

# DENTAL AGE ESTIMATION ACCORDING TO JOHANSON'S METHOD

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**OBJECTIVES:** Dental age estimation of the adult human remains can often be of great importance in forensic identification cases. There are numerous existing methods for the dental age determination, as well as several statistical methods for estimation of dental age in adults available in contemporary forensic dentistry. The aim of the present study was to compare real dental age with dental age estimation by the method according to Johanson (1971).

**METHODS:** 143 Caucasian permanent intact teeth without dental fillings and dental cavity were taken. The known age ranging was from 14 to 61 years. The average age was 45 years. For the dental age estimation the method according to Johanson (1971) was used. Every tooth was subject to longitudinal section of the mid-pulpal area in a vestibulo-lingual plane. Six variables were analyzed: secondary dentin, attrition, cementum apposition, root resorption, periodontal recession, and root translucency. The results of the known and the estimated age have been statistically compared using Person's correlation coefficient and regression analysis.

**RESULTS:** Lower incisors belonging to the recent population from coastal part of Croatia (central 5.4+/-0.3 mm; lateral 6.0+/-0.3 mm) had significant higher mesiodistal diameter of tooth crown than incisors from the continental Croatia (central 4.9+/-0.3 mm; lateral 5.4+/-0.3 mm). There was no significant difference in mesiodistal width between teeth from continental and coastal Croatia in the Middle Ages. Medieval incisors from continental Croatia (central 5.2+/-0.3 mm; lateral 5.8+/-0.4 mm) had significant higher mesiodistal diameter than teeth from the same part of Croatia but from recent times (central 4.9+/-0.3 mm; lateral 5.4+/-0.3 mm). Comparison of incisors from medieval and recent populations in coastal Croatia showed that contemporary inhabitants of this part of Croatia (central 5.4+/-0.3 mm; lateral 6.0+/-0.3 mm) have higher mesiodistal diameter than their ancestors (central 5.3+/-0.4 mm; lateral 5.8+/-0.3 mm).

**CONCLUSION:** The results showed strong correlation coefficient  $r=0.85$ ;  $p<0.001$  between known and estimated dental age. According to the multiple regression analysis maxillary two rooted premolars are in the stronger correlation with the age  $r=0.80$ ;  $p<0.001$ . The results obtained at this study can be recommended for forensic age estimation in human population from Croatia.

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