

A REVIEW ON INFLUENCE OF BREASTFEEDING ON MOTHER AND CHILD HEALTH

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ABSTRACT

Ayurveda is the ancient medical science enriched with plenty of references related to mother and child health. The strongest bond amongst mother and child is built during the process of breast feeding. Breast milk is the complete diet for every newborn and breast feeding is effectively necessary for mother as well as child. Human breast milk provides optimal nutrition for infants. Prevailing tendency of early weaning and using of formulated milk for infants causes significant health consequences in children even with long term impact on quality of life. This review is based on the Ayurveda texts and web sources to determine the merits of breastfeeding and impact of human milk and its substitutes on mother and child health in relation to the Ayurveda and modern concepts. The importance of breast milk is identified by Ayurvedic way of age classification of children as *Ksheerapa* and *Ksheeraannada* which based on their main diet respectively continue to be breast milk up to one year and up to 2 years who feeds on milk and semisolid foods. Ayurveda emphasizes the qualitative and quantitative characteristics of human breast milk, characteristics of *Dhatri*, methods of breast feeding and methods to enhance the quality of breast milk. Earlier breastfeeding is encouraged in Ayurveda which provides rich nutrient composition of colostrums to the infant. Sufficient amounts of nutrients, growth factors and immunity enhancers from human breast milk can sustain the life of a child. The lowered tendency to have diarrhea, asthma, childhood obesity and many infectious diseases and influence of *Dosha* on the nutrients of human milk were proven by the modern scientific findings regarding breastfeeding. Ayurveda advised to substitute human milk with Cow's milk or Goat's milk in a non-availability. Recent research findings support nutrients of these natural milk varieties as efficacious rather than the formulated milk. Thus, there is a need to promote exclusive breastfeeding as per Ayurveda for giving optimal nutrition and immunity to the child.

KEYWORDS: Ayurveda, Breastfeeding, Human milk, Nutrition, Mother, Child.

INTRODUCTION

Nutrition is the most important life saving component for each individual to sustain life. Every living being is dependent on food. Thus, Kashyapa Samhita explains the value of food as equal to medicine. The best way of accomplishing nutritional needs in early childhood is identified as-breastfeeding in modern medicine. Thus, modern medicine recommended exclusive breastfeeding up to the age of six months. Whatever the cause is omission of breastfeeding is severely affected to the health of the child. Ayurveda medicine, which is the science of the life, has its own concepts regarding the nutrition of the children. Ayurveda medicine has

identified the different food and beverage compositions during childhood on the basis of acquiring sufficient nutritional values in the respective ages of the childhood.

Major nutritional supplement to infants is considered as human milk. Although modern sciences and Ayurveda medicine emphasize on the importance of human milk in feeding of infants, prevailing circumstances due to competitive living styles lead to the emergence of the need of early weaning and focus to find substitutions to human milk especially as formulated milk. This causes health consequences among the children even as a long-

term negative impact on the quality of their lives in mother and child both.

Therefore, finding the influence of breastfeeding to the child based on the Ayurveda perspectives are a need of the society in both preventive and curative scopes through health.

Recommended duration of breast feeding by WHO and UNICEF

As per the WHO and UNICEF; early initiation of breastfeeding within one hour from birth, exclusive breastfeeding for 6 months of age, introduction of the safe complementary food after 6 months of age while continuing breastfeeding up to 2 years of age or beyond are recommended for the child.^[1]

Prevalence of non- practicing of exclusive breast feeding

Only around 44% of infants worldwide receive exclusive breastfeeding within the period of 2015- 2020. Over 820000 children's lives could be saved every year among children under 5 years, if all children 0- 23 months were optimally breastfed. Breastfeeding improves IQ, school attendance is associated with higher income in adult life.^[1]

Optimal nutrition in the first 2 years of the child's life minimizes the morbidity and mortality, risk of chronic diseases and fosters better development overall. Breast milk provides half or more of energy needs between 6-12 months of age and one third of energy needs between the

ages of 12- 24 months. Nutrition in breast milk reduce the mortality among malnourished children.^[1]

Because of the importance of breastfeeding WHO advised continual breastfeeding even in the Covid- 19 pandemic situation with safety measures.^[1]

Ayurveda view of human milk

Sthanya, *Nari Kshira* are the textual terminologies that are used in the Ayurveda medicine for human milk. Ayurveda medicine encompasses *Sthanya* as an *Upadhatu* of *Rasa Dhatu*. But Kashyapa Samhita explains *Sthanya* as a formation by *Rakta Dhatu*.

