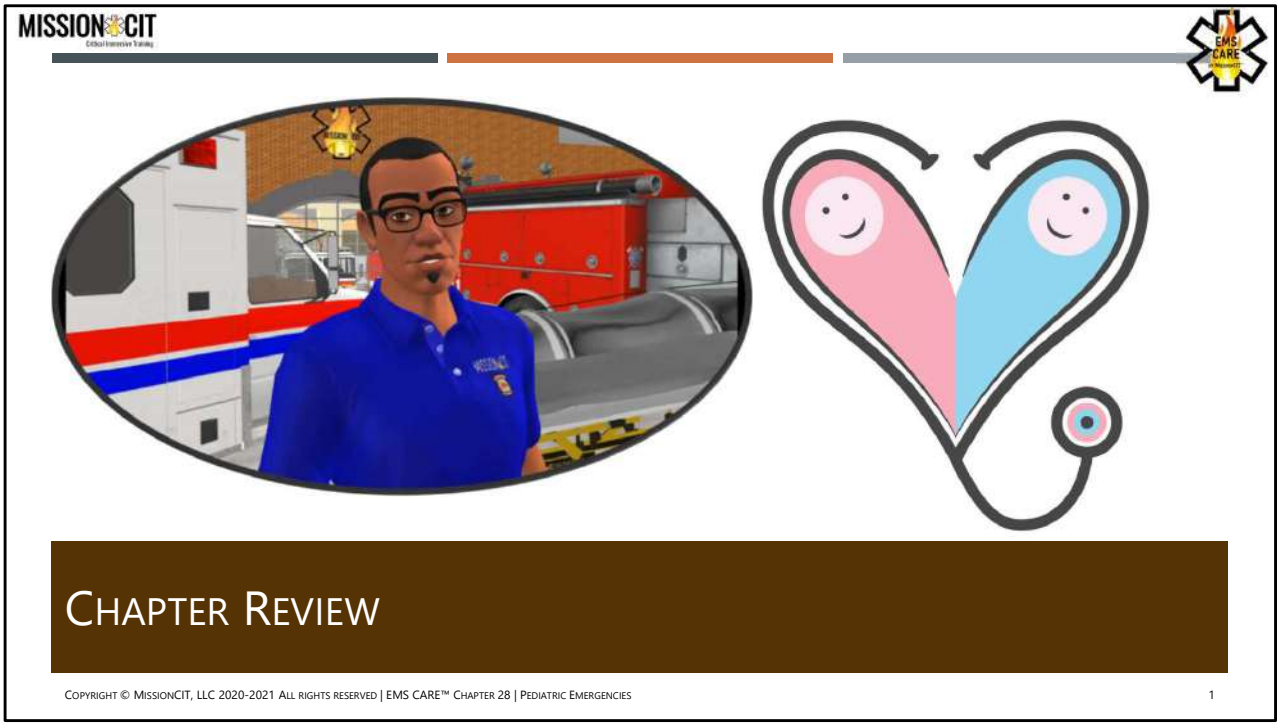


Thank you Missah!

Welcome to the chapter review for Pediatric Emergencies and Transport. Here we will quickly recap all that we have learned in each lesson.

So, let's get started!

MISSION CIT

LESSON 1 REVIEW | ANATOMY AND PHYSIOLOGY

- Many anatomical differences between adult and child
- Airways are shorter and smaller
- Intercostal muscles are not well-developed
- Abdomen is fragile
- Fontanelle is the gap between skull bones
- Skin is sensitive
- Weak muscles in the neck

Anatomic & Physiologic Difference



CHILDREN	ADULTS
New-born's head is larger & heavier as compared to his body	Adults head is not heavier than body
Thinner skin- Children have thinner skin than adults.	Adult skin not as much thinner than children.
Rapidly dividing cells- Children's cells divide more rapidly than adults	Normal cell division
No tears in early infancy	There is tears formation in eyes.
No voluntary control over the environment or activity.	Voluntary control On body

COPYRIGHT © MISSIONCIT, LLC 2020-2021 ALL RIGHTS RESERVED | EMS CARE™ CHAPTER 28 | PEDIATRIC EMERGENCIES

In the first lesson, we talked about the anatomical and physiological differences between adults and children. The pediatric head consists of a big forehead, elongated and bulbous cranium, pliable skull, and large and broad junctions between skull bones. In particular, the area between the skull bones is soft and is called fontanelle.

