## F35   Dental Age Estimation and Determination of the Probability an Individual has Reached the Legal Age of Majority

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After attending this presentation, attendees will understand how to calculate age probabilities from previously published techniques and associated data that utilize progressive morphologic changes in age estimation and measure variability in standard deviation.

This presentation will impact the forensic science community by assisting legal authorities and court systems in determining if an individual has reached the jurisdictional legal age of majority.

In the legal system, the term "minor" is used to refer to an individual who is under the age one legally assumes adulthood and is legally granted the rights afforded to adults by society. Not only in the United States, but throughout the world, this age varies depending upon the jurisdiction and application. Federal immigration and death penalty laws in the United States set the age of adulthood at age eighteen. The contractual and criminal laws that establish the legal age of majority are determined by each individual state. With exception of Nebraska, Alabama, and Mississippi, the contractual legal age of majority is eighteen. From a criminal standpoint, the age at which an individual can be tried as an adult, and if convicted, sentenced as an adult, differs greatly from state to state. Functions that may affect the ability to try a juvenile as an adult include: (1) the age of the juvenile; (2) the type of offense charged; (3) the extent of the juvenile's past history of delinquency; and, (4) whether the district attorney invokes the district court's original jurisdiction or seeks to transfer a pending juvenile court proceeding to the district court.

It has been documented that dental techniques that use progressive morphologic changes to estimate age are reliable and are considered to be the most accurate methods for estimating the ages of infants, children, and adolescents. At any given stage of tooth development, the random variation of age of the individual conforms to a particular probability distribution known as the "normal distribution." A normal distribution can be completely specified by two parameters, mean and standard deviation. If the mean and standard deviation are known, then one essentially knows as much as if one had access to every point in the data set. Therefore, probability of an individual being any given age can be calculated from previously published statistical data that calculates mean age and standard deviation.

Because the age of majority varies based upon the circumstances, probability calculations using published dental age estimation techniques need to be understood and charts fabricated to assist the forensic odontologist in calculating the probability of an individual reaching the jurisdictional legal age of majority.

**Forensic Odontology, Dental Age Estimation, Legal Age of Majority**