

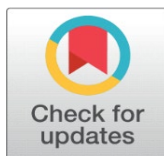
A REVIEW LITERATURE OF *TWAK SHARIR*- W.R.T. RACHANA AND KRIYA SHARIR

Dr. Alka Bhandare¹ , Dr. Shilpa Yerme² , Dr. Vaibhav Biradar³ 

¹ Professor and HOD, Department of Rachana *Sharir*, Dhanwantari *Ayurved* Medical College and Charitable Hospital, Udayagiri, Latur, Maharashtra, India

² Professor and HOD, Department of kriya *Sharir*, SGR *Ayurved* college Solapur, Solapur, Maharashtra, India

³ Associate Professor and HOD, Department of kriya *Sharir*, Dhanwantari *Ayurved* Medical College and Charitable Hospital, Udayagiri, Latur, Maharashtra, India



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Corresponding Author

Dr. Shilpa Yerme,
yermeshilpa@gmail.com

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ABSTRACT

Ayurveda is an ancient & holistic system of medicine. *Sushruta Samhita* an oldest one Samhita of Ayurved. Acharya *Sushruta* in *sharrer sthan* has mentioned five *Gyanendriyas* (sense organs). skin, which is largest covering organ of body, in Ayurveda it comes under the term *Sparshanendriya* and *adhishthana* is *Twacha* (skin). Skin performs many functions like touch sensation, cold, temperature, pain, pressure, etc. skin serve to be first line of defense whatever we get into from environment the first response is from skin. Functions of all three dosha are well elaborated in the *twak*. *Vata* is responsible for carrying sensory input from *twak* to *murda* by *vyaan vayu*, *Piita* in form of *bhrajak* pitta controls all the types of metabolic activities, and *Kapaha* regulates functions of sweat gland and sebaceous glands and maintains moisture. Being largest organ in the body it is also site of *mana* and *rasa dhatu*. *Rasa dhatu kshaya* is firstly and well elaborated in *twak*. Aging is the process that is well depicted in *twak*. Ayurveda advocates preventive and curative measure to control aging of *twak*.

This article has been comprehended with all details about skin (*twak*) including *Utpatti*, synonyms, kriya, *Rachna sharir* of *Twacha*, types (layers) etc. skin is one of *rog marg* variety of diseases are observed on skin which are very unpredictable. Skin is not only *rogmarg* but also it is part of treatment modality. understanding *twak* an account with anatomy & physiology will help in various ways for diagnosis, prognosis, treatment etc.

Keywords: *Sparshanendriya*, *Gyanendriyas*, *Adhishthana*, *Twak*, *Twacha Utpatti*, *Rachnatmaka*

1. INTRODUCTION

Skin is uppermost or outer part of body, which is more exposed than any other, so it becomes easy to examine, inspect or observe. Though the chances of exposure to sun light, microbes, pollutants, damage may increase, skin is quite capable to protect from all such. skin is protective in nature, so it heals easily from such damages. Skin can reflect one's emotions, psychology, behaviours, moods, interpretation. sweating, blushing are reactions observed on skin. Skin Colour change is very much helpful for diagnosis, or examination of patient. it has a great role in medical diagnosis process. In anaemia colour changes to pale, in jaundice –

yellowish, bluish skin is indicative of less oxygen supply. Skin patches or rashes are indicative of diseases such as chickenpox, measles, food allergy, cosmetic allergy. Some other conditions like moles, hyperpigmentation, warts, age spots, pimples are due to involvement pathology of skin. people are so mad for beauty of skin they invest much more time and money for the same. Everyone wishes for youthful and young appearance of skin.

dosha – dhatu & mala are the main components of *sharir*. *twacha* is *updhatu* of *mamsa dhatu* as well as *moolsthan* of *mamsa*. *twacha* covers *mamsa dhatu*. *twacha* has several views regarding *uttapti*, layers, diseases. acharya charaka and *sushruta* has elaborated *twacha* in different way. skin maintains normal physiological conditions. Acharya *yogratanakar* has included *twak pariksha* in *ashthvidh pariksha*. to study skin with respect to *Rachana* & *kriya* is important to deal with all such factors helpful for diseases and its management. *Twacha* is the seat for various *twakrogas*. Almost each *rogahas* its one or many *lakshanas* having *vyaktisthanas twacha*. *Twacha* is a seat of *sparshanendriya*. To know the *vikruti* first one should know the *prakruti*. Skin is the vital body part and sensory organ too. In modern times, the physicians are challenged with many novel diseases, as well as with novel forms of old diseases, that mark the medical practice more challenging and interesting too.

