

# COMPARATIVE STUDY OF MOISTURE CONTENT OF SKIN (TWACHA/TWAK) IN DOSHAJ PRAKRUTI.

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## ABSTRACT :

According to Ayurveda, Every Individual is unique. By understanding our unique nature or constitutions i.e. Prakruti not only every individual has different size and shape but its physiologically even psychological characters are different. These distinct constitution are Vata, Pitta and Kapha with multiple subtypes. Every tissue, every organ and every system in the body have predominance of Dosha in them and hence they function according to this predominance. So, in our Samhita according to prakruti different characters of skin are given. For example, Vata prakruti individuals have dry, rough and cracked skin due to their attributes of Ruksha, parusha and Vishada guna. Ushna, tikshna are the attributes of Pitta dosha. Due to these pitta prakruti individuals have quick advent of wrinkles and baldness. Kapha is unctous, smooth, soft and cold, due to these skin of these person's has snidgha, smooth, pleasing appearance and clarity of complexion. All these characteristics are may be due to skin moisture content because water has profound influence on the appearance, flexibility, texture and dryness of skin. In this study, moisture content of skin is examined by using P.C. based skin moisture meter in different prakruti. 150 volunteers of irrespective of sex, between 20 – 30 age group were selected and range of moisture content was observed. Skin moisture content can be used as an objective tool for prakruti examination and to decide the tara- tama bhava of snidgha, ruksha guna of various skin disorders.

*Keywords : Prakruti, Skin Moisture Content, Skin Disorders.*

## INTRODUCTION:

Skin is mirror of our body. It reflects the healthy physiological status of the body. The review of Ayurvedic literature reveals that the skin of the human being is influenced by the Prakruti. In Vata Prakruti individuals skin become dry, rough and cracking and the outer most layer of Twak is Udakadhara (Ch. Sha. 7/4), which holds the moisture content of skin. The same moisture is now days can be measured by the moisture meter. This instrument measures the moisture content of stratum corneum layer of skin. So this topic is selected to assess the relationship between Prakruti and skin which are described in our Samhita and its importance in skin physiology.

To achieve our aim of life it is necessary that our body remains healthy. For it we need to know our *Prakruti*. Ayurveda has its own unique aim i.e. *Swasthya Rakshana* with the help of *Prakruti* because *Prakruti* is the invisible and unavoidable causative factor influences the every aspect of all living from origin to end. So a fine understanding of principles behind *Prakruti* is unavoidable. *Twacha* of a person depends on different *Prakruti*. *Vata Prakruti* person has dry, rough, cracked skin. Skin of *kapha Prakruti* is unctuous, oily. Skin moisture may be one of the causative factor for dryness, because moisture content is

an important characteristic of skin for keeping it healthy. So in this an attempt is made to study relation between *Prakruti* and skin moisture and had tried to interpret these ancient concepts of *Prakruti* in term of modern medical terms. We can utilize these to decide normal range of skin moisture in different *Prakruti* and prevent skin disorders by using *Tara-tama- bhava* of *Snigdha*, *Ruksha Guna* of *Twacha* of different *Prakruti*.

**AIM:** To estimate the moisture content of skin in *Doshaj Prakruti*

**OBJECTIVES:**

1. To establish relation between skin moisture and *Prakruti*.
2. To evaluate skin moisture as an objective criteria for *Prakruti*.

**REVIEW :**

दोषानुशयिता ह्येषां देहप्रकृतिरुच्यते ।

— च.सु. 7/40

During conception fetus present with various proportion of *dosha*. Due to this dominance of one or more than one *dosha* at the time of *Garbha-dharana*, is responsible for psychosomatic expressions, called *deha Prakruti*.

एतानि हि येन येन दोषेणाधिके नैके नानेकेन वा समनुबध्यन्ते,

तेन तेन दोषेण गर्भाऽनुबध्यन्ते; ततः सा सा दोषप्रकृतिरुच्यते ।— च.वि.8/95

Predominance of one, two or all three doshas in various proportions, affects fetus. Exhibition of such predominance is called *Dosh Prakruti* of that individual.

