CORPORAL IMAGE SATISFACTION IN RELATION TO BODY COMPOSITION IN A YOUNG POPULATION FROM THE BASQUE COUNTRY (SPAIN)

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The aim of this study was to evaluate body composition variations among different states of body image satisfaction and dissatisfaction. The sample was composed of 932 individuals from the Basque Country, Spain (306 men, 626 women aged 18–30). Williamson silhouettes collection (2000) was used to assess satisfaction degree. Four anthropometric measures (height, arm, waist and calf circumferences) and two bioelectrical measurements (resistance and reactance; 50 kHz) were taken. Specific Bioelectrical Impedance Vector Analysis (spBIVA) was used to evaluate body composition. Bioelectrical values were projected on the specific tolerance ellipses from an Italo-Spanish reference population. Comparison between groups was performed using Hotelling's T2 and Student's t-tests. In men, the specific bioelectrical vector mean of the group with moderate dissatisfaction by excess was situated in the right quadrant of the ellipses (indicative of low cell mass) and toward the upper pole (indicative of high FM%). There were no significant differences in body composition between satisfaction and dissatisfaction by defect, and these groups are located near the median value of the ellipsis. In women, the specific vectors of groups with severe and moderate dissatisfaction by excess were in the left quadrant (indicative of high cell mass) and toward the upper pole. The group corresponding to body image satisfaction was in the lower left quadrant, which indicates a tendency to low FM%. The group with a slight dissatisfaction by defect was characterized by a smaller phase angle, indicative of less cell mass. There is a trend toward increasing FM% with increasing dissatisfaction by excess. Men and women differ in body composition characteristics associated to their body image satisfaction, women being more satisfied with a lower FM%. Body image dissatisfaction by excess tends to be related to FM% excess in men, while in women it seems to be more related to cell mass excess.

Keywords: *Specific BIVA; Body Composition; Body Image Satisfaction; Fat Mass Percentage*

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VARIATION IN FREQUENCY DISTRIBUTION OF PONTICULUS POSTICUS AMONG MODERN HUMANS: GENERAL OBSERVATIONS

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Ponticulus posticus is a non-metric feature located on the first cervical vertebra posterior to the lateral masses (other names: Kimmerle's anomaly, dorsal ponticle of the atlas). It is found in humans with a frequency of approximately 25% and is more common among non-human primates. The feature has attracted some attention, mainly because the presence of ponticulus posticus was thought to have an adverse effect on blood flow through the vertebral artery. Most of previous works focused on estimating frequencies of the feature within a study population, and little is known about factors affecting its variation in humans. We went through literature on this topic and analyzed frequency distribution of ponticulus posticus in modern humans. In addition we used our own data on 449 atlas vertebrae from 3 Russian and 3 North American osteological series. According to the results, complete ponticulus posticus is more common in males than in females and this pattern is repeatedly seen in most of the samples studied. As we can judge from available data, groups of African ancestry have higher frequencies of the feature compared to Caucasians, this is especially true

of female groups. Asian populations show the lowest frequencies. In the Caucasian groups that we studied ponticulus posticus is positively associated with cranial shift at cervico-thoracic border (χ^2-test, $p<0.05$), and negatively – with lumbalization of S1 ($p<0.01$). In summary, if the frequency of ponticulus posticus is used in inter-group comparisons it should be analyzed separately for each sex. The feature shows mild racial differences. It is somehow associated with cranial shift in spine morphology described by Khüne (1932), the nature of this association is a matter of future studies.

Key words: *ponticulus posticus, human anatomy, non-metric feature, intra-species variability*

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INHERITANCE OF DERMATOGLYPHIC ASYMMETRY AND DIVERSITY TRAITS IN TWINS BASED ON FACTOR: VARIANCE DECOMPOSITION ANALYSIS

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Background: It is well known that twin data have played a central role to sort out genetic from environmental variation. The increased dermatoglyphic asymmetry corresponds to a higher inter pair variability in a number of behavioral tests have prominent from earlier twin studies. Relatively few studies have attempted towards the extent and relative contributions of genetic and environmental effects on twin pedigrees through genetic model fitting statistical procedures. Aim: Dermatoglyphic asymmetry and diversity traits from a large number of twins were analyzed based on principal factors to evaluate genetic effects and common familial environmental influences by the use of maximum likelihood based Variance decomposition analysis. Sample: Data consists of monozygotic (MZ) twins of two sexes (102 male pairs and 138 female pairs) and 120 pairs of dizygotic (DZ) female twins. Results: All asymmetry (DA and FA) and diversity (Div) traits were clearly separated into factors and are perfectly corroborated with earlier studies (Micle and Kobyliansky, 1986, 1991, Karmakar et al., 2001) in different ethnic populations, which indicate a common biological validity perhaps exists of the underlying component structures of dermatoglyphic characters. Heritability results of twins clearly showed that DA_F2 is inherited mostly in dominant type (28.0%) and FA_F1 is additive (60.7%), but no significant difference in sexes were observed for these factors. Inheritance is also very prominent in diversity Factor 10, which is exactly corroborated with our previous findings (Karmakar et al., 2006). The present results are similar with the earlier results of finger ridge count diversity in twins (Holt, 1960), which suggested, finger ridge count diversity is under genetic control. Conclusion: The relationship between MZ and DZ twins is due to common genes that affect dermatoglyphic asymmetry and diversity traits (factors), suggests is under genetic control of which DA is inherited mostly in dominant type and FA is additive.

Key words: *dermatoglyphic asymmetry and diversity, segregation analysis, variance decomposition analysis, twins*

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