

THE RELATIONSHIP OF MATURATIONAL STATUS TO CHRONOLOGICAL AGE
IN CEYLONESE CHILDREN



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by

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A reliable method to determine the maturational status of Ceylonese children is not available. A method has therefore been developed to assess the maturational status of Ceylonese children by using the Greulich and Pyle Atlas of Skeletal Maturation of the hand and wrist (1959).

The chronological age as well as other measures of maturational status, such as height, weight, milestones and secondary sexual characters, are not sufficiently accurate. The most accurate single measure of maturational status is the skeletal age. Since, for all practical purposes, the skeleton develops as a unit the hand-wrist skeleton has been selected for this study.

The Inspectional Technique of Greulich and Pyle (1950, 1959), which is one of two methods available for interpreting hand-wrist radiographs, was used in this study. Radiographs of the left hand and wrist of 252 boys and 239 girls in age groups ranging from 84 to 191 months were compared with corresponding standards, for American children, as given in the Atlas of skeletal maturation (Greulich and Pyle, 1959).

The Skeletal Ages of the Ceylonese children correlated very significantly with those of American children indicating that the pattern of skeletal development was similar and even more important, that the above Atlas could be adapted for use in Ceylon. An important finding was that the Ceylonese children studied matured slower than the American children studied by

Greulich and Pyle (1950, 1959). The probable causes for this apparent retardation are discussed.

Due to this apparent retardation a correction has to be made when this Atlas is used for assessing skeletal age of Ceylonese children. This correction has been determined and is expressed in the form of a regression equation.

Indices of maturity and their variability for each age group have been obtained. They could be used, in group nutritional studies and paediatric clinics, as screening procedures.

A further observation is that the apparent retardation in Ceylonese children is less in Ceylonese boys than in Ceylonese girls when compared with American boys and girls respectively. However, Ceylonese boys mature slower than Ceylonese girls.

Practical uses of this method in the management of children with endocrine disorders, in group nutritional studies, in medico-legal work and in orthopaedic surgery are briefly outlined.