वातस्तु रुक्षलघुचलबहुशीघ्रशीतपरुषविशदः ।

तस्य रौक्ष्यात् वातला रुक्षापचिताल्पशरीरः प्रतरुक्षक्षामसन्नसकजर्जरस्वराः जागरुकाश्च भवन्ति,

लघुत्वात् लघुचपलगतिचेष्टाहारव्याहारा,

चलत्वात् अनवस्थितसंधि- अक्षिभ्रुहन्वोष्ठजिक्वाशिरः स्कन्धपाणिपादाः,

बहुत्वात् बहुप्रलापकण्डरासिरप्रतानाः,

शीघ्रत्वात् शीघ्र समारंभ क्षोभाविकारः शीघ्रनासरगविरगाः श्रतग्राहिणोऽज्यस्मृतयश्च,

शैत्यात् शीतअसहिष्णवाः प्रततशीतकोद्वेपकस्तम्भाः,

पारुष्यात् परुषकेशश्मश्रुरोमनखदशनवदनपाणिपादांगा,

वैशद्यात् स्फुटितांगावयवाः सततसंधिशब्दगामिनश्च भवन्तिः

त एवं गुणयोगात् वातलाः प्रायेण अल्पबलश्च अल्पायुषश्च अल्पापत्याश्चाल्पसाधनाश्च अल्पधनाश्च भवन्ति ।

— च.वि. ८/१००

*Ruksha, Laghu, Chala, Bahu, Shighra, Sheet, Parusha, Vishada are the gunas of Vayu. Due to Parusha Guna his hairs, nails, teeth, beard, mustaches, skin of face, mouth, hands and feet are always rough. Being Vishada their body has cracked skin and cracking sound present during movement of joints.*

पित्तमुष्णातीक्ष्णद्वंविस्त्रमम्लंकटुकं च । तस्यौष्ण्यात् पित्तला भवन्त्युष्णासहा, उष्णमुखाः, सुकु मारावदातगात्राः, प्रभूतपित्तुव्यङ्ग-  
तिलपिडकाः, क्षुत्पिपासावन्तः क्षिप्रवलीपलीतखालित्य दोषाः । प्रायोमदुअल्पकपिलश्मश्रुलोमकेशाः,  
तैक्ष्ण्यात् तीक्ष्णपराक्रमस्तीक्ष्णाग्नयः प्रभूताशनपानाः, क्लेशासहिष्णवो दन्दशूकाः, द्रवत्वात् शिथिलमदुसंधि- मांसाः,  
प्रभूतसृष्टस्वेदमूत्रपुरीषाश्च, विस्त्रत्वात् प्रभूत पूतिकक्षास्यशिरः- शरीरगंधाः, कट्वम्लत्वात् अल्पशुक्रव्यवायापत्याः, त एवं  
गुणयोगात् पित्तला मध्यबला मध्यायुषा मध्यज्ञानविज्ञान वित्तोपकरणवन्तश्च भवन्ति ।

— च.वि. ८/९

*Pitta is supposed to be Ushna, Tikshna, Drava, Visra, Amla, Katu. They have excessive moles, excessive hunger and thirst, quick advent of wrinkles, graying of hair and baldness.*

श्लेष्मा हि स्निग्धश्लक्ष्णमृदुमधुरसारसान्द्रमन्दस्तिमितगुरुशीतविज्जलाच्छः। तस्य स्नेहात् श्लेष्मलाः स्निग्धांगाः, श्लक्ष्णत्वात् श्लक्ष्णाङ्गाः, मृदुत्वात् दृष्टिसुखसुकुमारावदातगान्नाः, माधुर्यात् प्रभूतशुक्रव्यवायापत्याः, सारत्वात् सारसंहतस्थिरशरीराः, सांद्रत्वात् उपचितपरिपूर्णसर्वाङ्गाः, मन्दत्वात् मन्दचेष्टाहारव्याहाराः, स्तैमित्यात् अशीघ्रआरम्भकक्षोभविकाराः, गुरुत्वात् साराधिष्ठितावस्थितगतयः, शैत्यात् अल्पक्षुत्तृष्णासंतापस्वेददोषाः, विज्जलत्वात् सुश्लिष्टसारसंधिबंधनाः, तथा अच्छत्वात् प्रसन्नदर्शनाननाः, प्रसन्नस्निग्धवर्णस्वराश्च, त एवं गुणयोगात् श्लेष्मला बलवन्तो वसुमन्तो विद्यावन्तः ओजस्विनः आयुष्मन्तश्च भवन्ति।

