

AYURVEDIC PERSPECTIVE ON RASA DHATU: UNLOCKING SKIN QUALITY AND
REJUVENATION STRATEGIESDr. Hetal Patel^{*1} and Dr. Mayur Patel²^{*1}Associate Professor Department of Agadtantra, Bhargava Ayurveda College, Dahemi, Anand.²Professor Department of Samhita Siddhant, Shri RMD Ayurved College and Hospital, Wagaldhara.***Corresponding Author: Dr. Hetal Patel**

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ABSTRACT

Ayurveda, an ancient Indian medical system, hypothesizes a direct relationship between the body's primary nourishing fluid, Rasa Dhatu, and the vitality of the skin (Twak). This holistic perspective offers unique insights into maintaining healthy skin and understanding the processes of graceful aging. This review explores the fundamental Ayurvedic connection between Rasa Dhatu and Twak, outlines the characteristics of ideal skin (Twak Saar Purush), and examines current research on Ayurvedic botanicals and Rasayana therapies for enhancing skin health and rejuvenation. Many studies support the use of several Ayurvedic herbs, including Manjistha, Neem, Turmeric, Aloe Vera, and Shatavari, for their antioxidant, anti-inflammatory, and rejuvenating effects, which improve skin quality and combat the signs of aging. The Rasayana paradigm further emphasizes deep cellular nourishment as a means to achieve lasting skin health. Ayurveda provides a comprehensive, systemic approach to skin health, with Rasa Dhatu at its core for rejuvenation. Increasing research validates traditional Ayurvedic interventions for dermatology and anti-aging. However, more rigorous clinical trials are needed to facilitate their broader integration into modern healthcare.

KEYWORDS: Ayurveda, Skin Health, Twak, Rasa Dhatu, Twak Saarata, Rasayana, Anti-aging, Dermatological Interventions, Herbal Medicine.

INTRODUCTION

The integumentary system (Twak), serving as the body's most expansive organ, fulfils critical roles as a protective barrier, sensory interface, and a significant indicator of internal systemic health. Ayurveda, the ancient Indian medical system, accepts a holistic view of skin health, asserting its deep connection to the body's inherent physiological mechanisms and the balance of its basic constituents, known as Dhatus^[1], whereas conventional dermatological approaches typically address localised symptoms or specific pathologies.

According to Ayurvedic philosophy, true health is characterised by a state of equilibrium between the Doshas (Pitta, Kapha, and Vata), the Dhatus (body tissues), the Malas (excretory secretions), and a happy mind and soul.^[2] As a result, skin health is not just a surface characteristic; rather, it is a clear and obvious manifestation of the health and equilibrium of deeper tissues and metabolic functions. Central to this understanding is Rasa Dhatu, the primordial nourishing fluid, whose inherent quality profoundly influences the skin's vibrancy, luminosity, and youthful characteristics.^[3]

This scholarly work aims to present a thorough examination of the Ayurvedic viewpoint on skin health, with a focus on the complex connection between Rasa Dhatu and Twak. It will thoroughly examine the defining characteristics of an individual endowed with exceptional skin quality (Twak Saar Purush), delve into the specific mechanisms through which Rasa Dhatu impacts dermal health, and critically review contemporary research supporting the efficacy of various Ayurvedic remedies and the Rasayana concept in enhancing skin attributes and mitigating the effects of aging.

Deconstructing Rasa Dhatu: The Primary Source of Nourishment

In the sophisticated Ayurvedic schema of Dhatu formation, Rasa Dhatu occupies a paramount position as the initial and foundational of the Sapta Dhatu. Often conceptually aligned with plasma, lymph, and interstitial fluid in modern physiological terms, Rasa Dhatu represents the concentrated, nutrient-rich essence derived directly from thoroughly digested food and water, i.e Ahara Rasa.^[4]

1. Formation Process: Following the initial digestive breakdown of ingested food by Jatharagni (the central digestive fire), the resulting nutrient chyme undergoes further refinement by Rasa Dhatwagni (the specific metabolic enzyme complex governing Rasa Dhatu). This precise transformative process generates Rasa Dhatu, which subsequently permeates and circulates throughout the entire physiological system.^[4]

2. Core Function (Prinana Karma): The fundamental purpose of Rasa Dhatu is "Prinana" – all-encompassing sustenance. It acts as the vital sap that delivers essential nutrients to every single cell, tissue, and organ, serving as the indispensable raw material for the sequential formation of the subsequent six dhatus (Rakta, Mamsa, Meda, Asthi, Majja, Shukra).^[5]

3. Elemental Composition: Predominantly composed of the Jala Mahabhuta (water element), Rasa Dhatu furnishes the requisite fluid content and fluidity crucial for myriad bodily functions, significantly impacting cellular hydration and fluid equilibrium.^[4]

Therefore, a robust and healthy Rasa Dhatu is absolutely essential for the accurate formation, maintenance, and optimal performance of all other bodily tissues, establishing the fundamental groundwork for overall health and vitality, including the very essence of skin health.

