

## Determination of Skeletal Age in Nigerian Children: Applicability of the Greulich and Pyle Atlas

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**Abstract :** Background: The maturation of a child's bones as it grows to adulthood can be viewed radiologically. The skeletal age (bone age) is the average age at which a particular stage of bone maturation is achieved. The Greulich and Pyle standard is the commonest method used to assess the skeletal age using the hand and wrist radiograph throughout the world. This atlas was compiled solely from Caucasian children and made use of the orderly sequence of carpal ossification to determine the skeletal age. Several authors have faulted this atlas for not being suitable for other races. Aim: The aim of this study is to determine if the Greulich and Pyle Atlas is applicable to Nigerian children when compared to their chronological ages. Methods: The total number of 78 normal radiographs of the hand and wrist of Nigerian children obtained from several hospitals were used for this study . These radiographs were compared with the atlas and their skeletal ages noted from the atlas. The child's chronological age in each case was also recorded. Results: The result shows a mean increase of two months in the skeletal ages of the Nigerian children compared to the atlas. This difference, however, was not significant. The skeletal age (in months) was greater in 77% of the children than the expected age in the atlas. Conclusion: The mean skeletal age of Nigerian children, though more than the standard in the atlas, is not statistically significant; as a result the study finds the radiographic atlas of Greulich and Pyle atlas applicable to Nigerian children.

**Keywords :** Greulich and Pyle Atlas, radiograph, skeletal age

**Conference Title :** ICMMA 2015 : International Conference on Microscopic and Macroscopic Anatomy

**Conference Location :** Barcelona, Spain

**Conference Dates :** August 17-18, 2015