F20 Age Estimation From Third Molar Development in a Negroid Population

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The goal of this presentation is to discuss age estimation from third molar development in a Negroid Populaiton.

This presentation will impact the forensic community and/or humanity by demonstrating It will give the forensic community a database for age estimation using third molars in the Negroid populaiton.

Background: The analysis of third molar development for age estimation is an established procedure in forensic odontology. The technique is used in profiling unidentified bodies and in determining the probability that an adolescent has reached his/her eighteenth birthday. Both of these uses have significant legal ramifications. Age estimation from third molar development is based upon the 1993 ABFO study by Harry H. Mincer, DDS, PhD, et al. That study looked at radiographs from 823 individuals and most of the sample population was from the Caucasian race (80%). Third molar development rates and patterns may vary in persons of different racial groups.

Objective: This project's objective is to create a database for age estimation for the Negroid population. This information can be used in calculating the average empirical probability that an individual has attained his/her eighteenth birthday in immigration cases and for assisting medical examiners and coroners in unidentified body cases.

Method: Five hundred panoramic radiographs and the dates they were taken were collected from dental schools throughout the south and eastern part of the United States. The sex and birth date were recorded and the race of each individual was determined to be Negroid through information recorded in the health histories. Radiographs of individuals whose race could not be verified were not selected. The chronological age range of the individuals selected for this study ranged from 10 to 22 years. The radiographs were scanned with an Epson 1680 transparency scanner into Adobe Photoshop 7.0. The scanned radiographs were assigned generic numbers and the chronological age of the individual was not disclosed to the examiner. Six dentists with forensic experience scored the crown and root development of the third molars using the Demirjian's eight stage classification.

Conclusions: The information was compared to the 1993 ABFO study by Mincer, et al., to create a set of analyzed data for the Negroid population. The information will be available to forensic odontologists and applied to UT-Age, a computer program for automating the analysis for practical use. The study shows that Negroid third molars develop differently than Caucasian third molars. Appropriately applied, this information will help to more accurately estimate age for identification in unidentified body and immigration cases for persons in the Negroid racial group.

Age Estimation, Negroid, Third Molars

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