



## PHYSIOLOGICAL ASPECT OF *UPDHATU* AND FORMATION OF *STANYA* FROM *RASADHATU*

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### ABSTRACT

#### ABSTRACT

This article explores the physiological aspects of *Updhatu* (subsidiary tissues) and the formation of *Stanya* (breast milk) from *Rasadhatu* according to Ayurvedic principles. Ayurveda, an ancient Indian medical system, emphasizes the importance of *Dhatu* (bodily tissues) in maintaining health and vitality. *Updhatu*, the secondary tissues derived from the primary *Dhatu*, play a crucial role in supporting the body's structural and functional integrity. *Rasadhatu*, the first *Dhatu* formed after digestion, provides nourishment and forms the basis for the formation of other tissues, including *Stanya*. The quality of *Rasadhatu* is influenced by diet, lifestyle, and the digestive fire (*Agni*). *Stanya*, a type of *Updhatu*, is produced in the female mammary glands after childbirth and is considered an excellent source of nutrition for infants. Ayurvedic texts highlight the significance of breastfeeding for both maternal and infant health, as it promotes bonding, reduces the risk of various diseases, and provides immunological benefits. The article discusses the factors influencing *Stanya* production, such as diet, lifestyle, and hormonal regulation. It also addresses common breastfeeding challenges and presents Ayurvedic treatments and remedies, including herbal supplements, dietary guidelines, and lifestyle modifications. The study concludes by emphasizing the timeless wisdom of Ayurveda in understanding the profound bond between mother and child through the lens of breast milk and its role in promoting holistic well-being.

**Keywords:** Rasadhātu, Updhatu (subsidiary tissues), Stanya (breast milk), breastfeeding.

## INTRODUCTION

The secondary tissue of *Rasa*, known as *Stanya* (breast milk)<sup>1</sup>, is secreted by the female mammary glands after childbirth. *Stanya* (breast milk) is an excellent food for babies, as it provides nourishment and support. To maintain *Stanya* (~Breast milk) as an *Updhatu* (~Subsidiary tissues), it should not undergo any further metabolic changes.<sup>2</sup>

Breast milk is an excellent source of nutrition for infants.<sup>3</sup> According to the World Health Organization, infants should be given appropriate and safe supplemental meals during their first six months while continuing to nurse for up to two years of age or beyond. Exclusive breastfeeding is not recommended after that point.<sup>4</sup>

For human infants, especially in their first six months of life, Breast milk is the optimal source of nutrition as it contains the ideal balance of water, proteins, carbs, fats, vitamins, and minerals necessary for healthy growth and development.<sup>5</sup>

The World Health Assembly (WHA) has set a target to increase the global exclusive breastfeeding rate from 38% in 2012 to 50% by 2025<sup>6</sup>, with the aim of improving babies' health worldwide. In India, only 55% of children are exclusively breastfed, and to contribute to the global goal, India needs to achieve a 65.7% exclusive breastfeeding rate by 2025 according to the WHO tracking tool. Additionally, the world celebrates Breastfeeding Week from August 1 to August 7 every year to encourage breastfeeding.<sup>7</sup>

### OVERVIEW OF AYURVEDIC CONCEPTS: -

#### A. Brief introduction to Ayurveda and its significance in holistic health.

*Ayurveda*, meaning "science of life," is an ancient Indian medical system rooted in holistic principles that encompass physical, mental, spiritual, and cosmic aspects of well-being<sup>8</sup>. It emphasizes the interconnectedness between humans and nature, views individuals as microcosms of the macrocosm, and highlights the importance of living in harmony with the environment<sup>9</sup>. *Ayurveda* aims not only to treat

diseases but also to maintain the health of healthy individuals, promoting holistic health by balancing the body's *Dosha*, *Agni* (~Digestive fire), *Dhatu* (~Bodily tissue), and excretory functions.<sup>10</sup> With its roots in the *Vedas* and ancient texts. This traditional practice offers a comprehensive approach to health by focusing on lifestyle, diet, herbs, and mental well-being, making it a vital component of achieving total wellness for individuals and communities<sup>11</sup>.

