

# Study of Lip Print Pattern among Young Individuals in Bangalore City

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## Abstract

Chieloscopy or study of pattern of lip print is one of the easiest tools available for the identification of an individual in a medico legal investigation. The present study involves evaluating the pattern of lip prints among hundred individuals with 50 male and 50 female subjects. Lip prints are obtained on a white bond paper and studied involving all four quadrants. It was observed that Type I pattern was commonest lip print pattern among all the individuals and in female subjects, where as type II pattern was common among males. No two individuals had the same lip print pattern.

**Key words:** Chieloscopy, quadrant, reticular, lip print.

## Introduction

Chieloscopy is one of the most emerging methods of human identification that deals with study of lip prints. Lip prints are formed by the pattern of grooves present on the labial mucosa. Lip prints are unique to particular individual and do not change during life of a person. They were first studied by anthropologist; R Fisher in 1902. In 1950, two Japanese scientists Kazuo Suzuki, Yasuo Tsuchihashi reported the arrangement of furrows on lip is unique and proposed a classification.<sup>1</sup>

Lip prints are classified into following types:

Type I: Clear cut grooves running vertically over the length of lip.

Type II: Grooves running vertically over partial length of the lip.

Type II: Grooves branch in their course.

Type III: Intersected grooves.

Type IV: Reticular grooves.

Type V: Irregular nonclassified pattern.

The dissimilarity among individuals is influenced by hereditary factors, seasonal effects and age. This could be a hurdle in lip print being used as lifelong constant identification feature<sup>2</sup>. Lip prints are similar to finger

prints and foot prints in that individual characteristics are used for identification. They recover after undergoing alterations like trauma, inflammation and disease<sup>3</sup>. Lip prints of parents, children and siblings show some similarities which can establish relationships to limited extent. Variations in pattern among males and females could help in sex determination. Apart from standard types, 24 individual characteristics are distinguished. To simplify the study lip prints are classified into 4 quadrants and each quadrant is studied separately. Establishing 7 to 9 characteristics leads to positive identification. Substance forming print saliva and cosmetics can be identified which act as corroborative evidence<sup>4</sup>.

Identification of person and a suspect in crime is becoming more difficult for investigators as criminals are using sophisticated techniques while committing crime. Lip prints though a less recognized forensic investigating technique can be silent important evidence in a scene of crime to nail the culprit. The significance of Chieloscopy is linked to the fact that lip prints are inherent, develops at 6th month of intrauterine life. They are permanent, unalterable even after death unique to each person except for mono zygotic twins<sup>5</sup>.

## Aim

To study the pattern of lip prints among fifty young males and fifty young females.

**Material and Method**

Materials required are white bond papers, transparent foil of adhesive tape or cello tape, red lip stick and magnifying lens. Lip prints are collected from young individuals between 18 to 22 years of age. A total of 100 individuals are studied among which 50 are males and 50 females. Lips are first cleaned with tissue paper, red lip stick is applied over cleaned lips. Lip print is obtained by applying cello tape over the lips and pasting the same over white bond paper. Lip prints thus obtained are studied manually using magnifying lens.

**Exclusive criteria:** Persons with lip lesions, scars, and fissures.

**Results**

Lip prints are classified into 4 quadrants namely I<sup>st</sup> quadrant which is right upper quadrant, II<sup>nd</sup> quadrant is left upper quadrant, III<sup>rd</sup> quadrant is left lower quadrant and right lower quadrant being the IV<sup>th</sup> quadrant. Lip print pattern are studied in all four quadrants. A total of 50 male lip prints and 50 female lip prints were obtained. Type I lip print was commonest among all individuals and among females, whereas type II pattern was common among males. No two individual had the same pattern of lip print. Results are tabulated as follows:

**Table 1: Distribution of Lip print pattern among individuals.**

Pattern	No of Quadrants	Percentage
I	126	31.5%
II	83	20.75%
II	110	27.5%
III	48	12%
IV	33	8.25%
V	0	0%

**Table 2: Distribution of Lip print pattern among Males.**

Pattern	I Quadrant	II Quadrant	III Quadrant	IV Quadrant	Total
I	22	19	10	07	58
II	08	10	06	06	30
II	10	09	28	25	72
III	01	01	01	05	08
IV	10	10	06	06	32
V	00	00	00	00	00

**Table 3: Distribution of Lip print pattern among Females.**

Pattern	I Quadrant	II Quadrant	III Quadrant	IV Quadrant	Total
I	18	19	16	15	69
II	17	15	10	11	54
II	05	04	15	14	38
III	10	11	09	10	40
IV	01	00	00	00	01
V	00	00	00	00	00

### Discussion

The study of lip prints among 100 individuals revealed that no two individuals had same pattern of lip print which enhances the effectiveness of lip print as a tool for identification of an individual. In this study Type I was the commonest pattern occurring among individuals in contrast to the study done by Umesh Babu<sup>6</sup> where type IV was most commonly occurring lip print pattern. The study showed the least common type of lip print was type IV and type V in contrast to the other study<sup>6</sup> where type II was least occurring pattern. In the present study, type II pattern was the commonest occurring lip print in males followed by type I, while in females type I was commonest followed by type II. Our study result was in contrast to study done at Wardha<sup>7</sup> where type III pattern was more common in males and type II was commonest in females. The present study is in agreement with previous study<sup>8</sup> where type I was common in females.

In males there were five subjects with all four quadrants having similar pattern. There were fifteen female subjects having similar pattern in all four quadrants which is in agreement with study at Wardha<sup>7</sup> where more females had similar pattern in all four quadrants than males. In our study majority of them had two quadrants with similar lip print i.e, 15 in males and 20 in females. Least occurring pattern in males was type III and in females was type IV. The study is in contrast to results obtained by Sivapathasundaram<sup>9</sup> study which showed type III as the commonest pattern where as type I pattern is more common in our study,

### Conclusion

Chieloscopy remains a credible, non invasive and economically viable tool for identification of an individual. The study concludes that no two individuals have same lip print pattern. Type I is the commonest lip print pattern among all individuals. Type II in males and type I in females are the commonest pattern observed respectively. The result obtained varies with other studies done in similar field as various factors have a role in deciding the pattern of lip print in an individual. Hence a particular pattern of lip print cannot be attributed to a particular gender or region. The present study involving 100 subjects is a small sample size for generalizing the results. This study should be helpful in initiating further studies with larger amount of subjects providing enhanced results.

**Conflict of Interest:** Nil

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**Ethical Clearance:** Obtained from institutional ethical committee

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