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# THE CONCEPT OF VARNA AN AYURVEDIC PROSPECTIVE

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## ABSTRACT

Healthy and glowing skin is the first sign of physical and mental health of an individual as well as it is an impressive factor. According to modern medical science the complexion of skin primarily depends upon the genetic factors. Other than genetic factors, the environmental component like exposure to UV rays, carotene rich diet, and the mental stress can influence the skin complexion. There is brief description of various factors responsible for skin complexion in Ayurveda texts. The term "Varna" is used for skin complexion/colour. The factors Rachana Sharir, CBPACS, responsible for Varna (complexion) are the nature of shukra, New Delhi. predominance of Mahabhuta, behavioural and mental status of Garbhini (pregnant women), Trayupsthambh (diet, sleep, and sexual *habits), Prakriti, Agni, Dosha, Dhatu, Oja, Desa, and kala etc.*

**KEYWORDS:** *Twak, Varna, Mahabhuta, Dosha, Prakriti, Agni, Oja, melanin, ACTH, MSH* etc.

## INTRODUCTION

### Twak (skin)

*Twakendriya / Sparsanedriya is one among five Gyanendriya (sense organs).*[1]

*Twak (skin) is the organ responsible for Sparsha (touch).*[2]

The vishay (objective) of Twakendriya is Sprasha.[3] Twakendriya alone permeates all the senses. It is permanently associated with the mind,[4] while the mind is the ubheyendriya and has role towards perception of all special sensations. The *synonyms used for Twak are twacha, charma, dehachama, sharirvaranam, spashan, chavi, kruti, romabhumi, asrukdhara and chadani etc.*

**Development of Twak**

The union of Shukra (sperm) and Shonita (ovum) while being processed by heat, further development takes place and consequently seven layers of Twak (skin) come into existence just like formation of cream when milk is boiled.[5] While describing the monthly development of foetus Acharya Charak explained Twakendriya along with other senses are formed in the third month of intrauterine life.[6] and the Varna (complexion) of the foetus become clear in sixth month of intrauterine life.[7]

**Layers of twak**

There are different opinions regarding layers of skin in Ayurveda texts. In Sushrut samhita, *Astanga Hridaya, Saranagdhara samhita and Bhavprakash samhita there is description of seven layers of twak. But in Charak samhita, Bhela samhita and Astanga Sangraha there is* report of six layers of Twak. These layers are described on the basis of thickness, their various functions and associated diseases.

Acharya Sushrut has described the first layer (outer most) as Avbhasini, it expresses all types of Varna (complexion) and illuminates the five kind of Chhaya (shades of colour). It measures about eighteenth parts of vrihi (paddy /rice grain). Other layers are Lohita, Sweta, *Tamra, Vedini, Rohini, and Mansadhara from outside to inward.*[8]

*But Acharya Charak has* described there is six layers in Twak, namely Udakadhara, Asrikdhara, Tritiya, Chaturthi, Panchami and Shasthi[9] from superficial to deep.

**Varna (complexion)**

The term "Varna" stands for skin colour / complexion. Varna can be categorized as prakrit (natural) and vaikrit (abnormal). The Prakrit varna (natural/normal complexion) are Krishna (black), Shyama (brown), Shyamavadat (brown white) and Avadat (white) and the Vaikrit *Varna (abnormal complexion) are Nila(bluish), Shyav, Tamra (coppery), Harita (green) and Shukla (albinotic).[10] Acharya Harita explains about an additional Varna i.e Pingala Varna (pitta+rakta),[11] that is of abnormal kind.*

**Factors responsible for Varna utpatti**

Garbhaj bhav: Acharya Charak opined Varna can be achieved from Atmaj (previous deeds of soul) and Satmyj (habituation) bhav in the intrauterine life.[12](a)

*But Acharya Sushrut said Varna is achieved from Satmyaj bhav* And Rasaj bhav.[12](b)

***Panchmahabhut***

*The foetus is Panchabhautik as per the Shukra and Shonit are Panchbhautik. Teja dhatu (Agni) is the chief causative factor for determination of complexion.*[13] *Acharya Dalhan* opined that the Avbhasini which is the outermost layer, responsible for the illustration of various complexions like Gaura or Shyama and it illustrates five types of Prabha and Chhaya of the body with the presence of Bhrajak agni within this layer.[14]

Along with the Teja Mahabhuta the predominance of other four Mahabhuta determine the skin complexion like.

Varna (complexion) Sushrut Charak Gaura T+J T+J+A Krishna T+P T+V+P Gaurashyam T+J+A Krishnashyam T+P+A Shyam T+A+V+J+P (A-akash, J-jala, P-prithvi, T-teja, V-vayu).

