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गन्तस्मा द्वारक्तारमक्त्ययत्॥१०॥विश्वक्रमीयामाद्वप्रपृष्टित्वरकार्विता। त्वर्थाः श्रास्थ्रस्त्रीयाचे वृश्यिक्ष्यः। १९॥भवनालमलोज्ञाः विश्वमध्ये व्यक्ष्ययन्। पार्यज्ञातनम् वेवनासाभागाय क्रत्ययन्। पार्यज्ञातनम् वेवनासाभागाय क्रत्ययन्। पार्यज्ञातनम् वेवनासाभागाय क्रत्ययन् । प्रशासाधानम् व्यानारम् । प्रशासाधानम् व्यानम् व्यानम् व्यावस्य स्थाप्ति । प्रशासाधानम् व्यानारम् । प्रशासन् । प्रशासनम् व्यानम् । प्रशासनम् । प्रशास











# International Journal for Empirical Research in Ayurveda

# STUDY CO-RELATION BETWEEN 'SWEDA PRAVRITTI' AND ITS PH IN DIFFERENT DOSHAJ PRAKRUTI SUBJECTS Khobragade A.K.

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#### **ABSTRACT:**

Background: Ayurveda lays great emphasis on the examination of Prakruti which is the natural state of an individual. This is very crucial because by understanding the original state of the body functions only one can comprehend the possible malfunctioning. Aim & Objectives: To observe co-relation between 'Sweda Pravritti' and its pH in different Doshaj Prakruti Subjects. To Observe Co-relation between Sweda Pravritti and its pH in different Doshaj Prakruti Subjects and to Study Literature regarding Prakriti with all perspectives. Methodology: An observational study was done on randomly selected healthy individuals. Total 200 healthy individuals were selected from the premises of Shree Saptashrungi Ayurveda Mahavidyalaya and Hospital as well as from society. Who were then assessed for the Prakriti Parikshana with the help of online questionnaires designed by 'Uttarakhand Ayurveda'. Results: After the statistical evaluation, significant correlation was found between subjective assessment parameters like Sweda Prvrutti, smell of sweda, kandu after sweda, stains on cloths, Hair fall, Hast-Pad Sphutan with Prakriti of each individual. In the pH evaluation of sweda, mainly Alkaline pH was found in most of the individual. Hence study proves that there is presence of correlation in the particular prakriti with their pH of Sweda (Sweating).

KEY-WORDS: Sweda Pravritti', Kandu, Prakriti, Prajnaparadha, Pravutti etc.

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#### **INTRODUCTION:**

Ayurveda lays great emphasis on the examination of Prakruti which is the natural state of an individual. This is very crucial because by understanding the original state of the body functions only one comprehend the can possible malfunctioning. The primary aim of Ayurveda is to maintain health in healthy person and hence knowledge of *Prakruti* is imperative. It is the enumerations of body features internal as well as external; physical and psychological. Individuals with Vataj type of Prakruti (constitution) possess strength, span of life, procreation, accessories of life and wealth in lesser Pittai of Prakruti quantity.1 type (constitution) is endowed with moderate strength, span of life, spiritual materialistic knowledge, wealth and accessories of life.<sup>2</sup> Kaphaj type of Prakruti (constitution) is gifted with excellence of strength, wealth, knowledge, energy, peace and longevity.3 Prakruti is the important individualistic entity which makes a person to respond differently to the similar external or internal stimuli. Thus, it can impact various physical and psychological parameters. Intelligence is one of the psychological factors which are supposed to vary with *Prakruti*. Intellectual errors (Prajnaparadha) lead to causation of all diseases by aggravation of all the Dosha. Excretory product (Mala) is having important role in human physiology. They are formed in routine physiological and metabolic activities in the body. It is important to clear or purify by removing this routinely formed waste out of the body. If it's got accumulated, the mala have ability to vitiate the dosha and dhatu of the body. The term *sweda* means sweat or perspiration. It is one among three

metabolic excretory product mala like urine (*Mutra*), stool (*purish*). These are also known as dushya which get vitiated.4 As Urine gets changes its chemical properties with the physiological or environmental conditions, sweat (Sweda) also surely changes its properties. As mostly an effect on chemical properties also affects the pH of the particular waste product like Urine (Mutra), etc and turns to more alkaline or more acidic in nature. Hence by Studying PH of Sweda, assessment of alkaline & acidic Changes in body can be determined. Sweat which contains a wide range of biochemical markers can tell us a lot about assessment of alkaline & acidic Changes in body can be determined. Sweat which contains a wide range of biochemical markers can tell us a lot about our health. Variation in sweat PH (i.e. acidity or alkalinity) for instance can tell us weather our body is dehydrated and can aid the diagnosis of skin conditions such dermatitis, acne and other skin infections.

