

Emergency

Care and Transportation of the Sick and Injured



Section 6: Special Populations

31: Pediatric Emergencies

Cognitive Objectives (1 of 3)

- 6-1.1 Identify the developmental considerations for the following pediatric age groups: infants, toddlers, preschool, school age, adolescent.
- 6-1.2 Describe the differences in anatomy and physiology between the infant, the child, and the adult patient.
- 6-1.3 Differentiate the response of the ill or injured infant or child (age specific) from that of an adult.

Cognitive Objectives (2 of 3)

- 6-1.8 Identify the signs and symptoms of shock (hypoperfusion) in an infant and child patient.
- 6-1.11 List common causes of seizures in the infant and child patient.
- 6-1.13 Differentiate between the injury patterns in adults, infants, and children.

Cognitive Objectives (3 of 3)

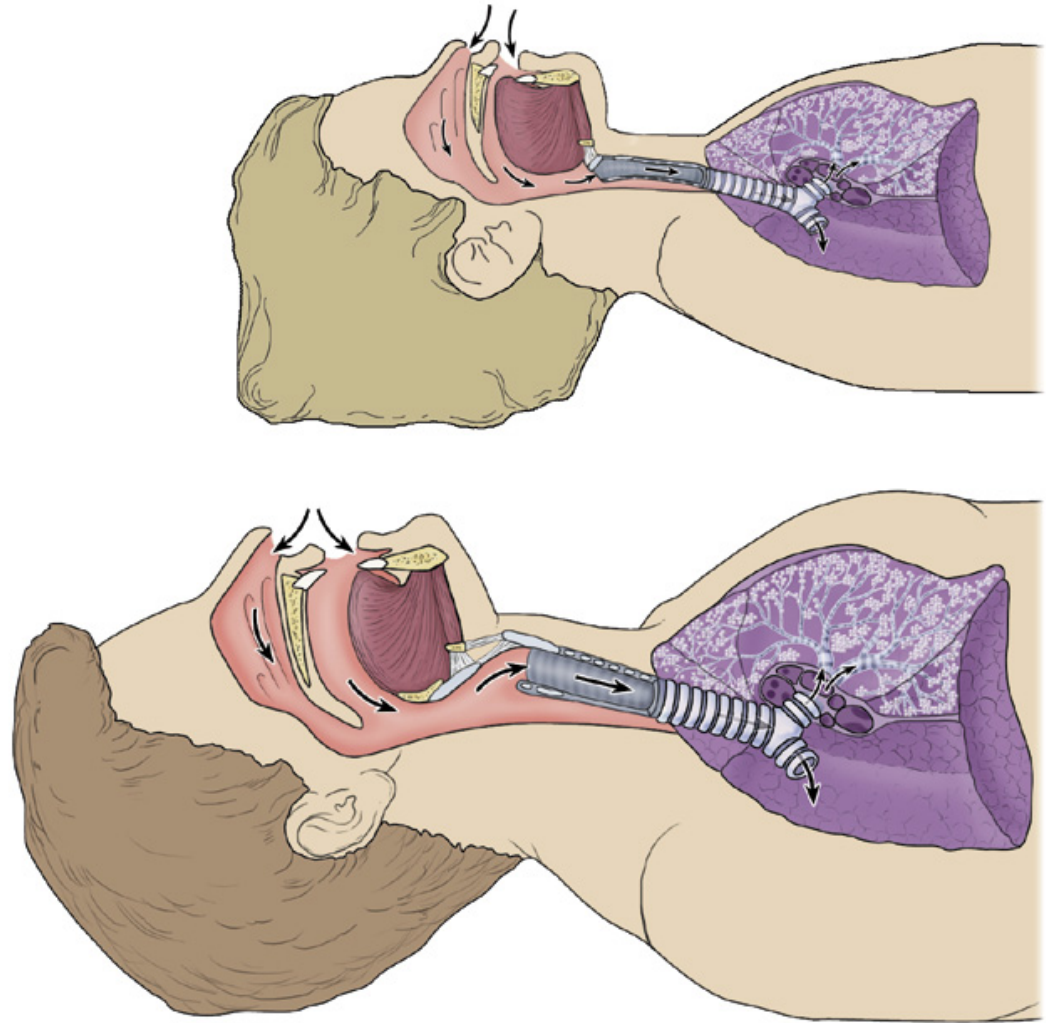
- 6-1.15 Summarize the indicators of possible child abuse and neglect.
- 6-1.16 Describe the medical/legal responsibilities in suspected child abuse.
- 6-1.17 Recognize the need for EMT-B debriefing following a difficult infant or child transport.

