



F25 Age of Majority vs. Third Molars

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The educational objective of this presentation is to reconstruct chronological age based on third molar development with an expected outcome of regression formulas for calculation of majority.

Materials and methods: Assembled from patient files of the School of Dentistry, Oral Pathology and Maxillo-Facial Surgery of the Katholieke Universiteit Leuven, Belgium were 2,515 orthopantomograms were. Selection criteria were: no medical history, no pathology present on the radiological image, at least one third molar present, Caucasian origin (Belgian Whites), orthopantomogram taken at an age between 16 and 22 years of age. A distinction was made between males (n = 1056) and females (n= 1459). Two observers attributed scores for each third molar present based on its dental development: Scores from 1 to 10 were used according to the ten developmental stages as reported by Gleiser and Hunt (1955).

Statistical analysis: The SAS statistical analysis software package was used (SAS Institute, Cary, NC, USA). Kappa statistics were used to determine interand intraobserver effects. Multiple regression analyses were performed and probabilities were calculated.

Results: No intraor interobserver effects were found. Statistical analysis resulted in multiple regression formulas for both males and females with the dental developmental stage of the third molars as variables. It seems that the third molars may account for 45% and 42% respectively of the variation in chronological age for males and females (r^2). Standard deviations for males and females of 1.49 and 1.50 years respectively were found.

The Table below lists regression formulas for females and males with standard deviations and r^2 for calculation of chronological age in individuals with four third molars present. Different regression formulas were obtained depending on the number of third molars present.

Regression formulas	s.d.	R ²
Female: $13,0484 + 0,3056 UL + 0,4736 LR$	1,51	0.42
Female: $13,0725 + 0,4773 LR + 0,3010 UR$	1,50	0.42
Male: $11.5886 + 0.4493 UL + 0.4525 LL$	1.49	0.45
Male: $11.5419 + 0.4426 UR + 0.4651 LR$	1.49	0.45

With first letter (U=upper; L=lower) and second letter (R=right; L=left) coding for the developmental score of a particular third molar.

Conclusion: Bearing in mind the limitations of this chronological age predictor, it remains a practical and useful tool for dental age calculation.

Odontology, Third Molars, Majority