

A STUDY TO EXPLORE TWAK LAKSHANA TO ASSESS INTERNAL HEALTH

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ABSTRACT

Introduction: Ayurveda describes the body as an interplay of *Dosha*, *Dhatu*, and *Mala*, serving as a vital diagnostic surface. *Twak*, the site of *Sparshanendriya*¹, reflects the relationship between *Shareera*, *Indriya*, and *Manas*, offering insights into systemic health. This study explores *Twak Lakshana* in classical Ayurvedic texts to evaluate its role in diagnosing internal diseases. **Objectives:** To assess *Twak's* role in evaluating internal health, compile references from Samhita, analyse *Twak Lakshana* in healthy and diseased individuals, and compare findings. **Methodology:** Data were collected from Ayurvedic texts and a questionnaire assessing *Twak* characteristics. Participants, pre-diagnosed patients and healthy individuals were selected based on defined criteria, and their *Twak Lakshana* findings were analysed. **Results:** Skin manifestations were observed in 66% of patients with systemic diseases. These signs, linked to *Rasa* and *Raktha Dhatu*, varied with disease chronicity, *Ahara Rasa*, and *Rasa Dhatu Poshana*, reflecting the status of *Dosha*, *Dushya*, and *Mala*. **Conclusion:** *Twak* provides valuable diagnostic insights into systemic diseases but is influenced by factors such as *Desha*, *Kala*, *Vaya*, *Bala*, *Dosha*, and *Prakruthi*. Its diagnostic reliability depends on these variables and the disease's chronicity.

Keywords: *Twak Lakshana*, *Dosha*, *Dhatu*.

INTRODUCTION

According to Ayurveda, the human body has a complex structure composed of *Dosha*, *Dhatu*, *Upadhatu*, and *Mala*. The skin, referred to as "*Twak*," is one of the five *Gyanendriyas* and is classified as a *Upadhatu* of *Mamsa Dhatu*². It envelops the entire body, and disorders related to the skin are known as *Twacha Rogas*. While these skin conditions are visible externally, their underlying causes often reside within the body. The skin's health is influenced by the balance of *Doshas* and is affected by the *Dhatus*, leading to various diseases on the skin. Consequently, the skin is an important diagnostic tool for identifying various health issues.

Twak is the seat of *Sparshanendriya*¹. The rest of the *Indriya* comes in contact with *Artha/Vishaya* [object of perception] through *Sparshanendriya*, which is in *Samavayi Sambandha* with the *Manas*. The disease manifestation occurs through *indriya*, *Shareera* and *Manas*.¹ As *Twak* is enveloping all these factors, it can be considered a mirror of internal health.

The frequency and consequences of diseases continue to escalate, highlighting the importance of recognizing the link between dermatological signs and internal health issues for early disease identification. Early detection, especially through skin assessments, can improve prognoses. Thus, a thorough and multifaceted comprehension of skin health is crucial. Moreover, if effectively decoded, the structured knowledge found in *Samhita* could provide substantial advantages to clinicians.

This research is designed to analyse and distil the fundamental details concerning *Twak* and its features in various systemic diseases described in *Samhita*. It also intends to support the notion that *Twak* can have a more expansive role in disease diagnosis, which is now primarily restricted to the cosmetic domain.

AIM AND OBJECTIVES

LAYERS OF TWAK

Acharya Charaka described six layers of *Twak*⁶.

Acharya Sushruta⁵, Sharangadhara, and Bhavaprakasha described seven layers.

- To explore the role of *Twak* in assessing internal health.

- To analyse the findings of *Twak Lakshana*

METHODOLOGY

- Data were collected from Ayurveda classical texts and commentaries on *Twak Lakshana* in systemic diseases.
- A questionnaire explored demographic details and *Twak* characteristics. Individuals, including pre-diagnosed patients and healthy subjects.
- The findings were analysed.