***2) Sharir Dosha and Dhatu***

Acharya Charak has explained Tridosha (Vata, Pitta and Kapha) in the state of equilibrium bestows upachaya (anabolism), bala (strength), and varnaprasad (bright complexion) and its imbalance condition cause diseases.[15]

Udana vayu present in the skin has function like Bala (strength), Swara (voice) and Varna (complexion).[16] The functionS of balanced Pitta dosha are Dehamardava (softness) and Prabha (lustre) to the skin. Prabha is the radiance of the skin which is expressed from a distance. Acharya Charak has described that the Rakta sara individual have reddish and unctuous skin.[17]

The normal state of Rasa, Rakta and Mansa dhatu are responsible for a healthy skin.

***3) Sharir Prakriti***

At the time of Union of Shukra (sperm) and Shonita (ovum), the predominance Dosha determines someone's Prakriti.[18] Acharya Charak explained the Kapha and Pitta Prakriti individual have fair/whitish complexion (Avadat Varna).[19]

**4) Color of Shukra**

The colour of fetus depends upon the color of Shukra (semen). If the color is like ghritamanda (ghee) then the color of offspring will be fair (Gaura), if it is of color of taila (oil), the offspring will be black (Krishna) and if the color of semen is of the color of madhu

(honey), the progeny will be bluish black or brown (Shyam).[20]

***5) Ahar and Vihar***

Acharya Charak has explained intake of appropriate quantity of healthy food, certainly helps the individual in bringing about strength, complexion (Varna), happiness, longevity.[15] The diet of mother also influences the complexion of the progeny. Consumption of nutritious diet along with healthy lifestyle and good thoughts during pregnancy reassure the health of mother as well as the health of baby. Some Acharya say that the color of fetus will be the same as the color of the food the pregnant woman partakes.[21] Excessive intake of madhura rasa (sweets) diet and Jalakrida (water spots) during pregnancy establishes Gaura (fair) Varna of the progeny. Excessive intake of tila (sesame) and vidahi anna (which causes burning sensation) responsible for Krishna (blackish) Varna and excessive intake of mix type of diet the progeny will be Shyama (bluish black or brown).[22] Acharya Charak opined, fetus gets nutrition from ahara rasa of mother through the upsveda (diffusion through uterine wall) and upsneha {through Apara (placenta)} during various periods of fetal life. The Bala (strength) and Varna (complexion) of the offspring depends upon the ahara rasa of mother.[23] Excessive intake of kashaya rasa (astringent) during pregnancy causes Shyaba (brownish) Varna and excessive use of amla rasa (sour) diet causes various skin disorders to the progeny.[24]

***5) Manas dosha***

As Acharya Charak says the mind (Mana/Chetas) has permanent relationship with the skin. The other four senses (indriya) are situated in circumstance of skin. Cheta is one of the chief component participates at the time of attainment of the special sensations. So the unfavourable reaction of either of the senses influence the status of mind and the mind has permanent relation with the skin, so these conditions may affect the skin complexion. On the other hand, the mental state of mother during pregnancy can also influence the Sattva, Rajas *and Tamas guna (characters of Mana) of fetus. Charak Samhita and Astang Hridaya have* clearly accepted the role of Manasa sthiti of the pregnant woman on the complexion of the progeny. The thoughts of the mother will influence the three Manas dosha. These three characters further influences the Panchabhautik dominance (Akash Mahabhut is a predominance Sattva, Vayu is a predominance of raja, Agni is a predominance of sattva and raja, Jala is the predominance of Sattva and Tama, Prithvi is a predominance of tamas) determines the complexion of the baby. Therefore Rupa and Varna of the offspring will be in accordance with the thoughts of the pregnant woman.[25]

**6) Agni**

Acharya Charak defines the function of Agni (status of digestion) is to provide Varna (complexion), Bala (strength), Svasthya (health), Utsaha (enthusiasm), Upachaya (plumpness), Prabha (glory), Oja, and Teja etc.[26] The word "Bhrajak" is derived from "Bhraj" dhatu which literally means Prabha. Acharya Dalhan opined Agni present in the Twak known as Bhrajak agni, present in the Avbhasini layer of skin is responsible for absorption of substances used in the form of abhyanga and pariseka etc. It also helps in the expression of Chhaya (shades and color) and Prabha of the skin.[27]

***7) Oja***

The essence (sar) of all Dhatu is known as Oja. Oja can be compared with the strength (immunity) of the body. This strength (Bala) bestows the brightness of colour/complexion along with other functions. While describing symptoms of Oja vyapat there is description of discolouration of skin.[28] Acharya Charak also defines loss of complexion (duchhaya) is due to Oja kshya (loss).[29] Hence the Oja present in body has role in the skin complexion.

