

## Hans-Heinrich Thiemann, Inna Nitz, Andreas Schmeling (eds), Röntgenatlas der normalen Hand im Kindesalter (Radiographic atlas of the normal hand at an early age)

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This is the third revised and enlarged edition of the *Röntgenatlas der normalen Hand im Kindesalter*. At first, the assessment of skeletal age was mainly used to detect growth disorders and to predict the adult height of children. Over the past years, a new field of skeletal age assessment has become more and more important: forensic age diagnostics of living individuals. This development was taken into account in the third edition by consulting three experts in the field of forensic age diagnostics.

The book begins with a short text presenting the general skeletal maturation and explaining the performance and evaluation of the X-rays. In the following, there are tables on the determination of adult height based on the methods by Bayley and Pinneau as well as Roche, Wainer and Thissen. The main part of the book consists of X-rays of the hand, which are clearly arranged according to sex and age. The X-rays are presented at quarterly intervals for newborns, at semi-annual intervals for children and at annual intervals for adolescents.

The most commonly used method worldwide for determining skeletal age is the radiographic atlas by Greulich and Pyle, which was published in 1959. Greulich and Pyle established the X-ray standards on the basis of hand X-rays

taken in the course of the Brush-Foundation-study from 1931–1942. In recent times, it was criticised with good reason that these X-ray standards do not consider the present acceleration level. The radiographic atlas by Thiemann, Nitz and Schmeling is based on a far more current reference population, as it was possible to take X-rays of healthy children and adolescents for research purposes due to the particular conditions in the former German Democratic Republic. Even the design of the study is superior to the one of the Greulich–Pyle–Atlas. The 5,200 examined subjects were selected according to standard height/weight tables.

The forensic applicability of the first editions of the *Röntgenatlas der normalen Hand im Kindesalter* was limited, as there was no information about the variation of the respective skeletal age. This flaw was eradicated in the current third edition. In addition, the image quality of the hand X-rays was clearly improved in comparison to the first editions.

For the international distribution, there exists only one disadvantage: the book is written in German. But this disadvantage is more than balanced by the fact that the understandability is achieved by reading of pictures that comprises 95% of the information. I'd be therefore optimistic that the book arrives also at a great international readership.

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