

**A NUTRITIONAL DEFICIENCY: AYURVEDA PERSPECTIVES**

<sup>1</sup>\*Dr. Kavita Gange, <sup>2</sup>Dr. Mahesh Jadhav and <sup>3</sup>Dr. Vikram Shelavale

PG Scholar Balrog Department, Ashwin Rural Ayurveda College and Hospital, Manchi Hills,  
Sangamner, Maharashtra.

Guide, Associate Professor Balrog Department, Ashwin Ayurveda College and Hospital,  
Manchi Hills, Sangamner, Maharashtra.

Assistant Professor, Balrog Department, Ashwin Ayurveda College and Hospital, Manchi  
Hills, Sangamner, Maharashtra.

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**\*Corresponding Author**

**Dr. Kavita Gange**

PG Scholar Balrog  
Department, Ashwin Rural  
Ayurveda College and  
Hospital, Manchi Hills,  
Sangamner, Maharashtra.

**ABSTRACT**

Ayurveda is mainly based on preventive aspect first rather than curative. Aahara (Food) is considered as the first pillar among three Nidra and Abrahmacharya being other two. Many common health problems can be prevented through nutritious diet. Food is important as a nutritional source, also with therapeutic value and most importantly it plays a vital role during the post treatment period in regaining the diminished strength due to the harmful effect of the disease. Nutrition is major concern for the mankind. Food determines body condition right from the womb to tomb; it is main source of energy. Abnormal nutrition may cause both over and under nutrition hazards. It causes more than half of the nearly 11 million deaths each year among children under age five. Nutritional deficiency disorders are viewed under Apatarpanajanya vyadhis. Nutritional disorders are described in scattered manner in Ayurveda texts. Ancient Acharyas

explained diseases related to nutritional deficiency such as Phakka, Parigarbhika, Balashosha etc in different samhitas. This paper highlights Ayurvedic perspective of nutritional deficiency related disorders.

**KEYWORDS:** Apatarpanajanya vyadhis, nutritional deficiency disorders, phakka, pargarbhika, bala shosha, Shushka revati.

## INTRODUCTION

Nutrition is major concern of the mankind. Abnormal nutrition causes over or under nutrition hazards among them nutrition deficiency disorder is one. Nutrition deficiency is such a condition where children fail to maintain natural body capacities such as growth, resisting power to infections as well as recovering from disease, learning and physical activities. As per WHO poor feeding of infants and young children resulting in under nutrition is; “The single most important risk factor for diseases”. It has a role in more than half of the nearly 11million deaths in each year among children under five.<sup>[1]</sup> Nutritional deficiency disorders are viewed under Apatarpanajanya vyadhis.

Based on severity and etiology they may be considered as Karshya, Phakka, Parigarbhika and Balashosha. Food (Aahara) is one of the three sub-pillars of life as per Ayurvedic classics.<sup>[2]</sup> Indian traditional medicine has incorporated various explanations regarding this vital pillar of life. The transforming unit from 'food' into nutrition is termed as 'Agni' or digestive fire, which forms the edifice upon which the Ayurvedic system is built<sup>3</sup>. According to Acharya Charaka over lean (Atikrushya) persons are described under eight despicable persons (Ashtau-ninditiya Purusha).

In the field of pediatrics there are so many disease which have no or limited answers in the contemporary medical science. Growth and development is a physiological process provided all factors influencing them are healthy.

### Nidana (Etiology)

The etiological factors of Nutritional deficiency disorders can be broadly classified under 3 separate headings.

#### Aharaja

**Quantitative:** Alpashana (Less food intake), Pramitashana (intake of nutritionally deficient food), Anashana (absolute no food intake), Langhana (Fasting).

**Qualitative:** Ruksha Annapana (food which causes dryness) excessive intake of Kashaya (Astringent), Alpa Bhojana (inadequate food) and Katu (spicy) and Tikta (Bitter) Rasa.

**Viharaja:** Shararika: Kriya atiyoga (Excessive purification therapies), Ativyayam (excessive exercise), Malamutradi nigraha (Suppression of natural urges), Atiadyayana (excessive learning), Vata sevana (excessive exposure to wind), Atapa sevana (Excessive exposure to sunlight), Atibhargamana (Child labour).

**Manasika:** Ati krodha (anger), Ati chinta (worry), Ati bhaya (fear).

**Others:** Ksheeralasaka (lactose intolerance / milk protein allergy), Anatha (Orphans), Krimi (Worm infestation), Grahani (Inflammatory Bowel disease), Visuchika (Infective Diarrhoea), Vatika prakriti (Body constitution), Chirakalina vyadhi (Chronic debilitating disease) and Anatha (Orphans).