In comparison to modern medicine, there is a hormonal influence on breast milk formation. The essence of the food that is ingested by the mother is circulated to the infant and provides all the nutrient essentials to the infant to sustain the life. These are mediated by the liver and the red blood cells. *Yakrit* and *Pleeha* which are the roots of *Rakta Vaha Srotas* and *Hridya* and *Dasha Dhamani* which are the roots of *Rasa Vaha Srotas* shows the physiology behind breastfeeding in more equal to the modern concepts. Thus, the involvement of *Rasa Dhatu* and *Rakta Dhatu* in the formation of *Sthanya* can be explored with modern knowledge too. Other than this physical involvement in the formation of breast milk, there is a psychological influence on breast milk formation. Breast milk is a source of providing the essence of the nutrition from *Anna Rasa* of mother in a congenial and wholesome composition to the child.

Characteristics of Sthanya^[2,3,4]

Charaka Samhita ^[2]	Susruta Samhita ^[3]
Normal colour	Thin
Normal smell	<i>Shita</i>
Normal taste	Clean
Normal touch	Free from impurities
Mix evenly in water	<i>Shankhabha</i> (tinged like the hue of a conch shell)
	Sweet in taste
	Evenly mix in water
	Not produce froth or streaks when mix with water
	Neither floats nor sinks in water

The above mentioned characteristics are important in finding the suitability of the breast milk on feeding. With exception to these qualities *Sthanya* has been identified as unwholesome to the child.^[4] As per the Ayurveda concepts the *Panchabhautika* composition of the food and beverages ultimately nourishes the body and these characteristics are clues on the sufficiency of nutritional factors of human milk through its properties.

Benefits of Sthanya^[2,3,5,6]

Ayurveda medicine mentioned that the *Sthanya* is advantageous to the child in below mentioned aspects.

- *Pushtikara* (nourishes)
- *Arogya* (Provide good health)

- Growth and development
- Provide strength, longevity, not causing diseases to child

Colostrum

Major nutritional needs for sustain the life of the infant such as carbohydrates, proteins, fats such as lactose, cysteine, omega 2,6 fatty acids, amino acids minerals, vitamins and water are in the breast milk composition of human within the essential ranges that needs to optimal growth and development of the child.

Antibodies in Colostrum namely IGA, IgG and IgM; lactoferrin, lysozyme, polypeptide, lactoperoxidase give

an immune response to the child to develop innate immunity of the child.

As it consists of immunoglobulin, macrophages, lymphocytes, lysosomes, growth factors help to defend many infections. Thus, children may be free from some commonly found infectious diseases.^[7] Human milk causes an effective host defense mechanism by enhancing the immunologic system of the newborn. Therefore, it gives protection against infections and foreign agents. Immunomodulatory, anti-inflammatory effects of human milk are the factors contributing to providing this protection. Human milk modifies the gut microflora and causes the gastrointestinal mucosal maturation. Thus, it prevents the consequences of infections in children.

Protection against autoimmune diseases by improving immune system is also a benefit from the breastfeeding and previous researches are shown that early introduction of other milk increase the risk of type I and II diabetes.^[8]

Thought or sight about the child by mother and even the physical contact by touch causes it to activate the milk secretion. When the sucking is more by the child there is a stimulatory action on milk production.^[9]

Suppression of the breast milk flow can be associated in a case of a wet nurse or mother's anger, grief and devoid of affection to the child. In such incidences Ayurveda medicine has advised to make her in to the calmness at first and administered her with the diets including *Shali* rice, *Yava*, wheat, *Shashtika*, meat soup, wine, *Sauviraka*, sesamum paste, garlic, fish, *Kasheruka*, *Shrungataka*, lotus stalk, *Vidari Kanda*, *Madhuka* flowers, *Shatavari*, *Nalika*, *Alavu* and *Kala Shaka*.^[9]

This shows the psychological influence of milk formation. In comparison to the modern medical findings; the emotional stimuli cause carrying signals to the hypothalamus and initiate its cycle to start milk ejection. Prolactin and Oxytocin cause this milk ejecting enhancing and inhibitory cycles. Prolactin causes this milk secretion reflex and by the influence of psychogenic factors such as sucking, milk expression, night feeding. Incorrect position, painful breast, prolateral feeds are caused to inhibit milk secretion by inhibiting prolactin secretion.