MATERIALS AND METHODS

A comprehensive literature search was executed, encompassing classical Ayurvedic texts and major scientific databases (e.g., PubMed, Scopus, Google Scholar). Search terms focused on "Rasa Dhatu," "Twak Saarata," "Ayurveda skin," "dermatology," "anti-aging," "Rasayana," and specific herbal names (e.g., Manjistha, Neem, Turmeric, Aloe Vera). The review prioritized studies on pharmacological actions, clinical trials, and reviews, with a particular emphasis on anti-aging and rejuvenative effects.

A. Twak (Skin): A Manifestation of Rasa Dhatu's Condition

The skin (Twak) is uniquely regarded in Ayurveda, not merely as a protective outer layer but as a dynamic, sentient organ that distinctly reflects the body's inner physiological and energetic state. While occasionally identified as an Upadhatu (secondary tissue) of Mamsa Dhatu (muscle tissue), its health is profoundly and primarily influenced by the state of Rasa Dhatu. Classical Ayurvedic texts unequivocally state that the skin serves as a direct and immediate indicator of the quality and health of Rasa Dhatu.^[3,6]

1. Observable Indicator of Nourishment

The skin's attributes: its sheen, texture, moisture, and overall tone—are key diagnostic markers of internal nutritional status. Any imbalance, deficiency, or impairment in Rasa Dhatu will invariably manifest

visibly on the skin, thereby establishing it as an invaluable diagnostic tool within Ayurvedic clinical practice.^[3]

2. The Concept of Twak Saar Purush

The pinnacle of optimal skin condition is termed Twak Saarata, and an individual embodying these superior traits is identified as a Twak Saar Purush. Such a person is distinguished by:

3. Lustrous and Smooth Skin

Possessing a soft, subtly unctuous (yet not excessively oily), inherently radiant, and luminous quality.

4. Clear and Healthy Complexion

Exhibiting a bright, uniform, and naturally attractive skin tone, often metaphorically compared to the pristine quality of lotus petals or the moon.

5. Fine and Delicate Hair

Characterized by soft, slender, dense, and firmly rooted body hair.

6. Healthy Nails

Typically displaying a pinkish hue, smooth surface, and perfectly contoured shape.

7. Overall Grace and Appeal

An inherently pleasing and aesthetically attractive physical presence.

8. Environmental Resilience

Demonstrating admirable tolerance to environmental shifts, indicative of robust skin integrity and balanced internal physiology.^[6]

9. Locus of Rasa Expression

Many Ayurvedic scholars interpret Twak Saarata as being equivalent to Rasa Saarata, underscoring that the finest qualities and functions of Rasa Dhatu are most overtly expressed and perceptibly experienced through the skin. This positions the skin as a primary anatomical region where Rasa Dhatu exerts its nourishing and life-giving influence.^[6]

B. The Dynamic Interplay: How Rasa Dhatu Shapes Skin Quality and Anti-Aging

The inherent and intricate connection between Rasa Dhatu and Twak profoundly illustrates how the quality of this primary nutrient fluid fundamentally shapes skin health and its intrinsic ability to resist the ravages of time:

1. Direct Cellular Nutrition and Regeneration

Rasa Dhatu consistently provides comprehensive nourishment to every individual skin cell. A steady supply of high-quality Rasa Dhatu ensures that dermal cells receive all vital nutrients essential for optimal metabolic function, efficient repair mechanisms, and continuous regeneration, all of which are crucial for

maintaining healthy, youthful skin and actively counteracting cellular aging processes.^[7]

2. Hydration and Suppleness

As Rasa Dhatu is predominantly imbued with the water element, it directly contributes to the skin's hydration levels, elasticity, and plumpness. A deficit or impaired quality of Rasa Dhatu frequently manifests as skin dryness, roughness, diminished elasticity, and a dull, lifeless appearance, all tell-tale signs of accelerated or premature aging.^[7]

