" or Air, has been given utmost importance.^[1] *Vata* can be translated as "*Anila*," which means "that which blows and moves" and is also considered as "Motive Force" for the remaining two "*Doshas* and *Dhatus* and *Malas*".^[2]

The ancient Ayurvedic script, *Charaka Samhita* and *Sushruta Samhita*, has categorized "*Vata*" into five "different functional types" as "*Pancha Maha Prana*," which includes "*Prana*, *Udana*, *Samana*, *Vyana*, and *Apana Vata*". *Vata*'s "functions" have been explained as "macroscopic pillars for sensation, expression, digestion, and water and removal, respectively".^[3,4] However, for a deeper comprehension of human physiology, specifically the finer autonomic reflexes, it is necessary to refer to the *Dasha Vidha Vata* system described in the later texts such as *Sharangdhara Samhita*. These ten *Vatas* include the *Upa Pranas*: *Naga*, *Kurma*, *Krikara*, *Devadatta*, and *Dhananjaya*.^[5] Today, the relevance of these ten types of *Vata*, in terms of their anatomical positions (*Sthana*) and actions (*Karma*), is explored using the Advanced System Physiology theory.

OBJECTIVES OF THE STUDY

1. To fill the gap between the physiological ideas of Ayurvedic thought and the advances that have been achieved in the field of Neurobiology.
2. To critically appraise the ten *Vayus* (*Dasha Vidha Vata*) in terms of their anatomical positions and actions.
3. To establish the linkage of these *Vayus* with the Autonomic Nervous System, Brainstem Reflexes, and the Enteric Functions.

MATERIALS AND METHODS

The *Samhitas of Ayurveda* and their commentaries, other Ayurvedic texts, modern medical science books, and relevant information from articles, journals, periodicals, and other published materials and websites were consulted to achieve the aims of the study. For this review article, some literary work was gathered from the ancient texts of Ayurveda like *Charaka Samhita*, *Sushruta Samhita*, *Ashtanga Hridaya*, and *Sharangdhara Samhita*. The

ancient texts were searched to find out the specific roles of the *Dasha Vidha Vata*. At the same time, the medical literature like the standard text of human physiology (textbooks like Guyton and Hall), and medical publications like the search facility of the PubMed and Google Scholar site, was searched to provide functional links. The search was done on the internet using key phrases like "Physiology of Sneezing," "Yawning Reflex," "Enteric Nervous System," and "Vagus Nerve."

REVIEW OF LITERATURE

A. The *Pancha Maha Prana* (Systemic Regulators)

1. *Prana Vayu*: The Neuro-Respiratory Governor

Prana Vayu is known to be the most significant of the five and is also considered to be the life force itself.

- Classical Physiology: It is present in the *Murdha* (Head), *Urah* (Chest), and *Kantha* (Throat). It governs *Buddhi* (Intellect), *Hridaya* (Heart), *Indriya* (Senses), and *Chitta* (Mind). Functions include *Shtivana* (Spitting), *Kshavathu* (Sneezing), *Udgara* (Belching), *Nishwasa* (Inspiration), and *Anna Pravesha* (Deglutition).^[6]

- Modern Correlation: The functions of *Prana Vayu* are associated with the Brainstem (Medulla/Pons) and the Cranial Nerves. The control of *Nishwasa* (Inspiration) is associated with the Dorsal Respiratory Group (DRG) in the medulla. The control of *Hridaya* shows Vagal Tone (Parasympathetic outflow), which controls heart rate. The function of *Anna Pravesha* (Swallowing) is a complex reflex involving the Glossopharyngeal (IX) and Vagus (X) nerves.^[7]

2. *Udana Vayu*: The Energy of Expression and Phonation

Udana Vayu is the upward-moving energy, which counteracts the force of gravity.

- Classical Physiology: Its seat is in the *Urah* (Chest), passing through *Nasa* (Nose), *Nabhi* (Umbilicus), and *Gala* (Throat). It is associated with *Vak Pravritti* (Speech Production), *Prayatna* (Effort), *Urja* (Energy), *Smriti* (Memory), and *Varna* (Complexion).^[8]

- Modern Correlation: *Udana* is equivalent to the neuromuscular coordination of Phonation and Speech. The passage of air through the larynx to produce vocal cord vibrations corresponds to the course of *Udana*. Neurological pathways include the Broca's Area (Motor Speech) and the Recurrent Laryngeal Nerve. The function of *Smriti* (Memory Retrieval) corresponds to the processes of Hippocampus and Temporal Lobe retrieval.^[9]

3. *Samana Vayu*: The Enteric Nervous System

Samana Vayu is the balancing force that acts centrally.

