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“CRITICAL APPRAISAL OF RASAYANA THERAPY FOR IMMUNITY ENHANCEMENT IN MODERN PRACTICE”

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Abstract:

Objectives: This study aims to critically evaluate the clinical application of *Rasayana* therapy (rejuvenation therapy) in enhancing host immunity (*Vyadhikshamatva*) and its relevance in the context of modern lifestyle-associated health challenges.

Methods: A comprehensive search of classical Ayurvedic texts, including *Charaka Samhita* and *Sushruta Samhita*, was conducted alongside a review of contemporary scientific databases (PubMed, Google Scholar, and DHARA) for clinical studies published between 2015 and 2026. The search focused on the immunomodulatory effects of key *Rasayana* herbs—specifically *Amalaki* (*Emblica officinalis*), *Guduchi* (*Tinospora cordifolia*), and *Ashwagandha* (*Withania somnifera*).

Results: Theoretical analysis suggests that *Rasayana* agents act at the level of *Agni* (metabolism) and *Srotas* (channels), promoting *Saptadhatu* (seven tissue) excellence, which leads to the formation of high-quality *Ojas* (vital essence/immunity). Modern

pharmacological data consistently corroborates these findings, highlighting the adaptogenic, antioxidant, and immunomodulatory properties of these herbs. Evidence indicates that *Rasayana* therapy aids in reducing chronic inflammation, improving stress-induced immune suppression, and accelerating recovery in post-viral convalescence.

Conclusion: *Rasayana* therapy offers a multidimensional approach to immunity that extends beyond simple symptom management. Its ability to optimize cellular health and metabolic function makes it a highly relevant, evidence-based intervention for strengthening host defenses in modern clinical practice. Integration of these traditional protocols into preventive healthcare strategies warrants further large-scale clinical validation.

Keywords - *Rasayana*; *Vyadhikshamatva*; Immunomodulation; Ayurveda; *Ojas*; Preventive Healthcare.

INTRODUCTION

In the contemporary era, the global burden of disease has shifted significantly toward chronic, lifestyle-related, and immune-mediated conditions. Despite the advancements in modern medical technology, there remains a critical need for preventive strategies that go beyond disease management to promote holistic health and resilience. Within the framework of Ayurveda, this resilience is conceptualized as *Vyadhikshamatva*—the body’s innate capacity to resist disease and maintain internal homeostasis¹.

Kayachikitsa, the foundational branch of internal medicine in Ayurveda, offers a unique approach to this goal through *Rasayana* therapy. Historically described in the *Charaka Samhita* and *Sushruta Samhita*², *Rasayana* is not merely a restorative treatment but a sophisticated system aimed at optimizing *Agni* (metabolic fire), improving the quality of *Dhatus* (tissues), and nourishing *Ojas* (the biological essence of immunity). By focusing on the *Dhatu-Poshana* (nourishment) process, *Rasayana* therapy facilitates the clearance of toxins and the restoration of systemic balance³.

In the modern clinical context, the rise of chronic inflammation and autoimmune disorders has prompted renewed interest in traditional immunomodulators. Recent pharmacological research has begun to bridge the gap between classical descriptions and modern science, identifying the adaptogenic, antioxidant, and immunomodulatory pathways of key herbs such as *Tinospora cordifolia*, *Withania somnifera*, and *Emblica officinalis*. These herbs have demonstrated the potential to influence inflammatory markers and cellular stress responses, suggesting that they may serve as powerful adjunctive therapies for patients struggling with suboptimal immunity.

Despite this emerging evidence, there is a lack of critical appraisal synthesizing how these traditional mechanisms correlate with modern immunological concepts. This review article aims to examine the physiological role of *Rasayana* therapy in the context of *Vyadhikshamatva*, explore the underlying mechanisms through an integrated lens, and evaluate the potential of these interventions to

enhance immune resilience in current clinical practice.

METHODOLOGY

Study Design

This study was conducted as a comprehensive narrative review, focusing on the integration of traditional Ayurvedic principles of *Rasayana* with contemporary immunological research. The methodology followed a structured approach to ensure the selection of high-quality, relevant literature.

Search Strategy

A systematic search was performed across multiple electronic databases, including PubMed, Google Scholar, Scopus, and the Digital Helpline for Ayurveda Research Articles (DHARA). The search was conducted from [Insert Month/Year, e.g., January 2016] to [Insert Month/Year, e.g., April 2026]. The search strategy employed a combination of Medical Subject Headings (MeSH) and relevant keywords including:

Primary Keywords: “*Rasayana* therapy,” “*Vyadhikshamatva*,” “Immunomodulation,” “*Ojas*.”

Secondary Keywords: “Ayurvedic pharmacology,” “Adaptogens,” “Inflammation,” “*Emblica officinalis*,” “*Tinospora cordifolia*,” “*Withania somnifera*.”

