



## CORRELATIONAL STUDY BETWEEN SHAREERIKA PRAKRUTHI AND DACTYLOGRAPHY

V M Arya

PG Scholar, Department of Kriya Shareera, Sri Dharmasthala Manjunatheshwara College of Ayurveda and Hospital, Hassan

Kamath Nagaraj

Associate Professor, Department of Kriya Shareera, Sri Dharmasthala Manjunatheshwara College of Ayurveda and Hospital, Hassan

**ABSTRACT** **Background:** Doshas dominating the sperms and the ovum during the time of conception and also those inhabiting the uterus at that time determine the Prakruthi of the individual. The Doshas which ultimately emerge at dominant factors actually determine the Prakruthi or the physical constitution. This non-pathogenic intensified status of Dosha remains constant from birth till death and this is Prakruthi. On the palm, sole and ventral surface of fingers and toes the epidermal thickenings produce surface ectodermal ridges. The ridges form the typical patterns, the development of which is genetically controlled and these patterns are unique for each individual including identical twins. This forms the basis of personal identification from the fingerprints for the medico-legal purpose. As Prakruthi and fingerprint is formed during the intra-uterine life and remains unchanged throughout the life, this study can serve as a platform to understand the relation between these two concepts. **Aims and Objectives:** To evaluate the relation between Prakruthi and dactylography. **Materials and Methods:** 150 subjects within age group of 18-30years visiting Prakruthi Analysis Unit of Sri Dharmasthala Manjunatheshwara College of Ayurveda & Hospital, Hassan will be selected and given with questionnaires for Prakruthi assessment and their 10 fingerprint will be obtained through rolled method. Later assessment was done based on the fingerprint pattern. **Discussions and Conclusions:** Kapha Prakruthi is associated with loop fingerprint pattern & showed less variation in fingerprint patterns. Cramer's results shows that there exists strong relation between Pitta Prakruthi and Arch pattern and also with Whorl pattern. It also shows that there is a very strong relation between Kapha Prakruthi and Loop pattern. It is concluded that, associated fingerprint patterns of Pitta Prakruthi are whorl & arch, variation in fingerprint patterns observed are in between Kapha & Vata Prakruthi. Maximum variations of fingerprint patterns were observed in Vata Prakruthi.

**KEYWORDS :** Shareerika Prakruthi, Dactylography, Fingerprint Pattern

## INTRODUCTION

Ayurveda differs from other medical sciences by virtue of its unique concepts, independent ways of diagnosis and treatment. The prime aim of Ayurveda is twofold, i.e., maintaining health of the healthy individual and curing the diseases of diseased person. Determination of Prakruthi in new born stage helps to differentiate the baby from other children by knowing peculiar characters. It also helps to maintain the health throughout the life span, by proper measures. Hence, Charaka considered Prakruthi examination, as the first points of investigations regarding the patients.

The whole physiology, pathology and treatment depend upon TriDoshas. The functions of Doshas are described in all the classics of Ayurveda. The Doshas are mainly responsible for the formation of human constitution. According to the Doshas, the Prakruthi of the man is labelled as Vatika, Pittika or Slaismika and bears peculiar characters due to the predominance of particular Doshas in the body.

Prakruthi represents the Doshik state of an individual. The word Prakruthi is a feminine term which maximally represents the 'nature of the individual'. In Vedic Literature, (Brahman and Upanishad Granth) Prakruthi is used for meaning like Swabhava, Sharir, and Utpatti etc.<sup>[1]</sup> In Ayurvedic Literature Prakruthi represents the trait appearing at the time of union of Shukra and Shonita which remains unchanged throughout the life.<sup>[2]</sup>

A healthy individual is born out of normal Sukra, Artava, Atma, Prakruthi and various Vikaras and the predominance of Dosha at the time of conception determines the Prakruthi of the individual. Prakruthi is a non-pathological Doshik status, which is inherent in the individual from being to death, which becomes distinct since the time of fertilization, mediated by maternal and paternal factors. No individual is alike another; all are different with respect to their own characteristic features.<sup>[3]</sup>

Charaka specifies Sama Dosha as Sama Prakruthi, in which Dosha are in state of equilibrium. Others are not termed as Prakruthi but called as Vatala, Pittala and Shleshmala (and not Vata Prakruthi etc.). Charaka considers Prakruthi as normal state hence describes Sama as only Prakruthi. Sushruta describes Dosha is elevated (Utkata) but within normal limits. According to Asthanga Hridaya, in any Prakruthi, Dosha are elevated but well tolerated and do not cause abnormality.