REVIEW OF LITERATURE

TWAK SHAREERA

Twak is the external covering of the body, derived from the word '*Twak Samvarane*', meaning the body's protective layer. In Ayurveda, it is also called *Twak indriya* or *Sparshanendriya*¹, which is responsible for *Sparsha*. *Twak* plays a crucial role in reflecting *Chaya* (complexion) and *Prabha* (radiance), indicating an individual's overall health. It is considered an *Upadhatu* of *Mamsa Dhatu*² and helps protect and cover the body.

Twak is classified as a *Matruja Bhava*³, meaning it is inherited maternally with *Vayu Mahabhuta Pradhanata*. During development, it forms through *Ushma*, acting on *Mamsa Dhatu*.

FORMATION OF TWAK

The formation of *Twak* occurs during *Agni's Paka* of *Shukra* and *Shonita*, akin to the formation of *Santani-ka* (cream) on heated milk⁴.

Modern embryology supports the view that the integumentary system (skin and its appendages) is not derived from a single layer, aligning with the Ayurvedic perspective of *Twak* layered formation.

The layers are linked to specific diseases, each playing a different role. Acharya Gangadhara clarified that Charaka's third layer comprises two distinct layers (superficial and deep), corresponding to Sushruta's seven-layer model.

SL NO	LAYERS	KEY FEATURES	RELATED DISEASES
1	<i>Avabhasini</i>	The outer layer reflects complexion (<i>Chaya</i>)	Pigmentation issues (e.g., <i>Tilakalaka</i>)
2	<i>Lohita</i>	The pigmented layer holds melanin	Pigmentation disorders (e.g., <i>Vyanga</i>)
3	<i>Sweta</i>	Clear or white appearance	Disorders like <i>Ajagallika</i> , <i>Mashaka</i>
4	<i>Tamra</i>	Red/purple layer with keratohyalin granules	<i>Kushta</i> , <i>Kilasa</i>
5	<i>Vedini</i>	Sensory layer with mechanoreceptors	Pain-related conditions (e.g., <i>Visarpa</i>)
6	<i>Rohini</i>	Growth-related layer, connective tissue	Growth disorders (e.g., <i>Apachi</i> , <i>Granthi</i>)
7	<i>Mamsadhara</i>	The deep layer, related to muscle and superficial fascia	Conditions like <i>Bhagandara</i> , <i>Vidradhi</i>

Table no1: Layers of *Twak* and disease related to it.

RELATION OF *TWAK* WITH *DOSHAS*⁷

Dosha	Key Function in Skin (<i>Twak</i>)	Imbalance Symptoms
<i>Vata Dosha</i>	Governs temperature and touch perception via <i>Pra-na Vayu</i> ; <i>Udana Vayu</i> affects skin colour	Dryness, roughness, cracked skin
<i>Pitta Dosha</i>	<i>Bhrajaka Pitta</i> controls complexion, radiance, and sweating	Hyperpigmentation, excessive sweating, rashes
<i>Kapha Dosha</i>	Provides moisture and softness via <i>Snigdha Guna</i>	Excess of unctuous, sluggish appearance

Table no 2: Relation of *Twak* with *Doshas*⁷.

RELATION OF *TWAK* WITH *DHATUS*⁸

Dhatu	Role	Key Characteristics	Impact of Imbalance
<i>Rasa dhatu</i>	Nourishes the entire body and skin; it contributes to moisture and appearance.	Predominantly <i>Kapha</i> ; stability, moisture, nourishment	Dull, dry skin; lack of hydration
<i>Rakta Dhatu</i>	Governs skin colour (<i>Varna</i>) and healthy complexion (<i>Varna Prasadana</i>).	Linked to <i>Bhrajaka Pitta</i> ; vibrant and healthy appearance.	Discoloration: dull or uneven skin tone
<i>Mamsa Dhatu</i>	Provides structural integrity and firmness of <i>Twak</i> .	Supports skin elasticity derived from muscle tissue.	Sagging skin, wrinkles, lack of firmness.

Table no3: Relation of *Twak* with *Dhatu*⁸.