Affective Objectives

- 6-1.18 Explain the rationale for having knowledge and skills appropriate for dealing with the infant and child patient.
- 6-1.19 Attend to the feelings of the family when dealing with an ill or injured infant or child.
- 6-1.20 Understand the provider's own response (emotional) to caring for infants or children.
- There are no psychomotor objectives for this chapter.

Airway Differences

- Larger tongue relative to the mouth
- Larger epiglottis
- Less well-developed rings of cartilage in the trachea
- Narrower, lower airway



Breathing Differences

- Infants breathe faster than children or adults.
- Infants use the diaphragm when they breathe.
- Sustained, labored breathing may lead to respiratory failure.

Circulation Differences

- **The heart rate increases for illness and injury.**
- **Vasoconstriction keeps vital organs nourished.**
- **Constriction of the blood vessels can affect blood flow to the extremities.**

Skeletal Differences

- **Bones are weaker and more flexible.**
 - They are prone to fracture with stress.
- **Infants have two small openings in the skull called fontanel.**
 - Fontanel close by 18 months.

Growth and Development

- Thoughts and behaviors of children usually grouped into stages
 - Infancy
 - Toddler years
 - Preschool age
 - School age
 - Adolescence

Infant

- First year of life
- They respond mainly to physical stimuli.
- Crying is a way of expression.
- They may prefer to be with caregiver.
- If possible, have caregiver hold the infant as you start your examination.



Toddler

- 1 to 3 years of age
- They begin to walk and explore the environment.
- They may resist separation from caregivers.
- Make any observations you can before touching a toddler.
- They are curious and adventuresome.



Preschool

- 3 to 6 years of age
- They can use simple language effectively.
- They can understand directions.
- They can identify painful areas when questioned.
- They can understand when you explain what you are going to do using simple descriptions.
- They can be distracted by using toys.

School Age

- 6 to 12 years of age
- They begin to think like adults.
- They can be included with the parent when taking medical history.
- They may be familiar with physical exam.
- They may be able to make choices.

Adolescent

- 12 to 18 years of age
- They are very concerned about body image.
- They may have strong feelings about being observed.
- Respect an adolescent's privacy.
- They understand pain.
- Explain any procedure that you are doing.

Family Matters

- When a child is ill or injured, you have several patients, not just one.
- Caregivers often need support when medical emergencies develop.
- Children often mimic the behavior of their caregivers.
- Be calm, professional, and sensitive.

Pediatric Emergencies (1 of 3)

- Dehydration
 - Vomiting and diarrhea
 - Greater risk than adults
- Fever
 - Rarely life threatening
 - Caution if occurring with rash

Pediatric Emergencies (2 of 3)

- Meningitis is an inflammation of the tissue that covers the spinal cord and brain.
- Caused by an infection
- If left untreated can lead to brain damage or death.

Pediatric Emergencies (3 of 3)

- **Febrile seizures**
 - Common between 6 months and 6 years
 - Last less than 15 minutes
- **Poisoning**
 - Signs and symptoms vary widely.
 - Determine what substances were involved.

