Prehospital Pediatric Care Course

Lesson 2
Anatomic and Physiologic Differences

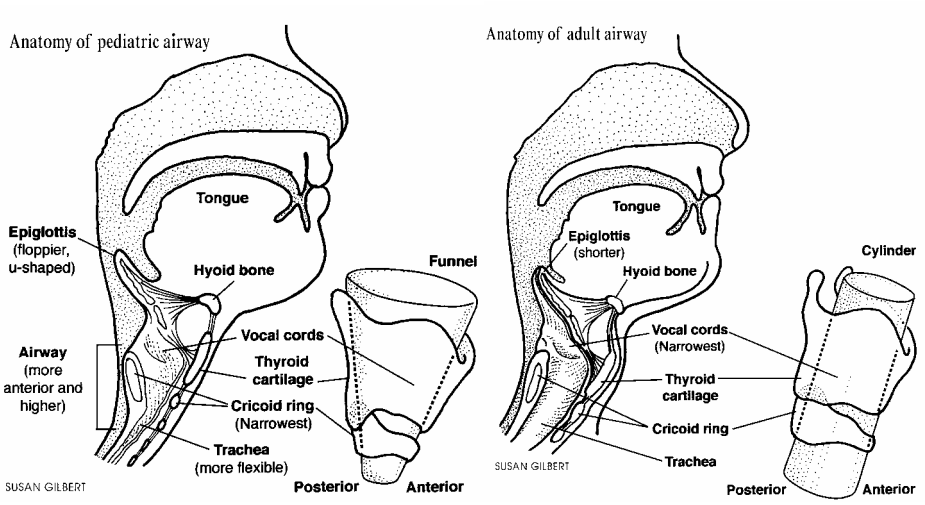
There are fundamental anatomic and physiologic differences between children and adults that directly effect

- **How assessment is performed**
- **How children respond to illness and injury**
- **How treatment and transportation decisions are made**

Pediatric Airway Considerations

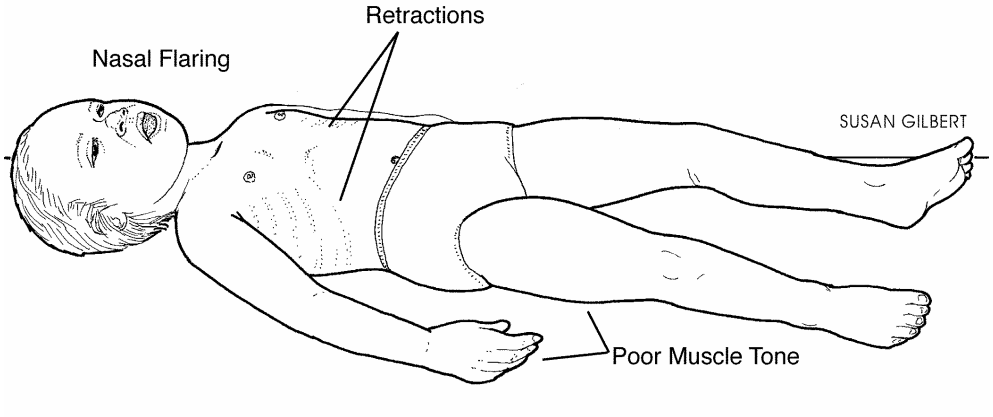
- More anterior than the adult (less head tilt to open the airway).
- Smaller diameter of airway than the adult (easily blocked by secretions or blood).

  Large tongue in relation to jaw size (likely to cause obstruction when child is unconscious).
- Infants prefer to breathe through the nose (nasal obstructions can cause respiratory distress).



Breathing Considerations

- Small children are dependent on contraction of the diaphragm to breathe.
- Children in respiratory distress compensate rapidly by increasing the respiratory rate, but, then easily fatigue, signaling the onset of respiratory failure.
- Children may have pronounced retractions of the chest wall because their chest walls are less muscular and have more flexible bones.
- Bradycardia is a late sign of low blood oxygen in the pediatric patient.



Pediatric Respiratory Rates	
Age	**Rate** (breaths per minute)
Infant (birth–1 year)	30–60
Toddler (1–3 years)	24–40
Preschooler (3–6 years)	22–34
School-age (6–12 years)	18–30
Adolescent (12–18 years)	12–16

Circulation Considerations

- Children compensate efficiently in shock by increasing heart rate and vasoconstriction but then decompensate rapidly.
- Mental state change may be an indicator of hypoperfusion.
- Hypovolemia can develop from vomiting or diarrhea in children.
- Blood pressure is an unreliable indicator of perfusion in the pediatric patient.

Pediatric Pulse Rates		
Age	**Low**	**High**
Infant (birth–1 year)	100	160
Toddler (1–3 years)	90	150
Preschooler (3–6 years)	80	140
School-age (6–12 years)	70	120
Adolescent (12–18 years)	60	100

Pulse rates for a child who is sleeping may be 10 percent lower than the low rate listed.

Low-Normal Pediatric Systolic Blood Pressure	
Age*	**Low Normal**
Infant (birth–1 year)	*greater than 60**
Toddler (1–3 years)	*greater than 70**
Preschooler (3–6 years)	greater than 75
School-age (6–12 years)	greater than 80
Adolescent (12–18 years)	greater than 90

**Note: In infants and children aged three years or younger, the presence of a strong central pulse should be substituted for a blood pressure reading.*