च.वि.8/98

*Kapha is Snigdha, Shlakshna, Mrudu, Madhura, Sara, Sandra, Manda, Staimitya, Guru, Shita, Vijjal and Achchha. Being Snigdha it imparts oily characters to skin. Being Shlakshna it imparts smoothness to skin.*

According to Sushruta skin is made up of seven layers :

तासां प्रथमाज्जभासिनी नाम, या सर्वान् वर्णान् अवभासयति पंचविधां च छायां प्रकाशयति, सा ब्रीहेः अष्टदशभागप्रमाणा, सिद्धमपन्नकण्टक अधिष्ठाना ।  
द्वितीया लोहिता नाम, षोडशभागप्रमाणा, तिलकालकन्यच्छव्यंगाधिष्ठाना; तृतीया श्वेता नाम, द्वादशभागप्रमाणा, चर्मदलजगल्लिकामशकाधिष्ठाना; चतुर्थी  
ताम्रा नाम अष्टभागप्रमाणा, विविध किलासकुष्ठधिष्ठाना पंचमी वेदीनी नाम पंचभागप्रमाणा, कुष्ठविसर्पाधिष्ठाना; षष्ठी रोहिणी नाम  
ब्रीहिप्रमाणाग्रंध्यपच्यर्बुदश्ली- पदगलगंडाधिष्ठाना; सप्तमी मांसधरा नाम ब्रीहीद्वयप्रमाणा, भगंदरविद्व्यर्शाधिष्ठाना । यदेतत् प्रमाणं निर्दिष्टम्  
तन्मांसलेषु अवकाशेषु, न ललाटे सूक्ष्मांगुल्यादिषु च, यतोः वक्ष्यति उदरेषु ब्रीहिमुखेन अंगुष्ठोदरप्रमाणम् अवगाढं विध्येदिति

— सु.शा. 4/4

According to Sushruta, the first layer of skin Avabhasini reflects luster and colour of the skin, while second layer of skin is reddish coloured. The remaining five layer of skin explain relationship between these layers and skin disorders.

Structurally skin consist of two main parts:

Epidermis: The superficial thinner portion which is composed of epithelial tissue, is the epidermis

Dermis: The deeper, thicker connective tissue portion is the dermis.

Skin Type -There are five basic skin types which is genetically determined.

- Normal skin
- Dry Skin
- Oily skin
- Combination Skin
- Sensitive skin.

#### IMPORTANT PHYSIOLOGICAL FUNCTIONS OF SKIN:

##### 1. Water Balance:

Stratum corneum provides lubrication and water proofing function. Lipids released by lamellar granules inhibit evaporation they also retard entry of water across the skin surface during showers and swims.

#### SKIN MOISTURE

“Moisture the key to revitalizing skin inside and outside.”

Water has profound influence on the appearance, flexibility, texture and dryness of the skin. Many dermatologists believe that within adequate moisture content many skin problems can be eliminate.

Adequate moisture is one of the most important factors in maintaining young and healthy looking skin. Damaged skin results in the potential of irritants entering and moisture exiting through the skin.

Moisture of skin specially present in the stratum corneum layer of epidermis. The water content of the cornified skin is a more important factor in maintaining the flexibility of this layer than is its oil content. Water is by far the most abundant component of the body, constituting 45-75% of the body weight. water and skin relationship, importance of skin moisture, effect of dehydration is reviewed.

#### IMPORTANCE OF SKIN MOISTURE:

1. Moisture content in the skin is closely dependent on the function of the skin and measuring the state of hydration of stratum corneum can enable. An early diagnosis to be obtained of non visible conditions in the skin.
2. Measurements of the skins moisture content are also valuable for evaluating a number of different factors, for e.g. for assessing effects of medicaments, cosmetics, moisturizers and other skin care preparation for the moisture content in the skin.
3. The first diagnostically accessible early symptom of diabetic food that is relatively easy to influence therapeutically is abnormal skin dryness, which makes the skin on the foot inelastic and thus easy to damage mechanically. So skin moisture has accordingly been developed for early diagnosis of diabetic foot.

