

TWAK SHARIR (SKIN) IN LIGHT OF CONTEMPORARY SCIENCE - A REVIEW  
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## ABSTRACT

According to Ayurveda, the term 'Twak' or 'Charma' is employed to describe the skin. It is referred to as such because it serves as a covering for the body. Twak plays a key role in the differentiation of skin layers during embryonic development. This process is primarily driven by the Pitta Dosha, in addition to all three Doshas. According to Charaka, Twacha is considered the Matruja Bhava (maternal tissue), one of the six Bhavas crucial to the development of the fetus. Twak is the Upadhatu of Mans Dhatu, which forms the outer protective layer of the body and shields it from external factors such as heat and cold. It is a vital organ of the integumentary system, enveloping underlying tissues and organs. Ayurveda considers Twak as Sparshanaindriya. While different Acharyas have discussed the layers of Twak, the understanding of each layer is not entirely clear in contemporary science. Acharya expounds on the thickness of each Twak layer relative to the Vrehi grain, with each layer having a distinct thickness. The formation of Twak, a term used in Ayurvedic medicine to refer to the skin, has been compared with the formation of casein over milk. However, there remains a need to comprehensively understand the structural, functional, and developmental features of Twak and skin, and to correlate them with each other. In light of this, the aims and objectives of this study are to investigate Twak from various Ayurvedic Samhita and to analyze and correlate Twak sthara with the different layers of the skin. This review will provide valuable insights into the similarities and differences between these two entities, and contribute to the advancement of Ayurvedic medicine.

**KEYWORDS:** Twak, Charma, Skin, Dhatus, Epidermis, Dermis, Hypodermis, Sparshanaindriya.

## INTRODUCTION

In Ayurveda, the term "Twak" or "Charma" is utilized to denote the skin. The word "Twak" literally translates to "that which covers the body", underscoring the skin's primary function as a protective barrier. Furthermore, the term "Twak" also highlights the skin's dynamic nature, as it exhibits pulsatility and responsiveness through its movements. The Updhatu of Mamsa is Twak, as described by Sushruta. The process of Twak formation in the developing fetus was also elucidated by Sushruta, following the fertilization of Shukra and Shonita, Twak develops similarly to how the layer of Santanika (scum) appears in boiling milk, gradually increasing in thickness, the seven layers of skin are formed on the surface of the fetus body comparable. According to the ancient Ayurvedic texts, Acharya Charaka and Acharya Sushruta, the human skin comprises several layers. Acharya Charaka has identified six layers of skin, with the first two being referred to as Udakadhara and Asrugdhara. The remaining four layers are identified

based on the conditions affecting them. Acharya Sushruta, on the other hand, has described seven layers of Twak, each with specific names and varying thicknesses. He has also detailed the conditions affecting each layer. Additionally, Sharangadhara has mentioned seven layers of Twak, along with the specific conditions that impact them. It has been observed that the first six layers of the Twak are named after Sushruta, whereas the seventh layer is called Sthula, which is the site of Vidradhi. Vagbhata, on the other hand, holds the opinion that the Twak is formed from the Rakta. The process of Rakta's Paaka results in the formation of the skin, which appears akin to the deposition of scum on the surface of boiling milk. According to contemporary science, the skin comprises two layers, namely, the epidermis and the dermis. The epidermis is a superficial epithelial tissue that originates from the surface ectoderm, whereas the dermis is a deeper layer composed of densely packed irregular connective tissue derived from mesenchyme.

The structure of the skin varies across different parts of the body.

During embryonic development, the skin at four to five weeks consists of a single layer of surface ectoderm overlaying mesoderm. During the initial and intermediate stages of pregnancy, there is an increase in the thickness of the epidermis. The surface ectoderm cells proliferate and establish a layer of squamous epithelium, known as the periderm, along with the basal or germinate layer. The periderm cells continually undergo the process of keratinization and desquamation and are replaced by cells that emerge from the basal layer. This replacement of peridermal cells continues until the 21st week, after which the periderm vanishes, and the stratum corneum begins to form. The proliferation of cells in the stratum germinativum also leads to the formation of epidermal ridges, which extend into the developing dermis. During

embryonic development, the surface ectoderm undergoes a transformation process that leads to the formation of a multi-layered epidermis. This process culminates in the development of different layers of the epidermis. The thickness of the epidermis is used to classify skin as either thick or thin.

## OBJECTIVES

1) The objective of this study is twofold: to review the concept of "Twak," as described in various Ayurvedic Samhitas, and to examine its correlation with the layers of the skin. Seven layers of Twak have been mentioned by Acharya Sushruta, Vagbhata, Bhavprakash, and Sharangdhara, while Charaka, Bhela, and Astanga Sangraha have referred to six layers of Twak. By examining the existing literature and analyzing the findings, this study aims to provide insights into the relationship between Twak and the layers of the skin.