- Classical Physiology: It is situated close to the *Agni* (Digestive Fire) in the *Koshta*. It traverses the entire GI tract. Functions include *Anna Grahana* (Food Retention), *Pachana* (Digestion), *Vivechana* (Separation of Nutrients/Wastes), and *Munchana* (Waste Propulsion).^[10]

- Modern Correlation: *Samana Vayu* is similar to the Enteric Nervous System (ENS). The "holding" of food (*Anna Grahana*) is associated with Gastric Accommodation and pyloric sphincter tone. The separation of nutrients (*Vivechana*) is associated with selective absorption by intestinal villi and the Migrating Motor Complex (MMC) that propels waste, regulated by the Myenteric plexus.^[11]

4. *Vyana Vayu*: The Circulatory and Motor Coordinator

Vyana Vayu pervades the whole body (*Sarva Sharira Gata*).

- Classical Physiology: It moves with very high speed (*Mahajava*) and is present in the *Hridaya*. It is responsible for *Rasa-Rakta Samvahana* (circulation), *Gati* (locomotion), *Apakshepana* (flexion), *Utkshepana* (extension), and *Nimesha–Unmesha* (blinking).^[12]

- Modern Correlation: *Vyana* is responsible for the Cardiovascular System (Cardiac Output and arterial flow) and the Somatic Motor System. The fast transmission of nerve impulses and the pumping action of the heart to supply tissues are the special attributes of *Vyana*. It also controls Autonomic Vasomotor tone (dilation/constriction) for thermoregulation.^[13]

5. *Apana Vayu*: The Pelvic and Excretory Governor

Apana Vayu is the downward-moving force.

- Classical Physiology: It resides in the *Pakvashaya* (colon), *Basti* (bladder), and *Guda* (rectum). It controls the elimination of *Shakrut* (feces), *Mutra* (urine), *Shukra* (semen), *Artava* (menses), and *Garbha* (fetus).^[14]

- Modern Correlation: *Apana* is associated with the regulation of the Sacral Spinal Reflexes (S2–S4) related to micturition and defecation. It controls the transition from sympathetic storage (holding) to parasympathetic voiding (expulsion). In the reproductive system, it controls the Ferguson Reflex of childbirth and the muscular contractions of ejaculation.^[15]

B. The *Pancha Upa Prana* (The Physiology of Reflexes)

Maha Pranas regulate the functions, while *Upa Pranas* regulate the reflexes. These are explained in detail in the *Sharangdhara Samhita*.

1. *Naga Vayu*: The Reflex of Eructation (Belching)

- Classical Physiology: "*Naga* performs *Udgara* (belching)".^[5] It relieves the pressure in the stomach.

- Modern Correlation: This is related to the Transient Lower Esophageal Sphincter Relaxation (TLESR). Gastric distension triggers a vagal afferent response to the brainstem to relax the LES, allowing gas to escape. Inhibition of this *Naga* force is related to Roemheld Syndrome (gastric-cardiac symptoms).^[16]

2. *Kurma Vayu*: The Reflex of Blinking

- Classical Physiology: "*Kurma* performs *Unmesha–Nimesha* (opening and closing of eyelids)".^[5] It protects the eye.

- Modern Correlation: This is the Corneal Reflex and Spontaneous Blinking. It is mediated by the Trigeminal (V) (sensory) and Facial (VII) (motor) nerves. Blepharospasm (excessive blinking) is a disorder related to the vitiation of *Kurma (Vata)*.^[17]

3. *Krikara Vayu*: The Reflex of Sneezing

- Classical Physiology: "*Krikara* causes *Kshavathu* (sneezing) and creates hunger".^[5]

- Modern Correlation: This is the Sneeze Reflex. Irritation of the nasal mucosa triggers the Trigeminal nerve, sending signals to the "sneeze center" in the lateral medulla. Recent research identifies Neuromedin B (NMB) peptides as key signaling molecules in this pathway.^[18]

4. *Devadatta Vayu*: The Reflex of Yawning

- Classical Physiology: "*Devadatta* causes *Jrumbha* (yawning)".^[5]

