

Asthma

What is asthma?

- Asthma is a chronic long-term condition that causes air passages to the lungs to become inflamed, swollen, and narrowed. The swelling can narrow passages enough to reduce or block airflow to and from the lungs. As air moves through the narrowed airway, it can make a wheezing sound.
- Children with asthma may have repeated episodes of wheezing, coughing, breathlessness, and chest tightness with nighttime or early morning coughing.

How common is it?

Asthma is one of the most common chronic diseases in children, affecting between 5% and 10% of children in the United States.

What are some common characteristics of children who have asthma or of asthma as children present with it?

- Asthma can vary from mild to severe, and it can be occasional or continuous.
- Asthma can worsen with infections, with weather changes, and with exposure to an asthma trigger. Asthma triggers are things that worsen asthma. Common triggers include viral infections, smoke, dust, mold, dust mites, cockroaches, and animal dander.
- Children with asthma may cough, wheeze, or have no symptoms at all, depending on how much air is moving at that time. Cough can be one of the first symptoms that the child experiences when asthma is acting up. Wheezing that can be heard also means there is a problem.
- If the child's airway is badly blocked, nothing might be heard, but the child will look like he or she is having trouble breathing.
- Asthma can and should be controlled. A child whose asthma is under control will look like any other child, will be able to play normally, and will only rarely have asthma symptoms. This control is one of the goals of asthma care, that is, to have the child live a normal life. Fortunately, with good asthma care, this control is possible for most children with asthma.

- A key component of good asthma control is management education for parents/guardians and teachers and caregivers and self-management education for older (school-aged) children. Teachers and caregivers should support older children in after-school care in self-managing their asthma, which includes helping them recognize symptoms and permitting children with adequate knowledge, skills, and behaviors to carry and administer quick-relief medication.
- Children who require frequent quick-relief medications for symptoms may need better controller medications. Use of quick-relief medications and any symptoms that keep children from fully participating in activities should be documented. This information is important to give to parents/guardians, so they can share it with their child's prescribing health care professional.

What are some elements of a Care Plan for children with asthma?

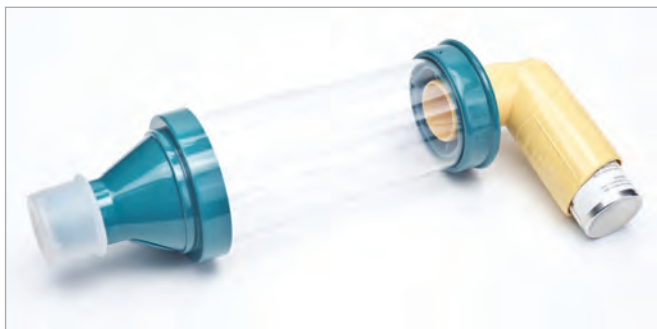
- The Asthma Action Plan is a specialized Care Plan for children with asthma.
- The Asthma Action Plan should include a list of the child's asthma triggers and which things to avoid. It should be updated after hospitalizations, emergency visits, child absences for illness, and changes in medications. A sample of an Asthma Action Plan can be found in Chapter 12.
- The Asthma Action Plan is usually designed with 3 zones based on the colors of a traffic light: red, yellow, and green.
 - Green zone is the plan for when the child is doing well and includes any controller medications that he or she needs to take to stay healthy (see Medications section later in this Quick Reference Sheet).
 - Yellow zone is the plan for when the child begins to develop symptoms such as cough and includes any quick-relief medications (see Medications section later in this Quick Reference Sheet).
 - Red zone is the plan for when the child is in trouble and needs prompt and vigorous treatment.
- Older children may use a peak flow meter to monitor their airway health. Peak flow meter numbers can be used to determine when children should take their quick-relief medications and to monitor how they are doing at different times of the day.

Asthma (continued)

What adaptations may be needed?

