## H71 Age Determination From Adult Human Teeth: Interest of Gustafson's Criteria

*Clotilde G. Rougé-Maillart, MD*, Nathalie C. Jousset, MD, Arnaud P. Gaudin, MD, and Michel P. Penneau, MD, PhD, Service de Médecine Légale, Centre Hospitalier Universitaire - 4 rue Larrey, Angers, 49100 Cedex 01, France*

The goal of this study is to test a simple method using the Gustafson's criteria and to compare it with the Lamendin method.

This presentation will impact the forensic community and/or humanity by demonstrating a new method for age determination that may be most effective on older individuals.

**Materials:** A total of 43 teeth were examined (38 extracted teeth, and 5 teeth were removed from corpses at autopsy). The age range of the individuals sampled was 13-73 years. The authors worked with the entire group to test this method, but to compare the method with Lamendin's method; only the teeth were worked with issuing from individuals greater than 30 years of age. Teeth were intact without pathological processes and marginal periodontitis.

**Method:** The age estimation of each tooth was carried out by one examiner. First, periodontitis was estimated. The labial and lingual faces of teeth were drilled to obtain a central section 1mm thick. At this stage, researchers estimated root transparency. Then, a central section 0.25 mm thick was obtained. The four other criteria were estimated. Then the point allocated to each of the six age related changes listed above were summed and used the Gustafson's regression line.

**Statistical Analysis:** Descriptive and comparative statistics using SPSS software was produced. After having determined the ages according to the authors' method, the results were compared with the real age and the mean of the errors was calculated. Then, methods were compared with Lamendin, using only the teeth from individuals more than 30 years of age. Parametric methods were used in view of the small sample size (test of student).

**Result:** This method is easy. All that is needed is a drill and a turbine. Preparation takes only half an hour. The results show that this method had a mean error of approximately 6 years. In age groups under 60 years, error was important and underestimates were predominant. Concerning age groups between 30 and 60 years, the differences between this method and Lamendin were not statistically significant. Concerning the oldest people (> 60 years), the range of error is very significant for the two methods. But, it was noticed that when ages were underestimates, root transparency was right quoted (2 or 3). The criteria was corrected (adding a coefficient) in the cases where root transparency was estimated at stage 2 or 3 with all others criteria estimated at stage 1. This eliminated the error in the case of the oldest individuals.

**Conclusion:** This method is easier than Gustafson's method and there's a good correlation between criteria and ages. This method isn't as effective for estimating ages between 30 and 60. Lamendin's method is simplest. But this method can be used because there are no significant differences between the two methods. However, this method can be used with the youngest people. It can be an easy method when pubic symphysis aging is not an option, or to complete the estimation. Perhaps this method will be most useful to estimate ages of people in the oldest age group, using a coefficient.

**Physical Anthropology, Age Estimation, Teeth**

 ** Presenting Author*