

PHYSIOLOGICAL INTERPRETATION OF RASAVAHATVA AND TISSUE NOURISHMENT: AN AYURVEDIC PERSPECTIVE ON DHATU POSHANA

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ABSTRACT

Ayurveda describes the human body as a dynamic functional system in which Dosha, Dhatu, Mala and Agni continuously interact to maintain physiological equilibrium. Among the seven Dhatus, Rasa Dhatu occupies an important position because it is regarded as the primary nutritive component produced after digestion of Ahara and subsequently contributes to the nourishment of successive Dhatus. The concept of Dhatuposhana is therefore fundamental for understanding normal growth, maintenance and regeneration of body tissues. The present article aims to critically analyse the physiological concept of Rasavahatva and Dhatuposhana described in classical Ayurvedic literature and to interpret these concepts in relation to contemporary physiology. A conceptual analytical review was performed using classical Ayurvedic texts

including Charaka Samhita, Sushruta Samhita and Ashtanga Hridaya along with relevant contemporary literature concerning digestion, nutrient transport, tissue metabolism and cellular nutrition. The collected information was thematically analysed under the headings of Rasa Dhatu formation, Rasa circulation, Dhatvagni, Dhatuposhana and physiological significance. The analysis indicates that Rasa Dhatu may be understood as a functional nutritive pool rather than merely a single anatomical structure. Its physiological interpretation involves digestion, absorption, transport and utilisation of nutrients by different tissues. Dhatvagni represents tissue-level metabolic transformation, while Dhatuposhana represents

the continuous process through which tissues receive and utilise their nutritional substrates. Understanding Rasavahatva and Dhatuposhana provides an integrated framework for interpreting nourishment, growth, maintenance and tissue equilibrium in Ayurveda. Further interdisciplinary research may help develop measurable physiological parameters corresponding to these classical concepts.

KEYWORDS: Rasa Dhatu, Rasavaha Srotas, Dhatuposhana, Dhatvagni, Kriya Sharir, Nutrition, Tissue metabolism.

INTRODUCTION

Ayurveda considers the human body to be a continuously functioning biological system in which Dosha, Dhatu, Mala and Agni maintain physiological equilibrium. The maintenance of normal body functions depends not only upon the intake of food but also upon its digestion, transformation, transportation and utilisation by individual tissues.

According to Ayurvedic physiology, Ahara undergoes digestion through the action of Jatharagni. The properly processed nutritional component subsequently contributes to the formation and nourishment of Rasa Dhatu. Rasa is therefore not simply regarded as a static body component but as a dynamic nutritive entity participating in the maintenance of the entire body.

The concept of Dhatuposhana explains how successive Dhatus are nourished. Classical Ayurvedic literature describes seven Dhatus—Rasa, Rakta, Mamsa, Meda, Asthi, Majja and Shukra—which are continuously maintained through metabolic transformation. Each Dhatu possesses its own metabolic activity, described as Dhatvagni, which contributes to the transformation and utilisation of nutrients.

Modern physiology explains that nutrients absorbed from the gastrointestinal tract enter the circulation and are distributed to different tissues. Glucose, amino acids, fatty acids, electrolytes, vitamins and other substrates are transported and subsequently utilised for energy production, synthesis and tissue maintenance. Although Ayurvedic and contemporary physiological terminology differs, an analytical comparison may provide useful insight into the functional interpretation of Dhatuposhana.

Rasavaha Srotas is also important in this context because it represents the pathway associated with the movement and distribution of Rasa. Classical literature describes the body in terms

of innumerable Srotas involved in transportation and exchange, while contemporary physiology describes integrated circulatory, lymphatic and interstitial systems for movement of nutrients and metabolites.

Therefore, understanding the physiological significance of Rasa Dhatu and Dhatuposhana may provide a useful bridge between classical Ayurvedic physiology and contemporary concepts of nutrition and tissue metabolism.

MATERIALS AND METHODS

Study design: The present study was designed as a conceptual analytical review.

