



IMPORTANCE OF NUTRITION IN PREGNANCY: AN INTEGRATIVE APPROACH

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ABSTRACT

A mother is the nurturing vessel for foetus. Proper nutrition and diet are vital in meeting the increased metabolic demand during pregnancy. Adequate and balanced nutrition intake fulfils nutritional needs of pregnancy and supports garbhini shareera for the physiological changes and reduces the risk of complications such as gestational diabetes, pre-eclampsia, IUGR and low birth weight of the foetus. The WHO estimates that approximately 15-20% of pregnancies are affected by nutritional deficiency. In India, about 49.4% pregnancies are complicated, where unbalanced nutrition and diet is the major cause which can lead to adverse maternal-neonatal morbidity and mortality. Ayurveda emphasize the significance of hita and satmya ahara in the form of nutrition, tailored to prakriti and condition of each individual.

Ayurvedic approach to plan and ensure that mother and the foetus get all the essential nutrition for the safe pregnancy and meet all the needs throughout pregnancy. Addressing nutritional needs and proper diet during pregnancy through a combination of ayurvedic guidelines and wisdom can significantly improve maternal- foetal health. Emphasizing both preventive and promotive healthcare, this integration model aims to optimize maternal and foetal outcomes. Also, collaborative efforts among medical practitioners to educate and support pregnant women in nutrition lead to healthier pregnancies.

KEY WORDS: Ahara, Ante-Natal Nutrition, Pathya, Congenital Anomalies, Garbhini Paricharya

INTRODUCTION

The foundation of a healthy life course for an offspring is largely laid during the prenatal period, making maternal nutrition a pivotal determinant of pregnancy outcomes and long-term health.¹ Optimal nutrient intake is essential not only to meet the increased physiological demands of the mother but also to support the rapid growth and development of the foetus, including organogenesis and brain development.² Deficiencies in key micronutrients, such as folate, iron, and iodine, are globally recognized public health concerns that significantly increase the risk of severe complications.³ Improper maternal nutrition - ranging from undernutrition to excessive weight gain - is strongly associated with adverse outcomes, including intrauterine growth restriction (IUGR), low birth weight, preterm birth, preeclampsia, and higher rates of congenital anomalies.³ Furthermore, it has long-term implications, contributing to non-communicable diseases (NCDs) like diabetes and cardiovascular disease in the adult life of the child, a concept underpinned by the Developmental Origins of Health and Disease (DOHaD) hypothesis.⁴

In parallel to modern nutritional guidelines, traditional medical systems offer comprehensive frameworks for maternal care. Ayurveda, the ancient Indian system of medicine, details a holistic regimen known as Garbhini Paricharya (antenatal care), which emphasizes lifestyle modifications, specific physical activities, and, most importantly, Pathya Ahara (wholesome and prescribed diet).⁵ The Ayurvedic texts (Samhitas) meticulously

outline month-wise dietary guidelines to ensure the nourishment of the mother's *Dhatu*s (tissues) and the sequential development of the fetus.⁶

While modern nutritional science provides quantitative data on caloric and micronutrient requirements, the Ayurvedic Pathya Ahara offers a qualitative, culturally relevant, and time-tested approach. The need for this manuscript, therefore, is to integratively analyse the traditional Ayurvedic *Garbhini Pathya Ahara* - as discussed in the classical Samhitas - and scientifically validate its components. By assessing the Ayurvedic recommendations through the lens of modern nutritional biochemistry and evidence-based requirements, this paper aims to demonstrate the nutritional balance and inherent sophistication of the Pathya Ahara. This comparison will highlight how the integration of both systems can complement contemporary antenatal nutritional counselling, thereby offering a more holistic and effective approach to maternal care.

MATERIALS AND METHODS

Relevant Ayurvedic texts were searched for classical advice of nutrition and diet of pregnant women throughout the pregnancy and the same has been provided below:

Ayurveda is a highly developed philosophy stemming from a very evolved civilization. This system conceptualized a vibrant society composed of a healthy population, which they termed Supraja (healthy citizens). To achieve this eugenic objective, a dedicated regimen for pregnant women, known as *Garbhini*



Paricharya (antenatal care), was advocated. The Charaka Samhita states the profound result of adherence: "*Evam Kurvati Varnasamvahana Hi Arogarogya Bala Sampadam Upetam Jnatinam Shreshtam Apatyam Janayati*," meaning that if a pregnant woman is cared for as advised, she will give birth to a child who is free from disease, healthy, physically strong, radiant, and well-nourished⁷.

