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3-D Facial Anthropometric Norms For The Southern Chinese

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Purpose: Accurate and demographic-specific normative data are required for the precise quantification of dysmorphology when accessing facial deformities. However, normative three-dimensional (3-D) data are not currently available for Chinese faces. The aims of this study were; (1) to create a normative database of facial anthropometric measurements for young adults with southern Chinese ancestry, (2) to develop a 3-D anthropometric analysis scheme applicable for assessing dentofacial deformities and (3) to compare the facial anthropometric measurements of young Chinese males and females.

Methods & Materials: A cross-sectional study was conducted on a group of healthy Southern Chinese subjects (51 males and 52 females) between 18 to 35 years of age with normal balanced faces. Facial images were captured with the 3dMDface stereophotogrammetric system. Anthropometric landmarks appropriate for measurement of dysmorphology were identified on these 3-D images. The applicability of several new measurements, which were not part of the traditional anthropometric analysis scheme, was also tested. All measurements were performed using 3dMDVultus software.

Results: The Chinese norms were distinct from those reported in the scientific literature for Caucasians. There were significant differences between Chinese males and females in relation to facial heights and most nasolabial measurements. Importantly, the new measurement scheme was found to be reliable for routine use in the assessment of facial dysmorphology.

Conclusion: This is the first database of anthropometric norms based on and 3-D photogrammetry for Chinese faces. These normative data can be used as a reference during the diagnosis, planning, and evaluation of postoperative outcomes after surgical correction of facial deformities.