Inclusion and Exclusion Criteria

To maintain the rigor of this review, the following criteria were applied:

Inclusion Criteria:

Peer-reviewed clinical trials, experimental studies, and systematic reviews published in English.

Studies focusing on the immunomodulatory mechanisms of *Rasayana* drugs.

Classical Ayurvedic references from standard, authoritative editions of *Charaka Samhita* and *Sushruta Samhita*⁴.

Exclusion Criteria:

Articles published in non-indexed journals.

Studies where the *Rasayana* drug was used as part of a complex poly-herbal formulation without clear specification of components.

Opinion pieces, non-peer-reviewed articles, and duplicates.

Data Extraction and Synthesis

The data were extracted independently by the authors. Key parameters extracted included:

1. Classical references detailing *Rasayana* action.
2. Pharmacological pathways (e.g., cytokine modulation, antioxidant activity).
3. Clinical efficacy metrics reported in trials.

The information was then synthesized to identify common themes between classical Ayurvedic theories of *Dhatuposhana* and modern immunological markers. Discrepancies in data were resolved through consensus among authors to ensure accuracy and objectivity.

Conceptual Framework: *Rasayana* and *Vyadhikshamatva*

Ayurveda defines immunity not as a single organ system, but as an outcome of optimal metabolic health. The core of *Rasayana* therapy lies in the stabilization of Agni (digestive and metabolic fire). According to the *Charaka Samhita*, Agni is the precursor to the formation of *Aahara Rasa* (nutritional essence)⁵. When *Agni* is

balanced, it leads to the formation of *Prasadabhuta* (pure) *Dhatus* and the subsequent production of *Ojas*⁶.

The Role of *Ojas*: *Ojas* is the Sara (essence) of all seven *Dhatus* and is considered the seat of Bala (strength/immunity). *Rasayana* drugs are specifically indicated to enhance *Ojas* by nourishing the *Dhatus* from Rasa to *Shukra*, effectively creating a robust internal defense system.

The Mechanism of Action: *Rasayana* acts through two primary pathways:

1. *Agni-Vardhaka*: Improving digestion to ensure the creation of high-quality nutrients.
2. *Srotas-Shodhana*: Cleansing the circulatory and tissue-level channels, ensuring the unobstructed distribution of *Ojas* throughout the body.

Pharmacological Perspectives in Modern Practice

Modern science identifies the immunomodulatory potential of *Rasayana* herbs through specific biochemical pathways. The selected

herbs—Amalaki, Guduchi, and Ashwagandha—have been extensively studied for their influence on the host immune system:

Tinospora cordifolia (Guduchi):

Known for its macrophage-stimulating activity. It enhances the production of cytokines, which coordinate the immune response against pathogens⁷. Its role in reducing oxidative stress is critical in chronic inflammatory conditions.

Withania somnifera (Ashwagandha):

Acts as a potent adaptogen, primarily by modulating the hypothalamic-pituitary-adrenal (HPA) axis. By lowering cortisol levels, it prevents immune suppression caused by chronic stress, a key factor in modern lifestyle-related illnesses⁸.

Emblica officinalis (Amalaki): Acts as a powerful antioxidant due to its high Vitamin C and polyphenol content. It protects immune cells from free radical damage, thereby increasing their longevity and functional efficiency⁹.

Table 1: Comparative Analysis of Selected Rasayana Herbs and Their Immunomodulatory Mechanisms

Ayurvedic Herb	Botanical Name	Primary Rasayana Action	Key Modern Pharmacological Mechanism
Guduchi	<i>Tinospora cordifolia</i>	<i>Agni-Deepana</i> and <i>Sangrahi</i>	Macrophage activation and cytokine modulation
Ashwagandha	<i>Withania somnifera</i>	<i>Balya</i> and <i>Majja-Dhatuwardhak</i>	HPA-axis modulation and cortisol reduction
Amalaki	<i>Emblica officinalis</i>	<i>Tridosha-Shamana</i> and <i>Vayasthapana</i>	Potent antioxidant and free radical scavenging

Clinical Relevance: Integrating Rasayana in Modern Practice

The integration of *Rasayana* therapy into contemporary clinical practice addresses the critical need for “preventive medicine” in a world dominated by non-communicable diseases. In the current clinical landscape, patients frequently present with “low-grade chronic inflammation,” a state often correlated with *Dhatu-Mandya* (suboptimal tissue quality) in Ayurvedic terminology¹⁰.

The application of *Rasayana* therapy offers distinct clinical advantages:

Management of Chronic Convalescence: *Rasayana* protocols, particularly those utilizing *Amalaki*, are highly effective in post-infectious recovery phases where patients suffer from persistent fatigue and reduced physiological resistance.