RELATION OF *TWAK* WITH *MALA*

Twak is involved in the production and excretion of *sweda*, which plays a vital role in regulating the body's temperature and hydration. The *Swedavaha Srotas* are Crucial for detoxification and maintaining healthy skin⁹.

PANCHABHAUTIKATVA OF *TWAK*

- **Prithvi:** Stability associated with the outermost layer.
- **Jala:** Softness and moisture in the skin.
- **Agni:** Color and luster of the skin.
- **Vayu:** Touch perception¹⁰.
- **Akasha:** Microchannels for sweat production.

VARNA OF *TWAK*

Skin colour depends on various factors, including *Purva Janma Karma*¹¹ and the balance of *Panchamahabhuta* at conception. *Bhrajaka Pitta* imparts lustre, while *Rakta Dhatu* gives skin colour. The *Pit-tavaha Siras* contribute to the brightness of the skin.

Pramana of *Twak* Acharya Sushruta provided measurements for the thickness of each layer of *Twak*, using units called *Vreehi* or *Yava*¹².

- The total thickness of *Twak* across all layers is approximately 5.95 *Yavas*, equivalent to 1.5–4 mm in modern terms.

Twak Layer	Thickness(Vreehi/Yava)	Comparison to Modern Science
1	1/18th	Outer skin (stratum corneum)
2	1/16th	Melanocyte layer (stratum Basale
3	1/12th	Dermis
4	1/8th	Connective tissue
5	1/5th	Papillary dermis
6	1	Reticular dermis
7	2	Superficial fascia

Table no4 : Pramana of Twak.

QUESTIONNAIRE:

Domains of questionnaire

1. Temperature
2. Texture
3. Colour
4. Sensation
5. Growth
6. Discharge
7. Other Observations
 - **Loss of Hair:** Present / Absent
 - **Pigmentation Changes:** Present / Absent
 - **Perspiration:** Normal / Increased / Decreased
 - **Pain:** Present / Absent
 - **Excess Secretion:** Present / Absent (Eye, Nose, Ear, Mouth)
8. Overall Appearance
 - Vavaviya Chaya Present / Absent

OBSERVATION AND RESULT

This observational study collected data from 100 pre-diagnosed patients and 100 apparently healthy indi-

viduals in and around Udupi and from SDM Ayurveda Hospital and Research Center Udupi.

Results Based on Age

Among Pre-diagnosed Patients

- Age 30-40: 30
- Age 40-50: 33
- Age 50-60: 37

Among Apparently Healthy Individuals:

- Age 30-40: 36
- Age 40-50: 36
- Age 50-60: 28

Results Based on Gender

Among Pre-diagnosed Patients

- Males: 60
- Females: 40

Among Apparently Healthy Individuals:

- Males: 42
- Females: 58

Results Based on Individual Diseases

Disease	No of cases	Twak lakshana observed	There are no cases with no twak lak-

			shana
Madatyaya	3	Hyperpigmentation on the forehead and cheeks in 1 patient	2
Jwara	4	Mild to moderate fever, red patches on the chest in 1 patient, no asymptomatic cases.	0
Raktapitta	4	Red spots on the face in 1 patient, thick nasal secretion with blood in 1 case,	1
Gulma:	2	Moderate fever, itching and burning sensations decreased skin colour in 1 patient,	1
Prameha	5	Skin tags in 4 patients, numbness in 1 patient	3
Unmada	4	Dry and unctuous texture in different patients, skin tags in 11 areas	0
Apasmara	2	Mild fever and dry skin in 1 patient	1
TB	4	Moderate fever, red rashes on chest in 1 patient	0
Shotha	4	Mild to moderate fever, tingling sensations	0
Udara	4	Mild to moderate fever, itching sensations	0
Grahani	2	Increased salivation	1
Atisara	2	No symptoms	2
Chardi	1	No symptoms	1
Visha	4	Moderate fever, tingling in 2 patients	1
Arsha	2	No symptoms	2
Pandu	5	Mild fever, dark circles in 1 patient	1
Kamala	4	Severe fever, yellow skin in 3 patients	1
Shwasa	3	Hair loss in 2 patients	0
Kasa	4	Burning sensations and dry skin in 1 patient	1
Mutrakrichra	3	No symptoms	3
Ashmari	2	No symptoms	2
Amavatha	4	Mild fever localised in knee joints	0
Sandhi Vata	4	Tingling sensations	0
Gridhrasi	3	Tingling and numbness in legs	2
Pakshagatha	4	Mild fever, burning in the nose	2
Vata Raktha	3	Cracked lips, itching in joint areas	2
Anartava/PCOD	3	Skin tags	0
Dysmenorrhea	1	No symptoms	1
Vandhyatva	2	No symptoms	2
Ardita	2	Excessive salivation in 1 case	1
Vishada	2	No symptoms	2
Sthoulya	4	Skin tags and hyperpigmentation	0