#### Explanation of *Dhatu* (~bodily tissue) (body tissues) and their importance in Ayurveda

In *Ayurveda*, The Concept of *Dhatu* (~Bodily tissue) Refers to The Body Tissues That Are Essential for Maintaining Health and Vitality. These *Dhatu* (~Bodily tissue) Include *Dosha*, *Dhatu*, And *Mala*, With *Dosha* Being the Structural and Operational Component,<sup>12</sup> *Mala* Responsible for Cleanliness, And *Dhatu* Providing Strength to The Body.<sup>13</sup> The Concept of *Dhatu Sarata* Categorizes Individuals Based on The Quality of Their Tissue Health, With A Significant Positive Correlation Found Between Tissue Excellence and Health-Related Physical Fitness, Emphasizing the Importance of *Dhatu* (~Bodily tissue) in Assessing an Individual's Strength<sup>14</sup>. Furthermore, the Circulation of *Rakta Dhatu* to Every Cell of The Body Is Crucial for Maintaining Life, with *Rakta Dhatu* Considered the Base of Living Beings in *Ayurveda*<sup>15</sup>. Understanding And Nurturing These *Dhatu* (~Bodily tissue) Are Fundamental in *Ayurvedic* Practices to Promote Overall Well-Being and Health.<sup>16</sup>

#### B. Importance of Studying *Updhatu* (subsidiary tissues) and *Stanya* (breast milk)

##### Definition And Significance of *Updhatu* (subsidiary tissues)

*Updhatu* (~Subsidiary tissues), Also Known as Sub-Tissues, refers to The Secondary Tissues in *Ayurveda* That Are Formed from The Transformation of The Primary Tissues (*Dhatu*). These Sub-Tissues are Crucial in Maintaining the Structural Integrity and Physiological Functions of The Body. The research By

Demos Et Al. This highlights the importance of understanding the optical characteristics of Subsurface Imaging<sup>17</sup>. While Yeh Et Al. Emphasizes the significance of volumetric imaging in analyzing the density, anisotropy, and orientation of cell and Tissue Components<sup>18</sup>. Additionally, Grieb Et Al. Discuss techniques for recording organ dilution curves in vivo, providing insights into tissue oxygen Distribution and Metabolism<sup>19</sup>. Comprehending *Updhatu* (subsidiary tissues) Is Essential in Ayurveda as It Contributes to The Holistic Understanding of Tissue Formation, Function, And Overall, Health in The Body.

#### **Role of *Stanya* (~Breast milk) in maternal and infant health:<sup>20, 21</sup>**

The infant should be fed a substance to the nutriment that the infant receives as far as possible in the mother's milk because it is closer to the womb, that is, the menstrual blood that is transformed into milk. The infant readily accepts this milk and is used for it.

#### **For baby:**

- Breast milk is a complete food for a baby; therefore, there is no need for any supplements for up to six months. It is easily digestible and maintains a healthy gut flora.
- Breast milk contains several protective factors such as IgA, lymphocytes, and lysozyme. It contains several anti-infective substances, antibodies, and friendly lactobacilli that protect the baby from many infections and provide immunological benefits throughout their lifetime.
- Breast milk contains all nutrients required for normal growth and development in an optimum proportion.
- In *Ayurveda*, Breast milk is used in *Navan (Nasya)* and *Aschyotan* (eye drops).
- Breast-feeding babies are smarter and have higher IQ levels than top-feeding babies because they contain DHA, which aids brain development.
- There was no adulteration, dilution, contamination, or infection risk.

#### **For mother:**

- During breastfeeding, the brain releases oxytocin and prolactin hormones, encouraging mothers to

bond with their babies, and easing stress and anxiety.

- The longer a woman breastfeeds, the better the lifetime benefits for reducing breast cancer, ovarian cancer, heart disease, and diabetes risks.
- The Oxytocin hormones released during breastfeeding help shrink the uterus back to its pre-pregnancy size, thus reducing the risk of postpartum depression, PPH, and anemia.
- Breastfeeding helps regain pre-pregnancy body weight faster because the energy stores laid down during pregnancy are consumed faster during lactation.
- The brain releases oxytocin and prolactin hormones during breastfeeding, encouraging mothers to bond with their babies and easing stress and anxiety.