***8) Desa***

The people living in northern part have fair (gaura) complexion, living in southern area have black (krishna) complexion and living in central region have brown (shyam) complextion.[30]

Dr. Ghanekar also stated that due to migration from one place to other there is change in complexion in a particular degree.

**Skin**

Skin covers the external surface of the body and is the largest organ of the body in both surface area and weight. It ranges in thickness from 0.5 mm on the eyelids to 4.00 mm on the heels. Structurally the skin consists of two main parts –the superficial thinner part, which is composed of epithelial tissue, is the epidermis. The deeper connective tissue portion is the dermis. Deep to the dermis, but not part of the skin, is the subcutaneous layer, called hypodermis. Several distinct layers of keratinocytes in various stages of development form the epidermis. In most region of the body of the epidermis has four strata/layers- stratum basale, stratum spinosum, stratum granulosum, and a thin stratum corneum. Where exposure to friction is greatest such as in palm and sole, the epidermis got extra 5th layer –stratum lucidium called as thick skin.

Epidermis contains 4 principal type of cells; Keratinocytes, melanocytes, Langerhans cell and Markel cells. About 90% of epidermal cells are keratinocytes, which are arranged in four or five layers and produce the protein keratin. About 8% of the epidermal cells are melanocytes which develop from ectoderm of a developing embryo and produce the pigment melanin. Their long, slender projections extend between the keratinocytes and transfer melanin granules to them. Melanin is a yellow red or brown black pigment that contributes to skin colour and absorbs damaging UV rays.

The skin is affected by various external factors, such as environment and routine care. Underneath the surface the skin is affected by more permanent factor the genes. Genetics are complicated by the fact that there is no specific skin gene-many genes work together to affect a single trait and many traits can be affected by a single gene. Genes have a significant influence on skin because skin is made up of so many proteins like Collagen, forms basic structure of the skin which gives it strength is a protein. So is melanin, which is the pigment gives the skin its colour.

**The structural basis of Skin colour**

Different human races have different skin complexions because of cultural, environmental, and biological differences. Melanin, carotene, and hemoglobin are three pigments that impact wide variety of color of skin.

**Role of melanin**

The amount of melanin causes the skin's color to vary from pale yellow to reddish brown to black. The number of melanocytes is about the same in all people but the difference in skin color, mainly due to the amount of pigment the melanocytes produce and transfer to keratinocytes. Melanocytes synthesize melanin from the amino acids tyrosine in the presence of an enzyme called tyrosinase. Synthesis occurs in an organelle called a melanosome.

Exposure to UV light increases the enzymatic activity within melanosomes and thus increases melanin production. Both amount and darkness of melanin depends upon UV exposure. It implies the people live near the equator, in tropical areas with intense sunlight like Australia, Melanesia, South Asia, and Africa have dark skin and the area away from the equator generally closer to pole have a lower concentration of UVR, so they have light skin complexion. Migration from one place to other also affects the complexion depending upon the intensity of UV radiation in that particular area. Modern medical science also favours on

the concept of Desa (place) on Varna.

On the other hand melanoblasts (or dendritic cells) of the epidermis and the nervous system has same embryological origin from the neural crest so the factors which affect the nervous system may affect the skin.

**Role of hemoglobin**

Dark skinned individuals have large amounts of melanin in the epidermis. But light skinned individuals have little melanin in the epidermis. Thus, the epidermis appears translucent and skin colour ranges from pink to red depending on the oxygen content of blood moving through capillaries in the dermis. The dermis houses an extensive network of blood vessels that carry 8-10% of the total blood flow in a resting adult. The red colour is due to hemoglobin, the oxygen carrying pigment in red blood cells.

**Role of carotene**

Carotene is a yellow-orange pigment that gives egg yolk and carrots their colour. This precursor of vitamin A, which is used to synthesize pigments needed for vision. So much carotene intake may be deposited in the skin after eating large amounts of carotene-rich foods that the skin actually turns orange, which is usually apparent in light skinned individuals.