Regimen for First Month of Pregnancy

Acharya Charaka directs that from the very first month, upon suspicion of conception, the woman should repeatedly take milk in a quantity suitable to her digestive power and strength. She should also consume *Pathya* and *Satmya Ahara* (favourable diet) in the morning and evening⁸. Acharya Sushruta, meanwhile, generally advises a sweet, cold, and liquid diet from the first to the third month⁹. Ashtanga Sangraha recommends taking medicated milk timely, based on digestive capacity, both morning and evening. For the first 12 days, specifically, ghee extracted from milk and medicated with *Shaliparni* (*Desmodium gangeticum* DC.) and *Palasha* (*Butea monosperma*) is advised. Water boiled with gold and silver should be given as a cooled after-drink. Sweet, cold, liquid, and congenial diet should be consumed twice daily. Oil massage and unguent rubbing should be avoided¹⁰. Harita advises taking drugs like *Yasthimadhu* (*Glycyrrhiza glabra* Linn.), *Parushaka* (*Grewia asiatica* Linn.), and *Madhukapushpa* (*Diploknema butyracea* Roxb.) with butter and honey, followed by sweetened milk¹¹.

Regimen for Second Month of Pregnancy

Acharya Charaka and Vagbhata advised the intake of milk medicated with Madhura (sweet) drugs¹². Sushruta prescribed following the same regimen as the first month¹³. Harita suggests sweetened milk treated with *Kakoli* (*Roscora prcera* Wall.)¹⁴

Regimen for Third Month of Pregnancy

Acharya Charaka and Vagbhata advised consuming milk with honey and ghee.¹⁵ Sushruta's advice remains sweet, cold, and liquid diet, with a specific mention of cooked Shasti rice with milk.¹⁶ Harita advised *Krushara* (a preparation of rice and pulses).¹⁷

Regimen for Fourth Month of Pregnancy

Acharya Charaka advised taking 10g of butter extracted from milk or milk mixed with butter.¹⁸ Sushruta's regimen included Shasti rice with curd, dainty and pleasant food mixed with milk and butter, and meat of wild animals.¹⁹ Vagbhata recommended milk with 10g of butter.²⁰ Harita advised medicated cooked rice.²¹

Regimen for Fifth Month of Pregnancy

Acharya Charaka and Vagbhata advised consuming ghee prepared with butter extracted from milk.²² Sushruta recommended Shasti rice with milk, meat of wild animals, along with dainty food mixed with milk and ghee.²³ Harita advised *Payasam* (rice cooked with milk and sugar).²⁴

Regimen for Sixth Month of Pregnancy

Acharya Charaka and Vagbhata advised taking ghee extracted from milk and medicated with drugs of the Madhura (sweet) group.²⁴ Sushruta advised ghee or rice gruel medicated with

Gokshura (*Tribulus terrestris*).²⁵ Harita advised the use of curd in the sixth month.²⁶

Regimen for Seventh Month of Pregnancy

Acharya Charaka and Vagbhata advised following the same regimen as the sixth month.²⁷ Sushruta advised taking ghee medicated with Prithakparnyadi (Vidarigandhadi) group of drugs.²⁸ Harita advised the use of *Ghritakhanda* (a sweet dish).²⁹

Regimen for Eighth Month of Pregnancy

Acharya Charaka stated that rice gruel prepared with milk and mixed with ghee should be given.³⁰ Sushruta prescribed Asthapana Basti (evacuative enema) for clearing retained feces and *Anulomana* of *Vayu* (regulating *Vata* in the right direction). The enema decoction included *Badara* (*Ziziphus jujube* Lam.) mixed with *Bala* (*Sida cordifolia*), *Atibala* (*Abutilon indicum*), *Shatapushpa* (*Pimpinella anisum*), *Palala* (pestled sesame seeds), milk, curd, *Mastu* (sour butter), oil, salt, *Madanaphala* (*Randia dumetorum*), honey, and ghee. This was followed by an unction enema of oil medicated with milk and a decoction of sweet group drugs. Subsequently, the woman should be given unctuous gruels and meat soup of wild animals.³¹ Ashtanga Sangraha combined Charaka and Sushruta's descriptions, advising soft rice mixed with ghee extracted from milk. He noted that the enema should be administered in a bent or humpbacked position to dilate the passage for proper medicine entry.³² Ashtanga Hridayakara advised a liquid diet prepared with ghee and milk, and an unction enema with ghee and sweet drugs to clean collected feces, followed by a decoction enema with *Badari* and sour substances mixed with pestled *Shatapushpa*, ghee, oil, and rock salt.³³ Harita advised the use of *Ghritapuraka* (a kind of sweet preparation).³⁴