#### **Purpose of the article:**

- This article delves into the physiological aspects of *Updhatu* (subsidiary tissues) and the formation of *Stanya* (breast milk) in *Rasadhatu*, focusing on the significance of breastfeeding in *Ayurveda*.<sup>22</sup>
- By integrating *Ayurvedic* principles with contemporary knowledge, this article aims to underscore the holistic and natural methods of promoting infant health and development through breastfeeding, aligning with ancient wisdom passed down through *Ayurvedic* literature.

#### **Understanding *Rasadhatu*:**

##### **Definition and Characteristics of *Rasadhatu***

*Rasadhatu*, as defined by *Ayurveda*, refers to the plasma tissue that nourishes the body and forms the basis for the formation of all other tissues. It is considered the first of the seven *Dhatu* (~ bodily tissue) and plays a crucial role in maintaining overall health and vitality. *Rasadhatu* is associated with the concept of *Rasayana* therapy, which aims to enhance longevity, strength, immunity (*Oja*), and overall well-being.<sup>23</sup>

##### **Primary function and role in the body: -**

- The primary function of *Rasadhatu*, the first tissue formed after digestion, is to provide nourishment and fluidity to the body, carrying essential nutrients, such as salts and sugars.

- *Rasadhatu* is closely related to kapha dosha, and its quality is influenced by the digestive fire or *Agni* (~ digestive fire), which transforms *Ahara rasa* into *rasa Dhatu*.
- It plays a crucial role in the formation of other bodily tissues and is affected by the efficiency of *Rasagni* (~Digestive fire), the metabolic process responsible for its transformation.<sup>24</sup>
- *Rasadhatu's* quality impacts overall health, and its balance is essential for preventing diseases and maintaining well-being.<sup>25</sup>

#### **Formation and Nourishment of Rasadhatu**

In the Ayurveda context, *Rasadhatu* refers to the formation and nourishment of the body's essential tissue, which is often associated with the mineral component. The nourishment of *Rasadhatu* can be influenced by various factors including diet, lifestyle, and specific nourishing practices. In the case of beach nourishment interventions, models like the Grain-size Nourishment Model (GNM) play a crucial role in optimizing nourishment design and monitoring post-intervention effects.<sup>26</sup>

#### **The influence of diet and lifestyle on Rasadhatu**

Diet and lifestyle play a significant role in influencing *Rasadhatu*, which is a crucial concept in *Ayurveda* related to the formation of nutrient plasma. *The Ayurvedic* literature emphasizes the importance of healthy dietary patterns, physical activity, and lifestyle modifications in maintaining optimal *Rasadhatu* levels. Research indicates that adopting a nutritious diet, engaging in regular exercise, and making lifestyle adjustments can prevent and manage conditions such as diabetes, which is closely linked to *Rasadhatu* imbalance. Therefore, incorporating *Ayurvedic* principles of diet and lifestyle can positively influence *Rasadhatu* and promote overall well-being and disease prevention.<sup>27</sup>

#### **Concept of Updhatu (subsidiary tissues) in Ayurveda**

In *Ayurveda*, the concept of *Updhatu* (~Subsidiary tissues) refers to the secondary tissues or sub-products of the main body tissues known as *Dhatu* (~Bodily tissue). *Updhatu* (subsidiary tissues) play a crucial role in maintaining overall health and well-

being. These secondary tissues are considered essential for the normal functioning of the body and are closely related to the primary *Dhatu* (~Bodily tissue). Various *Ayurvedic* texts emphasize the significance of *Updhatu* (subsidiary tissues) in the manifestation of diseases related to specific tissues, such as hair disorders linked to *Asthi Dhatu* and *Meda Dhatu's* involvement in metabolic disorders, such as hyperlipidemia. Additionally, the nourishment and treatment of *Updhatu* (~Subsidiary tissues) are highlighted in *Ayurvedic* guidelines to promote healthy tissue growth and prevent imbalances associated with aging and other health conditions.<sup>28</sup>