The colour of skin mainly depends upon the pigment melanin and MSH (melanin stimulating hormone) secreted from the pituitary. Melanocytes located in abundance between the dermis and epidermis of the skin, MSH stimulates formation of the black pigment melanin from themelanocytes and disperses it to the epidermis.[31]

**Relation of Stress with ACTH and Adrenocortical secretion**

Almost any type of physical and mental stress can lead within minutes to greatly enhanced secretions of ACTH and consequently cortisol as well (> 20 folds). When ACTH is secreted by the anterior pituitary gland, several other hormones like melanocytes stimulating hormone (MSH), lipotropin, and endotrophin that have similar chemical structures are secreted simultaneously. The reason for this is the gene transcribed to form the RNA molecule that causes ACTH synthesis initially causes the formation of a considerably larger protein, a pre-prohormone called proopiomelanocortin (POMC), which is the precursor of ACTH and several other peptides, including MSH, Beta-lipotropin, Beta-endorphin and few others. Under normal condition, most of these hormones are not secreted in enough quantity by the

pituitary. But when the rate of secretion of ACTH is high, some of the POMC derived hormones may also be increased. The POMC gene is actively transcribed in several tissues, like cells of dermis and lymphoid tissue. In melanocytes, located abundantly between the dermis and epidermis of the skin, MSH stimulates formation of black pigment melanin and disperses into the epidermis.[32] On the other hand within minutes the entire sequence leads to large quantities of cortisol in blood. It circulates through blood to reach skin cells. It slows down the skin cells and make cells take long time to get to the surface and peel off. Therefore the skin dead cells enhance, resulting lifeless and looks the skin dull.

Along with that in overstress situation moves the blood away from the skin, and a little amount of blood moves around, which turns again insufficient supply of oxygen through the skin. In this process, the skin doesn't get the required nourishment, which results skin pale and dull.[32]

**DISCUSSION**

Dr. Ghanekar has said the first skin layer Avbhasini is responsible for exhibition of Varna (complexion) and Prabha (glory) which depends on melanin pigmentation produced by the melanocytes present in the Malphigian layer. As the layers above Malphigi are opaque, exhibition of complexion is done by Stratum Corneum, so that Avabhasini may be correlated with Stratum Corneum. Prakrit Varna are the natural skin complexions of various races individual but the Vaikrit Varna describe the disease condition, arista lakshyan (symptoms seen just before death), physical and mental stress etc. The Complexion of an individual depends upon various factors, some factors will influence in intrauterine life and some factors influences after birth. Various Garbhaj bhav like Atmaj bhav, Satyamj and Rasaj bhav, nature of Shukra (sperm), predominance of Mahabhuta at the time of fusion of Shukra and Shonit, Manasthiti (mental status) of Garbhini, ahara (diet) and vihara (behaviour) of Garbhini will influence in the intrauterine life. Other Factors like Trayupsthambh (diet, sleep, sexual habits), Dosha, *Dhatu, Mala, Jatharagni, Bhrajak Pitta, Vayu, Oja, Desa (place) and Kala (season) will* affect the complexion after birth. Tejas dhatu (Agni) is the chief causative factor for determination of Varna. Basically the Bhrajak agni present in the skin, responsible for complexion. According to modern medical science melanin pigmentation present in the skin, is the chief contributing factor for skin complexion. The melanin may compare with the Bhrajak pitta described in Ayurveda.

While describing various characters of dhatu sara purusha, Acharya Charak described the Rakta sara persons have reddish and unctuous skin. Same thing is described in modern physiology that, the reddish colour of skin is due to the higher hemoglobin percentage present in RBCs of blood, which carries oxygen and iron. It may also prove the role of Satmyaj bhav on complexion that a regular intake of rich haemoglobin diet will enhance the skin complexion.

The colour of Shukra (semen) and the Atmaj bhav will determine the complexion. In modern medical science there is no such evidence found that the colour of semen which influence the complexion. The colour of Shukra and the Atmaj bhav may indicate the genes of parents/ancestor responsible for complexion.

Chetas (mind) has samabaya relation with Twak (skin). It may suggest the mental state affects the skin complexion like at the time of stress there is increase of ACTH hormone, which directly enhances MSH. The MSH increases the production of melanin at any age. On the other hand the mental status of mother during pregnancy can influence the Sattva, Rajas and Tamas guna (characters of Mana) of foetus.

The people living in northern part have fair (gaura) complexion, living in southern area have black (krishna) complexion and living in central region have brown (shyam) complexion. It depends upon the UV radiation levels at different area, and in different season.

## CONCLUSION

The formation of Varna starts from the intrauterine life and continues then after birth. Although it is decided in intrauterine life through the nature of Shukra (parent genes), Mahabhuta dominance and the deeds of previous birth (Atmaj bhav) but in some extent the *dietary habit (Satmaj bhav), Bhrajak pitta, Desa (sun exposure), Kala, Prakriti (pitta, kapha),* Manas sthiti(metal status), the equilibrium state of Dosha, Dhatu, Mala, Agni (jatharagni, bhrajak pitta) and Oja influences the Varna of an individual.

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