3. Complexion and Radiance

The natural luminosity and clear complexion inherent in healthy skin (Prabha) are considered direct outward reflections of a vibrant and well-formed Rasa Dhatu. When Rasa Dhatu is in its optimal state, it bestows upon the skin an inner radiance, uniform tone, and undeniable youthful vitality, unequivocally signifying robust cellular function.^[3]

4. Immune Competence and Resilience

Rasa Dhatu serves as the foundational precursor to Ojas (the subtle essence derived from all dhatus that governs overall vitality and immunological strength). A strong Rasa Dhatu contributes to a robust immune system, which in turn enhances the skin's capacity to effectively resist infections, adeptly manage inflammatory responses, and efficiently recover from environmental aggressors and cellular damage that commonly contribute to the aging process.^[5]

5. Inflammation Modulation and Anti-Aging Effects

Imbalances within Rasa Dhatu can precipitate the accumulation of Ama (metabolic toxins) or the vitiation of Doshas (particularly Pitta, which correlates with heat and inflammation). These internal disruptions frequently materialize as various inflammatory dermatological conditions (e.g., acne, eczema) or can accelerate aging processes through persistent low-grade inflammation. A properly functioning Rasa Dhatu supports the body's innate detoxification pathways, thereby preventing the buildup of impurities that can adversely affect skin clarity, mitigate inflammatory responses, and contribute to a more youthful visage.^[7]

Ayurvedic Principles and Research-Backed Botanicals for Skin Enhancement and Rasayana

Ayurvedic dermatological interventions are strategically designed to rectify underlying Dosha or Dhatu imbalances, bolster systemic detoxification, and fortify the body's inherent capacities for healing and rejuvenation. A pivotal principle in this domain is Rasayana (rejuvenation), a specialized branch of Ayurveda dedicated to fostering longevity, averting disease, and elevating the quality of all dhatus and sensory organs, with particular emphasis on skin health and anti-aging.

Rasayana for Skin Rejuvenation and Anti-Aging

The Rasayana philosophy, when applied to skin, transcends mere superficial cosmetic improvement; its core objective is profound cellular rejuvenation, promoting Dhatu Poshana (optimal tissue nourishment) and fostering the creation of Ojas, the very essence of vitality. For the skin, Rasayana therapies specifically seek to:

- 1. Enhance Cellular Regeneration:** Accelerating the optimal rate and quality of skin cell turnover.
- 2. Fortify Against Oxidative Stress:** Bolstering the skin's intrinsic antioxidant defenses to counter free radical damage, a primary instigator of cellular aging.
- 3. Support Collagen and Elastin Integrity:** Promoting the robust synthesis and structural integrity of essential proteins to maintain dermal firmness and elasticity.
- 4. Amplify Luminosity and Tone:** Restoring the skin's natural radiance and ensuring a uniform, healthy complexion.
- 5. Comprehensive Anti-Aging:** Proactively preventing the onset of premature aging signs such as wrinkles, fine lines, and dullness by nourishing the skin at a fundamental, cellular level.^[30]

This overarching holistic methodology necessitates addressing digestive efficiency (Agni), lifestyle choices, and mental well-being in conjunction with specific herbal and mineral interventions.

Research-Backed Ayurvedic Drugs for Skin Improvement and Anti-Aging

Drugs	Research Insights	Key Compounds
Manjistha (Rubia cordifolia)	Recognized for its anti-inflammatory, antioxidant, and complexion-enhancing properties. Research suggests its role in fostering clear skin by supporting healthy metabolic pathways that prevent accumulation of impurities. ^[8] It shows promise in improving skin tone and radiance by modulating cellular processes and mitigating oxidative stress. ^[9,10] Its application in addressing uneven skin tone and promoting healthy skin cell turnover is also highlighted. ^[10]	Anthraquinones, glycosides.
Neem (Azadirachta indica):	Widely acknowledged for its potent antimicrobial, anti-inflammatory, and antioxidant attributes. Scientific studies substantiate its effectiveness in managing acne and blemishes by inhibiting microbial proliferation and ameliorating	Azadirachtin, nimbin, nimbidin, quercetin.