Physical Differences

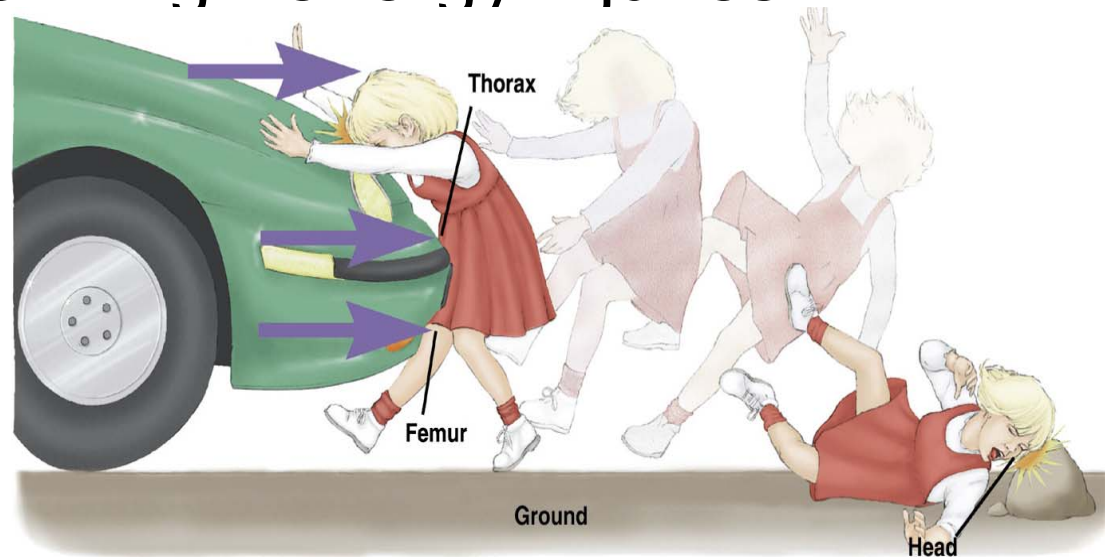
- Children and adults suffer different injuries from the same type of incident.
- Children's bones are less developed than an adult's.
- A child's head is larger than an adult's, which greatly stresses the neck in deceleration injuries.

