

Pediatrics

Note: The examination for those who are recertifying their subspecialty certificate (CAQ) in pediatric radiology or for those who choose 3-4 modules in pediatric radiology will have greater depth and breadth than the examination for those choosing 1-2 modules.

1. Brain, skull and spinal cord, neck
 - Normal variants related to age (Ultrasound, CT and MR)
 - Congenital anomalies in the neonatal brain, spine, neck
 - Demyelization diseases, dysmyelination diseases
 - Infections (neonatal, childhood, immunosuppressed child)
 - Masses (common benign and malignant, including supratentorial, infratentorial and metastatic vs. primary)
 - Hydrocephalus (differential diagnosis)
 - Hemorrhage (neonates)
 - Systemic disease affecting the brain (eg sickle cell disease)
 - Stroke
 - Trauma (including non-accidental)
 - Mitochondrial diseases/encephalopathies

2. Head/neck/orbit
 - Normal variants related to age (Ultrasound, CT and MR)
 - Congenital anomalies
 - Infections
 - Tumors (benign and malignant)
 - Trauma
 - Postoperative complications

3. Chest and airway
 - Neonatal common entities plus lines and catheters
 - Congenital malformations (diagnosis and treatment options)
 - Infections
 - Appropriate imaging (high resolution CT, CT angiography, MRI)
 - Masses (benign, malignant, chest wall)
 - Trauma
 - Pulmonary edema and its causes
 - Foreign bodies in the esophagus, trachea, lungs
 - Common causes of intrinsic and extrinsic airway obstruction (supraglottic and infraglottic)
 - Vascular malformations causing external compression of the airway
 - Normal variants related to age (CXR, CT, MRI)

4. Cardiovascular
 - Normal relationships of the great vessels and cardiac chambers

- Congenital heart disease (imaging with radiography; MR and CT for common anomalies; common surgical treatments)
- Cardiomyopathies and other acquired heart disease
- Pericardial disease
- Normal variants related to age (CT and MRI)

5. Abdomen: GI/GU

- Differential diagnoses in children with acute or chronic abdominal pain
- Esophagus and stomach (esophageal atresia, pyloric stenosis, gastro-esophageal reflux)
- Duodenum and small bowel (duodenal atresia, trauma, malrotation with/without volvulus, inflammatory bowel disease)
- Colon (inflammatory bowel disease, intussusception)
- Renal anomalies and infection, including duplication anomalies
- Renal/adrenal and liver tumors at various ages
- Urethra and bladder (neurogenic bladder; bladder outlet obstruction including posterior urethral valves)
- Genital abnormalities (common anomalies including hydrometrocolpos; uterine anomalies; inflammations; trauma; ovarian and testicular torsion)
- Clinical diseases affecting liver, spleen and pancreas
- Trauma
- Normal variants related to age
- Liver and kidney transplants (preoperative and postoperative complications)
- Fetal imaging (US)

6. Interventional

- Liver and kidney transplant imaging and treatment of complications
- Common procedures (including abscess drainage, biopsy, esophageal stricture dilation, vascular abscess)
 - biliary drainage, osteoid osteoma
 - Classification and treatment of vascular malformations

7. Musculoskeletal imaging

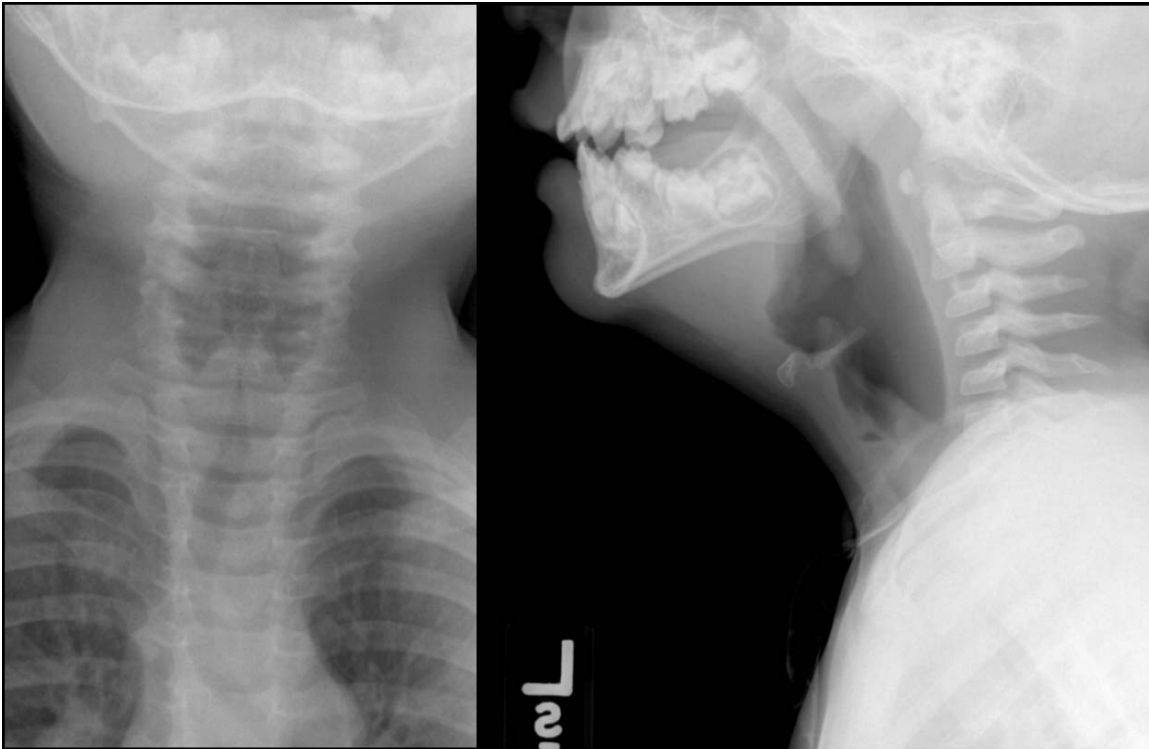
- Congenital malformations
- Normal development/normal variants
- Masses (benign and malignant)
- Infections (osteomyelitis, cellulitis)
- Trauma (classifications of fractures unique to children; injuries and complications unique to children; appropriateness of imaging)
- Tumors

8. General

- Imaging of non-accidental trauma (acute, subacute and chronic; appropriate documentation and communication)
- Imaging characteristics of systemic disease (including sickle cell disease, cystic fibrosis, lupus erythematosus, immune deficiencies)
- Life support systems
- National safety initiatives and safety issues as they apply to children
- Contrast reactions (prevention and treatment)
- Practice-based imaging guidelines and appropriateness criteria
- Low dose techniques and ALARA principles (Image Gently campaign)
- Age-related normal anatomy

Sample Questions:

1. Two year old with sore throat and cough, the most likely diagnosis is:



- A. Epiglottitis
- B. Croup
- C. Tracheomalacia
- D. Retropharyngeal abscess
- E. Subglottic hemangioma

Key = B

2. This eight-year-old male presents with pain and limp. What is the most likely diagnosis?



- A. Fibrous dysplasia
- B. Neuroblastoma
- C. Diffuse lymphatic malformation
- D. Myofibromatosis

Key = C