Regimen for Ninth Month of Pregnancy

Sage Charaka and Vagbhata advised the use of unction enema with oil prepared with sweet group drugs (or the same as used in the eighth month). A Vaginal Tampon of the same oil should be given for lubrication of *Garbhasthana* (cervix) and *Garbhamarga* (vaginal canal and perineum).³⁵ Ashtanga Hridayakara prescribed meat soup with cooked rice and fat (preferably ghee) or rice gruel mixed with a good quantity of fat. *Anuvasana Basti* (unction enema) and vaginal tampon, as advised in the eighth month, should be continued. Daily bath with decoctions prepared from *Vata*-suppressing drugs should be given. He specified that unction enema should not be given for the entire ninth month to women who lack unctuousness in the body, or in other words, unctuous enema should only be administered after prior use of oleation therapy.³⁶ Harita opined that different varieties of cereals should be used in the ninth and tenth months.³⁷

According to Modern Medicine

Modern medicine's approach to pregnancy nutrition is grounded in evidence-based research, focusing on specific macronutrient and micronutrient requirements to support optimal foetal development and maternal health across all nine months. The general dietary advice emphasizes consuming a balanced diet rich in whole grains, lean proteins, fruits, vegetables, and healthy fats.³⁸



Calorie needs remain stable during the first trimester (Weeks 1-13). However, to support foetal growth, an increase of approximately 340 kcal/day is typically recommended starting in the second trimester, rising to about 450 kcal/day in the third trimester.³⁹ Adequate hydration (8-12 glasses of water daily) is also crucial for increased blood volume and nutrient transport.

Key nutrients requiring focused attention and often supplementation throughout the entire pregnancy include:

- **Folic Acid (Folate):** This is essential for preventing Neural Tube Defects (NTDs), particularly in the critical first 28 days post-conception.⁴⁰ Supplementation of 400-800 mcg/day is strongly recommended, ideally beginning before conception and continuing throughout the first trimester. Dietary sources include fortified cereals, dark leafy greens, and lentils.
- **Iron:** The requirement significantly increases to 27 mg/day to support the expansion of maternal red blood cell mass and supply the foetus and placenta.⁴¹ Deficiency can lead to maternal anaemia and increase the risk of preterm birth and low birth weight. Iron is sourced from lean red meat, poultry, fortified cereals, and beans.⁴²
- **Calcium and Vitamin D:** Calcium (1000 mg/day) is vital for foetal skeletal development. Vitamin D is essential for calcium absorption and bone health, and supplementation is often required, especially for those with limited sun exposure.^{43,44}
- **Protein:** Increased intake (an average of 25 g/day over non-pregnant needs) is necessary to support the rapid growth of the foetus, placenta, and maternal tissues.
- **DHA (Docosahexaenoic Acid):** This Omega-3 fatty acid is vital during the second and third trimesters for foetal brain and retinal development. Pregnant women are advised to consume low-mercury fish (like salmon) or take supplements (around 200 mg/day).⁴⁵

Modern guidelines also issue strict cautions against consuming raw or undercooked meats, unpasteurized dairy, and high-mercury fish (such as shark or swordfish) due to the risk of bacterial contamination (e.g., *Listeria*) or foetal toxicity. Caffeine intake should also be limited to less than 200 mg/day. This evidence-based approach aims to mitigate risks and ensure the best possible health outcomes for both mother and child.⁴⁶

DISCUSSION

The nutritional recommendations for pregnant women, as outlined in the ancient Ayurvedic texts and modern allopathic

medicine, share a fundamental goal: ensuring the health and optimal development of both the mother and the foetus. While modern guidelines focus on quantifiable nutrients and caloric intake, the Ayurvedic approach, defined by *Garbhini Paricharya*, offers a holistic, time-tested framework emphasizing food quality, digestibility, and lifestyle.⁴⁷ A comparative analysis reveals significant areas of alignment, highlighting the relevance of the Ayurvedic approach even today.