Table No.: Results Based on Individual Diseases**Abnormal Skin Symptoms Observed in Apparently Healthy Individuals**

- Total Cases: 100
- Symptoms included:
 - Raised temperature in 2 individuals.
 - Dry skin in 5 individuals, cracked heels in 8, brittle nails in 2.
 - Black lips in 1, dull eyes in 2.

- Itching on the face in 1, inner thigh in 1.
- Pimples in 4, pus discharge from pimples in 2.
- Increased perspiration in 3.
- Hyperpigmentation on the forehead (5), neck (4), and knee/elbow joints (2).
- Hair loss in 17 individuals, dark circles around eyes in 5.

DISCUSSION

TWAK LAKSHANA IN VARIOUS SYSTEMIC DISEASES

<i>Srotas</i>	Conditions	Symptoms Related to Twak
<i>Pranavaha Srotas</i>	<i>Hikka, Shwasa, Kasa, Hridroga</i>	Skin dryness, colour changes, roughness, altered perspiration.
<i>Udakavaha Srotas</i>	<i>Udara, Atisara, Pravahika</i>	Dry skin, fluid-filled abdomen, visible veins, colour changes.
<i>Annavaha Srotas</i>	<i>Grahani, Gulma, Chardi, Amlapitta</i>	Burning sensations (<i>Pitta</i>), dampness (<i>Kapha</i>), and texture changes.
<i>Rasavaha Srotas</i>	<i>Jwara, Pandu, Ama Vata, Madatyaya</i>	Temperature fluctuations, edema, hair loss, horripilation.
<i>Raktavaha Srotas</i>	<i>Raktapitta, Kamala, Kushta, Visarpa</i>	Burning sensations, colour changes, discharge, skin lesions
<i>Mutravaha Srotas</i>	<i>Prameha, Mutrakrichra, Ashmari</i>	Edema, texture changes, numbness.
<i>Manovaha Srotas</i>	<i>Unmada, Apasmara, Vishada</i>	Changes in skin appearance, excessive salivation, piloerection.
<i>Shukravaha Srotas</i>	<i>Vandhyatva, Anartava, Nashtarthava etc.</i>	Dullness, loss of radiance, reduced vibrancy.
<i>Twak Gata Vata Lakshana</i>	<i>Sandhigata Vata, Pakshagatha, Gridhrasi etc.</i>	Colour and texture change, cracked skin, brittle nails, numbness.

Table no6: *Twak Lakshana* in various systemic diseases

The relationship between *Twak* and age shows that skin fully develops by age 30, characterised by optimal nourishment and rapid healing. Individuals aged 30-40 exhibit fewer dermatological symptoms, while those aged 50-60 show the highest prevalence of skin issues, often due to Vata disturbances, with symptoms like black discoloration and reduced complexion.

Regarding gender, females are more likely to display skin symptoms due to hormonal influences, lifestyle choices, and hydration, making them prone to pigmentation disorders and autoimmune diseases. In contrast, males tend to experience more hair loss and have a higher incidence of infectious skin diseases.