Source of data: Relevant information was collected from Charaka Samhita, Sushruta Samhita, Ashtanga Hridaya, classical Ayurvedic commentaries, standard Kriya Sharir textbooks, and relevant contemporary literature concerning nutrition, digestion, absorption, circulation and tissue metabolism.

Search approach: Literature was examined using the concepts Rasa Dhatu, Rasavaha Srotas, Dhatuposhana, Dhatvagni, Rasa Dhatu formation, tissue nourishment, nutrient transport and Ayurvedic physiology.

Method of analysis: The information obtained was organised under the thematic domains: Ahara → Jatharagni → Ahara Rasa → Rasa Dhatu → Rasavaha Srotas → Dhatvagni → Dhatuposhana → tissue maintenance. Classical concepts were then interpreted from a functional physiological perspective without claiming that any Ayurvedic concept is identical to a specific modern anatomical structure.

RESULTS / OBSERVATIONS

1. Rasa Dhatu as a dynamic nutritive component

Rasa is considered the first Dhatu formed following the proper digestion and transformation of Ahara. It provides nourishment to the body and supports subsequent Dhatus. Rather than interpreting Rasa as one specific modern anatomical structure, it may be understood functionally as a dynamic nutritive component associated with the distribution and availability of nutrients.

2. Relationship between Ahara and Rasa

The physiological sequence can be represented as:

Ahara → Jatharagni → Ahara Rasa → Rasa Dhatu → subsequent Dhatu nourishment

Proper digestion is therefore considered a prerequisite for effective tissue nourishment. If digestion and metabolic transformation are impaired, the quality and availability of nutritional material may also be affected according to Ayurvedic physiology.

3. Role of Rasavaha Srotas

Rasavaha Srotas are concerned with the movement and distribution of Rasa throughout the body. The concept of Srotas is broader than a single anatomical tube. Classical literature describes Srotas as pathways through which substances move, circulate, undergo exchange or are transported. Contemporary physiology similarly recognises several interconnected systems responsible for nutrient distribution, including blood circulation, lymphatic circulation and extracellular fluid exchange.

4. Concept of Dhatvagni

Each Dhatu is described as possessing its own metabolic activity, known as Dhatvagni. The functional sequence may therefore be represented as: Nutritional substrate → Dhatu-specific transformation → utilisation → tissue nourishment. Dhatvagni may consequently be interpreted as a classical framework describing tissue-level metabolic transformation rather than equating it directly with one modern biochemical pathway.

5. Dhatuposhana

Dhatuposhana represents the continuous process of nourishment and maintenance of the Dhatus. The process can be understood through three broad functional stages: availability of nutritional material; transformation and selection at tissue level; and utilisation for maintenance and development. Thus, Dhatuposhana is a dynamic physiological process rather than a one-time event.

DISCUSSION

Ayurvedic interpretation of tissue nourishment

Ayurveda explains that the body is continuously undergoing processes of formation, transformation, nourishment and degradation. The Dhatus are therefore maintained through continuous metabolic activity. Rasa has particular importance because it represents the initial stage of tissue nourishment after digestion. Proper functioning of Agni is consequently

essential for maintaining the quality of Rasa and the subsequent Dhatus.

Rasa and contemporary physiology

In contemporary physiology, nutrients absorbed from the gastrointestinal tract enter systemic circulation and are distributed to tissues. Blood and lymphatic systems participate in transport, while extracellular fluid facilitates exchange between circulation and cells. The Ayurvedic concept of Rasa may be discussed at a functional level in relation to this broad process of nutrient availability and distribution. However, it would be inappropriate to state that Rasa Dhatu is anatomically identical to blood plasma, lymph or any single modern body fluid.

Dhatuposhana and metabolism

Modern physiology recognises that tissues continuously require substrates for energy production, protein synthesis, membrane formation, cellular repair, growth, storage and maintenance of cellular functions. Ayurveda describes the continuous transformation and utilisation of nutritional material through the concept of Agni and Dhatvagni. Thus, Dhatuposhana can provide a useful conceptual framework for discussing tissue metabolism and maintenance.

