

## EFFECT OF *STANYA DUSHTI* ON GROWTH AND DEVELOPMENT IN INFANTS – A REVIEW

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### ABSTRACT

Breast milk is the best food for the infant upto 6 month of age. Our ancient *Ayurvedic* scholars were well aware of it and they have given exhaustive description about breast milk, their properties and vitiation by *Doshas* , as well as their treatment also. Ingestion of vitiated milk by infant causes various disorders which intern affects the growth and development of the infant. (Ch. Chi. 30/40-47, Ka. S. Su. 19/1-2). The present article is attempted to assess the effect of vitiated milk on growth and development in infants.

**KEYWORDS:** Breast milk, *stanya dosha*, vitiated milk.

### INTRODUCTION

The human breast milk is uniquely composed to supply the nutritional requirement for physical and neural development of infants. Children are said to be of three kinds as per diet i.e. Kshiravartana (Lactovorous), Annavartana (omnivorous) and Ubhayavartana (lacto-omnivorous). Health of Kshira-vartana children depends on non-vitiated milk. Pure or non-vitiated milk has normal color, smell, taste and touch; dissolves homogenously in water (*C.Sh.8/54*) and effect of pure milk are manifested in the form of unobstructed development of strength, body organs, longevity and disease free state. Pure milk does not cause any abnormality in children and mother (*K.Su.29/26*). Due to vitiation of breast milk, infant may develop serious diseases (*K.Su.29/27*). There are many factors, which are responsible for eight type of vitiation of breast milk. (*C. Chi.30/232-235*) Breast milk may be vitiated by different substances, few of them which are excreted in the breast milk are found harmful in the infants such as pesticides, pollutant, drugs and few foods. The present study planned to assess the effect of vitiated milk on growth and development in infants.

## BREAST MILK & ITS FORMATION

Ayurveda, the eternal science, has described the process of breast milk formation. A part of rasa (digestive product of food) of the pregnant woman serves the purpose of lactation,<sup>[1,2,3]</sup> the sweet essence of rasa having reached the breast from the entire body is termed as stanya.<sup>[4,5,6]</sup>

After delivery on third or fourth day the Dhamnis,<sup>[7d,11]</sup> or Siras,<sup>[8,9]</sup> situated in cardiac region get dilated and initiate milk ejection, Harita mentioned that due to force used during bearing-down efforts by the woman, her Srotasa get cleared leading to sudden Stanya Pravriti or milk ejection.<sup>[10]</sup> The word 'Stanya' means the substance which is derived from the breast, a body organ.

*स्तन्यं स्तने भवम्। स्तन शरीरावयवाच्चय दुग्धम् इति।*

*(हेमचन्द्र, ४/३/९९ शब्द कल्प द्रुम - भाग - ९ (राधा कान्त देव), V3. 5.41 (Venisamhara);*

1.60 (Bhaminivilas); Sanskrit English Dictionary (V.S. Apte)

As per **Kashyapa**, **Sushruta** and **Bhavprakasha**, the **Stanya Prasruti** (milk secretion) occurred like the semen. Milk is also secreted by thought, sight or touch of the child and also with his physical contact. For proper flow of milk, uninterrupted affection for the child is mainly responsible.<sup>[11,12,13]</sup>

Amount of milk is two anjali.<sup>[14,15]</sup> The volume of milk secretion goes from a mean of about 50 ml. per day on day two of lactation to about 500 ml. on day 4. After this time there is a gradual volume increase to about 850ml/day by three months postpartum. (Hurley W.L., 2004). The human milk is vitalizer, bulk promoting, compatible, unctuous and relieves aggravation of Vata, pitta, Asrk (blood), cures traumatic wound and disease of eye when used inform of Tarpan (Bathing the eye). It checks internal hemorrhage using as a snuff (Nasya).<sup>[7a,7b,7c]</sup>