#### **A. Definition and Types of Updhatu (~Subsidiary tissues):**

*Updhatu* (~Subsidiary tissues) refers to the secondary or subsidiary metals in *Ayurveda*, which are derived from the transformation of *Dhatu* (primary tissues). In *Ayurvedic* medicine, *Updhatu* (subsidiary tissues) play a crucial role in maintaining overall health and well-being. Different types of *Updhatu* (~Subsidiary tissues) include *Artava* (menstrual blood), *Mamsa* (muscle tissue), *Meda* (adipose tissue), *Asthi* (bone tissue), *Majja* (bone marrow), and *Shukra* (reproductive tissue).<sup>29</sup> Understanding and balancing these *Updhatu* (~Subsidiary tissues) are essential for promoting optimal health and preventing diseases according to *Ayurvedic* principles. Additionally, the concept of *Updhatu* (~Subsidiary tissues) aligns with the holistic approach of *Ayurveda*, emphasizing the interconnectedness of bodily tissues and their impact on overall wellness.<sup>30</sup>

#### **Different types of Updhatu (subsidiary tissues) and their roles**

#### **B. Physiological Functions of Updhatu (~Subsidiary tissues):**

#### **Detailed discussion on the role of various Updhatu (subsidiary tissues) in maintaining health**

*Updhatu* (subsidiary tissues), a concept of *Ayurveda*, plays a crucial role in maintaining overall health by contributing to the proper functioning of body tissues and organs. According to *Ayurvedic* principles, *Updhatu* (subsidiary tissues) is the secondary tissue formed after the primary tissues (*Dhatu*), and is es-

essential for supporting the structural and functional integrity of the body. These secondary tissues are believed to be influenced by the quality of the primary tissues and play a significant role in immunity, vitality, and overall well-being. *Rasayana* therapy, a branch of *Ayurveda* focusing on rejuvenation and longevity, emphasizes the importance of *Updhatu* (subsidiary tissues) in preventing diseases, promoting anti-aging effects, and enhancing the body's resilience against stress and infections. Therefore, maintaining the balance and health of *Updhatu* (~Subsidiary tissues) is vital for sustaining optimal health and well-being according to *Ayurvedic* principles.<sup>31</sup>

The process of derivation of *Updhatu* (subsidiary tissues) from *Dhatu* (bodily tissue) involves the transformation of essential body fluids, particularly semen, into secondary tissues or *Updhatu* (subsidiary tissues). In *Ayurveda*, the concept of *dhatu* refers to the seven primary tissues of the body, with semen being considered the most precious. Through metabolism and transformation, the body converts the primary *Dhatu* (~bodily tissue) into *Updhatu* (subsidiary tissues), which are considered byproducts or secondary tissues derived from primary tissues. This process is crucial for maintaining overall health and vitality, according to *Ayurvedic* principles, emphasizing the interconnectedness of bodily tissues and their role in sustaining well-being. Additionally, the *Unani* system of medicine also acknowledges the importance of preserving semen and its transformation into vital secondary tissues, although it does not specifically describe the *Updhatu* (~Subsidiary tissues) derivation process.<sup>32</sup>

#### IV. Formation of *Stanya* (~Breast milk) (breast milk)

##### A. Definition and Composition of *Stanya* (~Breast milk)

*Ayurvedic* perspective on Breast milk

Breast milk is important in *Ayurveda*, which is considered the ideal infant nutrition because of its numerous health benefits and role in proper growth and development. *Ayurvedic* texts emphasize the importance of breastfeeding, describing the formation of

Breast milk, milk ejection, wet-nurse examination, and breastfeeding techniques.<sup>33</sup>

##### Role of hormonal and physiological factors in this transformation

##### C. Factors Influencing *Stanya* (~Breast milk) Production

Dietary influences and recommendations

Dietary factors influencing *Stanya* (~Breast milk) production include nutrients like polyunsaturated fatty acids, maltose, vitamins A and E, and lower total cholesterol intake, as indicated by a study on equal production.<sup>34</sup>

*Stanya* (~Breast milk) is crucial for infant nourishment and immunity.<sup>35</sup>

Additionally, the use of *Karpasabeejachurna* has shown effectiveness in increasing *Stanya* (~Breast milk) production in lactating mothers.<sup>36</sup>

Therefore, a diet rich in specific nutrients and phytoestrogens can enhance *Stanya* (breast milk) production and provide overall health benefits for both mothers and infants.