2. MATERIAL AND METHODOLOGY

Available literature regarding *Twak (twacha)* in Ayurvedic text such as *Bruhartryi*, *Laghutrayi*, *Ghanekartika* etc. and modern text such as Cunningham's manual of practical anatomy, Human anatomy by B.D. Chaurasia. Materials from electronic media and journals related to the skin.

3. AIM AND OBJECTIVE

- 1) To Study the Perception of *Sharir Rachana* and *Sharir kriya* of *twacha*.
- 2) To assemble different views of *twacha* together as explained in different *samhitas* & classical textbooks.
- 3) To study the concept of skin (*twacha*) as per Ayurveda and Modern science and compare those concepts.

4. REVIEW OF TWAK WRT RACHANA AND KRIYA SHARIR

In *ayurved* Samhitas *Twak* is explained in detail with layers, types, and diseases. It is described as outer protective layer and sensory organ. Acharya *Sushrut* and *Charak* has explained very clearly different layer, its breadth, functions, and diseases for that particular layer. Ayurveda explains seven layers of the skin in detailed. each layer provides support to other layers so in whole all together perform functions better. In Ayurveda, skin is considered a manifestation of inner health. Position of *twak* is very crucial as it is the site of *Vyaan Vayu*, *Bhrajak* Pitta, *Rasa dhatu* and *Mana* also. It functions as bridge between body and mind. It should not be considered merely a covering of the body. It is in fact the mirror of the body which reflect the healthy or diseased state.

4.1. UTPATTI (FORMATION OF TWAK)

Formation of *Twak (Utpatti)* According to *Sushruta* and *Vagbhata*, after *Shukra*, *Shonita sanyoga*, *pachyamanawastha* occurs and seven layers of *Twak* are

formed like cream over milk. *Twak* is *matruja* organ and still it is generated as the *sparshanendriya* from *Atmaja* bhava. As per *charaka*, *Twak* is also generated during third month as it is *Dnyanendriya*. *Twak* is considered as an *updhatu* of *mamsa dhatu* along with vasa that are produced by *matrija* bhava itself. Acharya *Vagbhata* says that *Twak* is derived by the action of *rakta dhatvagni* from *rakta*.

Synonym: *Twak, Twacha, Charma, Sparshan, Sparshanendriya* etc.

Acharya *Sushruta* has described seven layers of *Twak* in *Samhita* along with specific name. Acharya *Sushruta* has clearly mentioned the thickness of each layer of *twak* but we are not able to find it applicable all over body uniformly. *Twak* width is having great anatomical variations i.e., different at different places e.g., it is quite thick over chest, abdomen and thin over forehead and fingers. We should consider the *twak* width of abdomen as reference as *Sushruta* has mentioned that during surgery thickness of incision in abdomen should be of thumb width. [Table 1](#)

Table 1

Table 1 Layers of <i>twak</i> According to Different Acharyas							
layer	Charak	Vagbhat	Sushrut	Arundata	Sharangdhar	Bhavprakash	Modern
1	Udakdhara	Udak dhara	Avbhashini	Bhashini	Avbhashini	Avbhashini	Stratum Basale
2	Asrugdhara	Asrug dhara	Lohita	Lohita	Lohita	Lohita	Stratum spinosum,
3	Sidhma, Kilasa Sambhavadhishthana	3rd	Shewta	Shewta	Shewta	Shewta	Stratum granulosum
4	Alaji, Vidradhi Sambhavadhishthana	4th	Tamra	Tamra	Tamra	Tamra	Stratum lucidum,
5	Dadru, Kushta Sambhavadhishthana	5th	Vedini	Vedini	Vedini	Vedini	Stratum corneum,
6	If this layer is injured, leads to Andhatwa & Tamapravesha leads to Andhatwa & Tamapravesha	Prandhara	Rohini	Rohini	Rohini	Rohini	Dermis Papillary & reticular layer
7			Mams dhara	Mams dhara	Sthula	Sthula	Hypodermis subcutaneous layer

5. MODERN ASPECT OF SKIN

Skin outermost cutaneous membrane which covers the external surface area. Skin is the largest organ of the body in accordance with weight and body surface area. Adult skin area is about 2 square meter (22 square feet) and weight about 4.5 kg (10 – 11 lb) i.e 16 % of total body weight. Thickness of skin ranges between 0.5 mm (0.02in.,) to 4.0 mm (0.16in.). almost over body it is 1mm (0.04 – 0.08 in) thick. skin is composed of two parts. [Bhishagratna \(1911\)](#)

- **Epidermis:** outer superficial thin portion made up of epithelial tissue.
- **Dermis:** deep thick portion of connective tissue.