Medications

- All staff who will be administering medication should have medication administration training (see Chapter 6).
- Asthma medications are often categorized as *controller* or *quick-relief*. These 2 types of medications are used together for better asthma control.
 - **Controller medications** fight the inflammation and keep the airway open.
 - The most common controller medications are inhaled steroids, which are typically given by parents/guardians at home.
 - Although these medications have few side effects, the mouth should be rinsed after taking inhaled steroids to prevent thrush, that is, a yeast infection of the mouth lining.
 - Sometimes, the child will take oral steroids, such as prednisone, by mouth for a short period.
 - Side effects of oral steroids include mood swings, increased appetite, nausea, weight gain, and behavior changes. If oral steroids are taken over a longer period, the immune system can become suppressed.
 - **Quick-relief medications** relieve the muscle spasm to allow better airflow temporarily.
 - Sometimes, they are referred to as *rescue* medications, but this terminology is not preferred because it can imply waiting until symptoms are bad.
 - The most common quick-relief medications are β -adrenergic agonists such as albuterol. Side effects include jitteriness, fast heart rate, and hyperactivity. Some children will be sleepy after a treatment. Albuterol can be administered in different ways.



Metered-dose inhaler with a spacer

- ▶ **Metered-dose inhalers with spacers:** Most children lack the coordination to properly use a metered-dose inhaler, by inhaling slowly and deeply while they depress the inhaler to release the medication. They will get a better dose of medication if they use a spacer. A spacer can have a mask or a mouthpiece on the end of it for the child to use that delivers the medication to the child. The inhaler-spacer method of giving inhaled medication takes very little time and delivers more medication to the lungs than using the inhaler alone or using a nebulizer.
 - ▶ Typically, the inhaler is easily attached to one end of the spacer, and the opposite end of the spacer is fitted with a mouthpiece or mask. The mask is held against the child's face, or the mouthpiece is held by the child's lips. The inhaler is depressed to release the medication as a mist into the spacer (the chamber). The child inhales 2 to 3 times to draw the medication from the spacer into the lungs. Then the spacer is washed and allowed to air-dry.
 - ▶ **Nebulizers:** Nebulizers are machines that drive air through liquid medication and make it into a mist that can be inhaled. Typically, it takes 5 to 10 minutes to complete a treatment using a nebulizer. The nebulizer allows mist to escape into the surrounding air throughout the treatment.
 - ▶ Younger children may use a mask over their mouths and noses to get medication; older children may breathe through a mouthpiece.
 - ▶ The delivery device and its tubing should be cleaned regularly and dried completely.
 - ▶ Some children dislike nebulizer treatments and may need a distraction such as reading a book or watching a video.
- Older (school-aged) children may be able to take their own medications, but they should have authorization from their parents/guardians and health care professionals that reflect that they have the maturity to recognize their symptoms and to use their medications properly.
- Quick-relief medications should be available for children with asthma to use if they need them while they are in school or child care.

Asthma (continued)



Administering quick-relief medication

- The ways to recognize that the child needs treatment with a quick-relief medication should be clearly stated in lay language in the Care Plan (see Asthma Action Plan for Home & School [page 211] in Chapter 12).
- As always, expiration dates of medications should be checked regularly and medications should be stored in a safe location. The number of puffs used should be documented and a cumulative count kept, ensuring that medication is still in the inhaler.
- Children with asthma are especially vulnerable to respiratory tract infections.

Dietary Considerations

Diet may need to be modified for children with asthma who have food allergies.

Physical Environment and Other Considerations

- **Indoor environment:** Be tobacco-free (true smoke-free environments do not allow smoking outside), control mold and mildew by fixing any water leak quickly, avoid having furry or feathered pets, clean the environment frequently, use integrated pest management to limit pesticide use and pests, use dustcovers for bedding, ensure good ventilation, change air filters frequently, and avoid using strong perfumes and scented cleaning products.

- **Outdoor play:** Be aware of ozone and pollen levels. Air temperature extremes can sometimes be a problem but should be balanced with the child's need to run and play outdoors. These are good issues to problem-solve with parents/guardians and health care professionals. Children with exercise-induced asthma may need to use their albuterol inhalers before physical activity.