## STANYA SAMPATA OR CHARACTERISTICS OF NORMAL BREAST MILK

The normal milk is cold, clean, free from discoloration, whitish, yellow or white just like the color of conch-shell,<sup>[16]</sup> natural colour,<sup>[17]</sup> sweet,<sup>[16]</sup> or natural taste,<sup>[17]</sup> natural smell, touch,<sup>[17]</sup> when put in water it mixes evenly,<sup>[16,17]</sup> neither produces froth nor streaks, neither floats nor settles down.<sup>[17]</sup> Normal milk provides good health.<sup>[16,17,18,19,20]</sup> nourishment.<sup>[17]</sup> normal growth and development.<sup>[16,18,19,20]</sup> strength.<sup>[16,21,22]</sup> longevity and does not cause any pain or

trouble to the child and mother.<sup>[23]</sup>

### **Abnormalities of Breast Milk – Stanya Dushti**

**Etiopathogenesis of Vitiating of Milk:** Due to indigestion, consumption of noncongenial, unusual or unfavorable and incompatible food, over eating, use of excessive salty, sour, hot, Kshara (alkaline) and putrefied articles, diseases of body and mind awakening in the night, worry, suppression of natural urges and attempt to excrete feces, etc. in the absence of their urges, use of Paramanna, dishes made of jaggery, curd, immature curd or fish, Abhishyandi articles meat of wild and aquatic animals, sleeping during day, over use of wine absence of exercise, trauma, anger, emaciation, the dosha get vitiating, in turns breast milk is vitiating moving through Kshiravaha Siras (milk channel) and produce milk disorders.<sup>[23-29]</sup>

### **Disorders of Milk & Its Effect on Growth and Development**

Charaka,<sup>[30]</sup> has mentioned eight disorders of milk which is caused due to vitiating with three Dosha.

**Vataja** - (3) Vairasya (Tasteless) Phena-samghata (Frothy), Ruksha (Non-unctuous).

**Pittaja** – (2) Daurgandhya (putrefied), Vaivarnya (discoloration).

**Kaphaja** – (3) Atisnigdha (Very unctuous), Picchila (slimy), Guru (not easily digestible and/or heavy by weight).

- 1. Vairasya (Tasteless)** – Due to use of Vata vitiating diet and mode of life that aggravate Vata, reaches the breast and alter the taste from Madhur to Kashaya, thus causing Vairasya. On feeding such milk, baby becomes emaciated, and does not attain proper growth.
- 2. Phena-Samghata (Frothy)** - The vitiating Vayu due to noncongenial diet and mode of life, reaches breast through Dhamnis and Siras and produced Phena-Samghata. Such milk is ejected with frothing, great difficulty and pain. On suckling the milk, the baby develops flatulence and pain abdomen along with suppression of natural urges and may cause Penasa; infant becomes weak, irritable and cries in feeble tone i.e. poor cry.
- 3. Ruksha (non-Unctuous)** Desiccation of fatty substances present in milk is caused by vitiating Vayu, so milk turns relatively less unctuous. After consuming the above milk, baby becomes less energetic, non alert, and nausea, memory is diminished.
- 4. Vaivarnya (Abnormal color)** - Due to aggravation of pitta by consumption of pitta Vardhaka diet and mode of life, the milk of such mother turns yellowish, blackish, bluish in color. On suckling such milk the body of infants undergoes discoloration, appearance

of rashes; excessive perspiration with thirst and diarrhea, increased body temperature and baby shows no interest in suckling.

5. **Daurgandhya (Abnormal smell)** - It is also due to vitiation of milk by pitta and body suffers from anemia (Pandu), jaundice (Kamala) after consuming such milk.
6. **Atisnigdha (Excessive unctuous):** After ingestion of Guru, Snigdha, Sheet diet by mother, Kapha gets aggravated and due to sedentary life style of mother it reaches breast and vitiates breast milk. Such milk due to its excessive unctuousness is non-congenial for infant. The baby feeding this milk shall be suffering from vomiting, tenesmus, excessive salivation, tiredness, dyspnoea, cough excessive sleep.
7. **Picchila (slimy)** – The vitiated Kapha due to above causes involves breast milk and makes it slimy (Picchila). Such milk results in generalized edema more on face, eyes and dullness.
8. **Guru (Heavy to digest)** – The vitiated Kapha reaching the breast makes the milk heavy (guru) due to its own heaviness. The child sucking this milk suffers from cardiac disorders (Hridroga).

#### Harita's five milk disorders<sup>[31]</sup>

S. No.	Abnormality of milk	Disease produced in infant
1.	Ghana	Excessive flatulence, suppression of feces, urine & flatus, dyspnoea, cough and distension of abdomen.
2.	Alpa	Emaciation, misery, dyspnoea, diarrhea and becomes aphonic
3.	Ushna	Fever, emaciation, retardation of growth and development and Jwaratarisar.
4.	Kshara	Eye disorders, itching, ulcers, excessive mucoid discharges from mouth and nose.
5.	Amla	Not described in detail.

