

A REVIEW ARTICLE ON THE PHYSIOLOGICAL UNDERSTANDING OF DHATU POSHANA NYAYAS

¹Nikethana L Naik, ²Nitish Kumar, ³Chaitra T M, ⁴Varun T V

^{1, 2} 1st Professional BAMS, Rajeev Institute of Ayurvedic Medical Science and Research Centre, Hassan.

³Assistant Professor, Department of Kriya Sharira, Rajeev Institute of Ayurvedic Medical Science and Research Centre, Hassan.

⁴Assistant Professor, Department of Shalaky Tantra, Rajeev Institute of Ayurvedic Medical Science and Research Centre, Hassan.

Corresponding Author: chaitra.t.m92@gmail.com

<https://doi.org/10.46607/iamj2012122024>

(Published Online: December 2024)

Open Access

© International Ayurvedic Medical Journal, India 2024

Article Received: 03/11/2024 - Peer Reviewed: 29/11/2024 - Accepted for Publication: 13/11/2024.



ABSTRACT

Dhatu Poshana Nyayas, a basic concept in *Kriya Sharira*, describes the process of tissue nourishment and sustenance within the human body. The term "*Dhatu*" refers to the seven fundamental tissues (*Rasa, Rakta, Mamsa, Meda, Asthi, Majja, and Shukra*) essential in maintaining the body's structure and function. "*Poshana*" denotes the nourishment or nutrition provided to these tissues. This principle offers a unique perspective on tissue nutrition and the sequential transformation of *Dhatu*s, representing a modern understanding of metabolism and cellular function.

Aims and Objectives:

This article explores the physiological understanding of *Dhatu Poshana Nyayas*, correlating classical *Ayurvedic* concepts with contemporary medical science. The article employs a structured approach to explain each *Nyaya*, including definitions (*Padartha Jnana*), processes (*Prakriya Jnana*), contextual relevance (*Sandarbha*), and interpretations (*Yukti*).

Methodology:

This is a comprehensive review of Ayurveda Samhitas. Previous articles referred to elucidating the principles of *Dhatu Poshana*. These were analysed using modern physiological concepts such as nutrient absorption, cellular metabolism, and homeostasis.

Discussion and Conclusion:

Dhatu Poshana Nyayas is intricately linked to the modern understanding of nutrient assimilation, transport, and absorption through the circulatory system and the cellular uptake of nutrients. This abstract provides a concise overview of the physiological principles of *Dhatu Poshana Nyayas* and their relevance.

Feel free to dive deeper into this enriching topic...

Keywords: *Dhatu Poshana Nyayas*, *Ayurveda*, tissue nutrition, integrative medicine.

INTRODUCTION

Many theories, similes, examples, etc., help us grasp the hidden meaning of the Slokas more easily. *Dhatu Poshana Nyayas* is one of the methodologies used to understand the formation of tissues (*Dhatu*s) and their nourishment. The fundamental theory of Ayurveda is to maintain an individual's health by ensuring the equilibrium of *Dosha*, *Dhatu*, and *Mala*.

We're excited to share insights from the fascinating world of *Ayurvedic* nutrition and tissue dynamics! This article explores the nutritional dynamics of tissues, known as *Dhatu Poshana*, emphasising how our body is shaped by the nutrition we consume. It highlights the importance of proper digestion and metabolism in forming the seven essential tissues (*Sapta Dhatu*s) that sustain our health from conception to death. The ancient wisdom of Ayurveda teaches us that these tissues undergo a continuous cycle of formation and transformation, ensuring our vitality and well-being.

According to Ayurveda, the body is the result or outcome of nutrition. On the other hand, diseases result from malt and impaired nutrition. How the food is digested, its various components are metabolized into appropriate *Dhatu* (tissue elements), and how some of its constituents are broken down to produce the energy required for vital activities are critical to health. The concept of *Sapta Dhatu*s in Ayurveda refers to the body's essential nutritional and structural factors. They are constantly formed, destroyed, and reformed with appropriate material derived from *Poshaka Dravyas* (nutrient substances) from conception to death.