## Layer of Twak

Layer			
prathama	Udakadhara-bahaya twak	avabhasini	1 <sup>st</sup>
dwitiya	asrugdhara	Lohita	2 <sup>nd</sup>
Tritiya	Sidhma, kilasa sambhavadhishthana	Shweta	3 <sup>rd</sup>
Chaturthi	Alaji, vidradhi sambhavadhishthana	Tamra	4 <sup>th</sup>
Panchami	Dadru, kushta sambhavadhishthana	vedini	5 <sup>th</sup>
Shashthi	Rohini	Rohini	6 <sup>th</sup>
Saptami	-	Mamsadhara	7 <sup>th</sup>

The parameter for thickness applies to fleshy areas rather than bony areas, such as the SukshmaAnguli (little finger) and lalaata (forehead). It is important to note that the thickness parameter is not suitable for these regions due to their bony nature. Therefore, when considering the application of this parameter, it is essential to take into account the specific area of the body and its unique characteristics. The motive behind describing the thickness of each Twak Stara is that performing various surgical interventions such as abdominal tapping should be done in Angusta Udara Pramana by Vrihimukha Yantra in Jaludhara.

**Skin:** The skin is the largest organ and a vital component of the integumentary system in the human body. It covers the entire surface of the body and serves as a sensory organ. It is a dynamic and reactive organ that can express emotions and feelings. The skin acts as a protective barrier between the body and the external environment, making it the first line of defense against harmful agents. It accounts for approximately 15% of the total body weight and is typically between 2-3mm thick. The skin comprises three layers, namely the Epidermis, Dermis, and Hypodermis (Subcutaneous tissue), each with a varying thickness, as summarized in the table below. The skin and its components are entirely derived from the ectoderm and mesoderm.

## Epidermis

Thin skin -4 layers 0.1mm thick

Thick skin -5 layers 1-2mm thick

## Dermis

### Sub layers Thickness

Stratum Corneum 10-30µm

Stratum Lucidum 100 µm

Stratum Granulosum 100 µm

Stratum Spinosum & Basale 100 µm

A papillary layer of the dermis.

## MATERIALS AND METHODS

The literary resources for the existing look at were amassed using ayurvedic Samhitas like Charaka Samhita, Sushruta Samhita, Astangsangrah, Bhavprakash & Sharangdhara etc. The research output is expected to exhibit clear correlations with the contemporary literature, journals, websites, and study papers as per the extensive research conducted. The research must be thoroughly supported by relevant literature and studies to ensure the credibility and authenticity of the findings.

## DISCUSSION

According to the teachings of Acharya Sushruta, the outermost layer of the skin, known as the Twacha Stara, is referred to as Avabhasini. This layer is approximately 1/18th the thickness of a grain of Vrehi and serves as the adhishthana for Sidhma and Padmakantaka. As per Dalhana, the first layer of skin is responsible for exhibiting the Gaura, Shyamadi Varna (complexion), and five types of Prabha (glory) and Chaya (shades) of the body with the assistance of Bhrajaka Pitta, which is present in this layer.

Lohita is the name given to the second layer of the Twak, as per Lohita Sushruta, which has a thickness of 1/16th of Vreehi. This layer serves as the Adhishthana of Tilakalaka, Nyaccha, and Vyanga. Charaka and Vriddha Vagbhata refer to the second Twachastara as Asrugdhara. Indu explains this layer as Rudhantvaasram, which means it holds the blood and prevents the outflow of Rakta dhatu from the body.

The third Twak Stara is called Shweta, as per Shweta Sushruta. It is approximately 1/12th the thickness of a grain of Vreehi and serves as the Adhishthana for Charmadala, Ajagalika, and Mashaka. Tamra Sushruta mentions the fourth layer of Twak as "Tamra." It lies beneath the Shweta layer and has a thickness of 1/8th of Vreehi. This layer serves as the Adhishthana for Kushta and Kilasa.

The Vedina Sushruta has identified the fifth layer of the skin, known as Vedini, which pertains to the perception of sensations such as touch, pain, heat, and cold. This layer is approximately one-fifth of the thickness of Vreehi. It serves as the Adhishthana for Kushta and Visarpa. Additionally, the sixth layer of Twak, as stated by Rohini Sushruta, is called Rohini, and it is equivalent to one Vreehi in thickness. This layer is the Adhishthana for Granthi, Apachi, Galaganda, Arbuda, and Shleepada. According to Mamsadhara Acharya Sushruta, the seventh layer of Twak is Mamsadhara, which is the thickest layer measuring about two Vreehi. This layer serves as the Adhishthana for Bhagandara, Vidradhi, and Arsha.