<i>Vyadhi</i>	<i>Twak Lakshana Observed</i>	<i>Diagnostic Contribution of Twak Lakshana</i>
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Madatyaya	Hyperpigmentation in one out of three patients	Insufficient for diagnosis; only <i>Varna Bedha</i> noted indicative of <i>Ojas Vyapath</i> and <i>Vata</i> involvement
Jwara	Red patches, cold sores, and hyperpigmentation	<i>Pratyatma Lakshana</i> with <i>Twak Lakshana</i> enhances diagnosis; indicates <i>Dosha</i> involvement for tailored treatment
Raktha Pitta	Nasal bleeding, anal bleeding, burning sensation, pimples, altered perspiration	Significant in diagnosing <i>Urdhvagatha</i> and <i>Adhogatha Raktapitta</i> ; indicates <i>Pitta-Raktha</i> involvement
Gulma	Fever, burning sensation, itching, horripilation	Some diagnostic value indicates <i>Pitta</i> and <i>Raktaja Dushti</i> with <i>Vata-Kapha</i> involvement
Prameha	Numbness, tingling, hyperpigmentation, skin tags	Limited diagnostic value related to <i>Poorva Roopa</i> of <i>Prameha</i> , indicating <i>Dhatu Kshaya</i> and <i>Basti</i> dysfunction
Unmada	Dryness, burning, itching, hyperpigmentation, skin tags, early ageing signs	No specific disease diagnosis; reflects <i>Medho</i> and <i>Rasa Dhatu</i> disturbances
Apasmara	Persistent fever, dry skin, cracked lips, heel fissures	Insufficient for diagnosis; suggests possible <i>Pitta</i> or <i>Vata</i> involvement with <i>Rasa Kshaya</i>
Tuberculosis	Elevated temperature, dry skin, red rashes, brittle nails, lymph node enlargement, piloerection	Reflects systemic issues and <i>Dhatu Kshaya</i> ; complex symptoms make <i>Twak Lakshana</i> insufficient for diagnosis
Shotha	Raised temperature, oiliness, thickened skin, pimples, blisters	Limited diagnostic value suggests <i>Dosha</i> accumulation between <i>Twak</i> and <i>Mamsa</i>
Udara	Increased temperature, itching, edema, skin discolouration	<i>Pratyatma Lakshana</i> supports diagnosis; suggests <i>Kapha</i> imbalance and <i>Jala Mahabhuta</i> changes
Grahani	Excessive salivation	Minimal contribution to disease-specific diagnosis
Atisara & Chardi	No skin symptoms observed	No diagnostic value; may reflect disease acuteness and <i>Dosha</i> influence
Visha	Fever, sweating changes, dry mouth, skin discolouration	Limited relevance: The diverse nature of <i>Visha</i> makes <i>Twak Lakshanas</i> non-diagnostic

Pandu	Dryness, roughness, cracking, numbness, puffiness, hair loss	Limited but aligns with <i>Pandu Vyadhi</i> ; suggests <i>Vata Vruddhi and Rasa Kshaya</i>
Kamala	Temperature changes, dryness, yellow-red skin discoloration	Limited diagnostic relevance; indicates <i>Vata and Pitta</i> imbalance
Arsha	Dry skin, localised dryness near the anus, cracked heels	Minimal diagnostic value
Kasa	Dry skin, pricking pain, hyperpigmentation, yellow eyes	Minor role in diagnosis; suggests <i>Vata Vruddhi and Rasa Kshaya</i>
Shwasa	Hair loss	Not relevant for diagnosis
Mutrakrichra	No skin symptoms observed	No diagnostic value
Ashmari	Dry skin, cracked heels, itching, hyperpigmentation	Limited diagnostic contribution suggests <i>Vata and Kapha's</i> involvement
Amavata	Localised warmth, redness, pitting oedema, cracked heels	Provides an understanding of <i>Dosha</i> involvement but is insufficient for a conclusive diagnosis
Sandhivata	Dry skin, numbness, hyperpigmentation	Indicates <i>Vata Pradhana Dhatu Kshaya</i> but lacks disease specificity
Gridhrasi	Mild temperature elevation, dry skin, tingling	Limited diagnostic relevance; suggests <i>Vata</i> pre-dominance
Pakshagatha	Dry skin, temperature rise, red spots	Some relevance for understanding <i>Dosha</i> ; insufficient for disease diagnosis
Vatarakta	Cracked lips, itching, nodular growths	Indicative of <i>Twak and Mamsa Ashrita Vatarakta</i> but not sufficient for diagnosis
Anartava/PCOD	Hyperpigmentation, skin tags, male-pattern hair loss	Significant diagnostic value; aligns with <i>Rasa and Medho Dhatu</i> disturbances
Dysmenorrhoea	No skin symptoms observed	No diagnostic value