**Samprapti ( Pathogenesis of disease):** Those who indulge in Vata promoting diet, physical exercise, strenuous study, anxiety, wakefulness in night, thirst, hunger, taking of astringents, partial starvation etc., circulating Rasa being reduced in quantity fail to nourish the tissue due to insufficiency; hence extreme Nutritional Deficiency Disorders occurs<sup>4</sup>

### Diagrammatic presentation of Samprapti

Receive etiological factor diet and physical work

(Nidana Sevana – Vata vardhaka Aahara-Vihara)

Vitiation of Vata Agni Dusti Formation of Ama

Dhatu Kshaya

Inadequate Rasa Dhatu and improper absorption due to formation of Sama ahara



Shoshita Rasadhatu

(Fail to nourish tissue due to insufficiency)



Under nourish Rasadhatu (Shushka) circulate in whole body



All Dhatu or tissue not gets nourishment due to Alpa Shushka Rasadhatu



Nutritional Deficiency Disorders

Factor involve in pathogenesis of Nutritional Deficiency Disorders (Samprapti Ghatak):

Dosha –

Vata, Dushya – Rasa, Srotas – Rasavaha, Srotodushti – Sanga, Adhishthana – Pakvashaya,

Vyaktisthana –Whole body.

Complication of Nutritional Deficiency Disorders: The lean person becomes a victim of spleen (enlargement), cough, wasting, dyspnea, gaseous tumour, piles, abdominal disease, and the disease of Ghrahani (Gastro-intestinal track).

Balshosha and Kshiraj Phakka (Marasmic Kwashiorkor) Balshosha<sup>[5]</sup> and Ksheeraj phakka<sup>[6]</sup> are nutritional deficiency disorders mentioned by two different authors. The causes of Balshosha are Shlaishmika anna sevana (Excessive energy dense food), Shitambu (cold liquid items) and diva swapna (excessive day sleep) done over period leads impairment of Agni further leading clinical features of Arochaka (reduced digestive capacity), Pratishyaya (Running nose), Jwara (fever) and Kasa (Cough); these conditions if not detected early may lead to Shosha (Emaciation) Marasmic Kwashiorkor. In Ksheeraj phakka intake of Shlaishmika dughdha leads to Agni dushti results in Bahuvyadhi (Infectious disease) and Kshaya (Failure to thrive). Karshya and Underweight: Karshya is under nutrition condition resulting from less intake<sup>[7]</sup>, Vatadushta stanya<sup>[8]</sup> or secondary to debilitating disorder where child becomes undernourished.

Vyadhi Sambhavaja Phakka (Diseases Leading to Karshya) Vyadhija Phakka<sup>[9]</sup> is malnutrition condition resultant of chronic diseases like Prameha, Grahani, Graha roga etc. On the whole Vyadhija phakka refers to severe forms of malnutrition. Shushka sphik (wasting of buttocks), Shushka bahu (wasting of Upper limbs), Shushka uru (wasting of thighs), Mahodara (Pot belly), Mahoshiro (head appears big) due to relatively wasting in body parts, Nischeshta adho kaya (inability to walk) etc. represents grades of Marasmus. Prameha being spectrum of metabolic disorders where Dhatu sara (essential nutrients) is lost. As it happens in Glycosuria, Phenyl-ketone-urea, Albumin-urea thus child develops specific deficiency leads to life threatening condition if not managed properly. Similarly diseases due to Grahani vikara's, Graha dushti (debilitating infections) shall also land up in nutritional deficiency disorders.

Parigarbhika / Garbhaja Phakka (Kwashiorkor) Abrupt stoppage of breast milk or child on feeding breast milk of pregnant women which has Alpa poshakansha (poor nutrients) leads to parigarbhika / Garbhaja Phakka condition presents with Kasa (cough), Agnisada (impaired digestive fire), Vamathu (vomiting), Tandra (stupor), Jwara (fever), Aruchi (anorexia) and Koshta vrudhhi (pot belly).<sup>[10]</sup>

**Shuska Revati:** Shushka revati one of Graha (Demon) affecting the child represents infectious spectrum of diseases resulting Sarvanga kshaya (Emaciation). In this child though fed with enough quantity of high quality food ends up in malnutrition. When it becomes chronic child presents with Anna dwesha (aversion to food), Vivarnata (loss of lustre) Nanavidha shakrita (variegated colour stools), Udara granthi (abdominal nodular swellings),

