



### **G4 The Accuracy of Third Molar Development as an Indicator of Chronological Age in a Texas Asian Population Using Demirjian's Method**

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After attending this presentation, attendees will better understand third molar development as a tool for age estimation in a Texas Asian population.

This presentation will impact the forensic science community by providing information about the reliability of third molar development as an indicator of chronological age in a Texas Asian population.

Age assessment and age estimation are integral components of forensic science. They aid in the identification process of unknown remains by narrowing search parameters for possible matches, aid in providing age estimation relating to illegal immigrants without proper documentation, as well as help the legal system determine whether or not a person in question is of legal age.

Asia is the largest continent, constituting nearly one-third of the landmass, lying entirely north of the equator, except for some Southeast Asian islands with more than half the world's population. The Asian population is a diverse ethnic group and encompasses individuals from Japan, Taiwan, Korea, China, Vietnam, India, the Philippines, and various other countries. In 2012, Austin, TX, had the highest percentage of Asians of all cities in Texas and the tenth highest of all cities in the country.

To date, there has been very little research concerning age estimation for Asian populations completed in the United States. "Asian" is a term that defines "a person of Asian origin, regardless of race."

The accuracy and precision of chronological age estimation based on the stages of third molar development is studied in a sample of panoramic radiographs of Asian patients, ages 13-20 years according to Demirjian's schematic definitions of crown and root formation. The data was collected from current and previous patients of The University of Texas Health Science Center in San Antonio, TX, as well as from pediatric and orthodontic private practices in the Austin, TX, area. Asian ancestry was established by one of the following methods: surname of unmarried individuals, self-reporting on health history forms, and/or health provider assessment in certain circumstances. Males and females are equally represented and there is adequate representation of all ages included in this study.

The age estimated from scoring the radiographs will be compared with the chronologic age of the subjects at the time the panoramic radiograph was taken. This study explores whether Demirjian's method provides accurate results that can be used for age estimation in this Texas Asian population. The population studied may differ from other ethnicities in third molar development. This study focuses on the reliability and/or variance of third molar development as it correlates with chronological age in the Texas Asian population studied and provides needed population-specific data.

#### **Age Estimation, Third Molar, Asian**