Ayurvedic Nutritional Guidelines (*Garbhini Paricharya*)

Ayurveda conceptualizes the foetus (*Garbha*) as receiving its nourishment from the mother's Ahara Rasa (digested food essence), which performs three functions: nourishing the mother, forming breast milk, and nourishing the foetus. The regimen is meticulously structured month-wise, focusing on substances that are easy to digest, promote growth, and are *Vata* and *Pitta* pacifying.⁴⁸

The cornerstone of the diet is the frequent use of *Ksheera* (Milk), often medicated with *Madhura* (sweet) group drugs, ghee, and honey [16, 19]. This practice is dominant across the first seven months.⁴⁹

- **First Trimester (Months 1-3):** Focus is on simple, liquid, cold, and sweet foods, primarily milk, rice gruel, and medicated ghee. This aids nutrient absorption during the period of potential nausea and supports the establishment of the pregnancy.
- **Second Trimester (Months 4-6):** As the mother begins to perceive foetal movements (*Dauhridya*), the focus shifts to including butter, ghee and nourishing rice preparations (*Shasti Shali*), sometimes accompanied by meat soup of wild animals. The use of medicated ghee (*Ghrta*) in the sixth month with *Madhura* drugs aims to promote *Ojas* (vitality) and maintain unctuousness.
- **Third Trimester (Months 7-9):** The emphasis shifts to preparing the reproductive tract for delivery. While nourishing foods continue, procedures like *Anuvasana Basti* (oil enema) and vaginal oil tampons (*Pichu*) using sweet drug-medicated oil are prescribed to lubricate the *Garbhamarga* (birth canal) and pacify *Vata Dosha*, which governs movement and labor.⁵⁰

Modern Nutritional Guidelines

Modern medical recommendations are quantitative, driven by physiological increases in metabolic demands.

Nutrient	Modern Rationale	Ayurvedic Parallel
Protein (↑ 25g/day)	Required for foetal tissue and placental growth.	Found in prescribed milk, ghee and meat soups.
Calcium & Vit D (1000 mg/day)	Essential for foetal skeletal development.	Milk and ghee are primary sources of highly bioavailable Calcium and Vitamin D.
Iron (↑ 27 mg/day)	Needed for maternal erythropoiesis and preventing anaemia.	Wild animal meat soup (prescribed by Sushruta) provides highly absorbable Heme iron.
DHA/Fats	Crucial for foetal brain and eye development.	Ghee (clarified butter), a primary dietary component, is a dense source of necessary saturated and healthy fats.
Folic Acid	Prevents Neural Tube Defects (NTDs).	Legumes and leafy greens (components of <i>Pathya Ahara</i>) are natural sources.



Alignment and Relevance⁵¹

The overlap between the two systems is striking, particularly regarding the focus on macronutrients

- **Protein and Calcium:** The continuous and significant recommendation of **milk and milk products (ghee, butter, curd)** in the Ayurvedic regimen directly addresses the modern requirement for high **Calcium** and high biological value **Protein**. Milk is highly recommended because it is *Sheeta* (cold) and *Madhura* (sweet), helping to balance *Pitta* and *Vata* while being easy to digest.
- **Fat/Energy Density:** The constant inclusion of **Ghee** (clarified butter) and **butter** in the Ayurvedic diet aligns perfectly with the modern need for increased **caloric density** and **healthy fats** (essential fatty acids and fat-soluble vitamins like A, D, E, K) necessary for rapid fetal brain and body development, especially from the fourth month onward.
- **Digestibility (First Trimester):** The modern recommendation for bland, small, frequent meals to manage nausea finds a parallel in the Ayurvedic focus on light, liquid, and easily digestible foods in the first month, which helps prevent digestive strain during the stabilization phase of pregnancy.
- **Holistic Care:** While modern medicine focuses on specific nutrients, Ayurveda incorporates a holistic view of care. Avoiding actions like oil massage and rubbing of unguents in the first trimester speaks to a caution against stimulating procedures early on. The late-term use of **Basti** and **vaginal oil tampons** is a preventative measure for easy delivery, addressing the mechanical and muscular aspects of childbirth, a concept modern medicine acknowledges through perineal massage recommendations.

CONCLUSION

In essence, the Ayurvedic *Garbhini Paricharya* provides a nutritionally sound, culturally compliant, and ecologically sustainable framework that naturally meets many of the quantified nutrient requirements prescribed by modern science. The integration of the traditional wisdom of Pathya Ahara with modern nutritional validation offers a comprehensive and deeply relevant model for antenatal care.

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