Another one layer is attached deep to dermis is subcutaneous layer, it is not part of skin. It consists of areolar & adipose tissue which is also known as hypodermis. fibres from dermis anchor the skin to subcutaneous layer and again it attaches to underlying organ and tissues.

This deep layer (subcutaneous layer) works as storage for fat, blood vessels which supply skin. It contains nerve endings called as lamellated corpuscles which

are sensitive to pressure. The subcutaneous layer serves as a storage depot for fat and contains large blood vessels. [Garde \(1999\)](#)

6. LAYERS OF EPIDERMIS

Epidermis has following layers:

- 1) **Stratum Basale (stratum germinativum)** deepest portion- it is separated from dermis by basement membrane and attached by hemidesmosomes to basal membrane. The layer contains melanocytes, cells are cuboidal to columnar and mitotically active constantly produce keratinocytes. [Ghanekar \(2002\)](#), [Pande and Chaturvedi \(2001\)](#), [Shastri \(2001\)](#), [Tortora \(2002\)](#)
- 2) **Stratum spinosum (prickle cell layer)** 8- 10 cells contain dendritic cells. irregular, polyhedral cells with cytoplasmic processes. they extend outward and contact to another cell by desmosomes.
- 3) **Stratum granulosum** 3-5 cell layers - this layer contains diamond shaped cells having keratohyalin granules which contains keratin precursors forms bundles. lamellar granules contain glycolipids which function like glue and keep cell stick together.
- 4) **Stratum lucidum** 2- 3-layer cell- it is found in palms and soles. this is thin clear layer containing eleidin produced from keratohyalin.
- 5) **Stratum corneum** superficial portion- 20- 30 cell layers. this layer is made up of keratin, horny scales (product of dead keratinocytes). Thickness varies keratinocytes secrete defences which are active during immune response. [Figure 1](#)

Figure 1

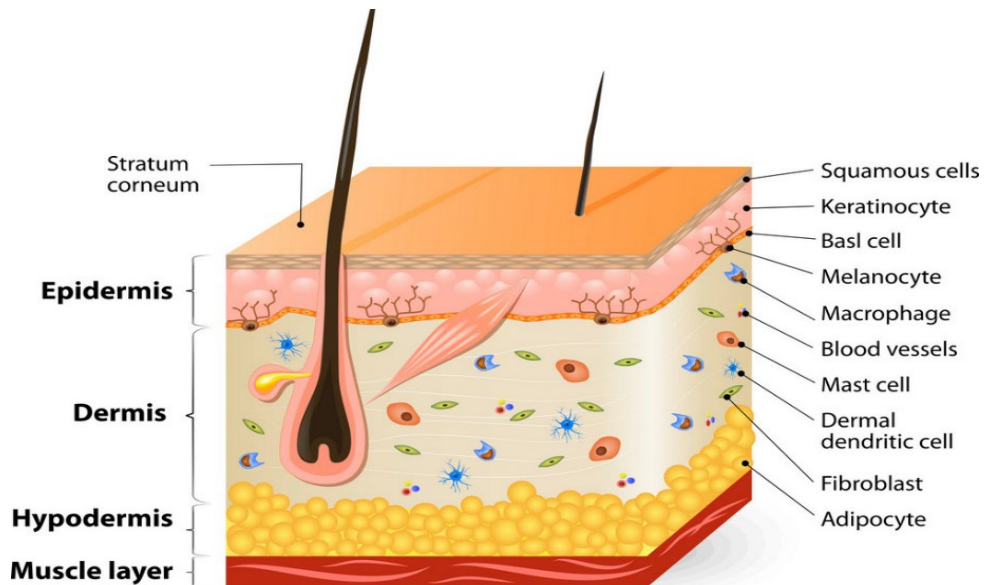


Figure 1 Layers of Epidermis

6.1. DERMIS

Dermis is connected to epidermis at basement membrane level. dermises consist of two layers.

- 1) **Papillary layer:** it is upper layer, thin consists of loose connective tissue and contacts epidermis.
- 2) **Reticular layer:** it is deep layer, thick less cellular in nature. It contains dense connective tissue, collagen fibres.

Dermis has hairs, hair follicles, muscles, sensory neurons, sweat gland and blood vessels.