Transportation Considerations

- Consider how to handle respiratory distress that develops during transportation to and from school or child care settings if it is not done by parents/guardians. Medication, the child's Care Plan, and a mobile phone should all be available.
- If the child's asthma is temperature sensitive, be aware of vehicle temperatures and, if possible, take time to use heat or air conditioning to stabilize the temperature as necessary before the child enters the vehicle.

What should be considered an emergency?

- Notify parents/guardians if
 - Symptoms do not improve after using the dose prescribed for the quick-relief medication.
 - The quick-relief medication has been needed 2 or more times during the day.
- Always notify parents/guardians about any asthma symptoms, even when they do not reach the level that constitutes an emergency, so the parents/guardians can work with the child's health care professional to monitor control of the asthma and keep the symptoms under good control. A daily symptom checklist can be a good communication tool to use with parents/guardians.
- Call emergency medical services (EMS) (911) without delay for any of the following emergencies experienced by the child:
 - Severe breathing problems such as struggling to breathe and pulling in at the neck or under the rib cage with every breath
 - Difficulty talking or walking
 - Lips or fingernails that are turning blue
 - Symptoms that are not improving after a second dose of quick-relief medication
- Keep emergency contact information updated at all times.

Asthma (continued)

What types of training or policies are advised?

- Preventing exposure of the child to asthma triggers.
- Recognizing the symptoms of an acute asthma episode.
- Treating acute episodes, including an understanding of the purpose of treatment, the expected response, and possible side effects. Caregivers should be able to assist and supervise the child during the treatment.
- Knowing when to call EMS (911).
- Using health consultants for training.
- Working as a team.
- Tracking absences and early dismissals.
- There should be a clear policy about exclusion and readmission associated with active wheezing.

What are some resources?

- American Academy of Pediatrics: www.aap.org, <https://shop.aap.org>, 1-866-843-2271
 - *Allergies and Asthma: What Every Parent Needs to Know* (book)
 - *Caring for Our Children: National Health and Safety Performance Standards; Guidelines for Early Care and Education Programs*, 3rd Edition (book), <http://cfoc.nrckids.org/CFOC>
 - Standard 3.1.3.2, Playing Outdoors
 - Standard 3.1.3.3, Protection From Air Pollution While Children Are Outside
 - Dinakar C, Chipps BE; American Academy of Pediatrics Section on Allergy and Immunology and Section on Pediatric Pulmonology and Sleep Medicine. Clinical tools to assess asthma control in children. *Pediatrics*. 2017;139(1):e20163438
- American Lung Association: “Improve Asthma Management in Schools” (Web page), www.lung.org/lung-health-and-diseases/lung-disease-lookup/asthma/asthma-education-advocacy/asthma-in-schools.html

- Asthma and Allergy Foundation of America: www.aafa.org
- Centers for Disease Control and Prevention: www.cdc.gov, 1-800-CDC-INFO (1-800-232-4636)
 - “Asthma Guidelines and Strategies” (Web page), www.cdc.gov/HealthyYouth/asthma/strategies.htm
 - “Asthma in Schools” (Web page), www.cdc.gov/healthyschools/asthma/index.htm
 - “Managing Chronic Health Conditions in Schools” (Web page), www.cdc.gov/healthyschools/chronicconditions.htm
- National Heart, Lung, and Blood Institute National Asthma Education and Prevention Program
 - “How asthma-friendly is your child-care setting?” (checklist), www.nhlbi.nih.gov/health/public/lung/asthma/chc_chk.pdf
 - “How asthma-friendly is your school?” (checklist), www.nhlbi.nih.gov/health/public/lung/asthma/friendly.pdf
 - *Managing Asthma: A Guide for Schools* (booklet), www.nhlbi.nih.gov/files/docs/resources/lung/NAEI_ManagingAsthma-508%20FINAL.pdf
- National Institute of Allergy and Infectious Diseases: www.niaid.nih.gov
- US Environmental Protection Agency: “Creating Healthy Indoor Air Quality in Schools” (Web page), www.epa.gov/iaq/schools

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Cerebral Palsy (CP)

What is cerebral palsy (CP)?