Moving on, the airways are smaller and shorter, the tongue and epiglottis is larger, and the airway is narrow below glottis.

As for the chest and lungs, the intercostal muscles are not well-developed until school age and there are more

heart beats per minute than adults.

The abdomen is fragile and the viscera is not protected by bone, so organs like liver and kidney are exposed.

In terms of extremities, the child's hands and legs are of the same length and the bones are less firm.

The skin is sensitive and more prone to injuries while the respiratory system is not well-developed. In fact, the presence of epiglottis can make intubation difficult.

Next, the nervous system consists of a large head, weak neck muscles, ligaments, and paraspinal muscles.

In metabolism too, children have a higher rate while the renal function is at 25-30%

MISSION CIT

Lesson 2a Review | Growth and Development

- 0-2 months: baby turns its head, flexes its arms, cries to express, sleeps for more than 16 hours, weak neck, and sucks when mouth reaches the nipple
- 2-6 months: Makes eye contact, voluntarily smiles at people, rolls over, sleeps through the night
- 6-12 months: Sit up without support, may move, teeth started, tend to put everything in mouth
- 12-18 months: Explore environment, follows instructions, communicate
- 18-24 months: Vocabulary of 100+ words, understands cause and effect, and gets used to conforming to rules.



Copyright © MissionCIT, LLC 2020-2021 All rights reserved | EMS CARE™ Chapter 28 | Pediatric Emergencies

3

In the first part of growth and development, we started with infants' physical and cognitive development. Within the first two months of life, the baby turns its head from side to side, flexes its arms, cries to express itself, sleeps for more than 16 hours a day, the neck is not strong enough to support the head, and sucks when the mouth reaches the nipple.

The baby increases eye contact from 2 to 6 months, tends to smile at people voluntarily, rolls over, and has better control over muscles. And 70% of babies sleep through the night. This is also the time when they reach

for objects and tend to put them in their mouths.

From 6 to 12 months, most babies can sit up without support, and some may even move or stand up. Teething has started, and there's a strong possibility for babies to put things in their mouths as they now have better control over their muscles.

This is also when babies can identify their parents from strangers, so separation anxiety is common. At 12 months, babies will copy gestures, babble, and can follow simple instructions.

By 18 months, children start to explore their environments, which is when the real danger begins. But the good part is they also start communicating their problems by this age.

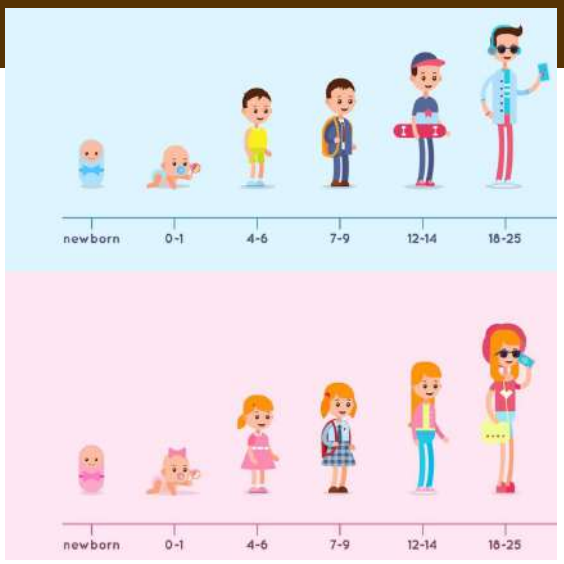
At the end of 24 months, children have a vocabulary of more than 100 words, follow instructions, understand cause and effect, and are relatively independent in their movement.