Mother's affectionate on child thus causing to stimulate the oxytocin milk ejection reflex. Therefore, the thought, sight, and comfortability of the mother cause to stimulate the milk ejection while stress, pain like psychological discomforts affect as an inhibitory factor on milk ejection.^[8]

Dhatri (Wet nurse)^[5,6,9,10]

In the non availability of mother's milk for her child due to any reason Ashtaga Samgraha has been recommended to arrange the two wet nurses (*Dhatri*) to feed the child.

There is a thorough description on the qualities of such wet nurses. As this fulfills the need of continual breast feeding to the child to maintain the optimal growth and development of the child in both physical and psychological aspects, these qualities are important to achieve these scopes.

Similar cast (*Samana Varna*), middle stature, young (neither too old nor too young), modest, neither too thin or too corpulent, having a good character without irascible or excitable, not fickle, Similar Desha and Sub caste, non greedy, affectionate to the child, having sound health, protruded lips, having alive child, sufficiency of healthy and pure breast milk, breasts are not too much pendulant or drawn up, healthy skin without moles or stains, being free from crimes are mentioned as the qualities of the *Dhatri*.

Ayurveda medicine has not recommended feeding the child with many wet nurses as it can raise many diseases easily due to an uncongenial effect on the temperament of the child.^[9]

This is because the uncongenial and unhealthy food and beverages by wet nurses cause vitiate the *Dosha* (Body humors) which leads to derangement of the *Sthanya* also. Thus, there is an influence of mothers' behavior on the child. As a consequence of these theoretical explanations these are cause to increase the tendency for being ill for the child. Therefore, Ayurveda medicine has advised to apply suitable body purification therapies and *Sthanya Shodhana Vidhi* to restore the normalcy of *Tridosha* and breast milk respectively.^[9]

If the mother or the wet nurse is suffering from hunger (*Kshudha*), grief (*Shoka*), fatigued or with tiredness (*Shranta*), vitiated body tissues (*Dushta Dhatu*), in pregnancy (*Garbhini*), suffering from fever (*Jvara*), emaciation (*Kshina*), obese (*Atisthula*) who ingested with non- congenial and unhealthy diets are not suit to breastfeed to a child. The child whose recently ingested medicine is not assimilated should give breastfeeds to the child. These factors are caused to derange the body humors (*Dosha*) which ultimately result in vitiating the breast milk.^[5,9,10]

In comparison to the modern findings, the contraindications of breastfeeding are mentioned as suffering from septicemia, tuberculosis, typhoid fever, breast cancer, malaria, substance abuse, severe neuroses, psychoses, active HIV infection of mother and galactosemia of child. These contraindications are also having similarity with Ayurveda perspectives. As Ayurveda mentioned the causative factors rather than mentioning by the name of the disease; above mentioned contraindications should be understood with the concepts of *Samprapti* (pathogenesis) in Ayurveda. The breast should not be *Ati Urdhava*, *Ati Lambhana* or *Ati Krishna*. The position and the appearance of the nipple should be in appropriateness.^[5] Abnormalities in these

requirements cause impairments in children. Thus, the characters of *Urdhva Sthana* (upturned nipples) and *Lamba Sthana* (prominent nipples) cause to have Karala, Urdhvaksha and extremely pendulous breast may cause to suffocate the child as a result of covering the face and nose.^[9] Thus, the influence on the breastfeeding in relation to the anatomical positioning while breastfeeding also considered as important in Ayurveda for preserve the child health. This may be important in strengthening the muscles of the child as an effect of an accurate sucking mechanism.

Stana Pana Vidhi

Proper arrangement and positioning while breastfeeding is described in detail within the Ayurveda literature. It has been advised for mothers to take a bath and wear clean clothes before starting to feed. This is in the scope of maintaining hygiene and a pleasurable and comfortable environment which affects both physically and psychologically to mother and child. She should wear *Praja Sthapana* medicines. This gives a *Rasayana* effect on both mother and child.^[10] Susruta Samhita advised to wash the breast and express the little quantity of breast milk. Otherwise this may produce cough, difficulty in breathing, vomiting, choking the channels by sudden rush of accumulated milk into the throat.^[9] Susruta Samhita is advised to start breastfeeding while

chanting the *Mantra*. This also influences psychologically as it makes auspiciousness.^[9] The breastfeeding should start first with the right breast.^[5] All these measures are valuable to comfort the mother while feeding and the child in sucking. Therefore, physical and psychological impact on health can be preserved as positive.