4. The major factor responsible for dry, scaly skin and irritant dermatitis, psoriasis can be related to the loss of water from the stratum corneum.
5. Damaged skin results in the potential of irritants entering and moisture exiting through the skin.

One of the most critical factors for beautiful, healthy skins is the water holding capacity and lipid content of the epidermis and in particular the stratum corneum. Without sufficient moisture, the epidermis cannot efficiently renew itself through the desquamation process, leading to dry feel, rough texture and build up of excess stratum corneum.

At the same time the lack of moisture can result in reduced sebum production which impairs the barrier function of the epidermis. Loss of water also causes destructive alternation in collagen, elastin and skin anatomy, physiology and biochemistry which contribute to degenerative changes seen in aging skin i.e. wrinkling, roughness, dryness with increased pore size. Xerosis or dryness of the skin results due to reduced water content of the stratum corneum.

#### **MATERIALS AND METHODS :**

For this work 150 volunteers, irrespective of sex between the age group of 20 – 30 yrs are selected. As age our skin becomes drier and loses elasticity. So to control this extraneous variables limited age group 20-30 yrs. are taken. The normal Physiology of the skin is disturbed by the skin diseases and Psoriasis, Dermatitis, etc. diseases shows pathological variations in skin moisture. Hence volunteers having skin diseases is excluded from the study. All volunteers are examined by *Ayurvedic* and Modern parameter. *Prakruti Parikshan* of an individual is done by using the standard Proforma and decided the *Prakruti* of an individual. Categorization of volunteers was done in three groups: *Vata*, *Pitta* and *Kapha pradhanya*. In each group 50 volunteers are kept. Each group again subdivided into two groups on the basis of *Anubandhatva*. Skin moisture is the main objective parameter of the study. So that moisture content of forehead skin in each individual is measured with the help of P.C. based skin moisture meter and observations are recorded in observation table.





**OBSERVATIONS:**

Parameter	Moisture content of forehead skin ( $\square$ s)		
Sr. No.	VataPrakruti	Pitta Prakruti	KaphaPrakruti
1	216	450	505
2	258	362	428
3	242	394	473
4	235	450	498
5	242	365	524
6	210	421	470
7	231	330	427

8	201	395	500
9	318	345	499
10	270	362	426
11	293	312	402
12	297	384	432
13	330	388	444
14	298	300	409
15	265	373	450
16	395	345	441
17	194	351	431
18	272	333	412
19	278	371	427
20	255	305	425
21	267	403	610
22	230	354	567
23	198	310	462
24	200	348	405

