

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
- Obstructive shock (tension pneumothorax, cardiac tamponade, pulmonary embolism, ductal dependent lesions)
- **Management of the airway scenarios**

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

- Upper airway obstruction (laryngospasm, stridor, croup, soft tissue obstruction, epiglottitis)
- Lower airway obstruction (asthma, anaphylaxis)
- Lung tissue disease
- Disordered control of breathing

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)