A fingerprint is the pattern on the inside of the finger in the area between the tip and the first joint and stays the same from the day of a

person's birth to the day they die. Like snowflakes, no two person's finger prints are exactly alike, not even those of identical twins. Finger prints are easily classified, as there are four different basic shapes of pattern — arches, loops, and whorls— that are then subdivided according to things like the numbers of ridges between certain points in the pattern.<sup>[4]</sup>

The arrangement and distribution of the patterns are unique to an individual, and no two hands resemble each other. An individual's genetic makeup plays a part in determining the basic shapes of the patterns and ridges, but it is not the only factor as identical twins have identical genetic makeup, but distinguishably different fingerprints. The probability that two individuals will have the same conventional fingerprint is about one in 1 billion. Fingerprints do not change throughout life, unless damage has occurred to the dermal skin layer. Temporary loss of fingerprints may be seen when there is swelling of the fingers, e.g. when stung by bee, but returns when the swelling recedes. Fingerprints can be erased permanently and deliberately by criminals to reduce their chance of conviction. Erasure can be achieved in a variety of ways including burns, acids and plastic surgery.

**Fingerprint Patterns:** If a pattern contains neither core nor delta, it is an arch; if it contains one core and one delta, it is a loop; and if it contains no core and two deltas, it is a whorl.

In a dead body, if fingertips are dried up or shrivelled. The prints can be taken after soaking the fingers in an alkaline solution (e.g. KOH). The surface of the fingers can be rounded out and smoothed by injecting glycerine, melted paraffin, hot water or air into the tissues. If the prints obtained by the above methods are not found decipherable, then the palmer skin of the terminal phalanx of each finger may be removed from both the hands and placed in a labelled bottle containing 10% formalin or a solution of glycerine and alcohol for preservation, and transported to the Fingerprint Bureau. In case of advanced putrefaction and in drowning, the skin may come out like a glove which can be preserved in formalin for the development of fingerprints.<sup>[5]</sup>

## Aims and Objectives

To evaluate the relation between Prakruthi and dactylography.

## MATERIALS AND METHODS

150 subjects within age group of 18-30years visiting Prakruthi Analysis Unit of Sri Dharmasthala Manjunatheshwara College of Ayurveda & Hospital, Hassan were selected and given with questionnaires for Prakruthi assessment and their 10 fingerprint were

obtained through rolled method.

Inclusion criteria were individuals within age group 18-30 years visiting Prakruthi analysis OPD of Sri Dharmasthala Manjunatheshwara College of Ayurveda & Hospital, Hassan. Histories with genetic disorders, individuals with major deformity for upper extremity (Syndactyl, Polydactyl) were excluded from the study.

Standard questionnaire for assessing Dehaprakruthi by Kishor Patwardhan and Rashmi Sharma was used for assessing Prakruthi. Individuals with Vata Pradhana, Pitta Pradhana, and Kapha Pradhana were considered (more than 10% difference between the predominant Doshas in Dwanthaja Prakruthi were considered). For assessment of fingerprint pattern the files of Ten Fingerprint Cards (TFC) of 150 subjects aged between 18-30 years are prepared. Fingers of the subjects (which are cleaned with tap water and soap and dried) will be rolled on the forensic fingerprint pads (such that the ink will be applied to the tips evenly by rolling the thumbs towards the subject's body and other fingers rolled away from the body i.e., thumb in fingers out method). Similarly rolled impressions of ten fingers of each subject will be obtained on the TFC in the allotted space for the fingers. The fingerprint ridges and ridge characteristics of ten fingers on TFCs will be observed under a fingerprint magnifier. A square of 5mm×5mm (25mm<sup>2</sup>) drawn on a transparent sheet in which ridge count will be observed within this square only; whereas pattern of the fingerprints will be observed on the basis of total impression.

