

## **Dental age estimation after completion of third molar mineralization**

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Eruption and mineralization of third molars are the main criteria for dental age estimation in living adolescents. As the validation of completion of the 18th year of life appears not to be possible with the forensically necessary probability even if all the third molars of a person are completely mineralized, there is a need for dental age estimation methods after completion of third molar development. In previous publications the radiographic visibility of the periodontal ligament and the root pulp in lower third molars as well as the characteristics of secondary dentin formation, cementum apposition, periodontal recession and attrition in the mandibular premolars were suggested as methods for this purpose. The aim of this study was to validate these characteristics in a large study population with a wide age range. In a material of 2346 orthopantomograms of 1167 female and 1179 male Germans aged from 15-70 years the characteristics were studied according to stage classifications proposed by Olze et al. The correlation of the individual characteristics with the chronological age was examined by means of a stepwise multiple regression analysis, in which the chronological age formed the dependent variable. Fundamentally, the recommendation for conducting age estimations in the living by these methods can be shared: The suitability of the studied characteristics and stages for age estimation in living individuals could be confirmed. The high number of missing teeth in the studied age group must be considered as a limitation of the methods. In further studies the influence of ethnicity, dietary habits and dental health care on the characteristics should be investigated.