All ancient *Samhita Granthas* have postulated the view that *Sapta Dhatu*s are produced in a kind of progressive evaluative meta-morphosis. *Dhatu*s are classified into two categories: 1) *Sthayi* or *Poshya* and 2) *Asthayi* or *Poshaka*. The *Sthayi* or *Poshya Dhatu* support the body by providing essential tissues. At the same time, the *Poshaka (Asthayi) Dhatu*s are seen to support the former by nourishing, sustaining, and maintaining them. After digestion, food gets divided into the *Sara* (potent part) and the *Kitta* (excretory part). *Sara* is acted upon by the *Dhatwagni*, which again divides this part into two: *Sthoola* and *Sookshma*. The *Sthoola* part nourishes the *Dhatu*, while the *Sookshma* part nourishes the *Upadhatu* and the successive *Dhatu*. The *Sookshma* part of the preceding *Dhatu* is acted upon by the *Agni* of the successive *Dhatu*, which produces three parts: *Sthoola* (which nourishes the self-*Dhatu*), *Sookshma* (which nourishes the *Upadhatu* and consecutive *Dhatu*), and *Mala* (which nourishes the excretory portion)¹.

DISCUSSION

Formation of *Dhatu*s

The formation of *Dhatu*s occurs through a series of metabolic transformations. It can be understood in the following steps:

A. Ingestion and Digestion

The process begins with the ingestion of food (*Ahara*). The food is broken down into small pieces and taken to the *Amashaya*. Then, the food is digested by the digestive fire (*Agni*), which transforms it into a nutrient-rich fluid known as *Ahara Rasa*. This

fluid contains the essential components needed for the formation of *Dhatu*².

B. Transformation

Ahara Rasa moves through *Rasavaha Srotas* by the action of *Rasa Dhatwagni*, undergoing metamorphosis and converting into *Rasa Dhatu*. *Rasa Dhatu* is categorised into *Sihayi (Poshya) Dhatu* and *Asthayi (Poshaka) Dhatu*. The *Sihayi (Poshya) Dhatu* nourishes the body, while the *Poshaka (Asthayi) Dhatu* participates in the formation of the next *Dhatu* and its maintenance. *Rasa Dhatu* (a plasma-like;e fluid)

nourishes the body and serves as the foundation for the subsequent *Dhatu*. *Dhatwagni* is essential in this metamorphosis, ensuring the nutrients are properly assimilated³.

C. Sequential Transformation

The progressive formation of *Dhatu*, from *Rasa Dhatu* to *Shukra Dhatu*, occurs by the action of the respective *Dhatwagni*.

D. Final Transformation

The *Dhatu Poshana Nyayas* describe the sequential nourishment of tissues:

Chart no 1: *Dhatu Poshana Nyayas*

i. *Kshiradadhi Nyaya* (Law of Transformation):

• Analogous to the transformation of milk into curd, this principle explains how nutrients undergo metabolic processes to transform into the next tissue in sequence⁴.

ii. *Kedarakulya Nyaya* (Law of Irrigation):

• This model resembles the distribution of nutrients to the irrigating fields, where nutrients are distributed evenly across tissues based on their need and capacity⁵.

iii. *Khale Kapota Nyaya* (Law of Selectivity):

• This principle, compared to pigeons picking grains from a heap, suggests that each tissue selects and absorbs specific nutrients from the circulating fluids according to its requirements⁶.

iv. *Ekakala Dhatu Poshana Nyaya* (Simultaneous Nourishment):

• Describes the simultaneous nourishment of all tissues by the same nutrient, recognizing the body's ability to allocate resources efficiently⁷.

E. *Dhatuvaha Srotas*

The *Dhatu*s are transported through specific channels known as *Dhatuvaha Srotas*. These channels facilitate the movement of nutrients and ensure that each *Dhatu* receives the necessary components for its formation⁸.

PHYSIOLOGICAL UNDERSTANDING

Ksheera Dadhi Nyaya in Dhatu Poshana

In Ayurveda, *Ksheera Dadhi Nyaya* is a principle that illustrates the gradual and sequential transformation of nutrients or tissues in the body, like how milk (*Ksheera*) slowly transforms into curd (*Dadhi*). This

transformation is essential in the process of *Dhatu Poshana*, nourishing the body's tissues (*Dhatu*s). According to *Ayurvedic* theory, nutrients from digested food undergo a series of transformations, progressively nourishing each of the seven *Dhatu*s (*Rasa*, *Rakta*, *Mamsa*, *Meda*, *Asthi*, *Majja*, and *Shukra*) in a specific order.

