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## Ayurvedic Insights Into Marasmus: Pathophysiology, Management, And Prevention

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### Abstract

Marasmus is a severe form of protein–energy malnutrition that primarily affects infants and young children. In Ayurveda, this condition resembles Bal Shosha or Karshya, arising due to poor digestion (Agnimandya) and deficiency of tissue nutrition (Dhatu Kshaya). This paper explores Ayurvedic and modern perspectives of pathophysiology, management, and prevention of Marasmus. Ayurvedic therapies such as Brimhana (nourishing), Rasayana (rejuvenation), and Agnideepana (digestive stimulation) play a crucial role. Nutritional management with Shatavari, Ashwagandha, and Yashtimadhu along with Panchakarma procedures like Abhyanga and Swedana are found beneficial. Preventive measures include exclusive breastfeeding, proper weaning, and maternal nutrition. Integration of Ayurvedic and modern practices can significantly reduce childhood malnutrition <sup>1,2,3</sup>.

### Keywords:

Marasmus, Bal Shosha, Karshya, Ayurveda, Malnutrition, Brimhana, Rasayana

### 1. Introduction

Marasmus is a chronic nutritional disorder resulting from severe deficiency of both protein and calories. Children below five years are most vulnerable, leading to muscle wasting, growth failure, and weakness (4). According to WHO, malnutrition remains a major cause of morbidity and mortality in developing countries. In Ayurvedic texts, similar features are described under Bal Shosha and Karshya, primarily due to Agnimandya and insufficient nourishment of Dhatus <sup>5,6</sup>. Ayurveda emphasises maintaining digestive fire, adequate diet, and Rasayana therapy for prevention and management.

### 2. Literature Review

Ayurveda defines health as a balance of Dosha, Dhatu, Mala, and Agni. When Agni weakens, food is not properly digested and nutrients fail to nourish tissues, resulting in Karshya or Bal Shosha<sup>7</sup>. Charaka and Sushruta highlight the importance of maternal nutrition, breast milk quality, and early childhood diet <sup>8,9</sup>.

Modern medical literature explains marasmus as a consequence of chronic energy deficiency, where both fat and muscle stores are depleted <sup>10,11</sup>.

3. Pathophysiology

Ayurvedic Samprapti

Agnimandya → Improper digestion → Rasa Dhatu Kshaya → Mamsa Dhatu Kshaya → Karshya / Bal Shosha → Clinical features of Marasmus such as emaciation, weakness, and low immunity<sup>12</sup>.

Modern Pathophysiology

Protein-Calorie Deficiency → Fat & Muscle Breakdown → Weight Loss → Metabolic Slowdown → Infection Risk ↑ → Marasmus.

Prolonged calorie and protein deficiency leads to mobilisation of fat and muscle proteins for energy. Decreased serum albumin and glucose levels cause wasting, immunosuppression, and delayed growth<sup>13</sup>.

Table 1: Comparison of Marasmus in Ayurveda and Modern Medicine

Ayurvedic	Modern
Bal Shosha / Karshya due to Agnimandya and Dhatu Kshaya	Protein-energy malnutrition from inadequate calorie intake
Protein-energy malnutrition from inadequate calorie intake	
Dhatu Kshaya (tissue depletion), emaciation, and low Ojas	Loss of subcutaneous fat, muscle wasting, growth failure
Management through Brimhana, Rasayana, and Agnideepana	Nutritional rehabilitation and infection management

4. Management

Ayurvedic management focuses on nourishing and rejuvenating therapies<sup>14</sup>. The treatment principles include:

- Aahara (Diet): Milk, ghee, rice gruel, mudga yusha, fruits.
- Aushadha: Shatavari, Ashwagandha, Yashtimadhu, Draksha avaleha.
- Panchakarma: Abhyanga with Bala taila, mild Swedana, Nasya with ghee.
- Modern Supportive Care: Balanced diet, micronutrient supplementation, infection control <sup>15</sup>.

5. Prevention

Exclusive breastfeeding for six months, maternal nutrition, timely weaning, hygiene, and community education are essential for prevention. Awareness programmes and integration of Ayurvedic dietetics can reduce incidence.

6. Discussion

The Ayurvedic approach to marasmus combines digestive correction and tissue nourishment. Brimhana and Rasayana therapies strengthen immunity and aid recovery. Integrative management with modern nutritional care enhances outcomes, particularly in resource-limited settings.

7. Conclusion

Marasmus is a preventable and treatable condition. Ayurvedic concepts such as Agnideepana, Brimhana, and Rasayana offer a holistic method for restoring health. Collaboration between modern paediatrics and Ayurveda can create comprehensive community-level strategies.

**Declarations**

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