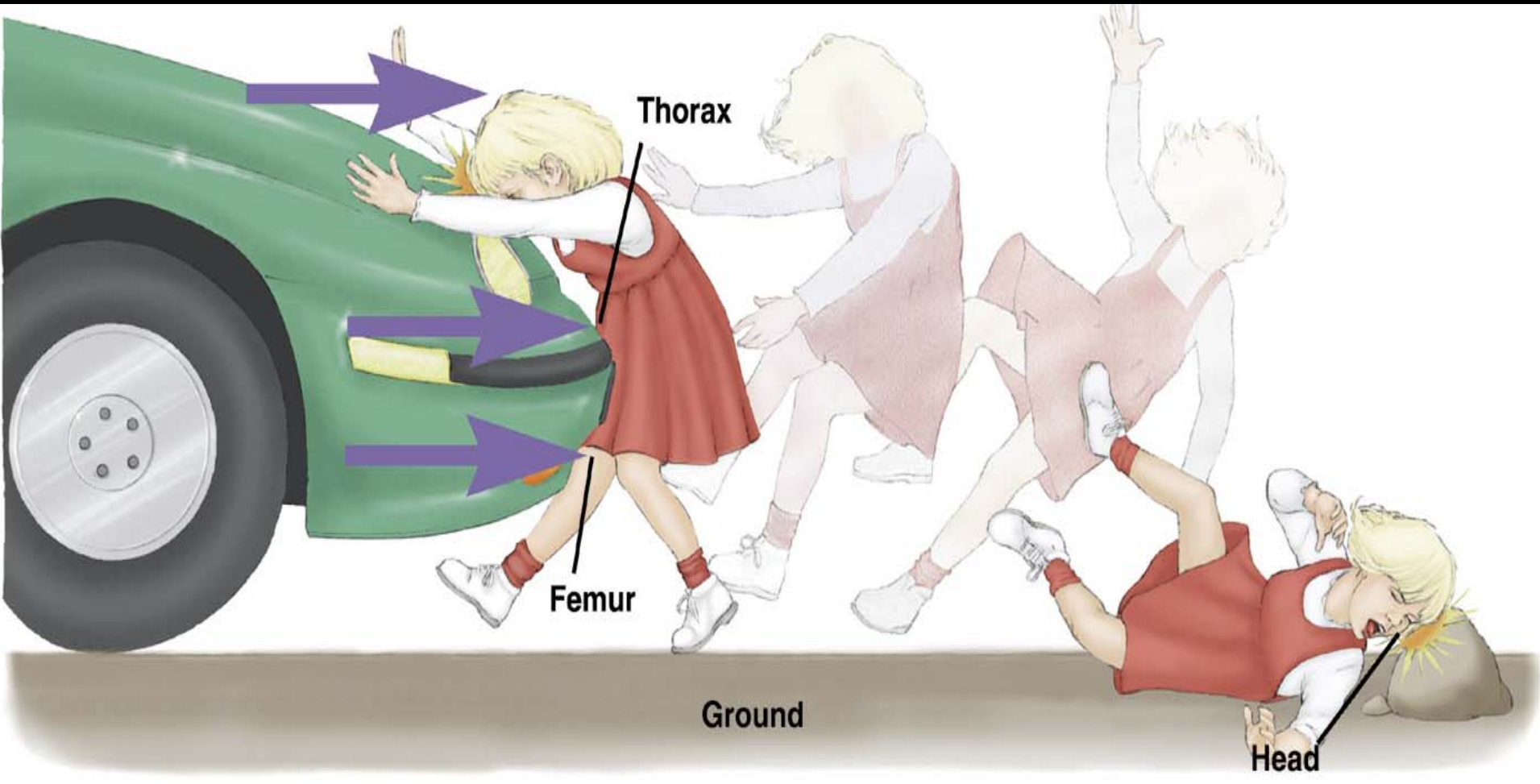
Psychological Differences

- **Children are not as psychologically mature.**
- **They are often injured due to their undeveloped judgment and lack of experience.**

Injury Patterns: Automobile Collisions

- The exact area of impact will depend on the child's height.
- A car bumper dips down when stopping suddenly, causing a lower point of impact.
- Children often sustain high-energy injuries.





Injury Patterns: Sports Activities

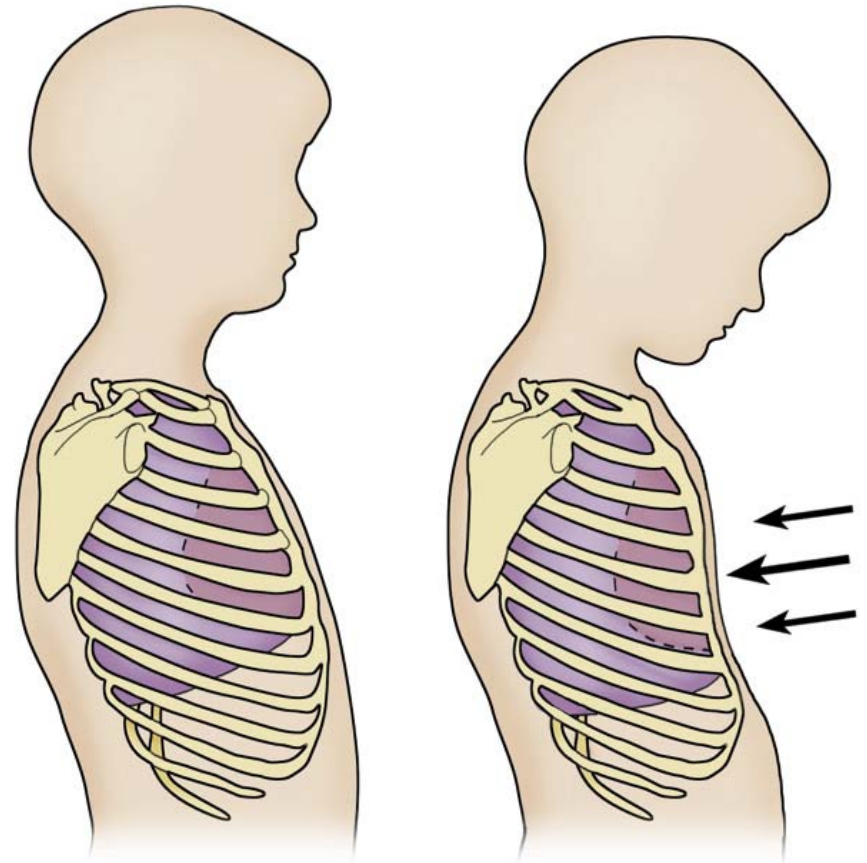
- Head and neck injuries can occur from high-speed collisions during contact sports.
- Immobilize the cervical spine.
- Follow local protocols for helmet removal.

