



G46 Identification of Sex Using Melanoderm Lip Prints: A Clinical Study in Senegal

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The goal of this presentation is to predict the sex of an individual from the architecture of a melanoderm lip print.

This presentation will impact the forensic science community by providing results from a clinical study. This presentation will add to research currently being conducted in cheiloscropy analyzing various materials from the crime scene, such as clothing, cups, glasses, cigarettes, doors, etc. The patterns of lip prints demonstrated significant sexual dimorphism between males and females.

Materials and Methods: This study was conducted on 197 melanoderm subjects in Dakar, Senegal. All the subjects (females = 97, males = 100) were 30 to 60 years of age. Non-gloss lipstick, cellophane tape, white bond paper, scissors, calipers, and a magnifying hand lens were used for analysis. The length and thickness of the upper and lower lips were measured with sliding calipers. For all lip prints, the thickness of the lip was measured at the center of the lip.

Results: Lip prints for each individual were collected to obtain the clearest and most complete print as noted by examination with the magnifying hand lens. Overall accuracy by the examiner was found to be 100% (all 197 subjects were diagnosed correctly). No significant difference was found in lip thickness between males and females ($P \leq 0.71649$ for upper lip, $P \leq 0.30718$ for lower lip, but there was a significant difference in widths of the mouth between males and females ($P \leq 0.00018$). For distribution of types of labial groove patterns, type V is predominant in all areas, whereas it is only in areas 2, 3, and 4. Type I is very important in all areas of females, but is present only in area 1 of males. The average difference in the lip length found between males and females was 7.63mm.

Conclusion: In the present study, none of the lip prints of any subject “matched” any of the others. This study demonstrates that lip prints have the potential of predicting the gender of the person, but in the future, a database for a population could be very important in criminal investigations.

Cheiloscropy, Melanoderm Lip Prints, Sex