#### Effect of vitiated milk in infant

1. **Vata vitiated milk:** This type of milk does not give satisfaction to the child, produces emaciation,<sup>[32]</sup> flatulence, Oliguria, constipation,<sup>[33,34]</sup> and various disorders of Vata.<sup>[32]</sup>
2. **Pitta vitiated milk:** By consuming this milk the child is hot in touch,<sup>[32,35]</sup> produces Vidaha,<sup>[36]</sup> (burning sensation) and various disorders of Pitta.<sup>[32]</sup>
3. **Kapha vitiated milk:** This type of milk may cause excessive sleep and various disorders of Kapha,<sup>[36,37,38]</sup> excessive salivation, swelling of face & eyes and vomiting.<sup>[38,39]</sup> Baby may be numb or idiot.
4. **Tridosha vitiated milk:** According to Vagbhatta consumption of this type of milk

produces Ksiralasaka,<sup>[40,41]</sup> child becomes lame, numb and dumb besides suffers from Charmadala.<sup>[42]</sup>

### **Pesticides and Pollutants in Breast Milk**

Human milk has been known to contain insecticides. Chlorinated hydrocarbons such as DDT and its metabolites dieldrin, aldrin, and related compounds are the best known. The major reason for these compounds to appear in breast milk is that they are deposited in body lipid stores and move with lipid. The fetus receives the greatest dose in utero, and adult body fat has approximately 30 times the concentration in milk. (*Lawrence R.A. Lawrence R.M., 1999*). Polychlorinated biphenyls (PCBs) in heavily contaminated pregnant Japanese women produced small-for-gestational-age infants who have transient darkening of the skin (“cola babies”). (*Wickizer T.M. Brilliant L.B. 1981*) Heavy Metals that have been found in milk include lead, mercury, arsenic, and cadmium. (*Ong C.N. et al 1985*) Whenever maternal exposure occurs, the breastfed infant and the milk should be tested. The intake of lead and cadmium by breastfed infants, as reported by the WHO study, is the same as or somewhat lower than that of infants fed formula mixed with local water. Levels in milk of these heavy metals however, are lower than would be predicted from maternal levels. Most common air pollutants are not found in human milk. (*Larsson B. et al, 1981*).

Chemicals those are lipophilic, biologically stable, nonionized at a physiologic pH and of low molecular weight transfer easily into maternal milk. Ten to 20 times more of the mother’s body burden of persistent organohalogen is transferred via the milk than via the placenta, according to *Jensen and Slorach, (1991)* who have published an extensive review of chemical contaminants in human milk and show that there is no difference in placental and milk transfer of heavy metals. If extractable fat is measured, the levels of persistent organohalogen are about the same in milk, blood, adipose tissue, and muscle. Mobilization from fat stores is greater than that from dietary intake during lactation. (*Jensen A.A. et al, 1991*).

### **CONCLUSION**

*Kashyapa* has mentioned that race, nature, maternal and paternal factors and own deeds of a person are responsible for the growth of the body. (*Ka. Su. 20/5*) As per *Charka*, these factors lead to the growth of the body in its entirety viz. Observance of time, natural process, excellence of diet and absence of damage. (*Ch. Sa. 6/12*). Madhur rasa due to presence of oligosaccharide & lactose as well as Snigdha properties due to presence of different type of

lipids in the breast milk play an important role in neurodevelopment. (*Newton ER, 2004; Carlson SE et al,1996*).Marasmic stage and inadequate growth in Viras (abnormal taste) milk fed babies has been explained due to inadequate intake of milk, which provides inadequate calories as well. *Vigandhata (Abnormal odor)*- odor may be due to higher concentration of different type of lipids in Kapha vitiated breast milk, and putrefied or blood's smell of breast milk may be due to ingestion of different Dosha vitiated substances, and mastitis, breast abscess etc. Some volatile sulphur containing foods (onion, garlic, broccoli, etc.) ingestion by mother has been found to increase the intensity of milk odor as perceived by blinded adult penalists. (*Mennella & Beauchamp, 1991*)*Vivarnta (Abnormal color)* - Presence of different dosha vitiated coloring substances in milk may be responsible for vitiation of breast milk. Certain drugs e.g. Minocycline HCL, Rifampin, chemicals (sunskit orange) cause discoloration of breast milk.(*Roseman BD,1981;Basler RS,1985*).The above facts is in supports of present study to assess the effect of vitiated milk on growth and development in infants.

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