



Review Article

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AYURVEDA-BASED DIETARY STRATEGIES FOR THE PREVENTION AND MANAGEMENT OF MALNUTRITION: A COMPREHENSIVE REVIEW

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ABSTRACT

Malnutrition continues to be a major global burden, particularly in developing countries, contributing to impaired physical growth, weakened immunity, cognitive deficits, increased susceptibility to infections, and higher mortality rates. Although modern nutrition emphasizes macronutrient and micronutrient supplementation, significant gaps remain in ensuring effective digestion, assimilation, and long-term metabolic balance factors central to sustained recovery. Ayurveda, the traditional medical system of India, offers a holistic dietary framework based on the principles of Agni (digestive and metabolic fire), Ahara (diet), Dhatu Poshana (tissue nourishment), Prakriti (constitution), and Rasayana (rejuvenation). Classical Ayurvedic texts describe conditions such as Karshya, Kshaya, and Dourbalya, which closely parallel modern classifications of undernutrition, wasting, and nutritional deficiency disorders. Ayurveda advocates a multipronged approach consisting of Deepana-Pachana (appetite stimulation and metabolic cleansing), Brimhana (nourishing/anabolic diet), medicated milk and ghee preparations, therapeutic gruels, and Rasayana therapy to rebuild depleted tissues. Recent scientific studies support the anabolic, antioxidant, immunomodulatory, and adaptogenic actions of many Ayurvedic formulations such as Ashwagandha, Shatavari, and Guduchi. This review examines fundamental Ayurvedic concepts of nutrition, analyses classical dietary interventions for malnutrition, and correlates them with contemporary nutritional science. The paper highlights the potential for integrative strategies that combine Ayurvedic dietetics with modern nutritional therapy, offering a sustainable, culturally compatible, and holistic approach for preventing and managing malnutrition across different populations.

Keywords: Ayurveda, malnutrition, Brimhana, Rasayana, Dhatu Poshana, Agni, therapeutic diets, undernutrition.

INTRODUCTION

Malnutrition, including protein energy malnutrition and micronutrient deficiencies, remains one of the most pressing public health concerns worldwide. The World Health Organization (WHO) reports that millions of children suffer from stunting, wasting, and underweight conditions, with long-term consequences on physical development, cognitive abilities, productivity, and quality of life. Pregnant women, lactating mothers, the elderly, immunocompromised individuals, and those with chronic illnesses are particularly vulnerable to the adverse effects of inadequate nutrition. Despite several national and international nutrition programs, the persistence of malnutrition suggests that conventional dietary interventions alone may not fully address the problem. This indicates the need for more holistic, sustainable, and culturally relevant nutritional approaches.¹

Ayurveda, one of the oldest traditional medical systems, places Ahara (diet) as one of the three pillars of health (Upastambha) along with sleep and regulated lifestyle. Unlike modern nutrition, which primarily emphasizes nutrient composition Ayurveda focuses on digestive strength (Agni), food qualities (Guna), bio-transformation (Vipaka), compatibility (Viruddha Ahara), and individualized dietary needs based on Prakriti. Classical Ayurvedic literature describes conditions such as Karshya

(emaciation), Kshaya (tissue depletion), Dourbalya (weakness), and Agnimandya (poor digestion), which resemble modern malnutrition and undernutrition states. These texts highlight the centrality of adequate nourishment, efficient digestion, and metabolic harmony for the formation of healthy tissues (Dhatu Poshana).²

Ayurvedic dietary management in malnutrition is not limited to providing more calories or protein; instead, it incorporates a sequential therapeutic approach. Initially, Deepana-Pachana remedies are used to improve appetite and correct impaired digestion. Once Agni is restored, Brimhana (anabolic and bulk-promoting) diets such as milk, ghee, fortified gruels, muscle broth, and nutrient-dense preparations are introduced to rebuild body tissues. Rasayana therapies are subsequently used to enhance vitality, immunity, and long-term metabolic resilience. These principles align well with current scientific understanding of metabolism, gut health, and tissue regeneration.³

The increasing interest in integrative nutrition research provides a unique opportunity to explore and validate Ayurvedic dietary strategies for malnutrition. With its emphasis on personalized nutrition, digestive optimization, and tissue nourishment, Ayurveda offers a complementary framework that can enhance the effectiveness of modern interventions. This review aims to examine Ayurvedic principles related to malnutrition, describe

classical dietary strategies, correlate them with modern nutrition science, and discuss their relevance in contemporary clinical and public-health settings.⁴

Source of data: Classical Ayurvedic texts (Charaka, Sushruta, Vagbhata), commentaries, Ayurvedic pharmacopoeia, modern nutrition textbooks, online databases (PubMed, Google Scholar, AYUSH research repositories).

