

**AGE ESTIMATION BY TEETH EXAMINATION:
A RADIOGRAPHIC AND DENSITOMETRIC STUDY**

By

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Abstract:

A total of 100 extracted incisors; canines and premolars were collected for this study from the Outpatient Clinic, Faculty of Dentistry, University of Alexandria. The gender and age of the patient, as well as the cause of extraction were recorded. Only sound teeth were included in the study. Teeth were stored in 4% buffered formaldehyde solution. Using long cone paralleling technique with XCP film holder to facilitate standardization, each tooth was embedded in wax and placed parallel to the film and perpendicular to the X-ray beam. To study the optical density of root dentine by densitometer, a reference graded aluminum wedge was used as a reliable scale. Measurements on dental radiographs (to the nearest millimeter) were done using a stereoscope with a measuring eyepiece (graduated lens) and included pulp and root lengths and widths. Densitometer device type 102 was used for analyzing X-ray films. Results showed that ratios presenting the size of the pulp cavity were negatively correlated with age, confirming the inverse relationship between these two variables. It was also shown that sex made significant contribution in the regression formula (when using all variables and when using densitometric measurements alone) resulting in stronger correlation with age (r from 0.74 to 0.91, $p < 0.01$ and 0.0001). Yet, if sex was not known, still estimates of age based on dentition are more likely to be correct than those based on osseous development.

Introduction:

Age determinations of adult individuals are of great importance within the forensic sciences. The study of teeth as a tool in estimating the age of dead persons or skeletal remains provides data of great importance in the field of human identification. Presently, age changes in the teeth provide good means for this.⁽¹⁾ Therefore, estimation of an individual's age based on teeth may be used in studies of archaeological material, for identification of an unknown dead body, and occasionally in dealing with living individuals with uncertain birth records.⁽²⁾

Stability is one of the outstanding features of dental evidence. Teeth are highly resistant to trauma, physical injury, fire, water, excessively low temperature, and putrefactive changes. Dental characteristics are highly individualistic and extremely stable.⁽³⁾

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