**Aim:** To observe co-relation between 'Sweda Pravritti' and its pH in different Doshaj Prakruti Subjects.

**Objectives:** - To Observe Co-relation between *Sweda Pravritti* and its pH in different *Doshaj Prakruti* Subjects and to Study Literature regarding *Prakriti* with all perspectives.

Methodology: - An observational study was done on randomly selected healthy individuals. Total 200 healthy individuals were selected from the premises of Shree Saptashrungi Ayurveda Mahavidyalaya and Hospital as well as from society. Who were then assessed for the Prakriti Parikshana with the help of online questionnaires designed by 'Uttarakhand Ayurveda'. Simultaneously routine case record details were collected along with

questionnaires for Sweda Pravutti of the individuals. After that pH assessment were done for the swead (Sweating) of the individuals. Observations were recorded grade wise and result was drawn out using statistical test.

#### Materials and Method: -

Type of Study: An Observational study.

No. of Individuals: 200 patients

Method of study: Observations on 200 healthy individuals between the age group of 18 to 65 years of the ages and assessment of Prakriti Parikshana, Sweda Pravrutti and pH of Sweda (Sweat) for each individual was done.

Study Duration: 18 months

**Location Study:** Concerned educational institute and Society

Method of selection of study subjects: Subject of either sex male and female between the age group of 18- 65 year. Subjects were selected on the basis of inclusion criteria & exclusion criteria.

# A. Inclusion criteria:

- 1. Subject willing to give voluntarily written informed consent.
- 2. Normal healthy individuals of either sex between the age group 18 to 65 years

# B. Exclusion criteria: 1 Journal for Emp

1. Subject having acute and chronic illness or having any systemic disorders and pregnant lady.

# Material:

- pH Paper
- Colour chart for pH meter
- Dropper
- Glass Flask

### Method:

- pH paper selected for the study was colourless.
- ii. Collected sufficient quantity of sweda (Sweat) with dropper (If sufficient quantity

of Sweating was not collected, it was induced with the help of Minor Exercises) iii.Put drop of Sweda (Sweat) on pH paper.

- iv.Compare the change in the colour of the pH paper by using the colour scale.
- v. Record each pH number on your table of results and decide acidity or alkalinity.

As per pH Scale, comparison shows the acidity or alkalinity. Interpretations was drowned as per below –

pН	Interpretations
7 (Green Color)	Neutral
<7 (Towards Red Color)	Acidic
>7 (Towards Blue Color)	Basic

# **OBSERVATIONS & RESULT:**

Table No. 1: Distribution of Individuals according to age in years

	Age Group	No of	Percentage
ř	in years	Individuals	rercentage
	18 - 33 yrs	64	34.60%
	34 - 48 yrs	72	38.92%
	49 - 65 yrs	49	26.49%
	Total	185	100%
	Mean±SD	40.82±12.31(19-61 years)	

In the present study, it was observed that, out of 185 Individuals, 64 Individuals (34.60%) were between 18 – 33 yrs; 72 Individuals (38.92%) were between 34 - 48 yrs; 49 Individuals (26.49%) were between 49 - 65 yrs.

Table No. 2: Distribution of Individuals according to gender

Gender	No of Individuals	Percentage
Male	88	47.57%
Female	97	52.43%
Total	185	100

In the present study, it was observed that, among 185 Individuals, 88 Individuals (47.57%) were male and 97 Individuals (52.43%) were female Individuals.

Table No. 3: Distribution of Individuals according to Weight in Kg:

Weight Group in Kg	No of Individuals	Percentage
< 50	09	4.86%
51-65	95	51.35%
66-80	75	40.54%
> 80	6	3.24%
Total	185	100%

In the present study, it was observed that, out of 185 Individuals, 95 Individuals (51.35%) were having weight in Kg between 51 – 65; 75 Individuals (40.54%) were having weight in Kg between 66 - 80 yrs; and very few 6 individuals were found over weight i.e., above 80.