7. HYPODERMIS

Hypodermis also known as subcutaneous fascia is deeply situated to dermis. This deep layer consists of hair follicles, sensory neurons, blood vessels and adipose lobules. [Table 2](#)

Table 2

Table 2 Sparteck Correlation with Modern Science					
S. N.	Layer	Width	Rogadhistan	Modern Concept	Skin Layer
1	Avabhasini	1/18 vrihi,	Sidhma, Padmakantak	Corneum Stratum	Epidermis
2	Lohita	1/16 vrihi,	Tilkalak, Nyachchha, Vyang	Stratum Lucidum	Epidermis
3	Shweta	1/12 vrihi,	Ajagallika, Charma dala	Stratum Granulosum	Epidermis
4	Tamra	1/8 vrihi,	Kilas, Kushta	Stratum Spinosum or Malpighian layer	Epidermis
5	Vedini	1/5 vrihi,	Kushta, Visarp	Stratum Basale or Germinative Layer	Epidermis
6	Rohini	1 vrihi,	Apachi, Arbud, Shlipad, Galganda	the layer of papillary and reticular merge together without demarcated.	Dermis
7	Mamsa dhara	2 vrihi,	Bhagandar, Vidradhi, Arsh	subcutaneous fascia	Hypodermis

8. TWAK SHARIR ACCORDING TO KRIYASHARIR

8.1. COMBINATION OF 5 BASIC ELEMENTS (PANCHABHAUHIKTWAM) OF SKIN (TWACHA)

Pruthvi: Shape of *twak* and *loma*

Aap: Ras and *Lymh*

Tej: skin colour and glow

Vayu: Touch Sensation (skin is sense organ having dominance of Vayu)

Aakash: *Lomkupas* (hair pits) and opening of sweat glands.

8.2. RELATION WITH TRIDOSHA

Vat: Touch sensation (*Sparsh*) and circulation is related to *Vyan Vayu*. Excess *vayu* represented by darkness of skin

Pitta: *Bhrajak* pitta related for giving lustre and colour. Excess pitta by yellowness of skin

Kapha: related to moisture or *snigdhatta* and represented whiteness of skin.

8.3. RELATION WITH TRIMALA

Sweda: Sweat (*Sweda*) among *trimala* excreted by skin which helps to maintain body temperature.

8.4. TWAK SARA: TWAK SARA IS ALSO KNOWN AS RASA SARA

Acharya *kashyapa* has clearly mentioned that as *rasa dhatu* nourishes *twak*, *twak sara lakshanas* are same as *rasa sara*. Skin of *twak sara* person is characterized by glossy, smooth, soft, clear, fine, less numerous, deep rooted, and tender hairs and such individual is endowed with happiness, good fortunes, power, enjoyment, intellect, knowledge, health, excitement, and longevity.

Acharya *kashyapa* mentioned two characters like *sadykshat prarohartva* (skin heals earlier) and *twakrograhit* (healthy skin).

8.5. PHYSIOLOGICAL ASPECT OF VATA (VYAAN & PRAAN) IN TWAK

When we consider the *panchgyanendriya*, *sparshgyanendriya* dwells the *twak*. It is *vata* that is key factor in any type of *sparshgyan* (sensory knowledge). It is *vyaan vata* that is specially located in the *twak* and is responsible for carrying information from *twak* to *mana* and same is carried to soul by *prana vata*.

If we consider things in terms of contemporary medicine, we find that a variety of sensory receptors are found in skin e.g., free nerve endings for pain, Ruffini end organ and Krause end bulb for warmth and cold respectively, Meissner corpuscle and Merkel disc for touch and Pacinian corpuscle for pressure sensation. Basically, all these receptors act like transducers that convert various form of energy (stimuli) into action potentials in nerve fibres. Different level of neurons carry these sensory information from sensory receptor to spinal cord, spinal cord to thalamus and finally from thalamus to cerebral cortex.

8.6. PHYSIOLOGICAL ASPECT OF PITTA (BHRAJAK) IN TWAK

Twak is considered as seat of *pitta dosha* also, specially *Bhrajak pitta*. *Bhrajak pitta* is responsible for digestion and absorption of substances used in the form of *abhyanga* (oil massage therapy), *parisheka* (bathing), *avagaha* (washing), *lepana*(poulticing) etc. It is responsible for glow of one's natural complexion. Achary *charka* has clearly mentioned that temperature and skin colour is controlled by *pitta dosha*. Variations in temperature and colour is duet to *pitta Prakopa*. further commentor *Chakrapani Datta*, in his commentary on this has stated that regulation of the heat and variations in the colour of the body are function of *bhrajak pitta*.