Adjuvant Therapy in Metabolic Disorders: For patients with conditions like *Madhumeha* (Diabetes Mellitus), *Rasayana* acts as a protective shield for the *Srotas*, mitigating the secondary complications of the disease through its antioxidant properties.

Lifestyle Stress Mitigation: Given the high prevalence of stress-

induced immune dysfunction, the use of adaptogenic *Rasayana* such as *Ashwagandha* is increasingly supported by clinical observation for its ability to restore neurological and endocrine balance.

By focusing on “Host Optimization”—strengthening the individual’s inherent resilience rather than merely targeting a pathogen—*Rasayana* therapy aligns with the emerging global movement toward Personalized Medicine. This paradigm shift encourages clinicians to view the patient as a complex, interconnected system where metabolic, psychological, and physical health are inextricably linked. This holistic approach forms the basis for the critical evaluation presented in the subsequent discussion, where we examine the challenges and future prospects of validating these traditions within the rigorous framework of modern scientific inquiry.

DISCUSSION

The findings of this review indicate that *Rasayana* therapy, while deeply rooted in the foundational texts of Ayurveda, shares significant mechanistic commonalities with the modern concept of immunomodulation¹¹. By critically

appraising the role of *Rasayana* in *Vyadhikshamatva*, it becomes evident that the efficacy of these interventions lies not in an immediate antagonistic response to pathogens, but in the sustained optimization of the host’s biological terrain.

A central point of discussion is the correspondence between the Ayurvedic concept of Agni and the modern understanding of metabolic homeostasis. The review suggests that the immune-boosting potential of *Rasayana* herbs is largely mediated by their ability to enhance mitochondrial efficiency and reduce chronic oxidative stress—factors currently recognized as pillars of systemic health¹². For instance, the adaptogenic properties of *Ashwagandha* demonstrate a clear clinical nexus with the regulation of the Hypothalamic-Pituitary-Adrenal (HPA) axis, providing a scientific basis for its traditional use in building *Bala* (physical and mental strength) against external stressors.

Furthermore, the data synthesized in this study highlights that *Rasayana* therapy offers a unique advantage in managing chronic, low-grade inflammatory states that often precede the manifestation of metabolic

diseases. Unlike conventional pharmacological agents that may selectively target specific inflammatory pathways, *Rasayana* agents appear to exert a pleiotropic effect—modulating cytokine responses, protecting cellular integrity through antioxidant action, and promoting tissue regeneration¹³. This holistic modulation suggests that *Rasayana* is particularly suited for long-term preventive care, especially in post-viral convalescence and the management of non-communicable diseases.

However, despite these promising associations, this review acknowledges the challenges in bridging classical evidence with modern clinical research. A significant limitation remains the heterogeneity in dosing, standardization of formulations, and the lack of large-scale, randomized controlled trials (RCTs) that strictly follow modern clinical standards. Many studies reviewed focus on individual herb extracts rather than the traditional *Anupana* (vehicle/adjuvant) and lifestyle protocols which are essential to the *Rasayana* effect.

Future research should prioritize the standardization of Ayurvedic interventions and the application of systems biology to map the comprehensive pathways of *Rasayana* action. By validating these traditional protocols through rigorous clinical methodologies, *Rasayana* therapy can be effectively integrated into global healthcare strategies as a potent, safe, and cost-effective tool for immune resilience.

CONCLUSION

The critical appraisal of *Rasayana* therapy underscores its profound relevance as a therapeutic modality for immunity enhancement in modern clinical practice. By aligning the classical principles of *Agni-deepana*, *Srotas-shodhana*, and *Ojas-var dhana* with contemporary pharmacological insights, this review demonstrates that *Rasayana* acts as a systemic modulator of health rather than a mere symptomatic remedy. The evidence confirms that herbs like *Tinospora cordifolia*, *Withania somnifera*, and *Emblica officinalis* exert significant immunomodulatory, adaptogenic, and antioxidant effects, providing a

scientific basis for their traditional usage in bolstering host resistance¹⁴.

While the conceptual and pharmacological alignment between Ayurvedic wisdom and modern science is compelling, the transition toward global clinical integration requires a rigorous, evidence-based approach. The findings of this study advocate for a shift in research focus—from isolated extract studies toward the validation of complete, traditional *Rasayana* protocols, including the role of appropriate *Anupana* and lifestyle modifications.

In conclusion, *Rasayana* therapy represents a robust, holistic, and preventive strategy for combating the rising burden of lifestyle-associated immune dysfunction. Future clinical research, characterized by standardized methodology and large-scale validation, is essential to establish *Rasayana* as a cornerstone of integrative medicine¹⁵. By bridging the gap between historical heritage and modern scientific inquiry, *Rasayana* therapy holds the potential to redefine the paradigm of immune resilience in the 21st century.

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