



G34 Demirjian 2.0

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Learning Overview: After attending this presentation, attendees will have gained a basic understanding of the historical significance of the original Demirjian dental age estimation studies and their impact on current dental age estimation cases routinely performed by forensic odontologists. Attendees will also learn about the current status of the historical Demirjian data collection and its availability for future research.

Impact on the Forensic Science Community: This presentation will impact the forensic science community by reviewing the significance of the historical Demirjian dental age estimation studies and discussing the limitations of the original study and calculations and how the original data will be managed and utilized in new modern studies.

The forensic odontologist is often called upon by agencies to estimate the age of both living and deceased individuals. The forensic odontologist often applies published studies that provide a method to analyze the dentition of an individual as well as a mathematical formula and/or a table of reference data to calculate the estimated age.

Some of the more significant historical studies for dental age estimation were conducted by Demirjian, et. al, in the 1970s. Dr. Demirjian conducted several longitudinal studies of children and adolescents over the span of 20 years utilizing dental models and radiographs of the developing dentition along with radiographs of the hand and wrist. Their data was published in several studies, which set the standard for future age estimations cases.

One of the major critiques of the original study as used for dental age estimation was the calculation and utilization of a maturity score index. The method of calculation has never been fully understood and in practical use was found to consistently underestimate the age of the studied individual. Another critique is the reporting of the age interval in a graphical format in percentiles making it difficult to accurately report the age and associated interval. The current common accepted method of reporting the age interval is in standard deviations.

With Dr. Arto Demirjian's assistance, the archives of the original data have been located. Dr. Demirjian has graciously made the original data available through the University of Montreal. The data is currently being digitized, and it is the intention of the University of Montreal to make the data available to qualified researchers for future studies.

This study in conjunction with the University of Montreal also intends to redo the original studies and provide forensic odontologists and other disciplines with a modernized study for dental age estimation cases, including standard deviations to report the age interval.

Age Assessment, Demirjian, Standard Deviation