Table No. 4: Distribution of Individuals according to Prakriti: In the present study, was observed that, out of 185 Individuals, 20 Individuals (10.81%) were Kap<mark>ha-Pittaj prakruti,</mark> 25 Individuals (13.51%) were of Kapha-Vataj prakruti, and 41 Individuals (22.16%) were of Pitta-Kaphaj prakruti, 24 Individuals (12.97%) were of Pitta-Vataj prakruti, 33 Individuals (17.83%) were of Vata-Kaphaj prakruti, 42 Individuals (22.70%) were of Vata-Pittaj prakruti.

### **DISCUSSION:**

The present observational study was conducted on 185 Healthy individuals, who were assessed for the Prakriti Parikshana and Specifically pH of the Sweda of individuals. After completion of the assessment data regarding this get corelated for any correlation between deha prakriti and pH of the Sweda Pravrutti of individuals. The data was collected as per distribution patients according to factors like Age, Sex, Prakriti, Addictions and

Nature of work, which get observed. The data available from the observations made in this study of 185 patients are being discussed below. On the Distribution observation, of the individuals according to Age, Maximum numbers of individuals i.e. 38.92% of individuals are from age group 34-48 years, 34.60% of individuals are from age group 18-33 years while minimum 26.49% of individuals are from age group 49-65 years. Age factors many times defines the state of Deha Prakriti of that individual. Because as age group changes, dosh pradhanata of the body also changes. Due to which characteristics of the Doshaj prakriti also gets changes. Here the present data signifies age factor of Deha Prakriti in accordance with textual references. On the of observation, Distribution the individuals according to Sex, numbers of individuals were Females i.e. 52.43% against 47.5<mark>7% Males. On</mark> the Distribution of observation, the individuals according to Prakriti, maximum number of individuals were of Vata Pittaj i.e. 22.70% and Pitta-kaphaj prakriti i.e. 22.16%. As study location comes under the region of Sadharan Desha, it more prone for the Vata and Pitta predominance prakrities. Hence, present data signifies predominance of mentioned Deha Prakriti in accordance with textual references. Individuals of the study were from different types of work Pattern. Among them 32.43% had vatapitta prakopak working pattern, while 29.73% had private job with less effortful job along with sedentary diet pattern which may affects the Doshaj condition of the individuals. Such working pattern and diet regime changes the dosh awastha in the body and results in the prakopa of

dosha like Vata & Pitta. Hence, the present data signifies cause for predominance of dosha in the body in accordance with textual references.

Time of sweating: In this study, observations were done on the Specific time for Sweda Pravrutti in the sample individuals in which majority of sample individuals facing the more sweating in the afternoon time i.e., 71.89%. It may be mostly due to temperature increase. It mostly observed in the Thermal Sweating. This occurs hot environmental temperature, the threshold being 28°C for men and 31°C for women. environmental temperature rises sweating increases. It is to be emphasized that when the ambient temperature is higher than body temperature sweating is the only method of keeping the body temperature normal.

Ritu: In this study, observations were done on the Specific Ritu for Sweda Pravrutti in the sample individuals in which majority of sample individuals facing the more sweating in the summer seasons i.e., 81.62%. It may be mostly due to rise in the temperature. It also mostly observed in the Thermal Sweating. Because sweating acts as a cooling mechanism and conducts the heat out through the body. This is possible with increased blood supply to the sweat glands. According to Ayurveda also its ushna Kala results for the Pitta prakopa in the body and there is increase in Deha ushma which causes more sweating. While few of sample individuals facing the more sweda pravrutti during the rainy seasons i.e, 10%. It may be due to kapha prakopak Ritu and their similar kapha predominant prakriti.

**Twacha Prakara:** In this study, observations were done on the Twacha

Prakara after Sweda Pravrutti in the sample individuals in which majority of sample individuals having the Ruksh Twacha Prakara i.e., 52.43%. It may be due to low nourishment after the dehydration caused after more Sweating. Sometimes, it may be occurring due to vatanubandhi in the prakriti of sample individuals. Hence more dryness causes itchiness of skin.

