

ABSTRAKT AJ

Knowledge of the soft facial tissues is the basis of any craniofacial reconstruction. It is of a great importance mainly for forensic practice, but it plays an important role in other fields, for example aesthetic surgery. Defining the thickness of facial tissues for different sexes, age and ethnic groups is an important aspect of forensic anthropology.

The thesis specialises in finding out the thickness of soft facial tissues in modern czech population, it takes into consideration the sex, age and assymetry. The main source of information are the CT scans of the heads of 46 adult women and 56 adult men of czech nationality ranging between ages 21 to 83. 80 landmarks are defined in each scan, therefore 40 linear measurements between corresponding points have been evaluated. Data were analysed using the PCA, Hotelling test, linear discrimination analysis, Kolmogorov-Smirnov test, MANOVA, Kruskal-Wallis test and Wilcoxon paired test.

Retrieved thicknesses of soft tissues will serve as the standards for the current czech population. Sexual dimorphism has been proven regarding the whole face, as well as both upper and lower parts of the face. The success of classification on the upper part of the face decreases significantly. Aging has been proven to have strong effect on the thickness of soft facial tissue of women in the area of glabella, orbitale, jugale, zygion, subspinale, gonion, mid-ramus of the left side, mid-mandibular border and inferior malar of the right side. Males have shown this effect in the area of orbitale, supramentale, ektokonchion of the right side and mid-mandibular border of the left side. The influence of assymetry was proven on the thickness of soft tissue in the area of jugale, inferior malar, supra M2, infra M2, infra canine, mentale and mid-mandibular border.

The obtained data were also used for the leading study of the computer reconstruction using the geometrical morphometry and statistical methods (GPA, TPS, PCA, multimeasurement linear regression). The precision of prediction shows that the method is not sufficiently reliable to be used in the forensic practice and the results may serve only as a reference for more elaborate study.