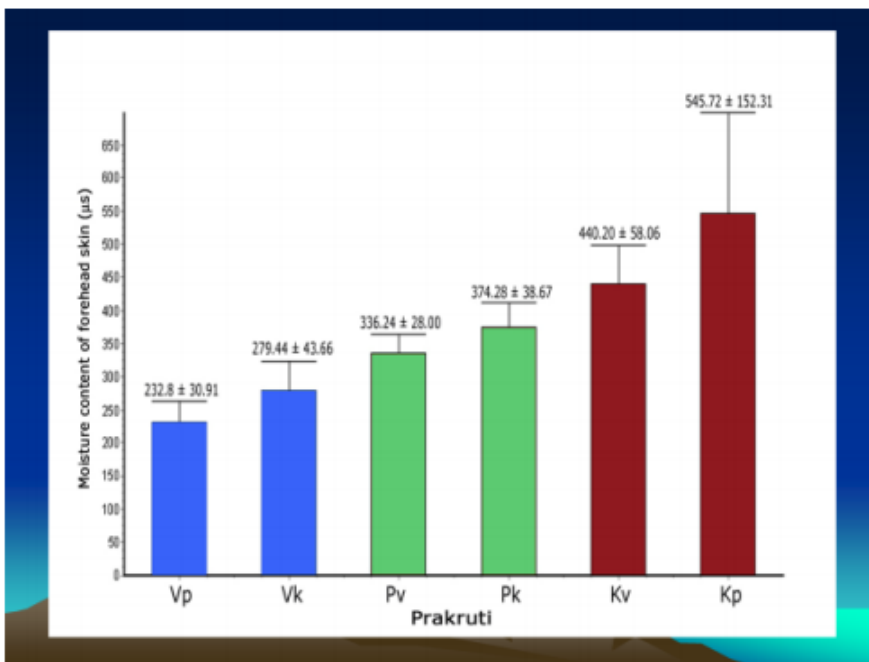
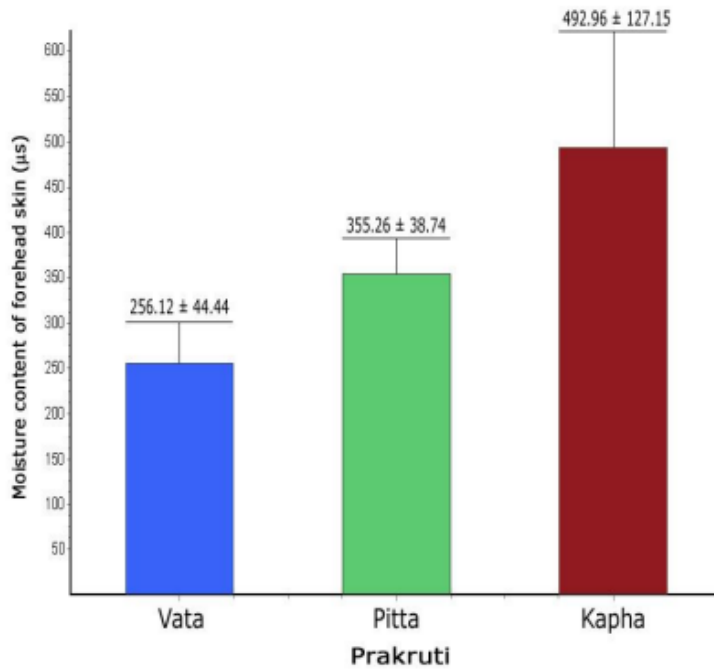
25	192	342	1072
26	310	335	437
27	237	385	602
28	219	318	310
29	238	312	743

30	300	285	431
31	253	415	500
32	204	328	433
33	258	341	833
34	285	350	542
35	388	338	585
36	220	337	417



37	230	324	358
38	268	326	460
39	234	370	422
40	285	378	342
41	215	367	427
42	284	307	475
43	222	366	447
44	209	270	555
45	226	310	761
46	237	356	484
47	285	382	541
48	263	393	467
49	295	378	470
50	254	399	467
$\bar{x}$	12806	17763	24648

	Vata Prakruti	Pitta Prakruti	Kapha Prakruti
Mean	256.12	355.26	492.96
S.D.	44.44	38.74	127.15
Range	211.68 – 300.56	316.52 – 394.00	365.81 - 620.11



In this chapter, 150 volunteers are classified according to Age, Sex, Religion, Habitat, Economic status, Dietary habit, Addiction, Agni, H/o skin diseases, Skin types, *Nidra* and Room temperature. Statistical analysis for mean and S.D. of skin moisture content of different *Prakruti* group is done and significance is tested by using ANOVA test.

Their observations are displayed with the help of tables.

In *Vata Pradhanyaja Prakruti* group average moisture content of forehead skin is  $256.12 + 44.44$ , In *Pitta Pradhanyaja Prakruti* group the same is  $355.26 + 38.74$  whereas in *Kapha Pradhanyaja Prakruti* group the same is  $492.96 + 127.15$ .

Statistically it is a significantly different, hence moisture content of forehead skin can be used as a precise parameter for *Prakruti* examination. In *Vata pradhan pittanubandhi Prakruti* group average moisture content of forehead skin is  $232.8 + 30.91$ . In *Vata pradhan kaphanubandhi Prakruti* group average moisture content of forehead skin is  $279.44 + 43.66$ . In *Pitta pradhan vatanubandhi Prakruti* group average moisture content of forehead skin is  $336.24 + 28$ . In *Pitta pradhan kaphanubandhi Prakruti* group average moisture content of forehead skin is  $374.28 + 38.67$ .