##### Lifestyle factors and their impact

Several lifestyle factors have been associated with an increased risk of breast cancer.<sup>37</sup> These factors include obesity, physical inactivity; sedentary behavior; unhealthy dietary patterns such as high consumption of red meat, animal fat, and sugary foods; and low intake of fiber, fruits, and vegetables. In addition, alcohol consumption, smoking, and tobacco use have been linked to a higher risk of breast cancer. Studies have shown that moderate to vigorous exercise for 3-4 hours per week can reduce the risk of breast cancer by 30%-40% compared to sedentary women, while obese or overweight women have a 50%-250% greater risk for breast cancer after menopause.<sup>38</sup>

##### B. Clinical Implications and Ayurvedic Management

##### A. Common Issues in *Stanya* (~Breast milk) Production?

##### Hypogalactia and other breastfeeding challenges

Breastfeeding faces common issues like hypogalactia, which is prevalent in postpartum stages due to factors like *Agni* (~Digestive fire) *Mandya* and

*Dhatu/Updhatu* (~Subsidiary tissues) *Kshaya*, leading to insufficient milk production.<sup>39</sup>

Ayurveda emphasizes the importance of *Stanya* (~Breast milk) (breast milk) for infant nourishment and immunity, with specific herbs like *Veerana*, *Shali*, and others aiding in increasing milk quantity.<sup>40</sup>

Modern medicine highlights the neural and hormonal regulation of milk secretion, emphasizing the role of breast stimulation in maintaining lactation.<sup>41</sup>

Addressing these challenges through a multidimensional approach involving traditional knowledge and modern interventions can help improve breastfeeding success rates and maternal-infant health.

### **Ayurvedic diagnosis and perspective**

*Stanya* (breast milk) *Ayurvedic* diagnosis focuses on lactation insufficiency, a prevalent issue affecting children's health in Asian countries, such as India. *Ayurveda* emphasizes the use of herbal remedies, such as the *Stanya-janana Mahakashaya*, comprising ten specific herbs to increase Breast milk production and address *Stanya Kshaya* effectively.<sup>42</sup>

Additionally, *Ayurveda* considers the holistic well-being of the individual, focusing on hormonal, emotional, physical, and dietary factors influencing breastfeeding, while modern medicine may lean more towards synthetic galactagogues and external interventions.<sup>43</sup>

## **B. Ayurvedic Treatments and Remedies**

### **Herbal supplements and their roles**

*Stanya* (~Breast milk), or Breast milk, holds significant importance in both *Ayurvedic* and modern literature as the ideal source of nutrition for newborns, providing immune protection and developmental signals.<sup>44</sup>

### **Dietary guidelines and lifestyle modifications**

Dietary guidelines and lifestyle modifications are crucial for promoting successful breastfeeding, as highlighted in various *Ayurvedic* studies. *Ayurvedic* texts emphasize the importance of proper nutrition and lifestyle habits for lactating mothers to ensure optimal breast milk production. Additionally, *Ayurveda* suggested the use of specific herbs, such as *Veerana*, *Shali*, and *Darbha*, to enhance breast milk

quantity, as described in the *Stanya-janana Mahakashaya*.<sup>45</sup>

Lifestyle factors, such as reducing stress and strain, which can negatively impact lactation, have also been addressed in *Ayurvedic* practices. By following these dietary guidelines, incorporating lactogenic foods, and adopting a healthy lifestyle, mothers can support their breastfeeding journey and ensure their and their infants' well-being.<sup>46</sup>

### **Role of Panchakarma and other therapies**

Panchakarma and other therapies play a crucial role in promoting breastfeeding by addressing issues such as lactation insufficiency and hormonal imbalance. *Ayurvedic* texts emphasize the significance of *Stanya-janana Mahakashaya*, a formulation of specific herbs, in enhancing breast milk production. Additionally, *Ayurveda* highlights the importance of maintaining internal balances and utilizing herbal galactagogues to support lactation, as opposed to synthetic galactagogues that may pose health risks.<sup>47</sup>

## **CONCLUSION**

The discourse on breast milk in *Ayurveda* underscores its significance in nurturing infants and promoting holistic well-being. By elucidating the physiological intricacies of lactation through the lens of *Ayurveda*, this study underscores the timeless wisdom inherent in traditional medical systems. Embracing the holistic principles espoused by *Ayurveda* can foster a deeper understanding and appreciation of the profound bond between mother and child epitomized by the nourishing essence of breast milk.

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