F21   UT-Age 2008: An Update

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After attending this presentation, attendees will understand the advantage of using computers in the generation of third molar age estimation reports.

The presentation will impact the forensic community by assisting the forensic community in utilization of computers to standardize, automate and create a database for age estimation reports.

Radiographic evaluation of third development has been widely used in estimating the chronological age of adolescents. In 1993, Harry H. Mincer, DDS, PhD, DABFO, et al., performed a study of the American Board of Forensic Odontology using the eight stages of crown and root formation to score third molar development proposed by Demirjian in 1973. This study resulted in the development of mean ages, standard deviations, and empirical probabilities of an individual attaining at least eighteen years of age for stages D through H based upon the residing arch of the third molar and the subject's sex. Although the subjects studied included 80% European, 19% African, and 1% "other" or "unspecified" ancestry, the data produced are only significant for individuals of European ancestry. Over the past several years additional studies have been performed using the Demirjian staging that estimated the chronological age and empirical probability of an individual attaining age eighteen for African and American Hispanic Ancestries. As these studies are published and accepted by the American Board of Forensic Odontology, they can be included in the database for age estimation calculations.

Determining whether an individual has attained his/her eighteenth birthday has great significance in our legal system. Of particular interest to the field of forensic Odontology is the Immigration and Naturalization Service's request for estimation of the age and evaluation of the empirical probability of an individual being at least eighteen years of age. Standardization of the report provides clarity in the report interpretation. Additionally, automation of the statistical data generated by the radiographic evaluation of third molar staging results in elimination of inadvertent error in statistical data calculations while simplifying and expediting the report process.

UT-Age was first introduced in 2002 as a Microsoft Access based application and database. However, as PC users updated their operating system to XP and now to Vista, many applications that used older Microsoft Access version applications failed to work properly necessitating continuous rewriting of the application. The latest version of UT-Age utilizes .NET Framework using a Microsoft Access database. .NET Framework provides a large body of pre-coded solutions to common program requirements, and manages the execution of programs written specifically for the Microsoft operating system. The .NET Framework is intended to be used by most new applications created for the Windows platform.

UT-Age 2008 incorporates many of the same features as previous versions of UT-Age but in a user friendly and familiar Windows layout. The computer program archives data for age estimation cases cataloging the case number, individual's name, ancestry, sex, profile and portrait photographs, stated date of birth, and radiograph(s). After entering the estimated development stage of the third molars present, the average mean age of the individual, the average age range to two standard deviations, and the average empirical probability of the individual having attained his/her eighteenth birthday is calculated. The program will then generate a report to the referring agency referencing the methodology of the analysis. The report is written and stored as a Word document allowing editing as necessary for supplemental information. The program also contains a user manual and Demirjian staging chart for quick reference.

The UT-Age program will be available for download from the CERF website, www.utforensic.org. Minimum system requirements for UT-Age 2008 are a Windows operating system, .NET 2.0 and Microsoft Word. .NET 2.0 is included on recent versions of Windows operating systems but is a free download from the Microsoft website if not currently on your computer system.

An overview and demonstration of the software will be presented.

UT-Age, Forensic Odontology, 3rd Molar Age Estimation