Head Injuries

- **Common injury among children**
- **The head is larger in proportion to an adult.**
- **Nausea and vomiting are signs of pediatric head injury.**

Chest Injuries

- Most chest injuries in children result from blunt trauma.
- Children have soft, flexible ribs.
- The absence of obvious external trauma does not exclude the likelihood of serious internal injuries.



Abdominal Injuries

- Abdominal injuries are very common in children.
- Children compensate for blood loss better than adults but go into shock more quickly.
- Watch for:
 - Weak, rapid pulse
 - Cold, clammy skin
 - Poor capillary refill

Injuries to the Extremities

- Children's bones bend more easily than adults' bones.
- Incomplete fractures can occur.
- **Do not** use adult immobilization devices on children unless the child is large enough.

Pneumatic Antishock Garments (PASG)

- Rarely used for treating children
- When to use a PASG:
 - Obvious lower extremity trauma
 - Pelvic instability
 - Clear signs and symptoms of decompensated shock
- Should only be used if it fits properly
- Should never inflate the abdominal compartment

Burns

- Most common burns involve exposure to hot substances.
- Suspect internal injuries from chemical ingestion when burns are present around lips and mouth.
- Infection is a common problem with burns.
- Consider the possibility of child abuse.

Submersion Injury

- Drowning or near drowning
- Second most common cause of unintentional death of children in the United States
- Assessment and reassessment of ABCs are critical.
- Consider the need for C-spine protection.

Child Abuse

- Child abuse refers to any improper or excessive action that injures or harms a child or infant.
- This includes physical abuse, sexual abuse, neglect, and emotional abuse.
- More than 2 million cases are reported annually.
- Be aware of signs of child abuse and report suspicions to authorities.

Signs of Child Abuse



Questions Regarding Signs of Abuse (1 of 4)

- Is the injury typical for the child's developmental stage?
- Is reported method of injury consistent with injuries?
- Is the caregiver behaving appropriately?
- Is there evidence of drinking or drug abuse?

Questions Regarding Signs of Abuse (2 of 4)

- Was there a delay in seeking care for the child?
- Is there a good relationship between child and caregiver?
- Does the child have multiple injuries at various stages of healing?
- Does the child have any unusual marks or bruises?

Questions Regarding Signs of Abuse (3 of 4)

- Does the child have several types of injuries?
- Does the child have burns on the hands or feet involving a glove distribution?
- Is there an unexplained decreased level of consciousness?

Questions Regarding Signs of Abuse (4 of 4)

- Is the child clean and an appropriate weight?
- Is there any rectal or vaginal bleeding?
- What does the home look like?
Clean or dirty? Warm or cold?
Is there food?

Emergency Medical Care

- EMT-Bs must report all suspected cases of child abuse.
- Most states have special forms for reporting.
- You do not have to prove that abuse occurred.

Sexual Abuse

- Children of any age or either sex can be victims.
- Limit examination.
- Do not allow child to wash, urinate, or defecate.
- Maintain professional composure.
- Transport.

Sudden Infant Death Syndrome (SIDS)

- Several known risk factors:
 - Mother younger than 20 years old
 - Mother smoked during pregnancy
 - Low birth weight

Tasks at Scene

- **Assess and manage the patient.**
- **Communicate with and support the family.**
- **Assess the scene.**

Assessment and Management

- **Assess ABCs and provide interventions as necessary.**
- **If child shows signs of postmortem changes, call medical control.**
- **If there is no evidence of postmortem changes, begin CPR immediately.**

Communication and Support

- The death of a child is very stressful for the family.
- Provide support in whatever ways you can.
- Use the infant's name.
- If possible, allow the family time with the infant.