	inflammation. ^[11] Its active compounds, such as nimbidin, effectively soothe irritated skin, alleviating redness and inflammatory responses. ^[12] Neem's comprehensive contribution to skin purity and resilience against environmental aggressors positions it favorably for maintaining a youthful appearance. ^[11]	
Turmeric (<i>Curcuma longa</i>)	Extensively investigated for its powerful antioxidant, anti-inflammatory, and photoprotective capabilities, primarily attributed to Curcumin. It significantly enhances skin luminosity and expedites wound healing by reducing inflammation and promoting collagen synthesis. ^[13] Curcumin effectively addresses inflammatory dermatological conditions, and its potent antioxidant activity safeguards against UV-induced skin damage (photo aging), diminishes hyperpigmentation, and enhances skin firmness and overall appearance by counteracting oxidative stress and inhibiting enzymes responsible for collagen and elastin degradation. ^[14,15]	Curcumin.
Sariva (<i>Hemidesmus indicus</i>)	Valued for its cooling, anti-inflammatory, and antioxidant properties. Research suggests its efficacy in bolstering systemic detoxification processes, thereby contributing to clearer and healthier skin. ^[16] It is traditionally used for its calming effects on irritated skin and for fostering an even complexion and radiance through an overall enhancement of skin vitality. ^[17]	Flavonoids, saponins, alkaloids (hemidesmine).
Guduchi (<i>Tinospora cordifolia</i>)	Esteemed as an immunomodulatory, antioxidant, and anti-inflammatory herb, and recognized as a potent Rasayana. While its specific dermatological research is often contextualized within its broader systemic benefits, its immune-modulating and anti-inflammatory properties are highly advantageous for managing various skin disorders, particularly those rooted in systemic imbalances and inflammatory processes. Its rejuvenative qualities contribute significantly to overall skin vitality and resilience. ^[18]	Alkaloids, glycosides, steroids.
Aloe Vera (<i>Kumari - Aloe barbadensis miller</i>)	Subjected to extensive research for its hydrating, soothing, anti-inflammatory, and remarkable wound-healing and anti-aging attributes. It markedly improves skin hydration and barrier function ^[19] and effectively reduces inflammation, redness, and irritation in conditions such as sunburn and eczema. Scientific studies corroborate its role in accelerating dermal repair by fostering cell proliferation and collagen synthesis, assisting in the fading of scars and blemishes. ^[20] Furthermore, its robust antioxidant activity protects against free radical damage, and it stimulates fibroblast activity, thereby promoting collagen and elastin production, which substantially enhances skin elasticity and diminishes visible signs of aging. ^[21]	Polysaccharides, vitamins (A, C, E), enzymes, minerals, aloin.
Shatavari (<i>Asparagus racemosus</i>)	A prominent Rasayana (rejuvenator) and adaptogen, valued for its cooling (Sheet Virya) and nourishing (Snigdha) characteristics. Research indicates its considerable antioxidant activity, which actively combats oxidative stress, a primary contributor to skin aging. ^[22] Its inherent unctuous nature profoundly nourishes the skin and alleviates dryness, rendering it highly beneficial for dry, sensitive, or mature skin. As an adaptogen, it assists in managing stress, a recognized trigger for various skin conditions and a factor that can accelerate the aging process. ^[23]	Saponins (shatavarins), flavonoids.
Guggul (<i>Commiphora mukul</i>)	Revered for its anti-inflammatory, systemic cleansing, and antimicrobial properties, particularly beneficial for challenging skin conditions. Scientific investigations support Guggul's effectiveness in managing acne, especially cystic forms, by attenuating inflammation and potentially modulating sebum production. ^[24,25] Its anti-inflammatory actions render it valuable for various inflammatory dermatological issues, thereby contributing to a clearer and calmer complexion.	Guggulsterones, volatile oils.
Lodhra (<i>Symplocos</i>)	Recognized for its astringent, cooling, and anti-inflammatory properties, rendering it highly beneficial for dermal purification,	Symplocosides, flavonoids, tannins.

racemosa)	pore tightening, and complexion enhancement. Its astringent nature aids in constricting pores and reducing excessive oiliness, supporting a refined skin texture. Research highlights its utility in mitigating blemishes and enhancing overall complexion by modulating inflammatory responses. ^[26,27] Its attributes also contribute to a firmer, more uniformly toned appearance.	
Chandana (Santalum album - Sandalwood)	Highly prized for its cooling, anti-inflammatory, antiseptic, and skin-brightening attributes. Sandalwood oil is extensively researched for its capacity to diminish skin inflammation, redness, and irritation, rendering it exceptionally effective for sensitive or aggravated skin. ^[28] It assists in managing minor skin infections and preventing breakouts due to its intrinsic antiseptic qualities. Traditionally, it is employed to brighten skin tone, reduce sun-induced tanning, and enhance overall complexion by promoting an even skin tone. Its antioxidant constituents further contribute to protecting the skin from environmental damage, thereby supporting a more youthful appearance. ^[29]	Santalols.