As per modern physiology melanin, carotene, haemoglobin is responsible for variations in skin colour. Melanocyte is responsible for colour of skin. it is present in the germinal layer of epidermis the cells which synthesize melanin by enzyme tyrosinase, which is in *avabhasini* layer of skin. Melanocytes are almost same in all people's; skin colour difference is due to the amount of pigment produced by melanocytes. All these phenomena are attributed to function of *Bhrajaka pitta* but same cannot be only limited to this. Mode of function of absorption of medicaments applied on *twak* is one of the important tasks to be understood. *Prabha* or *chhaya* is

correlated to circulatory events that takes place in the *Asrigdhara* layer of the skin which corresponds to the vascular bed of the skin. The hue and intensity of the skin depends upon the rate of flow of *rakta*. Again, *Udakadhara* layer, which is first layer of *twak* as per *Charak*, is layer that regulates water homeostasis in the body.

8.7. PHYSIOLOGICAL ASPECT OF KAPHA IN TWAK

A prominent layer of fatty tissue is found below *twak*(skin). This adipose tissue is nothing else but *meda* dhatu only. *Meda* dhatu is considered as one of sites where *kapha* resides. *Twak* itself is *updhatu* of vasa or fatty element. Ultimately, we can interpret that *kapha* and *meda* (adipose) are found below *twak*. *Sweda*(sweat) is considered as mala of *meda* that is excreted or expelled from body with help of *Roma Koopa* (sweat gland). Sweat by evaporation not only removes excessive amount of salt from body but other harmful chemicals also. It also regulates body temperature e.g., after exercise or in fever it decreases temperature. In condition of *kapha kshaya* there is dryness in the skin. This *raskshaya* is nothing but decrease/absence of *Jala mahabhoota*. Secretions by sebaceous glands may be attributed to *meda* (adipose tissue) dhatu underlying *twak*.

8.8. TWAK ACCORDING TO DIFFERENT PRAKRITI

According to Physiological point of view skin is reflection of healthy state, as each constitutional type has its own skin colour.

- 1) *Vata* prakriti - people has *krishna* and *aruna* complexion. Rough scaly dry skin owing to *ruksh*, *laghu*, *khar* properties of *vata* dosha.
- 2) *Pitta* prakriti individuals have light fair complexion. pimples, moles, freckles, blisters, warts are common in *pitta* person.
- 3) *Kapha* prakriti individuals has *shweta* complexion, which is corelated with *arishtak*, *kanak*, *Kamal*. *kapha* people have beautiful skin without a single patch owing to its *Snigdha*, *accha* properties. Healthy *twak* also reflects a good status of *Ojas*, as *varna bheda* is one of the important features of *Ojas vyapad*.

8.9. TWAK AGING YOGIC EXERCISES AND MEDITATION

Aging is the process of degeneration which occurs in any living organism with time passage. Which includes various changes, decreased ability of senses, immunity, skin tone etc. though aging is common it depends upon several factors. skin undergoes various changes like dryness, wrinkles, scales, patches, loosing elasticity. It can be attributed to genetic defects, environmental effect, disease, and an apoptosis. According to ayurveda aging is known as *Jara* means becoming old. *Charak* and *Sushruta* consider that *Jara* starts when an individual attains the age of 60 and 70 respectively. At this age some traits are seen in body elements, sense organs strength etc.

Beautiful healthy skin contributes variety of factors like dosha balance, percentage of dosha, age, prakriti, nutrition etc. moisture, supply of nutrition, metabolic activities, blood circulation and many more factors contribute to healthy skin. *Ayurved* has a wide variety to maintain healthy skin like *ojavardhan*, *vyadhishaman*, *Rasayan*, yoga practice, balanced diet. lifestyle, seasonal regimen, mental health are some factors which controls aging.

9. DISCUSSION

Though the skin is an independent organ at the same time it is in contact with all the organs and systems of human body the skin communicates with the organisms by means of the nervous system, circulation, and endocrine glands. Though difference of opinion is observed in texts (*ayurved* and modern), but both have potential. *ayurved* and modern science described types, functions, thickness, diseases etc. *ayurved samhitas* described diseases in different layers. Brainstorming deep study has been done in above project. This explains various opinions of classical and modern text as well about skin. Its function, its formation, and its structure.

10. CONCLUSION

Skin is most precious part or organ of body which have crucial role in one's personality. To keep balance or to maintain healthy skin everyone must go through skins anatomy and physiology. Physiologically Dosha, dhatu, mala together form the basis of the body. All the three dosha are present in the skin and perform the various physiological functions i.e., sensory, metabolic transformations and sweat secretion etc. Different prakriti types also are having different features of skin. Aging of skin is one of most early signs of oldness. *Ayurved* explains well to maintain skin health with different modalities for healthy aging. in above literary research functional, structural, physiological aspects of skin according to classical text and modern texts were studied.

CONFLICT OF INTERESTS

None.

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