Scene Assessment

- Carefully inspect the environment, following local protocols.
- Concentrate on:
 - Signs of illness
 - General condition of the house
 - Family interaction
 - Site where infant was discovered

Apparent Life-Threatening Event

- Infant found not breathing, cyanotic, and unresponsive but resumes breathing with stimulation
- Complete careful assessment.
- Transport immediately.
- Pay strict attention to airway management.

Death of a Child (1 of 2)

- Be prepared to support the family.
- Family may insist on resuscitation efforts.
- Introduce yourself to the child's caregivers.
- Do not speculate on the cause of death.

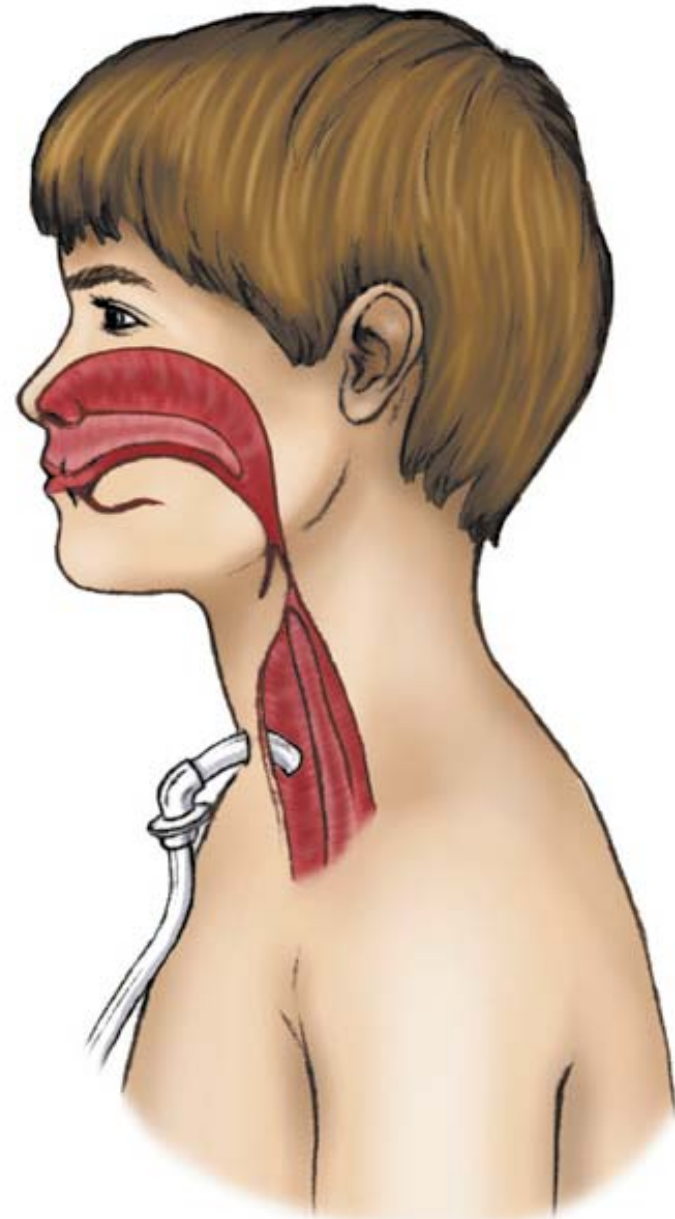
Death of a Child (2 of 2)

- Allow the family to see the child and say good-bye.
- Be prepared to answer questions posed by caregivers.
- Seek professional help for yourself if you notice signs of posttraumatic stress.