- Cerebral palsy (CP) is a condition caused by brain injury that interferes with messages from the brain to the body; this interference affects movements and muscle coordination.
- A more formal definition is “Cerebral palsy describes a group of disorders of the development of movement and posture, causing activity limitation, that are attributed to non-progressive disturbances that occurred in the developing fetal or infant brain. The motor disorders of cerebral palsy are often accompanied by disturbances of sensation, cognition, communication, perception, and/or behaviour, and/or by a seizure disorder.” (See www.ncbi.nlm.nih.gov/pubmed/16108461.)
- The term *cerebral* refers to the brain, and *palsy* means weakness or problems using muscles.
- Specifically, it is a neuromuscular disorder; it does not refer to or imply anything about intelligence or cognition.

How common is it?

- Each year, 8,000 infants and nearly 1,500 preschoolers in the United States are diagnosed as having CP.
- About 500,000 people in the United States have some form of CP, making this a very common condition.

What are some common characteristics of children who have CP or of CP as children present with it?

- Children may have mild, moderate, or severe CP and it can affect one side (hemiplegia), just the arms or legs (diplegia), or both the arms and legs (quadriplegia).
 - Children with *mild* CP may appear to be a little clumsy and have specific difficulties with arm or leg muscle control.
 - Children with *moderate* CP may need adaptive equipment such as leg braces and may walk with a limp or on their toes.
 - Children with *severe* CP may need a wheelchair or walker to get around.



Child with cerebral palsy

- There are different types of CP.
 - Children with *spastic* CP, the most common form, have too much muscle tone or tightness. Their legs may come together, for example, when they are picked up, in a manner that is referred to as *scissoring*. They may walk on their toes or in a crouch.
 - Children with *dystonic* CP have difficulty controlling their movements; this difficulty causes unusual postures or twisting of their arms or legs that makes it hard for them to use their hands or to walk.
 - Children with *mixed* CP have muscles that may be spastic, dystonic, or both. These children may have uncontrolled movements.
 - Children with *hypotonic* CP have muscles that are too “loose,” with low muscle tone.
- Some children with CP have problems with seeing, hearing, swallowing, or speaking.
- Many children with CP have normal intelligence; others may have intellectual or learning disabilities.
- The muscle problems that children with CP have can improve with therapy and other treatments; children with CP often advance their functioning during childhood. Mildly affected children usually live as long as their peers, but those with more severe CP may die earlier.

Cerebral Palsy (CP) *(continued)*

- Children with CP are more likely to have seizures. If that is the case, see the Seizures, Nonfebrile (Epilepsy), Quick Reference Sheet (page 179) for more details.
- Sometimes, the physical appearance of a child with CP can give the wrong impression about the child's ability to learn. Focus on the individual child, and learn firsthand what capabilities and needs the child has.
- Despite their physical disabilities, about half of all children with CP have typical intellectual abilities.

Who might be on the treatment team?

- Treatment team members may include the pediatrician/primary care provider, an orthopedic surgeon, a pediatric neurologist, and a developmental-behavioral pediatrician, pediatric rehabilitation medicine physician, or physical medicine specialist.
- Many children with CP can benefit from different kinds of therapy.
 - *Physical therapy* helps children work on gross-motor skills such as sitting, walking, and balance.
 - *Occupational therapy* helps children develop fine-motor skills necessary for feeding, writing, and dressing.
 - *Speech-language therapy* is important for children who may need to have the muscles around their faces, throats, or tongues strengthened for communication or eating.
- Sometimes, medications or surgery can help lessen the effects of CP.
- Children who are younger than 3 years (ie, 36 months) may receive these therapies through *early intervention* services. Early intervention is a system of services to support infants and toddlers with disabilities and their families.
- For children 3 years and older, *special education and related services* are available through the public schools to provide the therapies necessary for school achievement.

What are some elements of a Care Plan for children with CP?

