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EVOLIUCINĖ MEDICINA: ŽMOGAUS RAIDOS PERSPEKTYVOS IR SVEIKATA BESIKEIČIANČIOJE APLINKOJE

EVOLUTIONARY MEDICINE: PERSPECTIVES ON HUMAN DEVELOPMENT AND HEALTH CONSEQUENCES IN A CHANGING ENVIRONMENT

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Vilniaus universiteto Medicinos ir sveikatos mokslų
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STABLE FACIAL PROPORTIONS THROUGHOUT ADOLESCENCE, TAKING INTO ACCOUNT BODY SIZE PARAMETERS

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Background and Aim: The most rapid facial growth occurs during puberty. Facial proportions can be assessed using facial indices. Stable indices are important for determining which facial proportions remain unchanged throughout adolescence. This study aimed to identify which facial indices remain stable during adolescence and their relations with body parameters.
Materials and Methods: The study included 1376 participants aged 10–20 years. Faces were investigated using classical anthropometry. Eighteen craniofacial landmarks were identified, ten facial parameters measured, 34 facial indices calculated. Their stability was evaluated using linear regression ($p > 0.05$ – index is independent of age) and standard deviation (low standard deviation indicates stability).
Results: During adolescence, these indicators remained stable in girls: intercanthal width relative to biocular width (en-en/ex-ex) (SD = 2.53, $p > 0.05$), nasal width relations to morphological facial height (al-al/se-gn) and bigonial width (al-al/go-go) (SD = 2.21 and 2.46, respectively, $p > 0.05$), physiognomical upper facial height relative to bizygomatic width (se-sto/zy-zy) (SD = 3.19, $p > 0.05$). In boys, only the zygomandibular index (go-go/zy-zy) remained stable (it was also stable in girls: SD = 3.60 in boys, SD = 3.04 in girls, $p > 0.05$). Girls' se-sto/zy-zy was negatively correlated with BMI at age intervals 10–12, 13–16, and 17–20. Go-go/zy-zy positively correlated with body height in girls at the beginning (10-12 y.) and end (17-20 y.) of adolescence, and negatively related to BMI in both sexes at ages 17-20.
Conclusions: Only one index remained stable in boys – girls' facial proportions were more predictable during facial growth. Girls with higher BMI had relatively wider cheeks during the whole adolescence. Taller girls had relatively wider jaw in comparison to cheeks at the beginning and at the end of adolescence. Boys and girls with higher BMI had relatively wider jaw at the end of adolescence.

Keywords: anthropometry, facial growth, facial indices