Importance of Agni

Agni occupies a central position in Ayurvedic physiology. From a physiological perspective, the sequence can be viewed as: Digestion → absorption → transport → cellular utilisation → tissue maintenance. Ayurveda incorporates these processes into a broader functional framework through Jatharagni, Bhutagni and Dhatvagni.

FACTORS AFFECTING DHATUPOSHANA

1. Quality of Ahara

A wholesome and appropriate diet provides the nutritional substrates required for physiological maintenance.

2. Quantity of Ahara

Appropriate quantity supports digestion and assimilation, whereas inappropriate quantity may interfere with normal digestive processing.

3. Agni status

Normal digestive and metabolic activity is considered essential for effective nourishment.

4. Ahara Vidhi

Proper food habits and appropriate timing are traditionally considered relevant to efficient digestion.

5. Age

Growth, maturity and ageing are associated with different nutritional and metabolic requirements.

6. Physical activity

Appropriate physical activity influences energy expenditure and tissue metabolism.

7. Rest and sleep

Adequate recovery supports physiological maintenance and restoration.

8. Mental state

Ayurveda recognises interaction between Manas and Sharira, making psychological factors relevant to overall physiological equilibrium.

9. Prakriti

Individual constitutional characteristics may influence physiological tendencies and nutritional requirements.

10. Disease condition

Disease can disturb digestion, metabolism, transport and tissue utilisation, thereby affecting tissue nourishment.

AYURVEDIC–MODERN CORRELATION

Ayurvedic concept	Functional interpretation
Ahara	Nutritional intake
Jatharagni	Gastrointestinal digestion and metabolic processing
Ahara Rasa	Digested/absorbed nutritive material
Rasa Dhatu	Dynamic nutritive component
Rasavaha Srotas	Transport/distribution pathways
Dhatvagni	Tissue-level metabolic transformation
Dhatuposhana	Tissue nourishment and maintenance
Dhatu Kshaya	Loss/depletion of tissue status
Dhatu Vriddhi	Excess/accumulation or abnormal increase
Dhatu Samya	Functional tissue equilibrium

This table represents a functional comparison, not a claim of one-to-one anatomical equivalence.

PHYSIOLOGICAL SIGNIFICANCE

Normal Dhatuposhana contributes to maintenance of body structure, physical strength, tissue growth, cellular repair, reproductive function, immunity and resistance, and maintenance of vitality. The classical concept therefore provides an integrated view in which nutrition is not limited to the digestive tract but extends to the entire process of tissue maintenance.

CLINICAL AND RESEARCH SIGNIFICANCE

The concept of Dhatuposhana has potential relevance to the study of malnutrition, tissue wasting, impaired growth, weakness, metabolic disturbances, nutritional deficiencies, ageing and recovery after illness.

The present conceptual analysis also highlights a research gap: Ayurvedic descriptions of Rasa and Dhatuposhana are extensive, but objectively measurable physiological parameters corresponding specifically to these concepts require further investigation.

Future studies could examine relationships between Ayurvedic assessment of Rasa Dhatu status and measurable parameters such as nutritional status, body composition, biochemical markers and functional outcomes.

LIMITATIONS

The present article is a conceptual literature review and does not present original human or laboratory data. The proposed Ayurvedic–modern correlations are functional interpretations and should not be regarded as definitive anatomical equivalences. Further observational and experimental studies are required to validate measurable parameters associated with Rasa Dhatu and Dhatuposhana.

CONCLUSION

Rasa Dhatu and Dhatuposhana represent important concepts in Kriya Sharir for understanding the continuous process of nutrition, transformation and maintenance of body tissues. Rasa may be interpreted functionally as a dynamic nutritive component involved in the distribution and availability of nourishment, while Rasavaha Srotas represents the pathways involved in its movement.

The concept of Dhatvagni further explains tissue-level transformation and utilisation of nutritional material. From a contemporary physiological perspective, these concepts can be discussed in relation to digestion, absorption, transport, metabolism and cellular utilisation.

However, direct one-to-one identification of Ayurvedic concepts with modern anatomical structures should be avoided. A functional and interdisciplinary approach provides a more appropriate framework for future research. Dhatuposhana is therefore an important area of Kriya Sharir that deserves further objective and experimental investigation.

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