

B-III-11 PAEDIATRIC RADIOLOGY

Content provided by ESPR (European Society of Paediatric Radiology)

KNOWLEDGE

- To have an in-depth understanding of changes in anatomy and in physiology during growth from foetal life to adolescence
- To know normal variants in childhood that may mimic disease
- To have an in-depth understanding of embryology as applied to paediatric diseases
- To have an in-depth understanding of the various stages of embryonic and foetal development and their respective appearance on antenatal US and foetal MRI
- To understand and describe the principles guiding the construction of a child-friendly environment
- To have an in-depth knowledge of the ALARA principle and dose considerations and their application in paediatric patients
- To list imaging guideline algorithms specific to children
- To have an in-depth knowledge of indications and contraindications for contrast media for fluoroscopy, ultrasound, CT and MRI within the paediatric population including neonates
- To know the principles of nuclear medicine and to appreciate the relationship and comparison with conventional radiology, CT and MRI
- To describe principles and applications of hybrid imaging techniques (SPECT/CT, PET/CT, PET/MRI) in infants, children and adolescents
- To be familiar with physiological clearance, dosage and radiation exposure of radiopharmaceuticals and PET tracers
- To understand indications and the range of treatment strategies for common interventional radiological procedures in foetuses, neonates, infants and children
- To describe the standard procedures in emergency situations, including resuscitation techniques in children
- To ensure adequate monitoring of patients during sedation or interventional procedures

BRAIN AND SPINE

- To understand the imaging features of malformations of cortical development, including focal cortical dysplasia, polymicrogyria, heterotopia (subependymal, focal subcortical, laminar), lissencephaly / pachygyria, (hemi) megalencephaly, microlissencephaly and schizencephaly and their contribution in the identification of tubulinopathies
- To know the imaging features of agenesis and dysgenesis of the corpus callosum and of holoprosencephaly (lobar, semilobar, alobar)
- To understand the imaging features of hindbrain malformations, including the Chiari malformations, the Dandy-Walker spectrum, Blake's pouch cyst and vermian malformations (including Joubert syndrome)

- To know the imaging features, causes, grading, prognosis and clinical features of white matter injury of prematurity / periventricular leukomalacia
- To understand the imaging features, causes grading, prognosis and clinical features of subependymal and intraventricular haemorrhage in premature infants
- To understand the imaging features of hypoxic ischemic encephalopathy of the mature infant after acute asphyxia or prolonged partial hypoxia
- To understand the imaging features, causes and clinical features of hydrocephalus in infants, children and adolescents
- To understand the imaging features, causes and clinical features of benign enlargement of subarachnoid spaces in infants
- To understand the clinical and imaging findings of craniosynostosis and their significance
- To have an in-depth knowledge of the imaging features and clinical features of elevated intracranial pressure in infants, children and adolescents
- To have an in-depth knowledge of the imaging features and clinical features of different brain tumours in infants, children and adolescents, including the molecular classification, the principle of radiological staging, treatment and monitoring of follow-up
- To have an in-depth knowledge of the imaging features and clinical features of head trauma in infants, children and adolescents
- To understand the imaging features, clinical features and implications of non-accidental trauma in infants, children and adolescents and to be able to recommend and supervise further extracranial imaging according to recommendations
- To have an in-depth knowledge of the imaging features and clinical features of intracranial infections (including antenatal infections, e.g. TORCH group) in infants, children and adolescents
- To know the imaging features of multiparametric studies including hybrid imaging with SPECT and PET-tracers in brain and spine tumours and cerebral palsy
- To have an in-depth knowledge of the imaging features and clinical features of inflammatory diseases of the CNS
- To have an in-depth knowledge of the imaging features and clinical features of metabolic and developmental diseases of the white matter
- To know the imaging features, causes and clinical features of intracranial ischaemia / stroke / arterial and venous malformations in infants, children and adolescents
- To have an in-depth knowledge of the imaging features, changes with age and clinical features of pituitary disease in infants, children and adolescents
- To know the imaging features and clinical features of spinal malformations including spina bifida aperta, spina bifida occulta, meningomyelocele, dermal sinus, split cord malformations and tethered cord with clear knowledge of what is considered clinically significant vs. non-clinically significant findings
- To have an in-depth knowledge of the imaging features and clinical features of acquired diseases of the spinal cord in children