



Asthma Friendly Childcare

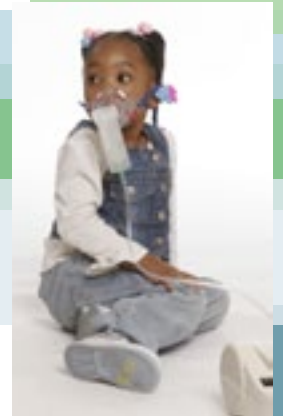
A Toolkit for Understanding and
Managing Asthma

Developed in partnership with



RESPIRATORY HEALTH ASSOCIATION®

This publication was funded by the Illinois Department of Public Health, Illinois Asthma Program, through cooperative agreement 5U59EH000532-04 from the U.S. Centers for Disease Control and Prevention. Its contents are solely the responsibility of the authors and do not necessarily represent the official views of the U.S. Centers for Disease Control and Prevention.



Asthma Information

WHAT IS ASTHMA?

Asthma is a common chronic (long term) illness that affects the lungs and airways. Children with asthma have sensitive airways that inflame and narrow in reaction to certain triggers. Examples of triggers are pollen, dust mites, pets, smoke, pollution and exercise.

During an asthma episode (attack), a child may experience difficulty breathing, wheezing, chest tightness or coughing. Asthma attacks can be mild, moderate or severe and sometimes, life-threatening. While there is no cure for the disease, asthma can be controlled with proper medication and education.

See resource section for images of the respiratory system and asthma.

ORIGINS OF ASTHMA – WHAT CAUSES ASTHMA?

The exact cause of asthma is not known; there is not a single cause of asthma. The causes of asthma symptoms can vary for different people. Most often starts in childhood, and some researchers think genetic and environmental factors interact to cause asthma.

- 1) **Allergies** – Exposure to allergens plays a causative role in in development of asthma.¹
- 2) **Asthma runs in families** – Children who have a parent or sibling with asthma are 3- to 6-times more likely to develop asthma than children without a family history of asthma.²
- 3) **Respiratory infections in childhood** – Viral infections in infancy is a risk factor for development of asthma.³

HOW IS ASTHMA DIAGNOSED?

It is often difficult for a doctor to make an asthma diagnosis, because symptoms are similar to other respiratory conditions, such as bronchitis and upper respiratory infection. A diagnosis of asthma is based on the following:

- 1) Symptoms
- 2) Family history
- 3) Lung function test, such as a spirometry test (typically done at the age of 7)

Sources:

- 1 Gaffin JM, Phipatanakul W. The role of indoor allergens in the development of asthma. *Curr Opin Allergy Clin Immunol.* 2009; 9(2): 128-135.
- 2 Liu T, Valdez R, Yoon P, Crocker D, Moonesinghe R, Khoury M. The association between family history of asthma and the prevalence of asthma among US adults: National Health and Nutrition Examination Survey, 1999-2004. *Genet Med.* 2009; 11(5): 323-328.
- 3 Kusel MM, de Klerk NH, Keadze T, Vohma V, Holt PG, Johnston SL, Sly PD. Early-life respiratory viral infections, atopic sensitization, and risk of subsequent development of persistent asthma. *J Allergy Clin Immunol.* 2007;119:1105–1110.

IMPACT OF ASTHMA

Asthma in the United States

- As of 2010, 25.7 million people in the United States, or 1 in 12 people, have asthma.
- 7 million children, or 1 in 11 children, have active asthma.⁴
- For employed adults, asthma caused 14.2 missed days of work.⁵
- Asthma is the leading causes of school absences – 10.5 million missed days of school.⁵
- Each day, nine Americans die from asthma. Asthma is a contributing factor in nearly 7,000 other deaths each year.⁶

Asthma in Illinois

- Approximately 1.7 million Illinois adults, or 13 percent of the population, have ever been diagnosed with asthma.⁷
- Of all Illinois children, 13 percent have been diagnosed with asthma, 1 percent higher than the national rate.⁸
- In 2007, children younger than 4 years old had the highest asthma hospitalization rate with 27.4 hospitalizations per 10,000.⁸

ASTHMA IN CHILDCARE

- Asthma prevalence in Head Start range from 15.8 percent to 35 percent. This is higher than the prevalence in the general population.⁹
- Children who attend day care have an increased risk of asthma due to early respiratory infections.¹⁰
- There are high levels of indoor allergens in childcare centers. Most notably, pet dander is present even when there are no animals.¹¹

Sources:

4 Asthma's Impact on the Nation: Data from the CDC National Asthma Control Program. Retrieved from http://www.cdc.gov/asthma/impacts_nation/AsthmaFactSheet.pdf.

