

Adult Dental Age Assessment Technique Chart



ABFO Dental Age Assessment Committee
 "This document is a supplemental age estimation guide for the forensic odontologist"

Adult DAE Technique	Expression of Uncertainty	Age Interval of Individuals Studied	Intact or Sectioned Teeth	Measurements Required	Best Teeth Utilized (order to use)	Can Teeth Have Pathology, Restorations/No Restorations/Trauma/Rotations	Sex/Ancestry Specific
Lamendin et al., 1992	Mean Error (ME) +/- 10 Years	40-80 Years	Intact	Root Length, Root Translucency and Periodontal Attachment	Any Single Rooted Tooth (Maxillary Centrals Best) Ideally Use Multiple Teeth Use Labial Surface	Teeth Can Have Minimal Restorations However There Should be No Periapical Pathology	Non Sex Specific (Study Performed on a French Population of European Ancestry)
Prince/Ubelaker, 2002	Standard Deviation (SD)	30-69 Years	Intact	Root Length, Root Translucency and Periodontal Attachment	Use Single Rooted Teeth : Maxillary Centrals>Laterals>Mandibular Incisors>Canines>Bicuspid Use Labial Surface	Teeth Can Have Minimal Restorations However There Should be No Periapical Pathology	Sex Specific and Population Specific for European-American and African American (Hispanic Populations Acceptable)
Bang/Ramm, 1970	Standard Deviation (SD)	25-75 Years	Intact/Sectioned	Root Translucency	Single Rooted Teeth Only: Maxillary #'s 4-13, Mandibular #'s 20-29 Can Use Mesial Root #'s 3, 14 19 and 30 and Distal Root #'s 3, 14, 19 and 30. Use Labial Surface	Teeth Can be Restored/Nonrestored and Have Pathology/Trauma Associated with Them	Non Sex And Non Ancestry Specific
Kvaal et al., 1995	Standard Error of Estimate (SEE)	20-87 Years	Intact (Radiographic Technique)	Ratios: Tooth/Root Length, Pulp/Root Length, Pulp/Tooth Length (Measured on Mesial) and Pulp/Root Widths at 3 Different Levels: (9 Measurements and 8 Calculations/Tooth)	Maxillary Arch > Mandibular Arch Centrals>Laterals>2nd Bicuspid and Then if Necessary Mandibular Laterals>Canines>1st Bicuspid. Ideally use Multiple Teeth	Teeth Must Have No Restorations/Trauma/Pathology/Rotations and be in Normal Function	Non Sex And Non Ancestry Specific (If Using Mandibular Laterals Then This Technique is Sex Specific)
Johanson, 1971	Standard Deviation (SD)	23-79 Years	Sectioned	Attrition, Periodontosis, Secondary Dentin, Cementum Apposition, Root Resorption and Root Translucency	Use Single Rooted Teeth (Incisors and Bicuspid) From Maxillary & Mandibular Arches	This Method Recommends Examination of the Dental Occlusion Noting the Number of Teeth Present, Location and Potential Habits of the Individual. Teeth Utilized Should be Vital and Not be in Traumatic Occlusion or Have Evidence of Previous Trauma (Including Extensive Caries or Restorations)	Non Sex And Non Ancestry Specific
Maples, 1978 (ST Position Weighted Formulas Only)	Standard Error of Estimate (SEE)	10-90 Years	Sectioned	Root Translucency (T) and Secondary Dentin (S) Formation	Can Use Any Tooth Except Third Molars, Best Tooth is 2nd Molar	This Method Recommends Examination of the Dental Occlusion Noting the Number of Teeth Present, Location and Potential Habits of the Individual. Teeth Utilized Should be Vital and Not be in Traumatic Occlusion or Have Evidence of Previous Trauma (Including Extensive Caries or Restorations)	Non Sex And Non Ancestry Specific
Cameriere et al., 2004	Standard Error of Estimate (SEE)	18-72 Years	Intact Radiographic Technique (Images Taken in Labio-Lingual direction)	Ratios of Pulp/Tooth Area (AR) and Pulp/Tooth Width at Mid-Root (c)	Maxillary Canines	Teeth Must Have No Restorations/Trauma/Pathology/Rotations and be in Normal Function	Non Sex And Non Ancestry Specific
Cameriere et al., 2007	Standard Error of Estimate (SEE)	20-79 Years	Intact Extracted Tooth Radiographic Technique (Images Taken in Labio-Lingual and Mesial Directions)	Ratios of Pulp/Tooth Area	Maxillary and Mandibular Canines	Teeth Must Have No Restorations/Trauma/Pathology/Rotations and be in Normal Function	Non Sex And Non Ancestry Specific

Note: All of these Dental Age Estimation Techniques Will Tend to Underestimate the True Chronologic Ages of the Elderly (>80 Years) and Overestimate the True Chronologic Ages of Young Adults (<35 years)