Stanya Apanayana

Gradual cessation of the breastfeeding and starting of the weaning is known as *Sthanya Apaharana*. *Ashtanga Samgraha* indirectly advised to limit the breastfeeding after the teeth eruption and introduce the other liquids and semisolids to the child.^[5] Within these concepts, children should be fed with Cow's milk and *Laghu* and *Vrinhana* food. Child is gradually practicing to ingest a normal diet after the tooth's eruption. Teeth eruption (*Dambhodbhava*) is started in the age between 6- 12 months. Therefore, Ayurveda medicine is indirectly advised to do exclusive breastfeeding for 6 months. Hereafter, human milk can be gradually substituted with Cow's milk and other beverages. Thus, breastfeeding while weaning is recommended up to the age of one year. In the absence of goat's milk it has been advised to use medicated cow's milk during *Sthanya Apanayana*.^[11]

Characters of vitiated Sthanya^[10]

Vata	Pitta	Kapha
<i>Shyava Aruna Varna</i>	<i>Krishna, Nila, Pita, Tamra Varna</i>	<i>Ati Shukla Varna</i>
<i>Kashaya Anurasa</i>	<i>Tikta, Amla, Katu Anurasa</i>	<i>Ati Madhurya, Lavana Anurasa</i>
<i>Vishada</i>	<i>Bhrusha Ushna</i>	<i>Picchila</i>
<i>Analakshya Gandha</i>	<i>Kunapa, Rudhira Gandhi</i>	<i>Ghruta, Thaila, Vasa, Majja Gandhi</i>
<i>Ruksha</i>	Causes to <i>Pitta Vikara</i>	<i>Tantummat</i>
<i>Drava</i>		Sink in water
<i>Phenila</i>		Cause to <i>Kapha Vikara</i>
<i>Laghu</i>		
<i>Athriptikara</i>		
<i>Karshana</i>		
Causes to <i>Vata Vikara</i>		

Management protocols for the vitiated mother's milk^[10,11]

When human milk is vitiated by *Vata Dosha*; *Dashamula* decoction or the decoction prepared with *Rat Nitul*, *Vacha*, *Patha*, *Katuka*, *Kushta*, *Dipyaka*, *Bharngi*, *Daru*, *Sarala*, *Vrushchikali*, *Kana*, *Ushna* should be given to the *Dhatri* for three days and then should be administered with a *Vata Dosha* pacifying *Ghruta*. After this *Snehana* is completed *Mrudu Virechana* Should be administered followed by *Vasti Karma*, *Sveda* and *Abhyanga* to pacify the vitiated *Vata Dosha*.

When *Nari Kashira* is vitiated with *Pitta Dosha*; the decoction of *Amruta*, *Abhiru*, leaves of *Patoli*, barks of *Nimbha*, *Chandana*, *Sariva* or decoction of *Triphala*, *Musta*, *Bhunimbha*, *Katukarohini* or decoction prepared by the one of the group of medicines (*Dravya Gana*)

known as *Sarivadi*, *Patoladi*, *Padmakadi* should be administered. *Pitta* pacifying purgatives, *Abhyanga*, *Pralepa* are also indicative.

When *Kapha Dosha* gets vitiated; It is advised to make vomiting for the child by using medicinal preparations and even to the *Dhatri*. It is advised to administer the *Peya* and decoctions of *Mustakadi Gana* or decoction prepared with *Tvarala*, *Ela*, *Dhevadara*, *Kelinda* or decoction of *Ativisha*, *Musta*, *Vacha* and *Panchakola*. *Kshira Vardhaka Dravya* are indicative in treatment by *Charaka Samhita*.

The differences between human milk as per *Prakriti* has been proven with a cross sectional study conducted by Singh *et al*, 2006. This study concluded that the composition of the human milk varied in relation to the

Prakriti and the vitiated state also.^[12] Hence, it clues for the need of purification intervention for vitiated breast milk which are mentioned within Ayurveda classics.

Substitutions of breastfeeding

Bottle feeding, formulated milk usages are the most used methods of feeding the child worldwide. These cause to emerge many health hazards.

Bottle feeding^[13]

Bottle feeding is a mostly using feeding method in current society. It causes many health consequences. Health hazards of bottle feeding were firstly found in the early 20th century. Increased risk of mortality was highly recognized within those periods among bottle fed infants in comparison to breastfed infants. Other than these, incidences of many illnesses in childhood such as diarrhea, infectious diseases in lower respiratory tract and asthma showed within high rates.