5 Akinbami LJ, Moorman JE, Liu X. Asthma prevalence, health care use, and mortality: United States, 2005–2009. National health statistics reports; no 32. Hyattsville, MD: National Center for Health Statistics. 2011.

6 "New Asthma Estimates: Tracking Prevalence, Health Care and Mortality," NCHS, CDC, 2001. National Asthma Control Program. Asthma's Impacts on the Nation. Rep. Centers for Disease Control and Prevention, n.d. Web. 10 Apr. 2013.

7 "2010 Child Asthma Data: Prevalence Tables." Centers for Disease Control and Prevention. Centers for Disease Control and Prevention, 16 Nov. 2011. Web. 30 July 2013.

8 2009-2014 Illinois Asthma State Plan. Third Edition. Illinois Department of Public Health. Web.

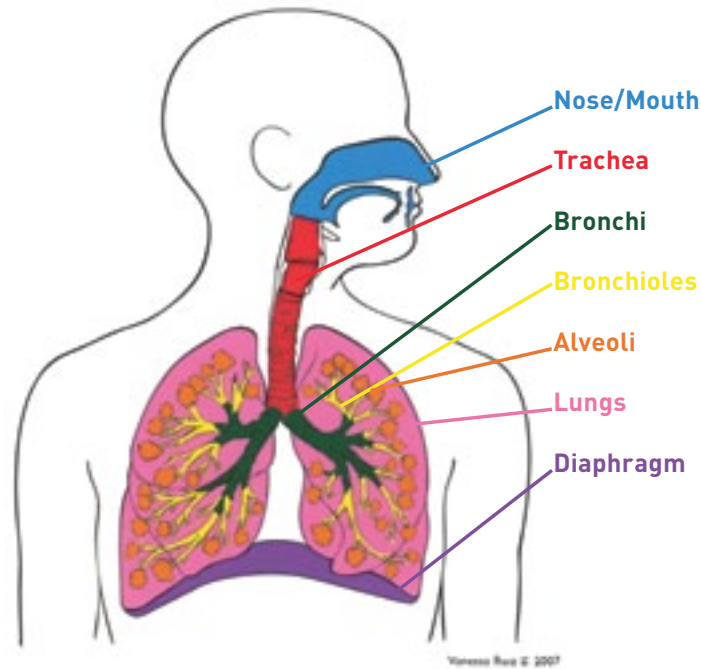
9 Walders N, Mcquaid E, Dickstein S. Asthma knowledge, awareness, and training among head start and early head start staff. J School Health. 2004; 74(1): 32-34.

10 Nystad W, Skrondal A, Magnus P. Day care attendance, recurrent respiratory tract infections and asthma. Int J Epidemiol. 1999; 28: 882-887.

11 Salo PM, Sever ML, Zeldin DC. Indoor allergens in schools and daycare environments. J Allergy Clin Immunol. 2009; 124(2): 185-194.

Our Respiratory System and What Happens During an Asthma Episode

To understand how asthma affects the body, let's take a look at the respiratory system. See diagram below:



WHAT HAPPENS DURING AN ASTHMA EPISODE?



Controlled Asthma



Uncontrolled Asthma

During an asthma attack, the airways become twitchy and sensitive. Three things occur:¹

- 1) Bronchoconstriction: the smooth muscle bands around the airways squeeze the airways.
- 2) Inflammation: the walls of the airways swell up and become more pink.
- 3) Mucus: viscous liquid clogs up the airways.

Source:

1 Guidelines for the diagnosis and management of asthma U.S Department of Health and Human Services. 2007.
<http://www.nhlbi.nih.gov/guidelines/asthma/asthsumm.pdf>

Managing Asthma

Although there is no cure for asthma, it can be controlled through proper education and management. Asthma affects each child differently, so it is important to know his/her warning signs and triggers.

WARNING SIGNS

Warning signs are symptoms that show you a child is having difficulty with asthma. Every child has their own unique set of warning signs. Recognize and know what level of action to take when you see a warning sign.

Level I - These are common warning signs that happen early in an episode.

- Shortness of breath
- Cough
- Feeling tired or weak
- Itchy chin or throat
- Watery eyes
- Dark circles under eyes
- Stomachache

HOW TO RESPOND

- 1) Move child away from any triggers. If child is around something that bothers their asthma, try to leave the situation.
- 2) Administer quick-relief medication to relieve symptoms. Medicine should work within in 15 minutes.
- 3) Monitor child's warning signs. Make sure symptoms aren't getting worse.

Level II - These common warning signs and symptoms are more serious.