As an EMT, perform ABCs to ensure that the baby's airways are clear and consider emergency transportation if the baby is not responding to stimuli, not getting up from sleep, or is crying persistently. If the child is scared or has separation anxiety, keep the parent close-by, during your examination.

MISSION CIT

Lesson 2b Review | Growth and Development

- Preschool (2-5years): Many questions, communicate well, may have episodes of tantrums
- Middle childhood (6-12 years): Cusp of puberty, more aware of body, school is central
- Adolescence (12-20 years): Puberty, peer pressure, depressions, drug abuse, and teen pregnancy are possible



Copyright © MissionCIT, LLC 2020-2021 All rights reserved | EMS CARE™ Chapter 28 | Pediatric Emergencies

4

Continuing with growth and development, when kids enter the preschool years of 2 to 5 years, they have many questions and tend to communicate well. They can move and eat by themselves and conform to established rules, though in the process, there can be many episodes of tantrums.

At this age, make sure you talk to them and use their magical thoughts and imagination to make them feel better.

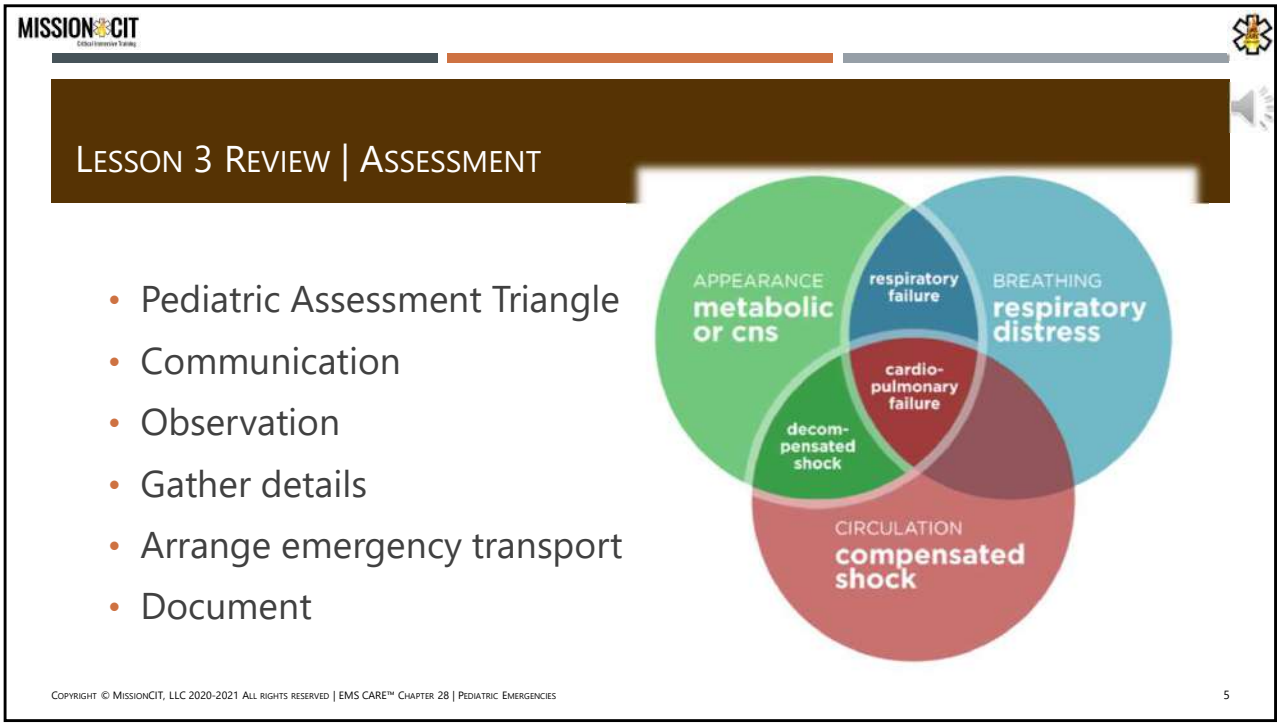
By 12 years, children are on the cusp of puberty, get permanent teeth, and start learning more about he

changes in their body. At this age, school is a central part of their lives and friends slowly start becoming an important aspect. There is a lot of peer pressure at this age and they tend to do many things to fit into a group.

