



Physical Anthropology Section – 2006

H32 Superficial Ancestral Characteristics of the Nose

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After attending this presentation, attendees will learn, retain, and implement the newest additions to Olivier and Thomas nasal characteristics. Attendees will also find a new understanding of the nose and root superficial characteristics, as well as the characteristics that are common among different ancestral groups.

This presentation will impact the forensic community and/or humanity by being a catalyst for further research into the genetic work on the varying aspects of what composes the superficial ancestral characteristics of the nose. Also, this presentation serves as the beginning of a catalogue of varying nose and root types, including images and text explaining in detail the differences between nose and root types. All of these would be extremely crucial for Forensic Facial Reconstruction.

Facial reconstruction or approximation depends on the ability of the artist to utilize the landmarks on the skull to build a replica of the soft tissue. The primary features of the face (the eyes, nose, and mouth) useful for facial recognition are the areas most concern for the artist. A closer understanding of the relationship of bone to soft tissue and of the variation present in contemporary human populations is essential.

Classification systems for the nose are relatively limited and are often based on broad divisions of ancestral groups into 3-4 main clusters. These categories do not recognize the diversity represented in the contemporary American population nor do they recognize the amount of admixture of ancestral lineages. This study explores the variation of nose proportions, nasal bridge and root shapes, and nasal angles.

Sixty-seven individuals from five ancestral backgrounds (Mongoloid, Hispanic, African, Caucasoid, and Mixed Ancestry) were selected. Frontal and lateral photographs were taken of the nasal area with scales.

Measurements of the features were then taken using NIH's ImageJ. The data are compared and analyzed for their superficial nose characteristics. Specific measurements include Angle from glabella to the bridge (nasofrontal angle); angle from the tip of the nose to the philtrum of the nose (nasolabial angle); length of nose; and width of nose. In addition the types of nose and root are assessed according to the Olivier and Thomas chart. As not all individuals could be assigned to these categories, new categories were created to accommodate for these trends. The new categories for nose type include Slight Curve and Deep Curve; for nose root, the new categories are Slight Point, Flat Point, and High Elevated Point.

The data were analyzed using Microsoft Excel and ImageJ. Linear measurements were converted to proportions. ANOVA was used to assess the difference between ancestral groups while Chi Squares was utilized for the categorical data.

Results show that the most common nose type across all five ancestral groups is Elevated Point with a Slight Curve. It is only the secondary traits of the nose and root that differentiate the various ancestral groups. Also, individuals of Mongoloid ancestry have the lowest nasal measurements altogether, while individuals of Caucasoid ancestry have the highest nasal measurements altogether. And finally, the author has noticed that the frontal views of the noses are quite different, while the lateral views of each of the noses tends to be extremely similar.

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