Children With Special Needs

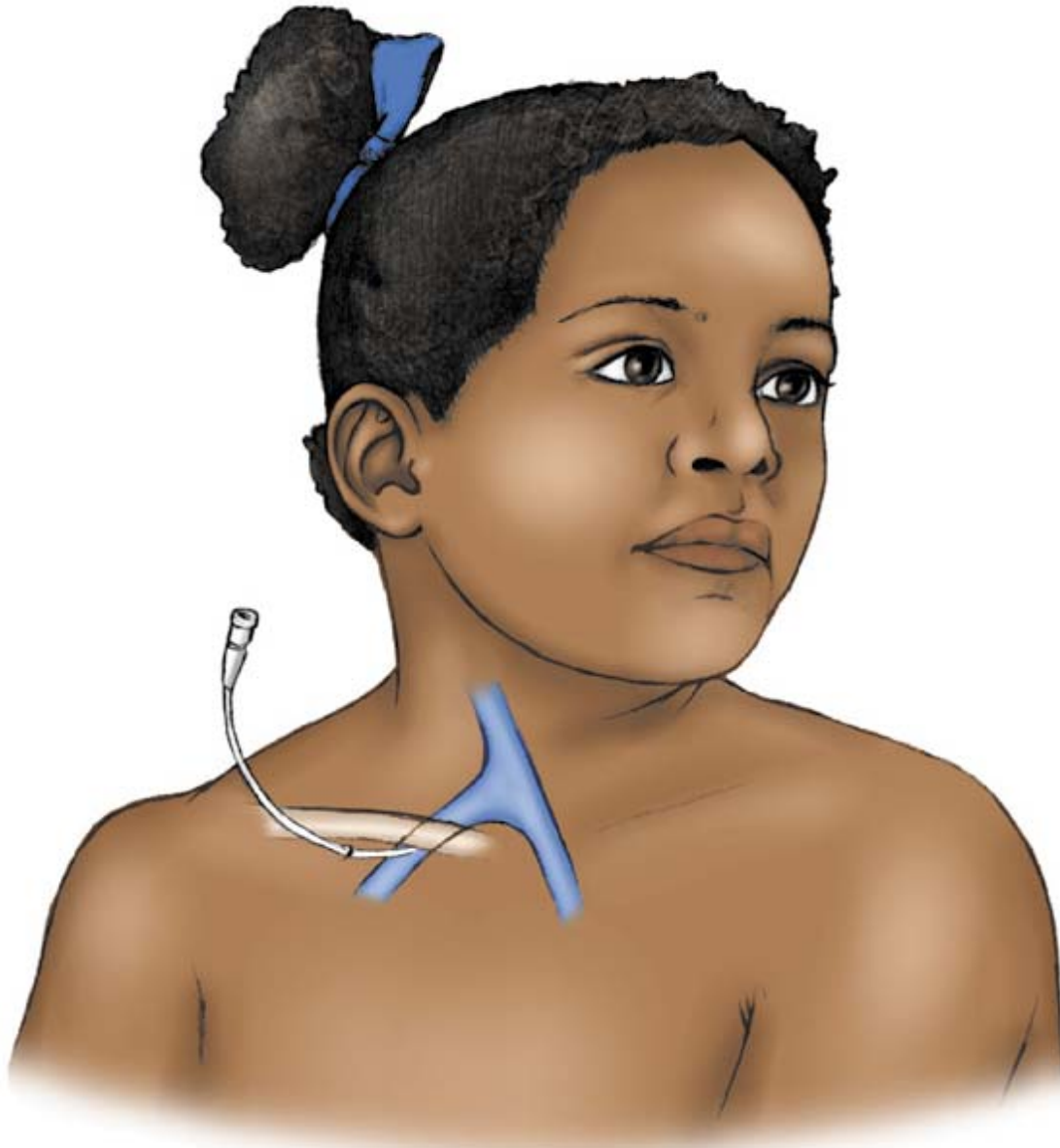
- Children born prematurely who have associated lung problems
- Small children or infants with congenital heart disease
- Children with neurologic diseases
- Children with chronic diseases or with functions that have been altered since birth

Tracheostomy Tube



Artificial Ventilators

- Provide respirations for children unable to breathe on their own.
- If ventilator malfunctions, remove child from the ventilator and begin ventilations with a BVM device.
- Ventilate during transport.



Central IV Lines

Gastrostomy Tubes

- Food can back up the esophagus into the lungs.
- Have suction readily available.
- Give supplemental oxygen if the patient has difficulty breathing.

Shunts

- Tubes that drain excess fluid from around brain
- If shunt becomes clogged, changes in mental status may occur.
- If a shunt malfunctions, the patient may go into respiratory arrest.