From your perspective, children are in a position to understand what is going on. So, use simple terms and explain the situation. Respect their modesty during physical examination.

Between 12 to 20 years, children go through a ton of physical development as their mind and body gets prepared for an adult life. They understand the world, reason with events, form preferences, and strive to create an independent identity for themselves. There is a greater emphasis on looks and the opposite gender plays a key role in their lives.

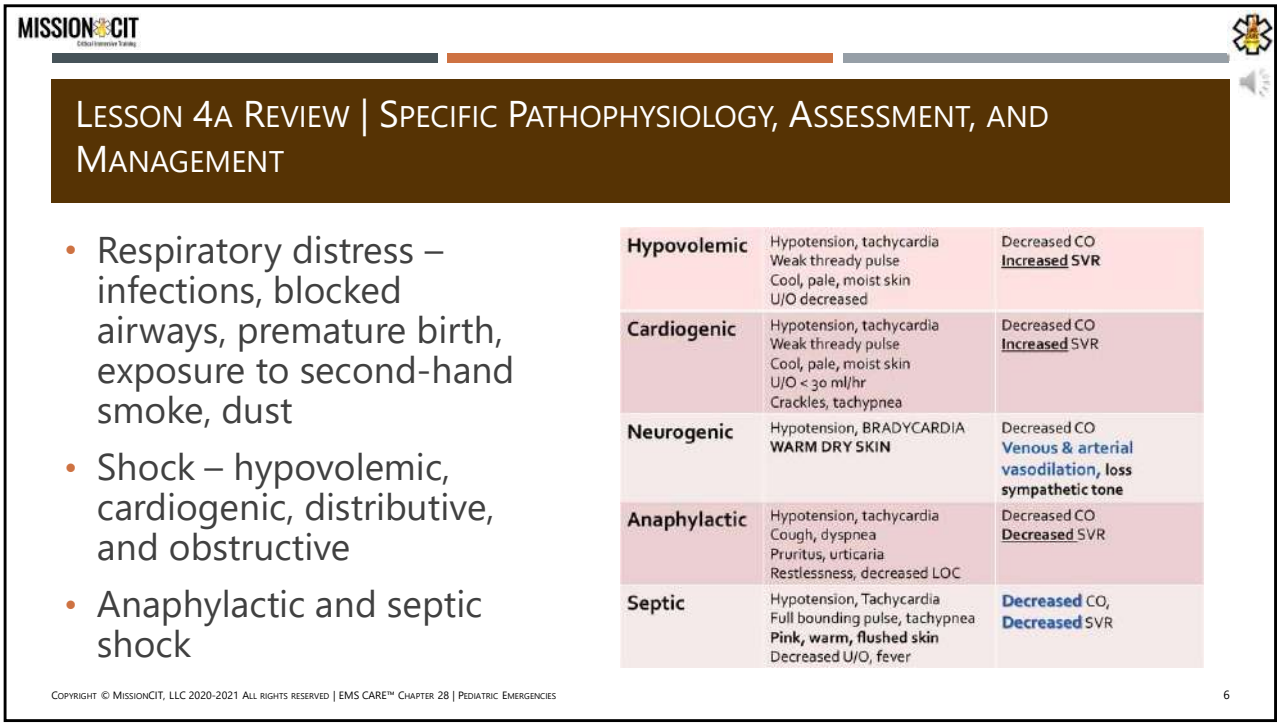
If you’re examining a person of this age, explain in simple terms, and respect their modesty. Be open to drugs, teen pregnancies, and other complications that come with peer pressure.



