

NEOMED MMScA Program
Clinical Keywords
Pediatrics Rotation

Anatomy and Physiology

- **Fetal blood flow pathway:**
 - Persistent fetal circulation
 - Transition from fetal circulation to adult circulation
 - Patency of ductus arteriosus and foramen ovale
- **Respiratory:**
 - Development
 - Surfactant
 - Difference in lung volumes and airway anatomy in adults vs. neonates
- **Cardiovascular:**
 - Fetal hemoglobin
 - Anemias
 - Sickle cell disease
 - Hemolytic disease of the newborn
 - Rhogam

Pathophysiology and Anesthetic Management

- **Congenital heart defects:**
 - Ebstein's anomaly
 - Coarctation of the aorta
 - Interrupted aortic arch
 - Hypoplastic left heart syndrome
 - Tetralogy of Fallot
 - Transposition of the great arteries
 - Total anomalous pulmonary venous return
 - Tricuspid atresia
 - Pulmonary atresia
 - Truncus arteriosus
 - Atrioventricular canal defect
 - Double outlet right ventricle
 - Vascular rings
 - Dextrocardia
 - Blalock Taussig (BT) shunts
 - Norwood procedure
 - Fontan procedure
 - Ross procedure
- **Other congenital defects:**
 - Down's syndrome (Trisomy 21)
 - Pierre Robin syndrome
 - Treacher Collins syndrome

- Vascular rings
- Tracheoesophageal fistula (TEF)
- **Respiratory/Airway:**
 - Respiratory distress syndrome
 - Upper respiratory infection (URI)
 - Cystic fibrosis
 - Bronchopulmonary dysplasia
 - Choanal atresia
 - Diaphragmatic hernia
 - Tracheoesophageal fistula
 - Prematurity
 - Asthma
- **Neuromuscular:**
 - Muscular dystrophy
 - Cerebral palsy
 - Scoliosis
 - Tethered cord
 - Skeletal abnormalities (Marfan syndrome, osteogenesis imperfecta)
 - Meningocele
 - Myelomeningocele
 - Spina bifida
 - Nerve palsies
- **Gastrointestinal:**
 - Esophageal atresia
 - Pyloric stenosis
 - Necrotizing enterocolitis
 - Omphalocele
 - Gastroschisis

Pediatric Anesthesia

- **Pediatric equipment, endotracheal tube selection and depth**
- **Premedication, induction techniques, anesthetic differences from adult**
- **Fluid management and blood replacement, estimated blood volume, transfusion protocol**
- **Anesthetic management for pediatric procedures**
- **Management of complications**
- **Temperature measurement and control:**
 - Complications of hypothermia/hyperthermia
 - Shivering
 - Temperature measuring sites
 - Body and fluid warming devices

Pediatric Advanced Life Support (PALS)

- **Pharmacology, fluid therapy, resuscitation and post resuscitation guidelines**

- **Management of the cardiac scenarios (bradycardia, tachycardia, Vfib/pulseless Vtach, asystole/PEA), synchronized cardioversion and defibrillation**
- **Management of the shock scenarios**
 - Hypovolemic shock
 - Cardiogenic shock
 - Distributive shock (anaphylactic shock, septic shock, neurogenic shock)
 - Obstructive shock (tension pneumothorax, cardiac tamponade, pulmonary embolism, ductal dependent lesions)
- **Management of the airway scenarios**
 - Upper airway obstruction (laryngospasm, stridor, croup, soft tissue obstruction, epiglottitis)
 - Lower airway obstruction (asthma, anaphylaxis)
 - Lung tissue disease
 - Disordered control of breathing