**OBSERVATIONS AND RESULTS**

**Table 1: Showing Distribution Of Prakruthi & Fingerprint Pattern (%)**

Prakruthi	Pattern	Right Finger Print Pattern (%)					Left Finger Print Pattern (%)				
		Thu- mb	Inde x	Mid- dle	Ring	Litt- tle	Thu- mb	Inde x	Mid- dle	Ring	Litt le
Vata	Arch	6.0	6.0	6.0	2.0	-	6.0	16.0	8.0	4.0	4.0
	Loop	60.0	48.0	72.0	34.0	82.0	46.0	42.0	56.0	40.0	70.0
	Whorl	34.0	46.0	22.0	64.0	18.0	48.0	42.0	36.0	56.0	26.0
	Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Pitta	Arch	-	10.0	4.0	-	-	2.0	44.0	10.0	-	2.0
	Loop	40.0	38.0	80.0	58.0	90.0	38.0	26.0	80.0	66.0	86.0
	Whorl	60.0	52.0	16.0	42.0	10.0	60.0	30.0	10.0	34.0	12.0
	Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Kapha	Arch	2.0	14.0	6.0	4.0	2.0	2.0	14.0	8.0	6.0	6.0
	Loop	64.0	60.0	82.0	54.0	80.0	76.0	50.0	66.0	50.0	80.0
	Whorl	34.0	26.0	12.0	42.0	18.0	22.0	36.0	26.0	44.0	14.0
	Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

**Table 2: Showing Chi-Square Test For Prakruthi And Fingerprint Pattern**

Pattern	Prakruthi	Frequency	Pearson Chi-Square Value	Asymptotic Significance
Arch	Vata	10	34.090*	.002
	Pitta	28		
	Kapha	12		
	Total	50		
Loop	Vata	48	38.254*	.008
	Pitta	49		
	Kapha	50		
	Total	147		
Whorl	Vata	44	32.105*	.042
	Pitta	45		
	Kapha	37		
	Total	126		

**Table 3: Showing Cramer's Results Between Prakruthi And Fingerprint Patterns**

Pattern	Prakruthi	Frequency	Cramer's Value	Approximate Significance
Arch	Vata	10	.337	.002
	Pitta	28		
	Kapha	12		
	Total	50		
Loop	Vata	48	.357	.008
	Pitta	49		
	Kapha	50		
	Total	147		
Whorl	Vata	44	.327	.042
	Pitta	45		
	Kapha	37		
	Total	126		

Arch	Vata	10	.337	.002
	Pitta	28		
	Kapha	12		
	Total	50		
Loop	Vata	48	.357	.008
	Pitta	49		
	Kapha	50		
	Total	147		
Whorl	Vata	44	.327	.042
	Pitta	45		
	Kapha	37		
	Total	126		

**DISCUSSION**

Distribution of 3Fingerprint patterns in Right and Left hand (Table 1): In this study the number of people having loop pattern is more in all 5 fingers. It may be due to fact that the most common fingerprint pattern in Indian population is loops, followed by whorls and arch.

Chi-square test for Prakruthi and fingerprint pattern (Table 2): It was observed that there is significant difference in the distribution at p value < 0.05 level since individuals with Kapha Prakruthi, which has maximum number of subjects with Loop type of fingerprint pattern. It was observed that there is significant difference in the distribution at p value < 0.05 level since individuals with Pitta Prakruthi having maximum number of subjects with Whorl type of fingerprint pattern.

Cramer's results between Prakruthi and Finger print pattern (Table 3): There exists a strong relation between Pitta Prakruthi and Arch pattern (Cramer's value- 0.337). Cramer's test for Loop pattern has shown a very strong relation (Cramer's value .357) with Kapha Prakruthi. Cramer's result for Whorl pattern also shows a strong relation (Cramer's value .327) with Pitta Prakruthi.

**CONCLUSION**

The study shows the relation between Prakruthi and Dactylography. Kapha Dosh shows less variation were loop being the most repeated fingerprint pattern, whereas Vata Dosh shows maximum variation and Pitta Dosh in between the two.

**REFERENCES**

1. Agnivesha. Charaka samhitha with Ayurveda Commentary by Chakrapanidatta, editor Acharya YT. Varanasi: Choukhambha Orientalia; 2011. P.277
2. Agnivesha. Charaka samhitha with Ayurveda Commentary by Chakrapanidatta, editor Acharya YT. Varanasi: Choukhambha Orientalia; 2011. P.300
3. Sushruta. Sushruta Samhitha Dalhana. In: Acharya YT edi. Nibandhasangraha Commentary. Reprint ed. Varanasi: Chaukhambha Sanskrit Sansthan; 2010.P.339
4. <https://owlcation.com/humanities/fingerprinting>
5. Biswas Gautam, Review of Forensic Medicine and Toxicology, Ed. 4, New Delhi, Jaypee Brothers Medical Publishers (P) Ltd 2019, P. 90