In the next lesson, we talked in detail about the different assessment tools and approaches you can use to handle pediatric emergencies. Out of these, the pediatric assessment triangle is an important tool where you evaluate the appearance, breathing, and circulation of blood to the skin.

Besides, observe the environment to get clues about the situation, examine the child if needed, communicate to the child if possible or to the parents, provide emotional support when needed, and evaluate if the child needs emergency transport.

Above everything, document everything as this can come in handy for healthcare providers.



In the next two lessons, we dealt with specific pathophysiology, including their assessment and management.

First off is respiratory distress, which is a condition where the child finds it difficult to breathe. This can be due to infections, blocked airways, premature birth, exposure to second-hand smoke, dust, and other factors. Some of its possible symptoms include pale or bluish skin, chest retractions, increased breathing rate, clammy and cold skin, noisy sounds during breathing, sleepiness, and fussiness.

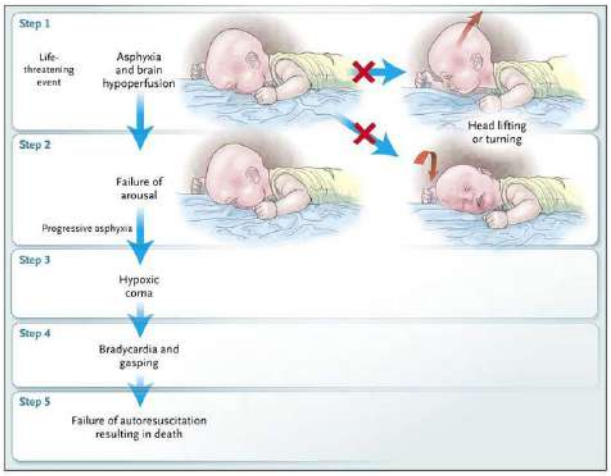
To address this condition, Check airways for possible obstruction, check the heart rate and call A L S if the rate is below 60 or above 180, and arrange for emergency transport.

The second condition we talked about is shock, one of the leading causes of morbidity among children as the body does not get the necessary glucose required to function. There are four kinds of shock, hypovolemic, obstructive, distributive, and cardiogenic. Hypovolemic shock is caused by fluid loss, cardiogenic is due to the heart's inability to supply oxygen to the body, distributive is due to a restriction of blood vessels to deliver blood, and obstructive is due to obstructions in the pulmonary or systemic valve. Anaphylactic and septic shock are common causes of distributive shock. In all cases of shock, arrange for emergency transport right away.

MISSION CIT

Lesson 4b Review | Specific Pathophysiology, Assessment, and Management

- Neurological issues – Likely from birth. Meningitis, seizures, altered mental status, and closed head injury
- Gastrointestinal problem – Common and ranges in severity
- Toxicology possible in young children and adolescents
- SIDS – provide emotional support
- Pediatric trauma – Transport immediately



Copyright © MissionCIT, LLC 2020-2021 All rights reserved | EMS CARE™ Chapter 28 | Pediatric Emergencies

Continuing with specific pathophysiology, we discussed neurological issues that are mostly congenital, though some may develop after birth. In this case, assess and stabilize the child and arrange for emergency transport. Some special conditions to watch out for include meningitis, seizures, altered mental status, and closed head injury.

The next condition, gastrointestinal problems, affects children of all ages and range from mild to severe. Dehydration and hypovolemic shock are common, especially if the child has been experiencing continuous

vomiting and diarrhea. Some possible causes include posseting, gastro-esophageal influx, blood-streaked vomiting, recurrent cough and wheezing, colic, bloody stool, threadworms, and constipation.

Stabilize the patient, perform ABCs, talk to parents to gather medical history, and decide on emergency transportation.

The third condition is the possible ingestion of toxins, especially among young children who tend to put everything into their mouths. This is also likely to happen in adolescents who may attempt suicide. Administer activated charcoal if local protocols allow, and transport the child to the nearest hospital.