In contemporary science, nutritional assimilation is the process by which the body absorbs and utilizes nutrients from our food. After digestion in the gastrointestinal tract, nutrients like carbohydrates, proteins, fats, vitamins, and minerals are absorbed into the bloodstream. Various tissues and organs then distribute and utilise these nutrients for growth, repair, and

energy production. This process can be understood through metabolism, including catabolic and anabolic pathways that break down nutrients and synthesize complex molecules. All metabolic pathways, like the Glycolytic pathway, Krebs's TCA cycle, Urea cycle, Gluconeogenesis, etc., should be examples of this type of transformation with the involvement of their specific enzymes⁹. Even the process of converting a zygote into a foetus can also be correlated as the complete transformation will take place.

Kedara Kulya Nyaya in Dhatu Poshana

Kedara Kulya Nyaya is an *Ayurvedic* principle that illustrates the process of tissue nourishment in the body by comparing an irrigation system. In this analogy, different body tissues are likened to a field (*Kedara*), and the nutrients are compared to water flowing through channels (*Kulya*). Nutrients derived from digested food are distributed evenly across the body's tissues as water flows through irrigation channels to nourish crops in different parts of a field¹⁰.

In contemporary physiology, nutritional assimilation involves the absorption of nutrients from the digestive tract into the bloodstream, where they are transported to various tissues and organs. This process is regulated by hormones, enzymes, and cellular mechanisms that ensure nutrients are distributed efficiently to meet the body's needs. This movement of nutrients depends on factors like pressure gradients and tissue needs rather than gravity alone. In this theory, nourishment is based on their requirements, so the flow is regulated according to pressure differences and metabolic demand¹¹.

Khale Kapota Nyaya in Dhatu Poshana

Khale Kapota Nyaya is an *Ayurvedic* principle that describes the selective nourishment of tissues using the analogy of pigeons (*Kapota*) picking grains in a field (*Khala*). In this metaphor, the body's tissues are likened to pigeons, and the nutrients from digested food are compared to grains scattered in a field. As pigeons selectively pick grains based on availability and need, the body's tissues absorb nutrients according to their specific requirements. This principle highlights the idea that not all tissues absorb nutrients equally; rather, they are selectively nourished based

on their current state, needs, and body balance of body¹².

Comparison with Modern Nutritional Assimilation

In contemporary physiology, nutritional assimilation involves the selective uptake of nutrients by various tissues through mechanisms such as active transport, diffusion, and hormonal regulation. Tissues with higher metabolic activity or greater need for repair tend to absorb more nutrients. This selective absorption is controlled by a complex interplay of signals, including hormones like insulin that direct nutrients to where they are most needed. The *Khale Kapota Nyaya* principle aligns closely with this contemporary understanding, as both systems acknowledge the selective nourishment of tissues. This theory explains the autoregulation of blood flow by tissue factors. Blood flow to each tissue is regulated depending on the metabolic needs of the particular tissue.¹³

Eka Kala Dhatu Poshana Nyaya in Dhatu Poshana

Eka Kala Dhatu Poshana Nyaya is an *Ayurvedic* principle that describes the simultaneous nourishment of all body tissues (*Dhatus*) from the nutrients derived from digested food. Unlike other *Ayurvedic* theories, which suggest a sequential or selective process of nourishment, this principle posits that all *Dhatus* receive their nourishment at the same time, as soon as the food is digested and assimilated. The idea is that the essence of the digested food, known as *Ahara Rasa*, is distributed across the entire body, providing immediate and concurrent nourishment to all tissues, ensuring their simultaneous maintenance and function¹⁴.

Comparison with Modern Nutritional Assimilation

In modern physiology, nutrient distribution also includes elements of simultaneous nourishment. Once nutrients are absorbed from the digestive tract into the bloodstream, they are transported throughout the body to various tissues. These nutrients are made available to all tissues almost simultaneously, depending on the body's needs and circulation efficiency. While some tissues may absorb more nutrients than others due to their metabolic demands, the overall distribution mechanism in the human body is quite efficient in ensuring that all tissues receive nourish-

ment concurrently. This parallels the *Eka Kala Dhatu Poshana Nyaya* principle, which emphasises the simultaneous availability of nutrients to all tissues.