Care Plans may include

- Incorporating physical, speech-language, or occupational therapy exercises into the child's daily routine. These plans may include the use of splints, braces, communication devices, or adapted toys to help children be more active, participate more, and have fun while they are working their bodies.
- More children are participating in intermittent intensive physical therapy programs. These may include several hours of therapy daily for 2 to 3 weeks, and they may require that the child miss school or child care during this time.
- A written plan known as the Individualized Family Service Plan will be provided for children in early intervention.
- An Individualized Education Program will describe an older child's unique needs and the services available to address them.

What adaptations may be needed?

Medications

- Some children with CP will be prescribed muscle relaxants.
- Others will receive injections at a specialized treatment center to help relieve muscle spasms.
- A child with CP who has a seizure disorder may be taking anti-seizure medications. See Seizures, Nonfebrile (Epilepsy), Quick Reference Sheet (page 179) for more details.
- All staff who will be administering medication should have medication administration training (see Chapter 6).

Dietary Considerations

- Children with CP may need a softer or smoother diet if the CP affects their swallowing muscles.
- Depending on the severity of the CP, they may also require extra time and more assistance with meals and snacks than their peers.
- Some children may need a feeding tube (known as a gastrostomy tube, "G-tube," or "gastrostomy button").

Cerebral Palsy (CP) *(continued)*

Physical Environment and Other Considerations

- All children and staff should be fully immunized, including with influenza vaccine, to protect the child with CP.
- Ask individuals who have cared for children with CP about strategies to help them best learn, and become knowledgeable about different learning styles. Some children will use different techniques, such as communication boards, to learn.
- Ask the treatment team for tips on how to best adapt lessons and daily routines for the child to develop active learning.
- Work with the physical, occupational, and speech-language therapists to learn strategies that can best help the child with CP while attending the program or class.

What should be considered an emergency?

- Children with CP may need extra time, supervision, or transport in case of an emergency such as a fire.
- Any critical adaptive equipment would also need to be brought in an evacuation.
- Children with CP are at increased risk of choking and other airway compromise caused by problems with swallowing foods, liquids, and even their own oral secretions.
- Children with severe CP near the end of their lives might have special plans in place. See the “Children With Terminal Illnesses and Do-Not-Attempt-Resuscitation Plans” box in Chapter 8.

What are some resources?

- American Academy for Cerebral Palsy and Developmental Medicine: www.aacpdm.org, 414/918-3014
- Cerebral Palsy Foundation: <http://yourcpf.org>, 212/520-1686
- Easter Seals: www.easterseals.com, 1-800-221-6827
- Elaine Geralis: *Children With Cerebral Palsy: A Parent's Guide*, 2nd Edition (book)
- Freeman Miller, MD; Steven J. Bachrach, MD; and Cerebral Palsy Center at Nemours/Alfred I. duPont Hospital for Children: *Cerebral Palsy: A Complete Guide for Caregiving*, 3rd Edition (book)
- United Cerebral Palsy: <http://ucp.org>, 1-800-872-5827

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Preterm Newborns (Preemies): An Overview

Who are preterm newborns (preemies)?

- Preterm newborns (preemies) are newborns who are born early. A preterm newborn is one who is born before 37 weeks of gestation (pregnancy); a preemie can be delivered very early (after only 6 months of pregnancy) or later (after 8 months), but newborns in both situations may have problems that result in the need for specialized care.
- Many newborns who are born preterm will need neonatal intensive care after birth, and some continue to face challenges or health issues throughout childhood.

How common are preterm births?

One in 10 babies (9.6%) was born prematurely in the United States in 2016.

What are some common characteristics of preterm newborns?

Some of the most common long-term problems faced by preemies are

■ Lung problems

- The lungs of preterm newborns are often not ready to function and can be damaged during necessary treatment. This form of lung disease is called *bronchopulmonary dysplasia* (BPD). Some very preterm babies with BPD will be discharged from the hospital with supplemental oxygen, often to be used for 6 to 12 months.
- Parents/guardians and child care providers need to learn how to use oxygen tanks and associated monitors as they provide these babies with usual life experiences.
- Long-term treatment of BPD overlaps with asthma treatment. (See Asthma Quick Reference Sheet [page 75] for more details.)