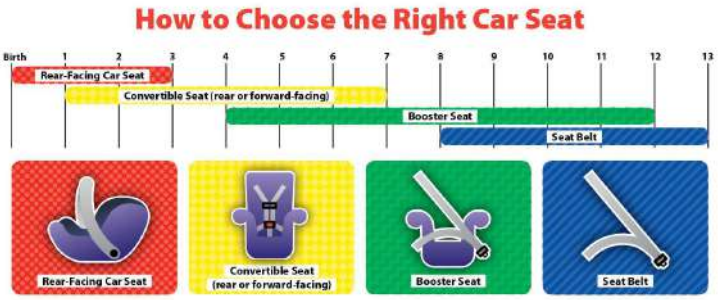
The next condition we talked about is Sudden Infant Death Syndrome or SIDS. This is when the child dies in its sleep due to a combination of environmental and physical factors. Your best option here is to provide emotional support to the parents.

Lastly, we discussed pediatric trauma that happens when a child is injured in an accident or when there was a fall. Since the chances for survival is low, transport the child safely and immediately to the nearest trauma center.

MISSION CIT

LESSON 5 REVIEW | TRANSPORTATION

- NHTSA has a specific set of guidelines
- Avoid transporting multiple patients together if possible
- Use industry-approved child restraint systems
- Constant research is going on in this field, so stay updated



COPYRIGHT © MISSIONCIT, LLC 2020-2021 ALL RIGHTS RESERVED | EMS CARE™ CHAPTER 28 | PEDIATRIC EMERGENCIES

In this last lesson, we discussed the rules to follow while transporting a pediatric patient. The N H T S A has specific guidelines, so make sure the seats and child restraint systems conform to national and local guidelines.

Whenever possible, never transport multiple patients together, and even if you must, the child should be restrained to a safe system, and must never be allowed to travel in a patient's lap. If a child requires continuous monitoring, make sure the child is placed in a cot, and restrained with a system that matches the current

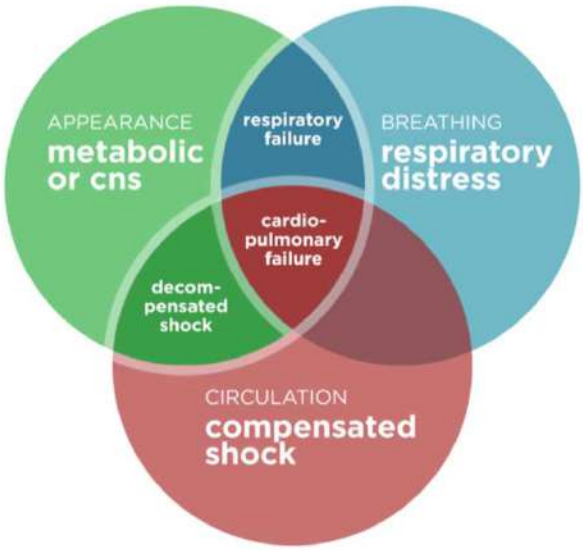
national and local specifications.

Also, it merits to note that many initiatives and research are happening to make this transportation safer for the child. Stay tuned to the updates, and follow them for the best safety.

Finally, know your department or company’s policies and S O Ps before placing a car seat or pediatric patient in the ambulance's front driver’s compartment. Also, check with a supervisor before changing any ambulance setting or attempting to deactivate an airbag. Some companies or departments may not allow either, so check with the leadership team if uncertain.

With this, we have completed the chapter reviews. And now it’s time to take the quiz. Remember, you must pass with a score of 70% or greater. You have up to four tries.

Good testing.


APPEARANCE
metabolic or cns
respiratory failure
BREATHING
respiratory distress
cardio-pulmonary failure
decom-pensated shock
CIRCULATION
compensated shock


EMS CARE
CH 28
PEDIATRIC EMERGENCIES AND TRANSPORT