- Modern Correlation: Yawning is a thermoregulatory reflex to cool the brain and increase alertness. It is controlled centrally by the Paraventricular Nucleus (PVN) of the hypothalamus, mediated by Dopamine and Oxytocin systems.^[19]

5. *Dhananjaya Vayu*: Cellular Integrity and Decomposition

- Classical Physiology: "*Dhananjaya* pervades the body, provides nourishment, and does not leave even after death (causing decomposition/swelling)".^[5]
- Modern Correlation: In the living, it maintains Cellular Tone and compartmental pressure. In death, the cessation of ATP pump function leads to calcium entry, causing Rigor Mortis, followed by cellular breakdown and gas formation (decomposition). This "swelling" in death is the defining characteristic of *Dhananjaya*.^[20]

OBSERVATIONS

Table 1: The *Dasha Vidha Vata* and Physiological Correlations.

<i>Vata</i> Type	Sub-Type	Classical Location (<i>Sthana</i>)	Primary Function (<i>Karma</i>)	Modern Physiological Correlation
<i>Prana</i>	<i>Maha</i>	<i>Murdha, Urah, Kantha</i>	Respiration, Swallowing	Brainstem (DRG), Vagus Nerve, CN IX, X
<i>Udana</i>	<i>Maha</i>	<i>Urah, Nasa, Nabhi</i>	Speech, Memory, Effort	Broca's Area, Recurrent Laryngeal Nerve
<i>Samana</i>	<i>Maha</i>	<i>Koshta</i> (near <i>Agni</i>)	Digestion, Separation	Enteric Nervous System (ENS), MMC
<i>Vyana</i>	<i>Maha</i>	<i>Hridaya</i> , Whole Body	Circulation, Movement	Cardiac Output, Autonomic Nervous System
<i>Apana</i>	<i>Maha</i>	<i>Pakvashaya, Basti</i>	Excretion, Reproduction	Pelvic Splanchnic Nerves (S2-S4)
<i>Naga</i>	<i>Upa</i>	Stomach Throat	Eructation (Burping)	TLESR, Vago-vagal Reflex
<i>Kurma</i>	<i>Upa</i>	Eyes (<i>Netra</i>)	Blinking (<i>Unmesha</i>)	Corneal Reflex (CN V & VII)
<i>Krikara</i>	<i>Upa</i>	Nose/Throat	Sneezing, Hunger	Sneeze Reflex (Medulla), Neuromedin B
<i>Devadatta</i>	<i>Upa</i>	Mouth/Throat	Yawning	Hypothalamic PVN, Thermoregulation
<i>Dhananjaya</i>	<i>Upa</i>	Whole Body (<i>Sarvaga</i>)	Cellular Tone, Decomp.	ATP pumps, Rigor Mortis, Oncosis

DISCUSSION

The *Tridosha* system, and more specifically the sub-classification of *Vata*, offers a wide-ranging system of knowledge about human physiology. *Prana Vata* can be generalized as "breath," while the *Dasha Vidha Vata* sub-classification differentiates between the voluntary process of breathing (*Prana/Udana*) and the involuntary protective mechanisms (*Krikara/Naga*).

The literature review reveals an impressive similarity between the *Dasha Vidha Vata* sub-classification and the functional classification of the nervous system: The *Maha Pranas* match very well with the Parasympathetic–Craniosacral division, the Sympathetic–Thoracolumbar division, and the Sympathetic–Thoracolumbar division of the nervous system, respectively, while the *Upa Pranas* match well with the following brain stem reflexes: the Blink reflex, the Sneeze reflex, the Yawn reflex, and the Gag/Burp reflex. This difference is of immense clinical importance.

The patient with *Udgara Bahulya* has an imbalanced *Naga Vayu*, which can be caused by irritation in the Vagus nerve (GERD). The patient with Blepharospasm has *Kurma Vayu* pathology in the Facial nerve. It becomes simpler to explain edema or compartment syndrome by defining the role of *Dhananjaya*, who regulates cell swelling.

CONCLUSION

The *Dasha Vidha Vata* brings together a complete design of the human neuro-physiological system. The integration of these ideas with the science domain confirms the authenticity of the ancient texts and reveals a completely new area within the concept of *Integrative Diagnostics*. A complete examination of the ten *Vayus* will turn the entire Ayurvedic system from the concept of "*Vata* imbalances" to the area of precision medicine.