Conclusion

Dhatu Poshana Nyayas are essential principles in Ayurveda that explain how tissues (*Dhatus*) are nourished. Each Nyaya provides unique insights. Ksheera Dadhi Nyaya emphasises the progressive transformation of nutrients from one Dhatu to the next; Kale Kapota Nyaya highlights selective nourishment based on tissue demands; Kedara Kulya Nyaya illustrates the role of channels and pressure gradients in nutrient distribution; Eka Kala Nyaya underscores simultaneous, direct nourishment of all tissues. Together, these nyayas form a comprehensive framework for understanding physiological processes, emphasising the sequential and targeted distribution of nutrients. They guide the understanding of physiological health, highlight the pathogenesis of diseases when nourishment is obstructed, and inform personalised treatment strategies to restore balance and optimise tissue health.

REFERENCES

1. Dwarakanatha C. Introduction to kayachikitsa, chaukambha Orientalia, 3rd ed. 1996, chapter 17, p.324
2. Dhargalkar ND, Sharira-Kriya-vignana, Banaras ayurveda series, Chaukhambha Sanskrit series, Varanasi, 4th ed, 2018, P.294-295
3. Dhargalkar ND, Sharira-Kriya-vignana, Banaras ayurveda series, Chaukhambha Sanskrit series, Varanasi, 4th ed, 2018, P.297
4. Kulakarni P, Vaidya SM, A textbook of Ayurvedic Physiology vol-II, Jai krishnadas Ayurveda Series, No 318, Chaukhambha Orientalia, Varanasi, 1sted. 2023, Chapter 1, P.5
5. Kulakarni P, Vaidya SM, A textbook of Ayurvedic Physiology vol-II, Jai krishnadas Ayurveda Series, No 318, Chaukhambha Orientalia, Varanasi, 1sted. 2023, Chapter 1, P.5
6. Kulakarni P, Vaidya SM, A textbook of Ayurvedic Physiology vol-II, Jaikrishnadas Ayurveda Series, No 318, Chaukhambha Orientalia, Varanasi, 1sted. 2023, Chapter 1, P.5
7. Kulakarni P, Vaidya SM, A textbook of Ayurvedic Physiology vol-II, Jai krishnadas Ayurveda Series No 318, Chaukhambha Orientalia, Varanasi, 1sted. 2023, Chapter 1, P.5
8. Dwarakanatha C. Introductions to kayachikitsa, Jai krishnadas Ayurveda Series No 87, chaukambha Orientalia, Varanasi, 3rd ed. 1996 Chapter 17, p.324,
9. Kishor Patwardhan. Human Physiology in Ayurveda. Jaikrishnadas Ayurveda Series No-134, Chaukhambha Orientalia, Varanasi, 2016 Chapter 8, p.48
10. Pandey V, Bargale SS, Shashirekha HK, Textbook of Kriya Sharira human physiology vol-2, The Mohandas Indological Series 136, Chaukhambha Publications, New Delhi, reprint, 2023 Chapter 1, P.12
11. Kishor Patwardhan. Concepts of Human Physiology in Ayurveda, Central Institute of Higher Tibetan Studies, Sarnath, Varanasi. Samyak Vak Series-14, Editor: Pabitra Kumar Roy (2008), Page No.53 to 73
12. Pandey V, Bargale SS, Shashirekha HK, Textbook of Kriya Sharira human physiology vol-2, The Mohandas Indological Series 136, Chaukhambha Publications, New Delhi, reprint, 2023 Chapter 1, P.13
13. Kishor Patwardhan. Concepts of Human Physiology in Ayurveda, Central Institute of Higher Tibetan Studies, Sarnath, Varanasi. Samyak Vak Series-14, Editor: Pabitra Kumar Roy (2008), Page No.53 to 73
14. Pandey V, Bargale SS, Shashirekha HK, Textbook of Kriya Sharira human physiology vol-2, The Mohandas Indological Series 136, Chaukhambha Publications, New Delhi, reprint, 2023 Chapter 1, P.14

Source of Support: Nil

Conflict of Interest: None Declared

How to cite this URL: Nikethana L Naik et al: A review article on the physiological understanding of dhatu poshana nyayas. International Ayurvedic Medical Journal {online} 2024 {cited December 2024} Available from: http://www.iamj.in/posts/images/upload/2266_2270.pdf