



Pediatric Sonography (PS) Tasks 2014

Anatomy and Physiology 30%
<i>Normal anatomy</i>
Evaluate anatomy of the brain and skull
Evaluate anatomy of the spine
Evaluate anatomy of the gastrointestinal system, e.g., liver, spleen, pancreas, bowel
Evaluate anatomy of the neck
Evaluate anatomy of superficial structures
Evaluate anatomy of the chest, e.g., pleural space, lung, thymus
Evaluate musculoskeletal anatomy, e.g., hips and joints
Identify normal developmental changes
Understand age-specific growth standards
<i>Perfusion and function</i>
Evaluate peripheral vascular anatomy
Evaluate abdominal vascular anatomy
Evaluate intracranial vascular anatomy
Evaluate anatomy of the genitourinary system, e.g., scrotum, kidneys, adrenal gland, bladder, uterus, ovaries
Pathology 35%
<i>Abnormal physiology and perfusion</i>
Identify vascular malformations
Identify congenital abnormalities, i.e., neurulation, neural plate closure, migration anomalies, hindbrain, cerebellar, callosal agenesis
Identify neurocutaneous syndromes, i.e. tuberous sclerosis, Von Hippel-Lindau, Sturge-Weber
Identify hydrocephalus/ventriculomegaly
Identify spinal malformations
Evaluate for splenic abnormalities, e.g., polysplenia
Evaluate for pancreatic abnormalities, i.e., cystic fibrosis, pancreatitis, and lesions
Evaluate for stomach, duodenum, and intestine abnormalities, i.e., duplication cysts, pyloric stenosis, necrotizing enterocolitis, intussusception, masses
Evaluate for kidney abnormalities, i.e., horseshoe, duplication anomalies, cystic diseases
Evaluate for ureter and bladder abnormalities, i.e., ureterocele, duplication, bladder extrophy, urachal anomalies, vesicoureteral reflux, obstructive process
Evaluate male genital tract for abnormalities, e.g., hydroceles, cryptorchidism
Evaluate female genital tract for abnormalities, e.g., hematometrocolpos
Evaluate for neck abnormalities, e.g., vascular and nonvascular lesions
Evaluate chest masses, e.g., sequestration vs. congenital pulmonary airway malformation
Evaluate diaphragmatic paralysis (M-mode) and congenital hernia
Evaluate the hip for developmental dysplasia

Identify findings of hypoxic-ischemic insults in the preterm and term infants
Evaluate intracranial hemorrhage, infection, and masses
Identify hydrocephalus/ventriculomegaly
Identify findings of sickle cell disease
Evaluate for hepatobiliary disease, i.e., infection, obstruction, parenchymal liver disease, benign and malignant lesions, etc.
Evaluate liver transplant
Evaluate for splenic disease, i.e., infection, benign, malignant lesions, and congenital lesions
Evaluate kidneys for abnormalities, i.e., stone disease, infection, masses, vascular disease
Evaluate renal failure and transplants
Evaluate ureter and bladder for abnormalities, i.e., infection, masses, vesicoureteral reflux
Evaluate adrenal glands for masses and hemorrhage
Evaluate male genital tract for abnormalities, i.e., torsion, infection, tumors
Evaluate female genital tract for abnormalities, i.e., torsion, masses
Evaluate the glands and soft tissues for infection, inflammation, lymph nodes, and masses
Evaluate the pleural space and lungs for abnormalities, i.e., simple or complicated pleural effusion and consolidation
Evaluate joint effusion in hips or other joints
Evaluate tendons and synovium for tenosynovitis and synovial hypertrophy
Evaluate superficial structures for foreign bodies, infections, and masses
Evaluate intravenous lines and vessels for abnormalities, i.e., thrombosis, pseudoaneurysm, and narrowing
Evaluate hernias, i.e., inguinal hernias
Evaluate peritoneal cavity for the presence of fluid and abscess
Evaluate retroperitoneum for masses, i.e., lymphadenopathy
Evaluation following surgery and interventional procedure
Integration of Data 9%
<i>Incorporate outside data (Clinical assessment, history and physical [H&P], lab values)</i>
Assess indications for examination requested
Assess relevant clinical laboratory values for examination being performed
Assess relevant patient signs and symptoms for examination being performed
Correlate ultrasound findings with other imaging modalities
Protocols 10%
<i>Clinical standards and guidelines</i>
Inform patient or referring practitioner of examination preparations (i.e., fasting for abdominal imaging)
Modify the examination based on clinical history or sonographic findings
Use multiple patient positions to evaluate anatomy
Utilize appropriate acoustic windows and scan planes
Modify imaging protocol in the premature or critically ill infant
Modify imaging protocol in the uncooperative infant/child
<i>Measurement techniques</i>
Obtain measurements of structures
Obtain Doppler velocities and measurements

Physics and Instrumentation	11%
<i>Artifacts</i>	
Modify the examination due to gray-scale artifacts	
Modify the examination due to color Doppler artifacts	
Modify the examination due to spectral Doppler artifacts	
<i>Imaging instruments</i>	
Select proper examination technique, e.g., M-mode, B-mode, Doppler, harmonic imaging	
Adjust console settings to achieve optimal imaging display	
Select proper transducer	
Other	5%
<i>Managing medical emergencies</i>	
Recognize findings that require immediate attention	
<i>Traumatic injury</i>	
Identify abnormalities related to traumatic events	
<i>Interventional procedures</i>	
Maintain infection control	
Use sterile technique when preparing for procedure	
Provide ultrasound guidance during procedures	