REFERENCES

1. Agnivesha, *Charaka Samhita* revised by Charaka and Dridabala with Vidyotini Hindi Commentary by Kashinath Pandey and Gorakhanath Chaturvedi, published by Chaukhambha Bharati Academy, Varanasi, Reprint year 2003, *Sutra Sthana* 12/8, page number-246.
2. Sushruta, *Sushruta Samhita* with Ayurved Tattva Sandipika by Ambikadutta Shastri, published by Chaukhambha Sanskrit Sansthan, Varanasi, Reprint year 2010, *Sutra Sthana* 15/4, page number-76.

3. Vagbhata, *Ashtanga Hridayam* translated by Prof. K. R. Srikantha Murthy, published by Chowkhambha Krishnadas Academy, Varanasi, Reprint year 2019, *Sutra Sthana* 12/4, page number-168.
4. Agnivesha, *Charaka Samhita* revised by Charaka and Dridabala with Vidyotini Hindi Commentary by Kashinath Pandey and Gorakhanath Chaturvedi, published by Chaukhambha Bharati Academy, Varanasi, Reprint year 2003, *Chikitsa Sthana* 28/5, page number-776.
5. Sharangdhara, *Sharangdhara Samhita* with Jiwanprada Hindi Commentary by Dr. Shailja Srivastava, published by Chaukhambha Orientalia, Varanasi, Reprint year 2011, *Prathama Khanda* 6/12-13, page number-45.
6. Vagbhata, *Ashtanga Hridayam* translated by Prof. K. R. Srikantha Murthy, published by Chowkhambha Krishnadas Academy, Varanasi, Reprint year 2019, *Sutra Sthana* 12/4, page number-168.
7. Guyton and Hall, *Textbook of Medical Physiology*, published by Elsevier, 13th Edition 2016, Chapter 42: Regulation of Respiration, page number-539.
8. Sushruta, *Sushruta Samhita* with Ayurved Tattva Sandipika by Ambikadutta Shastri, published by Chaukhambha Sanskrit Sansthan, Varanasi, Reprint year 2010, *Nidana Sthana* 1/14, page number-298.
9. Kandel ER, Schwartz JH, Jessell TM, *Principles of Neural Science*, published by McGraw-Hill, 5th Edition 2013, Chapter 60: Language and the Brain.
10. Agnivesha, *Charaka Samhita* revised by Charaka and Dridabala with Vidyotini Hindi Commentary by Kashinath Pandey and Gorakhanath Chaturvedi, published by Chaukhambha Bharati Academy, Varanasi, Reprint year 2003, *Chikitsa Sthana* 15/6, page number-456.
11. Goyal RK, Hirano I. The Enteric Nervous System. *New England Journal of Medicine*. 1996; 334:1106-1115.
12. Sushruta, *Sushruta Samhita* with Ayurved Tattva Sandipika by Ambikadutta Shastri, published by Chaukhambha Sanskrit Sansthan, Varanasi, Reprint year 2010, *Nidana Sthana* 1/17, page number-299.
13. Levick JR, *An Introduction to Cardiovascular Physiology*, published by Hodder Arnold, 5th Edition 2010, page number-12.
14. Vagbhata, *Ashtanga Hridayam* translated by Prof. K. R. Srikantha Murthy, published by Chowkhambha Krishnadas Academy, Varanasi, Reprint year 2019, *Sutra Sthana* 12/9, page number-170.

15. De Groat WC, Yoshimura N. Anatomy and physiology of the lower urinary tract. *Handbook of Clinical Neurology*. 2015; 130:61-108.
16. Bredenoord AJ, Smout AJ. Physiologic and pathologic belching. *Clinical Gastroenterology and Hepatology*. 2007; 5(7):772-775.
17. Berardelli A, et al. The blink reflex and the corneal reflex. *Clinical Neurophysiology*. 1999; 51:13-34.
18. Li S, et al. A central mechanism of the sneeze reflex. *Cell*. 2021; 184(14):3789.
19. Walusinski O. Yawning: unsuspected avenue for a better understanding of arousal and interoception. *Medical Hypotheses*. 2006; 67(1):6-14.
20. Vij K, Textbook of Forensic Medicine and Toxicology, published by Elsevier, 5th Edition 2011, Chapter: Post-mortem Changes, page number-145.