DISCUSSION: According to observation it was found that criteria like sweda pravrutti, smell of Sweda, Kandu after Sweda, stains on Cloths due to Sweda, Hair fall due to excessive sweda, Hast-Pad Sphutan, etc were significantly corelated with the prakriti of the Individuals.

Sweda Prvrutti: In the observation, maximum 18 individuals having grade 3 of Sweda Pravrutti for Kapha-Pittaj Prakriti, 13 individuals having grade 1 of Sweda Pravrutti for Kapha-Vataj Prakriti, 21 individuals having grade 2 of Sweda Pravrutti for Pittaj-Kaphaj Prakriti, individuals having grade 1 of Sweda Pravrutti for Pitta-Vataj Prakriti, individuals having grade 1 of Sweda Pravrutti for Vata-Kaphaj Prakriti, 22 individuals having grade 1 of Sweda Pravrutti for Vata-Pittaj Prakriti. By using Chi-square Test statistically **significant** correlation was found between Sweda Pravrutti and Prakriti

 $(\chi 2=178.04, P=0.0001, S)$ .

Smell of Sweda: In the observation, maximum 18 individuals having grade 3 of Smell of Sweda Pravrutti for Kapha-Pittaj Prakriti, 16 individuals having grade 1 of Smell of Sweda Pravrutti for Kapha-Vataj Prakriti, equally 15 individuals having grade 1 & 2 of Smell of Sweda Pravrutti respectively for Pittaj-Kaphaj Prakriti, 13 individuals having grade 1 of Smell of Sweda Pravrutti for Pitta-Vataj Prakriti, 19

individuals having grade 1 of Smell of Sweda Pravrutti for Vata-Kaphaj Prakriti, 33 individuals having no Smell of Sweda Pravrutti for Vata-Pittaj Prakriti. By using Chi-square Test statistically **significant** correlation was found between Smell of Sweda Pravrutti and Prakriti (χ2=135.21, P=0.0001, S).

Kandu after Sweda: In the observation, maximum 13 individuals having grade 2 of Kandu after Sweda Pravrutti for Kapha-Pittaj Prakriti, 15 individuals having grade 2 of Kandu after Sweda Pravrutti for Kapha-Vataj Prakriti, 31 individuals having grade 1 of Kandu after Sweda Pravrutti for Pittaj-Kaphaj Prakriti, 19 individuals having No Kandu after Sweda Pravrutti for Pitta-Vataj Prakriti, individuals having grade 1 of Kandu after Sweda Pravrutti for Vata-Kaphaj Prakriti, 39 individuals No Kandu after Sweda Pravrutti for Vata-Pittaj Prakriti. By using Chi-square Test statistically significant correlation was found between Kandu Sweda Pravrutti Prakriti after and  $(\chi 2=224.12, P=0.0001, S)$ .

Stains on Cloths: In the observation, maximum 12 individuals having grade 3 of Stains on Cloths after Sweda Pravrutti for Kapha-Pittaj Prakriti, equally individuals having grade 1 of Stains on Cloths after Sweda Pravrutti and no signs of Stains on Cloths after Sweda Pravrutti for Kapha-Vataj Prakriti, 17 individuals having grade 1 of Stains on Cloths after Sweda Pravrutti for Pittaj-Kaphaj Prakriti, 18 individuals having no signs of Stains on Cloths after Sweda Pravrutti for Pitta-Vataj Prakriti, equally 16 individuals having grade 1 of Stains on Cloths after Sweda Pravrutti and no signs of Stains on Cloths after Sweda Pravrutti for Vata-Kaphaj Prakriti, 39 individuals having no signs of

Stains on Cloths after Sweda Pravrutti for Vata-Pittaj Prakriti. By using Chi-square Test statistically **significant** correlation was found between Stains on Cloths after Sweda Pravrutti and Prakriti (χ2=155, P=0.0001, S).