DISCUSSION

The Ayurvedic framework offers a profound, time-honoured understanding of skin health that conceptualizes Twak (the skin) as a direct and vibrant reflection of the body's internal state, profoundly influenced by the quality of the primary nourishing fluid, Rasa Dhatu. The traditional concept of Twak Saarata articulates an ideal for skin excellence, fundamentally rooted in systemic balance and deep tissue nourishment. This holistic approach fundamentally shifts the paradigm from merely treating superficial symptoms to addressing underlying systemic imbalances, which are often the true progenitors of various dermatological conditions and accelerated aging.

The comprehensive review of numerous Ayurvedic botanicals reveals a significant alignment between traditional wisdom and contemporary scientific investigation. Herbs such as Manjistha, Neem, Turmeric, Sariva, and Aloe Vera, among others, exhibit a broad spectrum of dermatologically relevant properties, including potent antioxidant, anti-inflammatory, antimicrobial, and wound-healing actions. These observed effects resonate well with their traditional applications in supporting systemic health, balancing Pitta tendencies, and fostering holistic skin rejuvenation (Rasayana). The Rasayana concept, in particular, provides a unique and comprehensive approach to anti-aging and sustained skin vitality by focusing on deep cellular nourishment, enhanced regeneration, and augmented protective mechanisms.

Core Strengths of the Ayurvedic Approach to Skin Health

1. Holistic Patient Assessment: This system treats the individual as an integrated whole, considering Dosha balance, Agni (digestive metabolism), and Dhatu quality. This enables a root-cause resolution for skin concerns.

2. Multi-Targeted Therapeutic Action: Many Ayurvedic herbs feature a synergy of active biochemical compounds that exert diverse beneficial effects on the

skin, often concurrently addressing multiple facets of skin health, including key anti-aging pathways.

3. Emphasis on Prevention and Rejuvenation: The Rasayana aspect focuses on long-term maintenance, actively preventing premature aging, and fostering sustained skin vitality rather than exclusively managing acute symptoms.^[30]

Limitations and Future Research Directives

Despite the compelling preliminary evidence and centuries of traditional utilization, the broader integration of these Ayurvedic interventions into mainstream dermatology and anti-aging practices necessitates addressing several pivotal challenges:

1. Demand for Rigorous Clinical Trials: While in-vitro and animal studies provide valuable mechanistic insights, a critical need exists for more large-scale, randomized, placebo-controlled, double-blind human clinical trials to conclusively validate the efficacy, safety, and optimal dosages of Ayurvedic interventions for specific skin conditions and anti-aging benefits across diverse human populations.

2. Challenges in Standardization and Quality Control: Variability stemming from raw material sourcing, processing methodologies, and final product composition can introduce inconsistencies in therapeutic outcomes. The development and strict adherence to rigorous standardization protocols are indispensable for achieving reproducible and reliable research.

3. Elucidating Deeper Mechanisms: Further in-depth scientific inquiry is required to fully unravel the precise molecular and cellular pathways through which complex Ayurvedic formulations exert their nuanced effects on skin health and the aging process.

4. Pharmacokinetic and Pharmacodynamic Studies: Comprehensive investigations into the absorption, distribution, metabolism, and excretion (ADME) profiles of the active compounds within these herbal formulations

are crucial, particularly considering their application in skin delivery and systemic influence.

5. Comparative Effectiveness Research: Studies directly comparing the efficacy, safety, and cost-effectiveness of Ayurvedic treatments against conventional dermatological and anti-aging therapies would yield invaluable insights for potential models of integrated healthcare.

CONCLUSION

Ayurveda offers a profound, millennia-old understanding of skin health that conceptualizes Twak (the skin) as a direct and vibrant reflection of the body's internal state, profoundly influenced by the quality of the primary nourishing fluid, Rasa Dhatu. The traditional concept of Twak Saarata articulates an ideal for skin excellence, fundamentally rooted in systemic balance and deep tissue nourishment. Contemporary research is progressively corroborating the significant antioxidant, anti-inflammatory, antimicrobial, and rejuvenative properties of numerous Ayurvedic botanicals, thereby reinforcing their traditional application for enhancing overall skin quality, managing various dermatological conditions, and actively promoting anti-aging effects. While the existing body of evidence is encouraging, a concerted commitment to robust, high-quality clinical research is imperative to fully harness the potential of these holistic Ayurvedic interventions, paving the way for their broader acceptance and thoughtful integration into modern dermatological and anti-aging practices for comprehensive skin well-being.

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