■ Apnea

- When a baby stops breathing, it is called *apnea*. Preterm babies can have apnea because the part of the brain responsible for breathing is immature.
- In most cases, apnea goes away when newborns reach the age when they would have been born (40 weeks after conception). Rarely does this problem continue after hospital discharge, but, in selected cases, babies may be sent home on an apnea monitor, which sounds an alarm warning for changes in breathing or heart rate.

■ Central nervous system problems

- Some babies may have brain injuries associated with preterm birth, including bleeding into the brain, which can lead to hydrocephalus (water on the brain), cerebral palsy, or another developmental disability.



Preterm baby

AAP

- All preterm babies need close monitoring for developmental problems during infancy, and some may need specialized therapies to improve their functional abilities. Please see Cerebral Palsy (CP) Quick Reference Sheet (page 95) and Hydrocephalus and Shunts Quick Reference Sheet (page 151) for more information.
- **Vision problems**
 - An overgrowth of blood vessels in the back of the eye in preterm newborns can pull on the delicate lining of the eye, called the *retina*. The retina is the part of the eye responsible for vision. This condition is called *retinopathy of prematurity* (ROP). Sometimes, this condition resolves on its own, as the baby grows; sometimes, it causes permanent vision loss. Babies may require laser surgery to stabilize the condition. Even preemies who do not require surgery have an increased need for glasses as they get older.
 - Preterm newborns are also at increased risk for eye-muscle disorders, whether or not they have ROP. The eye-muscle imbalance can make one eye or both eyes turn in or out.
 - Preterm babies should have regularly scheduled eye examinations throughout infancy and childhood. (See Visual Impairments Quick Reference Sheet [page 201] for more details.)
- **Hearing problems:** Preterm newborns face multiple risk factors for hearing loss. Most babies have their hearing tested before they leave the neonatal intensive care unit (NICU), but they may need periodic testing as they get older as well. (See Hearing Loss and Deafness/Hard of Hearing Quick Reference Sheet [page 133] for more details.)

Preterm Newborns (Preemies): An Overview *(continued)*

■ Gastrointestinal problems

- Some babies have an intestinal problem called *necrotizing enterocolitis* (NEC) in the NICU that can damage the intestine, and sections of the intestine may need to be surgically removed. This surgery can leave a baby with short gut syndrome, which makes it hard for the baby to digest food properly.
- Babies with short gut syndrome may need small, frequent feedings and a special diet.
- Preterm infants may be more prone to gastroesophageal reflux disease (GERD). See the Gastroesophageal Reflux Disease (GERD) Quick Reference Sheet (page 129).

- **Anemia:** Some preterm newborns develop anemia (low red blood cell count). They may require blood transfusions while in the NICU or may need iron and extra vitamins.

■ Nutritional problems

- Preemies frequently need a special formula or fortified breast milk (human milk) early on to grow properly.
- Some babies continue to have growth and feeding challenges that may require occupational, speech-language, or feeding therapy and, in some cases, use of feeding devices.

- **Infection:** Preterm babies may be vulnerable to infections in the first year after birth. The most serious infections are usually viral such as influenza and respiratory syncytial virus (RSV) infection that attack the lungs. Preterm babies younger than 6 months are too young for the influenza vaccine, so they depend on others to be vaccinated to protect them.

■ Developmental problems

- The development of preterm babies can vary.
- Some preemies catch up quickly and do things such as walk and talk at the same time as their peers who were born at term, that is, who were born after a full 9 months. Others may lag behind their peers and catch up around 1, 2, or 3 years (ie, 12 months, 24 months, or 36 months) of age.
- Some preemies have permanent neurologic damage and developmental delays, which are usually apparent early in infancy.
- Other preemies, without clearly defined neurologic injuries, show subtler educational and behavioral problems as they get older. Positive early childhood experiences may lessen the risk of these problems.

- Preemies may be small for their age and have long, narrow heads from the pressure on their soft skull bones.
- Some preemies are poor feeders and grow slowly in weight and height.

Who might be on the treatment team?