It has been revealed by scientific researches that breastfeeding protects children against some rarely found disease conditions like sudden infant death syndrome, insulin dependent diabetes mellitus, childhood lymphoma, botulism, urinary tract infections and necrotizing enterocolitis.

Bottle feeding was identified as a way of having a long-term effect on quality of life as it causes adverse consequences for metabolism, cognitive development, emergence of the diseases like cardiovascular diseases, rheumatoid arthritis, some cancer varieties and multiple sclerosis in the rest of the life.

And this may develop the risk of mortality due to diarrhea and other infections even if not breastfed also.

Cow's milk

Cow's milk is encompasses with the properties of *Jivanam*, *Rasayana*, Relieve *Urakashata* and *Krishna*, Strengthening, *Medhya*, Purgative, Relieve the diseases of *Shrama*, *Mada*, *Bhrama*, *Shvasa*, *Kasa*, *Thrisha*, *Kshudha*, *Jirna Jvara*, *Mutra Karichchra*, *Raktapitta*.^[14]

That said, Cow milk is not very similar to human milk. Both are about 88% water, but human milk has 7% carbohydrate, 1.3% protein, and 4.1% fat. Cow's milk has about 4.5% carbohydrate, 3.3% protein, and 3.9% fat.^[15]

Usage of medicated cow's milk may minimize these consequences.

Goat's milk^[15]

In the absence of human milk goat's milk should be administered to the child by medicating with *Laghu Panchamula* or *Shalaparni* or *Prishniparni* and adding sugar which gives the same effect as of human milk.

Formulae milk^[15]

Human milk provides specific and nonspecific factors and these are cause to have a long-term effect on child to be as free from diseases in comparison to the formulated milk.

Benefits of Breast milk to mother and baby^[16]

- Stronger immune systems
- Less diarrhea, constipation, gastroenteritis, gastroesophageal reflux, and preterm necrotizing enterocolitis (NEC)
- Fewer colds and respiratory illnesses like pneumonia, respiratory syncytial virus (RSV) and whooping cough
- Fewer ear infections, especially those that damage hearing
- Fewer case of bacterial meningitis
- Better vision and less retinopathy of prematurity
- Lower rates of infant mortality
- Lower rates of Sudden Infant Death Syndrome (SIDS)
- Less illness overall and less hospitalization
- Parents have up to six times less absenteeism from work

Breast milk provides abundant and easily absorbed nutritional components, antioxidants, enzymes, immune properties, and live antibodies from mother. Mother's more mature immune system makes antibodies to the germs to which she and her baby have been exposed. These antibodies enter her milk to help protect her baby from illness. Immunoglobulin A coats the lining of the baby's immature intestines helping germs and allergens from leaking through. Breast milk also contains substances that naturally soothe infants.

Breastfed babies may become healthier children with

- Fewer instances of allergies, eczema, and asthma
- Fewer childhood cancers, including leukemia and lymphomas
- Lower risk of type I and II diabetes
- Fewer instances of Crohn's disease and colitis
- Lower rates of respiratory illness
- Fewer speech and orthodontic problems
- Fewer cavities
- Less likelihood of becoming obese later in childhood
- Improved brain maturation
- Greater immunity to infection

Breastfeeding is healthier for mother physically

- Promotes faster weight loss after birth, burning about 500 extra calories a day to build and maintain a milk supply.
- Stimulates the uterus to contract and return to normal size.
- Less postpartum bleeding
- Fewer urinary tract infections
- Less chance of anemia

- Less risk of postpartum depression and more positive mood
- Reduced risk of breast cancer in future.

CONCLUSION

Ayurveda medicine has consisted with the knowledge of breastfeeding and its effect on both the mother and child even as long-lasting consequences. Preventive methods of the disorders are also explored in Ayurveda by scoping on preserving the health of child and mother too. Breast milk has been identified as the best way of child nutrition at least up to the age of 6 months. Therefore, substitution of the milk by appropriate wet nurses has been advised as a first and foremost solution for non availability of required breast milk from the mother. It has been recommended for medicated cow's milk or goat's milk as a substitution for human milk in the inconvenience of finding suitable human milk for the child. Recently emerged feeding methods such as bottle feeding and formula feeding are not suitable to feed the child as the cause to raise many health consequences and lack in nutrition and immunity enhancers in comparison to the mother's milk. Further studies to find the effectiveness of these solutions mentioned in Ayurveda contests may provide a better impact on child nutrition and immunity in comparison to the prevailing substitutes for human milk.

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