

Forensic practise has seen a great increase in past few years in the extension of juvenile offenders, missing child and child abuse, especially in connection with pedo-pornographic material. This thesis focused on specification juvenile identification from facial morphology based on evaluation of longitudinal data during the pubertal spurt. The material was 3D facial surface images of 21 girls and 23 boys), mean age at the beginning of the study was 12.4 years for girls and 12.3 for boys. They were scanned annually during three years, i.e. 12 – 14 year. The 3D facial images were evaluated using the methods of geometric morphometrics. Specifically, the superimposition of two average models, Dense correspondence analysis and PCA. The facial growth including allometric changes were observed with respect to its variability and sexual dimorphism.

The results suggest that the variability of facial form (shape and size) was larger than variability of facial shape. Statistically significant differences in the form of the face were found among all age groups within and between sexes. After elimination of size there were significant differences within all age group of boys, in girls only between 12 and 14 years. No significant sexual dimorphism of any age group was occurred. In terms of average changes of facial morphology with increasing age there were a general elongation of the face, flattening of the cheeks, the eye fissures became deeper in relation to more prominence of eyebrow ridges. The increase in nose prominence as well as downward projection of chin were connected with the general elongation of the face. Generally the surface changes were larger in boys than in girls especially in nose and lips.

We suppose that standardization of size and shape changes in facial morphology during puberty will be useful in identification techniques within forensic practice, especially with regard to aging of missing child and facial reconstructions from human skeletal remains.