In *Kapha pradhan vatanubandhi Prakruti* groups, average moisture content of forehead skin is  $440.2 + 58.06$ . In *Kapha pradhan pittanubandhi Prakruti* average moisture content of forehead skin is  $545.72 + 152.31$ .

Statistically it is a significant difference, hence variation in skin moisture is due to the effect of *Prakruti*.

#### DISCUSSION:

Skin is mirror of our body. It reflects the healthy physiological status of the body. The review of Ayurvedic literature reveals that the skin of the human being is influenced by the *Prakruti*. In *Vata Prakruti* individuals skin become dry, rough and cracking and the outermost layer of *Twak* is *Udakadhara* (Ch.Sha. 7/4), which holds the moisture content of skin. The same moisture is now days can be measured by the moisture meter. This instrument measures the moisture content of stratum corneum layer of skin. So this topic is selected to assess the relationship between *Prakruti* and skin which are described in our *Samhita* and his importance in skin physiology.

1. *Vata Pradhan Prakruti* individuals have low skin moisture because *Akash* and *Vayu Mahabhuta* plays important role to develop dryness and *Ruksha, Parush* and *Vishad Guna* of *vata dosha* also has tendency to develop *Rukshata* of skin. Due to these *Rukshata Shoshan* of *Jala* takes place in *Vata Pradhan Prakruti* individuals.
2. In *Pitta Pradhan Prakruti*, there is dominance of *Teja Mahabhuta* and *pitta dosha* has *Ishat Snigdha, Tikshna, Ushna Guna*. They evaporate water from the skin. Loss of water from the body through sweat, urine is more. Thus together they may act on skin by decreasing skin moisture and develop medium skin moisture in *Pitta PradhanPrakruti*.
3. In *Kapha Pradhan Prakruti*, we found that these individuals have high skin moisture because *Snigdha, Shlaksha Guna* of *Kapha Dosha* and *Jala* and *Pruthvi Mahabhuta* play important role for their *Kledana Karma* i.e. *Aadrabhava* to the body and *Sthir Guna* helps to retain moisture for longer time.

**CONCLUSION:**

In present study on the basis of observation and discussion of observed facts following points are concluded.

Skin moisture content and Prakruti are dependent on each other. There is variation in the skin moisture content of different *Prakruti* groups.

1. *Vata Pradhan Prakruti* individuals showed tendency towards low skin moisture content. It's mean and S.D. of skin moisture is 256.12+44.44.
2. *Pitta Pradhan Prakruti* individuals showed tendency towards medium skin moisture content. It's mean and S.D. of skin moisture is 355.26+38.74.
3. *Kapha Pradhan Prakruti* individuals showed tendency towards high skin moisture content. It's mean and S.D. of skin moisture is 492.96+127.15.

*Anubandhatva* of *dosha* also show variation in skin moisture content. From their following points are concluded -

1. Mean and S.D. of skin moisture content of *vata Pradhan pittanubandhi Prakruti* is 232.8+30.9.
2. Mean and S.D. of skin moisture content of *vata Pradhan kaphanubandhi Prakruti* is 279.44+43.66.
3. Mean and S.D. of skin moisture content of *pitta Pradhan vatanubadhi Prakruti* is 336.24+28.
4. Mean and S.D. of skin moisture content of *pitta Pradhan kaphanubandhi Prakruti* is 374.28+38.67.
5. Mean and S.D. of skin moisture content of *Kapha Pradhan vatanubandhi Prakruti* is 440.2+58+06.
6. Mean and S.D. of skin moisture content of *Kapha Pradhan pittanubandhi Prakruti* is 545.72+152.31.

In conclusion, it can be stated that-

- ❖ Skin moisture content is influenced by *Prakruti*. *Vata*, *Pitta*, and *Kapha Pradhan Prakruti* individuals have low, medium and high skin moisture respectively. Skin moisture also influenced by the *Anubandhi Dosha* of *Prakruti*.
- ❖ Skin moisture content can be used as an objective tool for the *Prakruti Parikshana*.
- ❖ This skin moisture content is an important parameter to decide the *Tara-tama-bhava* of *Snigdha*, *Ruksha Guna* of various skin disorders.

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