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**Determination of bone age in children with cartilaginous dysplasia (multiple hereditary osteochondromatosis and Ollier's enchondromatosis).**

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Cartilaginous dysplasias (multiple hereditary osteochondromatosis [MHO] and Ollier's enchondromatosis [OE]) are common pediatric orthopaedic conditions. Long bone growth deformities commonly develop in children with MHO and OE. The timing of procedures frequently used to treat these deformities is often dependent upon the bone age. It was the purpose of this study to investigate bone ages in a series of 40 children with MHO and OE. There were 6 girls and 9 boys with OE, and 9 girls and 16 boys with MHO. Each child's age, gender, race, and diagnosis were recorded. Hand-wrist radiographs obtained during routine evaluation of hand-wrist deformities or scanograms were identified, randomly numbered, and blinded regarding the identity and age of the child. Each radiograph was reviewed by five different observers at two different times separated by a minimum of 3 weeks. Statistical analyses were performed, looking at differences between bone and chronological age; inter- and intraobserver variability in bone age assessment; and differences by observer. The average chronological age (n = 40) was 7.8 +/- 3.6 years, average bone age (n = 400) was 7.2 +/- 3.7 years, and average difference between chronological and bone age (n = 400) was 0.6 +/- 1.3 years (P < 10<sup>-6</sup>). Intra- and interobserver variability was +/-1.5 and +/-1.6 years. There were no differences between observers in the average chronological/bone age difference (P = 0.63). Clinicians should be aware of this average 0.6-year delay in bone age when planning an epiphysiodesis for limb length equalization in children with cartilaginous dysplasias.



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