

## XIV:

# Can Dental Development be used for Assessing Age in Underdeveloped Communities?

By A. W. VOORS

*Department of Epidemiology,*

*School of Public Health, University of North Carolina at Chapel Hill, NC 27514, USA*

For comparing various groups of persons with respect to any characteristic of interest, it is usually desirable to take the age of the individuals into account, especially if they are children. If calendar ages are unknown, as often occurs in underdeveloped areas, it is of interest to know whether the stage of dental development is a valid index of calendar age. This question is in particular need of an answer for the circumstances which prevail in underdeveloped areas, namely protein malnutrition, avitaminosis and caloric malnutrition. A brief review of the literature indicates that malnutrition usually does not decrease the rate of deciduous tooth development and decreases only slightly the rate of permanent tooth development.<sup>1</sup>

A further question concerns the reliability of dental development stage as an index of calendar age. For the North coast of New Guinea 2,179 children with known calendar ages 0-15 years were assessed for dental development stage. It was found for the upper jaw in each sex that the standard deviation of the 50%

eruption points for the deciduous incisors and first molar was approximately 3 months and for the second deciduous molar, first permanent molar and permanent incisors 6 months.<sup>2</sup> Thus, if the groups measured are not too small, the standard error of the mean calendar age in any one dental development stratum becomes quite small.

This dental index of calendar age is of particular use in assessing retardation in the growth of body height due to adverse social conditions, since malnutrition causing retardation of body growth apparently does not cause similar retardation in dental development. Growth retardation, in the absence of any age index, is subject to underestimation, since in such cases body height often is inadvertently used as an index of age.

## REFERENCES

- 1 Voors, A. W. (1957) *Doc. Med. Geogr. Trop.*, 9, 137.
- 2 Voors, A. W. and Metselaar, D. (1958) *Trop. Geogr. Med.*, 10, 175.

Comment! There is no evidence presented here!  
 BUT - the references may suffice!  
 "... since malnutrition causing retardation of body