- Medications are not working or do not last
- Increase in coughing or tightness in chest
- Wheezing
- Inability to do usual activities

HOW TO RESPOND

- 1) Take the same steps as with Level I: move away from triggers, take quick-relief medication and monitor warning signs.
- 2) If symptoms worsen or are not better within 15 minutes of using medication, follow child's asthma action plan and consider calling 911.

Level III - These are common severe warning signs and symptoms.

- Severe shortness of breath
- Difficulty walking or talking (inability to finish a sentence)
- Retractions (sucking in skin at ribs and neck)
- Paling, blue or gray lips and nail beds

HOW TO RESPOND

- 1) Call 911. Any ONE of these symptoms requires immediate medical help.
- 2) If you haven't already, administer quick-relief medication.

Adapted from Asthma Action Plan in U.S. Department of Health and Human Services. So You Have Asthma. National Heart Blood and Lung Institute. 2007. http://www.nhlbi.nih.gov/health/public/lung/asthma/have_asthma.pdf

Triggers

Triggers are activities, conditions or substances that cause the airways to react and asthma symptoms to occur. Not all children with asthma are affected by the same things. It is important to determine a child's asthma triggers and know what action to take to reduce exposure.

Triggers can include allergens and irritants. Below are some common asthma triggers. Determine what triggers are found in your childcare facility or home. For a list of action steps to reduce exposure to asthma triggers:

- Childcare provider: see page 14.
- Parents: see page 18.

ALLERGENS



Pets

Animals with fur, even non-shedding or hypoallergenic breeds, produce dander (found in dried saliva and skin cells) that can trigger asthma. Dander becomes airborne and settles on children, furniture or toys.

Many people also are allergic to animals with feathers.



Dust Mites

Dust mites are tiny bugs that live in beds, stuffed animals, carpets and cloth furniture. They primarily live on dead skin cells from humans and their animal pets. A typical mattress may have anywhere from 100,000 to 10 million mites inside.



Mold

Mold often lives on walls where it's dark and humid. It survives by eating materials, such as wood, paper and wallpaper paste. Mold is commonly found in bathrooms and basements.



Pests

Pests can live anywhere, especially in dark, damp places and behind walls, furniture and clutter. Many children are allergic to droppings and/or body parts of pests, such as rodents or cockroaches.



Pollen

Pollen travels through the air at certain times of the year. High pollen count days are typically in the fall and spring.

In the spring, pollen typically comes from trees, grasses and weeds. In the fall, pollen typically comes from ragweed and weeds.

IRRITANTS



Smoke

Smoke coming from a burning cigarette, pipe or cigar, or smoke exhaled by a smoker, are the number 1 asthma triggers.

Burning materials that produce smoke (wood, candle, coal, incense, etc.) might also give children trouble with their asthma.

Third-hand smoke (chemicals left after smoking) also may trigger a child's asthma. (See glossary.)



Pollution

Poor air quality, particularly on hot summer days when ozone pollution is high, can cause asthma episodes.



Strong Odors

Any strong smell can trigger an asthma episode. Common odors include: cleaners, bleach, pesticides, air-fresheners or plug ins, potpourri, perfume or aftershave, cosmetics, lotions, paints, glues and other crafts.

OTHER COMMON TRIGGERS



Emotions

Emotions (fear, anger, frustration, crying or laughing) change breathing patterns, which can cause asthma symptoms.



Infections

A cold, respiratory or sinus infection, or the flu can make controlling asthma more difficult.



Cold Weather

Cold, dry air, very hot weather, changes in seasons or a sudden fluctuation in weather can lead to asthma attacks.



Exercise

Asthma episodes can be triggered by exercise, especially when it leads to overexertion or when exposed to extreme temperatures (both hot and cold).

Although exercise is a trigger, a child can and should be active under extra supervision.

Source:

Asthma trigger: gain control. U.S. Environmental Protection Agency. Retrieved from <http://www.epa.gov/asthma/triggers.html>

Integrated Pest Management

According to the U.S Environmental Protection Agency (EPA), children are more sensitive to improper use of pesticides, which leads to health problems.¹ It is important to have a policy around pest management at your childcare center.

Integrated Pest Management (IPM) is a guideline to help you solve pest problems by taking environmentally sensitive approaches to manage pests in your childcare center. It is a method to safely control pests by focusing on pest prevention and environmentally friendly interventions. Examples of safety measures are keeping pests out, monitoring for pests, and using least toxic products (for example, using gel baits to trap cockroaches instead of using a strong chemical insecticide).