- Preterm babies will often be followed by a special neonatal follow-up team at the hospital where they were in the NICU. Neonatal follow-up teams might include neonatologists, developmental specialists, and neonatal nurse practitioners.
- Speech-language, occupational, physical, nutritional, and respiratory therapists might also be involved in the baby's care.
- Social workers are available to help parents/guardians cope with family and social issues.
- These teams may monitor preemies for developmental delays or apnea, or they might give special medications such as those listed in the Medications section later in this Quick Reference Sheet.
- Preemies might need to see subspecialists such as pediatric ophthalmologists (eye doctors), pulmonologists (lung doctors), neurologists (brain doctors), and gastroenterologists (stomach and intestine doctors).
- Audiologists (hearing specialists) may be needed to monitor hearing over time.

What adaptations may be needed?

Medications

- Preterm newborns should receive immunizations on the same schedule as their term peers.
- All children and staff should be fully immunized, including with influenza vaccine.
- In addition, they may receive special injections (palivizumab [Synagis]) during winter months for their first years to strengthen the immune system's ability to fight off RSV infection.
- No other routine medications are given to preterm infants, but those with BPD may receive medications for wheezing, diuretics ("fluid pills"), and supplemental oxygen.
- All staff who will be administering medications should have medication administration training (see Chapter 6).

Preterm Newborns (Preemies): An Overview *(continued)*

Dietary Considerations

- Give preemies extra time to eat and digest their food if necessary.
- Some preemies may be on special infant formulas or breast milk fortifiers.

Physical Environment and Other Considerations

- Find out from parents/guardians what challenges their child had from being born preterm and what challenges still exist.
- Check out the Quick Reference Sheets in this book related to the specific problems that the child still faces, such as GERD, cerebral palsy, and visual impairment or hearing loss.
- Preemies may be more vulnerable to losing body temperature and might need extra hats or bundling.
- Exposure to colds and respiratory illnesses can be a problem for preterm babies with lung disease. Preemies without lung disease will likely do better when faced with respiratory tract infections. With preterm newborns with lung disease, the family may want to consider using a small group care setting to limit the child's exposure to respiratory illnesses in the first year after birth. When this setting is not possible, measures such as placing a small group of infants with a primary caregiver in a separate space could be considered. Evidence for the effectiveness of these measures is lacking, however. Avoid secondary smoke exposure for all infants, but particularly for preterm infants with vulnerable lungs.
- Preterm newborns are at increased risk for sudden unexpected infant death (SUID). Be sure to place babies to sleep on their backs. A preterm baby may be even more susceptible to SUID than a term baby when placed asleep on his or her tummy.

- Remember to adjust developmental expectations to account for the baby's preterm birth (eg, an infant born 2 months early should be acting like a 4-month-old when he or she is 6 months of age).
- Let parents/guardians know whether the program staff has any concerns about a baby's hearing or vision, especially if the baby was born preterm.

What should be considered an emergency?

Preterm babies often have a complex medical history after a long newborn hospitalization. Assessment during an emergency department visit may be difficult if that background information is not readily available. The appropriate program staff should have a copy of pertinent medical history in the event that the child must be taken to the hospital for immediate evaluation.

What types of training or policies are advised?

- Pediatric first-aid training that includes CPR (management of a blocked airway and rescue breathing) with instructional demonstration and return demonstration by participants on a mannequin. *Pediatric First Aid for Caregivers and Teachers* is a course developed and run by the American Academy of Pediatrics to teach these skills as well as how to provide care for children with other problems requiring first aid (www.pedfactsonline.com/about.aspx).
- Specific training related to care, especially apnea-monitor training.

What are some resources?

- American Academy of Pediatrics: www.healthychildren.org, <https://shop.aap.org>, 1-866-843-2271
 - “Premie” (Web page), www.healthychildren.org/English/ages-stages/baby/preemie/Pages/default.aspx
 - *Understanding the NICU: What Parents of Preemies and Other Hospitalized Babies Need to Know* (book)
- March of Dimes: www.marchofdimes.org

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