Study selection: Review articles, clinical trials, classical references, and observational studies relevant to Ayurvedic dietetics and nutritional interventions.

Ayurvedic Understanding of Malnutrition

Concept of Karshya

Karshya is described as an emaciated condition caused by insufficient Ahara, poor assimilation, excessive exertion, or chronic diseases.⁵

Kshaya indicates depletion of Dhatus, especially Rasa, Mamsa, and Medo Dhatu.

Role of Agni

Ayurveda states: “Rogah Sarve’Pi Mande Agni all diseases arise from impaired digestion.

Malnutrition correlates with weakened digestive fire leading to poor absorption and nutrient utilization.⁶

Dhatu Poshana

Nutrition follows a sequential pattern from Rasa to Shukra Dhatu. In malnutrition, inadequate Rasa Dhatu formation affects subsequent tissues, causing weakness, stunting, and wasting.⁷

Ayurvedic Dietary Strategies for Malnutrition

Brimhana (Anabolic / Bulk-Promoting Diet)

These foods help build tissues and increase body mass.⁸

Table 2: Brimhana foods

Milk and milk products	cow’s milk, curd, ghrita.
Mamsarasa (meat soups)	especially for severe wasting.
Yavagu, Payasa, Krishara	nutrient-dense gruels.
Mudga Yusha	easily digestible protein-rich preparation.
Til, Masha, Mudga	promote strength and nourishment.
Wheat and rice preparations	provide carbohydrates and energy.

Use of Medicated Gruels (Peya, Vilepi, Yavagu)

Useful for patients with low digestive capacity. Enhances hydration, energy, and improves tolerance to heavier foods.

Examples: Atmagupta Yavagu (Mucuna pruriens), Ashwagandha Yavagu, Bala-Satavari–based gruels for children and postpartum women.⁹

Examples Ashwagandhadi Ghrita, Shatavari Ghrita, Bala Ghrita.¹¹

Enhancing Agni

Before Brimhana therapy, mild Deepana-Pachana is essential. Herbs, Pippali, Shunthi, Jeeraka, Trikatu, Improve appetite and metabolism.¹²

Rasayana (Rejuvenative Therapy)

Rasayana strengthens tissues, enhances immunity, and improves metabolic efficiency.

Important Rasayana for malnutrition, Chyavanprash, Ashwagandha Avaleha, Amalaki Rasayana, Shatavari Kalpa, Guduchi Rasayana.¹⁰

Dietary Regimens for Special Conditions

Infants and children

Fortified milk (Shatavari-milk), ghee, dates, raisins. Balya herbs such as Kushmanda, Draksha, Yashtimadhu.

Pregnant women

Rasayana diets, milk-based preparations, ghee, nutritious gruels.

Use of Medicated Ghee (Ghrita)

Promotes weight gain, enhances digestion and nutrient absorption.

Elderly

Easily digestible food, soups, gruels, and Rasayana support.^{13,14}

Correlation with Modern Nutrition Science

Ayurvedic Concept	Modern Equivalent
Agni	Digestive capacity, enzyme function
Brimhana	High-calorie, protein-rich diet
Rasayana	Antioxidants, adaptogens, immunity boosters
Payasa / Yavagu	Therapeutic diets, liquid nutrition
Medicated ghee	Healthy fats, improved absorption of fat-soluble vitamins
Dhatu poshana	Stepwise nutrient assimilation and tissue-building ^{15,16}

Clinical studies show Ashwagandha, Shatavari, Mucuna, and milk-based diets improve body weight, muscle mass, and immunity in malnourished populations.

(Agni), tissue nourishment (Dhatu Poshana), and metabolic balance (Samagni) with disease vulnerability. This holistic orientation distinguishes Ayurvedic dietetics from reductionist approaches that focus entirely on caloric or micronutrient supplementation.¹⁷ A fundamental Ayurvedic principle is that even nutrient-rich food cannot nourish the body unless digestion and assimilation are optimal. Malnutrition, therefore, is viewed not only as a result of insufficient food intake but also as a disturbance in the internal processing of food. The initial use of Deepana-Pachana herbs (such as Pippali, Shunthi, Jeeraka, and Trikatu) aims to rekindle digestive fire, reduce accumulated

DISCUSSION

Malnutrition is a multifactorial condition influenced by inadequate nutrient intake, impaired digestion and absorption, chronic infections, socioeconomic factors, and underlying disease. Ayurveda provides a comprehensive framework to understand these interrelated factors by linking digestive function

toxins (Ama), and prepare the gut for nutrient assimilation. This concept aligns with modern findings that impaired gut integrity, dysbiosis, and low digestive enzyme activity contribute significantly to undernutrition, particularly in children in low-resource settings.¹⁸ After correcting digestive disturbances, Ayurveda recommends Brimhana therapy, consisting of nourishing foods that promote anabolic activity and tissue regeneration.