Vandhyatva	Mouth ulcers (male), facial hair (female)	Limited diagnostic value for infertility
Ardhita	Perspiration changes, excessive salivation	Minimal relevance for diagnostic purposes
Vishada	No skin symptoms observed	No diagnostic value
Sthoulya	Unctuous skin, hyperpigmentation, skin tags	Valuable diagnostic indicator for <i>Sthoulya</i> ; suggests <i>Medha and Kapha</i> disturbance

Table no 7: discussion based on individual disease.

CONCLUSION

The changes observed in skin characteristics are often ascribed to shifts in the *Tridosha*, which relate to the underlying condition, the interaction between *Dosha* and *Dushya*, and the fluctuating states of the *Dosha* involved, including its *Tara-Tama Bhavas* as well as the *Anubandha – Anubandya* relation of *Vyadhi*. However, it did not demonstrate the *Pratyatma Lakshana* of *Vyadhi*, which is essential for precise diagnosis.

In analysing the link between a disease and its physical manifestations, skin features can vary significantly based on multiple factors, including *Rutu*, *Desha*, *Kala*, *Vaya*, *Bala*, *Dosha*, *Dhatu*, and *Prakruthi*. These factors change as the disease advances, its chronicity, the individual's *Prakruthi*, and other variables. Skin manifestations are particularly notable in cases of *Rasa* and *Raktha Dhatu* disturbances, presenting differently across various skin layers as the disease evolves and mental conditions are affected, highlighting their strong association with the skin.

While dermatological indicators provide valuable insights, they are insufficient for comprehensively identifying all systemic conditions. Their effectiveness can vary based on factors such as the *Kriyakala*, *Vyadhi Utpatti Hetu*, *Sthana*, *Roga Marga* and other relevant elements. However, they assist in analysing the *Dosha*, *Dhatu*, or *Srotas* involved in the illness, promoting a quicker medical comprehension of

Vyadhi. When applied correctly, this approach empowers practitioners to improve early diagnosis, prognosis, and treatment, shifting the focus away from solely relying on diagnostic tools.

The present study involved a random selection of 100 pre-diagnosed patients alongside 100 healthy individuals from the Udupi region of Karnataka. The research explored the concept of skin as a potential indicator of internal health issues, utilising a prepared questionnaire. Research indicated that 66% of patients with various systemic diseases showed skin manifestations. Nonetheless, these signs were not entirely reliable for diagnosis and prognosis of the diseases, as their effectiveness depended on several factors, including whether the disease was acute or chronic, the presence of pre-existing conditions, and the influence of dietary and nutritional factors like *Ahara Rasa* and *Rasa Dhatu Poshana*. I thought they conveyed the status of *Dosha*, *Dushya*, and *Mala*. Conversely, 34% of the patients showed no skin symptoms, while 25% of the healthy participants displayed changes in their skin condition, providing insights into potential underlying diseases at early stages.

Future studies should involve a larger cohort of patients, with an emphasis on specific diseases and factors like *Srotas*, *Kriyakala* of *Vyadhi*, chronicity, etc., to ensure the accuracy and relevance of the findings.

This will enable researchers to arrive at a definitive conclusion.

FUTURE RESEARCH SCOPE:

Future studies should involve larger patient cohorts and focus on specific diseases and factors, such as Srotas and disease progression, to enhance the accuracy and relevance of findings.

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