Jihvayanimnata (geographic tongue). Child shows progressive emaciation at the outset the clinical condition which can be correlated with abdominal tuberculosis.<sup>[11]</sup>

### **Failure to thrive**

Failure to thrive (FTT) is a descriptive term rather than diagnosis and is used for infants and children up to five years of age whose physical growth is significantly less than their peers same age and sex. The children present with poor growth, often associated with poor development and cognitive functioning. The degree of Failure to thrive (FTT) is usually measured by calculating weight, height and weight-for-height as percentage of the median value for based on appropriate growth chart.<sup>[12]</sup>

**Protein Energy Malnutrition (PEM):** The World Health Organization (WHO) defines PEM as range of pathological condition arising from coincidental lack in varying proportion of protein and calories, occurring most frequent in infants and young children, and commonly associated with infection.<sup>[13]</sup>

**Marasmus:** It is characterized by marked wasting of fat and muscle as these are consumed to make energy. The main sign is severe wasting the child appears very thin (skin and bones) and has no fat. There is severe wasting of shoulder, buttocks and thighs. The loss of buccal pad of fat creates the aged or wrinkled appearances that have been referred to as monkey faces. Baggy pants appearances refer to loose skin of the buttocks hanging down. Axillary pad of fat may also be diminished. Affected children may be alert in spite of their condition. There is no edema.

**Kwashiorkor:** It usually affects children aged 1-4 years. The main sign is pitting edema. Child may have a fat sugar baby appearance. Edema ranges from mild to gross and may represent up to 5-20% of the body weight. Muscles wasting always present and child unable to stand or walk. The skin lesion consists of increased pigmentation, desquamation and dyspigmentation may be confluent resembling flaky paint or in individual enamel spots. Petechiae may be seen over abdomen. Smooth tongue, cheilosis and angular stomatitis, Herpes simplex stomatitis also be seen in kwashiorkor. A flag sign which are the alternate bands of hypopigmented and normally pigmented hair pattern is seen when the growth of child occurs in spurts. Hairs lose their luster and are easily pluckable. Mental changes include unhappiness, apathy or irritability with sad, intermittent cry. Neurological changes seen during recovery. Anorexia, vomiting, abdominal distention, and stool may be watery or

semisolid, bulky with low pH and may contain unabsorbed sugars. Anemia present as in mild PEM but with greater severity. Prolong circulating time, bradycardia, diminished cardiac output and hypotension is seen in kwashiorkor. Glomerular filtration and renal plasma flow are diminished.

### Principles of Management

Etiological factors should be avoided because this Nidana Parivarjana<sup>[14]</sup> has two fold benefits. Being a prophylactic measure, further progression of disease can be halted. The other aspect is in future relapse of the same disease can be prevented. Proper application of Samshodhana (Purification therapy), Samshamana (Conservative therapy), Diet and lifestyle are helpful in preventing, controlling as well as eradicating the condition.

### Chikitsa

With above said perspectives we can conclude that nutritional disorders are either due to Agnimandya and Dhatukshaya. Hence principles of treatment shall be on the lines of Agnidipana, Brimhana, Dhatusara vardhana. If complicated with features like inability to walk, speech, Irritability and others, respective treatment should be adopted with mild purification measures to enhance the quality of absorption and assimilation. For this Haritaki churna (powder form of fruits of Terminalia chebula), Trivrutta kshira (roots of Operculina turpethum boiled in milk), Draksha rasa (Vitis vinifera fruit juice) can be used judiciously. Further one can use Aravindasava, Rajanyadi churna, Kushmanda avaleha, Amritaprasha ghrita, Pippalyadi Ghrita, Kalyanaka ghrita, Chyavanaprsha for Dhatu sara vardhana. Therapies like mild Udavartana (dry powder massage), Abhyanga (oil massage), Shastika shali pinda sweda (sudation therapy with bolus of cooked rice), Basti (medicated enema), Shirodhara (procedure of slowly and steadily dripping medicated oil or other liquids on the forehead) to stimulate child and to rehabilitate. Care should be taken to avoid factors which can predispose for nutritional deficiency disorders.

### Pathya

Daily diet should include all components of diet; protein, fat, carbohydrates and minerals<sup>[15]</sup> Vihara includes various preventive as well as rehabilitative measures.

### DISCUSSION

Nutritional deficiency disorders are described in scattered manner in Ayurvedic text. A systematic study of these conditions provide insight in to hazards of nutritional deficiency

and represents different aspects of Nutritional deficiency disorders and proper understanding of pathogenesis of the conditions provides valuable key for the effective management.

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