### Correlation of layers of Skin

Layers	Twak Sthara	layer of skin
Prathama	Avabhasini	Stratum Corneum
Dwitiya	Lohita Stratum	Lucidum
Tritiya	Shweta Stratum	Granulosum
Chaturthi	Tamra	Malpighian layer
Panchami	Vedini	Papillary layer
Shasthi	Rohini	Reticular layer
Saptami	Mamsadhara	Subcutaneous tissue and muscular layer

### CONCLUSION

The traditional explanation of the Pramana of each Twaksthara lacks conclusive evidence, which can pose a challenge for those seeking to understand it. Therefore, it is crucial to compare and contrast it with modern descriptions to comprehensively understand the subject. The Twak's layer corresponds with the skin layer in its functional and structural aspects. This relationship between the two layers is critical to comprehend the intricacies of the Twak Sahara.

### REFERENCES

1. Agnivesha, Charaka Samhita revised by Charaka and Dridabala with Ayurveda Dipika commentary of Chakrapanidatta, Edited by Yadavji Trikamji Acharya, Chikitsasthana 15th chapter, 7th Edition, Choukhambha Surbharati Prakashan, Varanasi, 2005; 738: 514.
2. Sushruta, Sushruta Samhita, Nibandhasangraha commentary of Dalhanacharya and Nyayachandrika Panchika commentary of Gayadasa, Edited by Yadavji Trikamji Acharya, Shareera Sthana 4th Chapter, Reprint, Choukhambha Orientalia, Varanasi, 2005; 824: 355.
3. Charaka, Charaka Samhita with Ayurveda Dipika Commentary, Choukhamba Sanskritseries. Varanasi ShareeraSthana, 1994; 7/4: 337.
4. Sharma PV. Sushruta Samhita with Nibandhasangraha commentary of Dalhanacharya. Shareera Sthana 4/4. Reprint ed. Varanasi (India): Choukhambha Orientalia, 2009; 355.
5. Srivatsava Sailaja. Sharangadhara Samhita. Poorvakhand, 5/18, 2nd ed. Varanasi (India): Choukhambha Orientalia, 1998; 124.
6. Agnivesha, Charaka Samhita revised by Charaka and Dridabala with Ayurveda Dipika commentary of Chakrapanidatta, Edited by Yadavji Trikamji Acharya, Chikitsasthana 15th chapter, 7th Edition, Choukhambha Surbharati Prakashan, Varanasi, 2005; 738-514.
7. Sushruta, Sushruta Samhita, Nibandhasangraha commentary of Dalhanacharya and Nyaya Chandrika Panchika commentary of Gayadasa, Edited by Yadavji Trikamji Acharya, Shareera sthana 4th Chapter, Reprint, Choukhambha Orientalia, Varanasi, 2005; 824, 355.
8. Vagbhata, Ashtangahrdayam Sarvangasundari commentary of Arunadatta and Ayurveda rasayana commentary of Hemadri, edited by Bhashagacharya Harishastri Paradakara Vaidya, Shareera sthana, 3rd Chapter, 9th Edition Choukhambha Orientalia, Varanasi, 2002; 956-386.
9. Keith L.Moore. The developing human clinically oriented embryology. 8th ed. New Delhi: Elsevier India Pvt.Ltd, 2011; 440-441.
10. Sushruta, Sushruta Samhita, Nibandhasangraha commentary of Dalhanacharya and Nyayachandrika Panchika commentary of Gayadasa, Edited by Yadavji Trikamji Acharya, Shareera Sthana 4th Chapter, Reprint, Choukhambha Orientalia, Varanasi, 2005.

11. Charak Samhita. Vidyotini Hindi commentary by P. Kashinath Shastri & Dr. Goraknath Chaturvedi, published by Chowkhambha Sanskrit Sansthan Varanasi reprinted edition Charak sharirasthana., 2007; 4(22): 875.
12. Acharya YT. Charaka Samhita with Ayurveda Dipika commentary of Chakrapani Datta. Shareera Sthana 7/4. Reprint ed. Varanasi (India): Chaukhambha Orientalia, 2014; 337.
13. Sharma PV. Sushruta Samhita with Nibandhasangraha commentary of Dalhanacharya. Shareera Sthana 4/4. Reprint ed. Varanasi (India): Chaukhambha Orientalia, 2009; 355.
14. Kunte AM, Navare KS. Ashtanga Hridaya of Vagbhata with Commentary: Sarvangasundara of Arunadatta and Ayurveda rasayana of Hemadri. Shareera Sthana 3/8. Reprint ed. Varanasi: Chaukhambha Orientalia, 2014; 386.
15. Behl practice of dermatology, CBS publishers and distributors 10th edition–chapter, 2005; 2 –6.
16. Mahadevan, G Harini Ramya, J Harini Aarthi, R Abhijeet, J Gokul. Ayurvedic Dermatology & Venereology. 1st edit. Derisanamcope: Sarada Mahadeva Iyer Ayurvedic educational and charitable trust, 2011; 13.
17. Sharma PV. Sushruta Samhita with Nibandhasangraha commentary of Dalhanacharya. Shareera Sthana 4/4. Reprint ed. Varanasi (India): Chaukhambha Orientalia, 2009; 355.