22. CONCLUDING REMARKS

In developing Member States radionuclide bone scan is one of the most commonly requested nuclear Medicine procedure, it comprises approximately 25-45% of the bulk of ‘in-vivo’ imaging procedures in general nuclear medicine. These figures underlie the clinical importance of bone scanning as it provides aid in the diagnosis of bone and soft tissue infection, occult trauma lacking radiographic correlate, assessing post-traumatic injuries and for staging of cancer patients. There is an established role for bone scanning in assessing the child with non-accidental injury, the child with a limp for clarifying the underlying etiology as related to infection, inflammation or malignant disease.

Taking the large body of clinical experience, bone scanning is accepted as a safe, simple and reproducible diagnostic procedure, both in children and adults. In combination with early acquisition protocols, both arterial and blood pool imaging, the procedure delivers valuable information on inflammatory or malignant processes, response to therapy or tissue viability as encountered in diabetic patients or in complicated cases of frostbites.

Bone scintigraphy in the paediatric population requires special attention to acquisition techniques and to patient’s correct positioning and comfort during the study thereby assuring high quality images. Acquiring additional views, image magnification and SPECT studies may be required to identify subtle lesions. The correlation of bone scans with conventional x-ray studies is mandatory.

The advent of new hybrid imaging instrumentation (SPECT-CT or PET-CT) with high resolution CT systems and the introduction of [18F ] PET-CT for the diagnosis of musculo-skeletal disease bone scans provide new impulses towards enhancing the diagnostic efficacy of bone scanning. Increasing evidence indicates that this is in part attributable to enhancing the specificity and sensitivity of the procedure by improved anatomical location and improved spatial resolution.

This Atlas is intended to address the needs of nuclear medicine physicians, both residents and specialists. It is thought to serve as an illustrative reference to those not having sufficient exposure to paediatric bone scan investigations in order to keep up adequate competency in this particular application. Experts in paediatric nuclear medicine are often consulted for their opinion on bone scans obtained in their respective countries. It became obvious that only physicians who were experienced in paediatric nuclear medicine could immediately recognize the appearances of a ‘normal’ bone scan. Maintaining high-quality bone images is an important issue that needs constant attention to various operational levels of the nuclear medicine department.

The above consideration provided the stimulus leading the Paediatric Task Group of the EANM in 1992 to compile and publish the first edition of the Atlas of bone scintigraphy in the developing paediatric skeleton as one of its collaborative projects. More than 17 years later the need for an updated edition of this reference document is contemporary.

The endeavor to produce an Atlas of the scintigraphic features of the usual developing skeleton required to review over 1800 bone scans considered normal, which were provided by the following centres: Hospital for Sick Children, Department of Radiology, London, Great Britain; Service de Biophysique, Centre Hospulier d’Agen, Agen, France; Klinik und Poliklinik für Nuklearmedizin der Universität Mainz, Germany; Hospital St. Pierre,
Akademisch Ziekenhuis, Department of Radiology, Brussels, Belgium; Hospital General Vall d 'Hebron, Department of Nuclear Medicine, Barcelona, Spain; Assistance Publique, Hospitaux de Paris, Saint-Antoine, Service de Médecine Nucléaire, Paris, France and the Red Cross War Memorial Children's Hospital, Department of Paediatrics and Child Health, Cape Town, South Africa.

We are indebted to the medical professionals for their invaluable contribution. A list of contributors is provided in the final section of the book.