Classical formulations such as Payasa, Yavagu, Krishara, fortified milk preparations, and Mamsarasa not only provide calories and proteins but also act as easily digestible nutrient vehicles for compromised individuals. Many of these foods resemble therapeutic diets used in modern clinical nutrition, such as high-calorie semisolid feeds and protein-rich porridges for children with moderate or severe acute malnutrition. The inclusion of medicated ghee enhances absorption of fat-soluble vitamins and essential fatty acids, a concept also validated by modern lipid science.¹⁹ Rasayana therapy represents one of the most distinctive contributions of Ayurveda to the management of malnutrition. Rasayana herbs like Ashwagandha, Shatavari, Guduchi, and Amalaki exhibit immunomodulatory, adaptogenic, antioxidant, and anabolic actions.

Clinical and preclinical studies have shown improvements in body weight, muscle mass, immunity, and overall vitality with these formulations. These effects may be mediated through enhanced mitochondrial function, modulation of stress hormones, and improved gut microbiota, indicating strong convergence between traditional Ayurvedic wisdom and emerging biomedical research.²⁰ Ayurveda also emphasizes personalization of diet based on Prakriti (constitution), season (Ritu), age, and concurrent health conditions. This individualized approach is relevant today as public-health nutrition shifts toward precision nutrition models. For example, Vata-predominant individuals may require warm, unctuous, easily digestible foods to counter tissue depletion, Pitta types benefit from cooling, sweet, and stabilizing foods, Kapha types may show better outcomes with light, digestive-enhancing foods even in undernourished states due to sluggish metabolism. In children, pregnant women, postpartum mothers, and the elderly, specific Ayurvedic guidelines address unique physiological needs. For instance, milk- and ghee-based preparations enriched with Shatavari or Yashtimadhu support lactation and nutritional recovery; Kushmanda and Draksha formulations build strength in pediatric populations; and light, digestible Rasayana foods benefit elderly individuals with diminished digestive capacity.²¹

Despite its strengths, Ayurvedic nutrition research faces challenges such as variability in traditional formulations, lack of standardization, limited large-scale clinical trials, and insufficient integration with national nutrition programs. Bridging these gaps requires collaborative research models, validated nutrient profiling of Ayurvedic foods, and well-designed trials that investigate both clinical outcomes and mechanisms of action. Leveraging Ayurveda in community-based nutrition programs may also increase cultural acceptance and compliance, especially in rural populations where malnutrition is highly prevalent.²² Overall, the integration of Ayurvedic dietary strategies with modern evidence-based nutrition has strong potential to improve outcomes in both acute and chronic malnutrition.

CONCLUSION

Ayurveda offers a rich, multidimensional perspective on malnutrition that emphasizes not only food quantity but also digestive capacity, metabolic harmony, and tissue nourishment. Through principles such as Deepana-Pachana, Brimhana, and

Rasayana, Ayurveda outlines a stepwise, individualized, and sustainable approach to nutritional rehabilitation. These strategies align closely with modern scientific understanding of gut health, metabolic restoration, and immune modulation, highlighting valuable opportunities for integrative practice.

The review demonstrates that classical Ayurvedic foods such as medicated gruels, milk preparations, nutrient-dense porridges, and ghee-based formulations are effective nutritional supplements capable of promoting weight gain, enhancing digestion, and rebuilding depleted tissues. Rasayana herbs further contribute to recovery by improving immune function, resilience, and overall vitality. Such interventions are cost-effective, culturally acceptable, and feasible for use in resource-limited settings. While contemporary research increasingly supports the therapeutic potential of Ayurvedic nutrition, more robust clinical trials and standardized protocols are required to validate traditional formulations and facilitate their incorporation into public health strategies.

Integrating Ayurvedic dietary principles with modern nutrition programs may provide a more comprehensive and holistic solution to the persistent challenge of malnutrition. In conclusion, Ayurveda based dietary strategies represent a promising complement to conventional nutritional therapy, offering individualized, metabolically balanced, and restorative approaches to the prevention and management of malnutrition. With further scientific validation and policy support, Ayurveda could play a significant role in improving global nutritional outcomes and advancing integrative nutrition care.

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