Hair Fall: In the observation, maximum 12 individuals having grade 2 of Hair Fall after Sweda Pravrutti for Kapha-Pittaj Prakriti, 14 individuals having grade 1 of Hair Fall after Sweda Pravrutti for Kapha-Vataj Prakriti, 18 individuals having grade 2 of Hair Fall after Sweda Pravrutti for Pittaj-Kaphaj Prakriti, 16 individuals having no of Hair Fall after Sweda Pravrutti for Pitta-Vataj Prakriti, individuals having no of Hair Fall after Sweda Pravrutti for Vata-Kaphaj Prakriti, 33 individuals having <mark>no of Hair Fall</mark> after Sweda Pravrutti for Vata-Pittaj Prakriti. By using Chi-square Test statistically significant correlation was found between Hair Fall after Sweda Pravrutti and Prakriti  $(\chi 2=113.71, P=0.0001, S)$ .

Hast-Pad Shputum: In the observation, maximum 11 individ<mark>uals having grade</mark> 1 of Hast-Pad Shputum after Sweda Pravrutti for Kapha-Pittaj Prakriti, 17 individuals having grade 1 of Hast-Pad Shputum after Sweda Pravrutti for Kapha-Vataj Prakriti, 21 individuals having No of Hast-Pad Shputum after Sweda Pravrutti for Pittaj-Kaphaj Prakriti, 15 individuals having No Hast-Pad Shputum after Sweda Pitta-Vataj Pravrutti for Prakriti, individuals having No of Hast-Pad Shputum after Sweda Pravrutti for Vata-Kaphaj Prakriti, 22 individuals having No Hast-Pad Shputum after Sweda Pravrutti for Vata-Pittaj Prakriti. By using Chi-square Test statistically significant correlation was found between Hast-Pad

Shputum after Sweda Pravrutti and Prakriti (γ2=132.71, P=0.0001, S).

pH of Sweda: In this study, observations were done on the pH of Sweda Pravrutti in the sample individuals in which majority of sample individual's sweat having Alkaline Nature i.e., 49.19%. It may be due to more quantity of sweating which results in the less concentration of Sweat. Maximum 18 individuals found with acidic pH of Sweda Pravrutti for Vata -Kaphaj, Vata – Pittaj Prakriti, individuals found with alkaline pH of Sweda Pravrutti for Pitta - Kaphaj Prakriti, while 18 individuals found with nutral pH of Sweda Pravrutti for Vata - Pittaj Prakriti. By using Chi-square Test statistically significant correlation was found between pH of Sweda Pravrutti and Prakriti  $(\chi 2=104.57, P=0.0001, S)$ . The initial pH of sweat is about 7.1-7.4. Bicarbonate reabsorption is inversely related to sweat rate. Thus, at low sweat rates, the luminal fluid is exposed to the duct for a long time and is further acidified, which results in a pH of below 7. However, at quicker flow rates, pH can remain as high as above 7. Since lactate is produced by eccrine sweat gland metabolism, there is a direct relationship between sweat rate and the rate of lactate excretion. The higher the sweat rate, the higher the concentration of lactate excreted. However, because of the increased release of water content, there is an inverse relationship between sweat rate and lactate concentration. Thus, it makes sense that sweat lactate concentration decreases with increased exercise intensity.

## **CONCLUSION:**

Ayurveda considers life to be the union of the body, senses, mind, and spirit. The concept of Prakriti has a central role in Ayurveda therapeutics. Vata, Pitta, Kapha Prakriti persons have different physical, physiological and psychological characters as found during Prakriti Parikshana. It provides the right regimen for individual covering all aspects of our physical, psychological nature, and therefore, affords spiritual, methodology for preventing, as well as curing of diseased. Sweda (Sweating) is patho-physiologically important because any change in bodily entity like Prakriti of the individual which may causes excessive perspiration or no perspiration and other symptoms related to this srotas. In the study, on observations, change in physical and physiological entities under the prakriti parikshana of each individual were very much found correlated to textual references. After the statistical evaluation, significant correlation was found between subjective assessment parameters like Sweda Pryrutti, smell of sweda, kandu after sweda, stains on cloths, Hair fall, Hast-Pad Sphutan with Prakriti of each individual. In the pH evaluation of sweda, mainly Alkaline pH was found in most of the individual. After the statistical evaluation, significant correlation was found between pH of Sweda (Sweating) with the Prakriti of the individual. Hence study proves that there is presence of correlation in the particular prakriti with their pH of Sweda (Sweating).

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