The EPA is a government agency that deals with the environment and its impact on human health. For more information on IPM for your childcare center, visit: <http://www.epa.gov/pesticides/controlling/childcare-ipm.htm>

Source:

1 Head start staff: what you need to know about pesticide poisoning. U.S. Environmental Protection Agency. <http://www.epa.gov/oppfead1/Publications/whatyouneed-hsstaff.pdf>

Food Allergies

There is a link between asthma and food allergy, and it's important to know if a child has any food allergies. Children with food allergy are 2-4 times more likely to have asthma.¹ Food allergies cause an immune response that may exacerbate asthma symptoms.

Below are the eight most common food allergens:

- Milk
- Eggs
- Peanuts
- Tree nuts
- Fish
- Shellfish
- Soy
- Wheat

Ensure there is a food allergy management prevention plan at your center by following the U.S. Centers for Disease Control and Prevention (CDC) recommendations.²

- 1) Have a daily management of food allergies for each child.
- 2) Create a food allergy friendly environment at your center.
- 3) Train staff on food allergies management.
- 4) Educate children and parents about food allergies.
- 5) Be prepared for food allergy emergencies by developing policy requiring epi-pens from children with known food allergies.

For more information on managing food allergy, visit Food Allergy Research & Education (FARE) www.foodallergy.org. FARE is a non-profit organization dedicated to finding a cure for food allergies and keeping individuals with food allergies safe through education and research.

The CDC has a detailed guideline for managing food allergies at http://www.cdc.gov/HealthyYouth/foodallergies/pdf/13_243135_A_Food_Allergy_Web_508.pdf

Sources:

1 Branum AM, Lukacs SL. Food allergy among U.S. children: Trends in prevalence and hospitalizations. NCHS data brief, no 10. Hyattsville, MD: National Center for Health Statistics. 2008.

2 U.S. Centers for Disease Control and Prevention. Voluntary Guidelines for Managing Food Allergies in Schools and Early Care and Education Programs. Washington, DC: U.S. Department of Health and Human Services; 2013. <http://www.foodallergy.org/document.doc?id=249>

Treatment

TYPES OF MEDICINE

There are two types of asthma medication: long-term controller and quick relief inhaler. It is important to know the type of medicine a child is using.

Long-term Controller

- A long-term controller prevents asthma episodes by reducing swelling and extra mucus in the airways.
- Not everyone with asthma needs a controller medicine. It depends on the severity.
- If a child is prescribed a long-term controller, he/she must use it every day even if there are no asthma symptoms.

Common Controller Medications

Dry Powder Inhalers



Pulmicort®



Advair®

Metered Dose Inhalers



Symbicort®



QVAR®



Flovent®

Pill



Singularair®

Do not store in the bathroom. Humidity can cause medication to clump.

If you haven't used your inhaler in more than two days, you may need to "prime it" (shake inhaler and do a test spray).

Clean the plastic case once per week. Remove the metal canister and run the case under warm water for 30 seconds. Let air dry before replacing the canister. Use with a spacer, whenever possible.

Quick-Relief Inhaler

- A quick-relief inhaler is rescue medicine that relieves the squeezing and tightness in the airways.
- Everyone with asthma should have a quick-relief inhaler with them at all times.
- Use when a child is feeling the first warning sign of an asthma episode.
- If suggested by a health care provider, he/she may need to use a quick-relief inhaler before physical activity.

Common Quick-Relief Inhalers

Metered Dose Inhalers



Xopenex®



ProAir HFA®



Proventil® HFA
(Albuterol)



Ventolin® HFA
(Albuterol)

Helpful Tips

- If you haven't used your inhaler in more than two days, you may need to "prime it" (shake inhaler and do a test spray).
- Clean the plastic case once per week. Remove the metal canister and run the case under warm water for 30 seconds. Let air dry before replacing the canister.

METHODS OF ADMINISTRATION

There are different delivery methods to administer asthma medicine - metered dose inhaler, dry powder inhaler, pill, spacer/holding chamber and nebulizer.

Metered Dose Inhaler (MDI)

This type of inhaler uses an aerosol canister to shoot out mists of medicine.



Steps to use a meter dose inhaler

- 1) Remove any candy, food or gum from your mouth.
- 2) Stand up straight.
- 3) Take the cap off the inhaler. Make sure to clean out any dust or fuzz so there is nothing inside.
- 4) Shake the inhaler for five seconds.
- 5) Take a deep breath in and breathe out slowly to empty your lungs completely.
- 6) Place the inhaler mouthpiece inside your mouth and seal your lips tightly around the mouthpiece.
- 7) Press down on the inhaler and simultaneously take a quick breath in.
- 8) Hold your breath for 10 seconds and then breathe out.
- 9) If using a controller medicine, rinse your mouth with water and spit water out.

Spacer or Holding Chamber

This is an add-on device that should be used with aerosol inhalers. It is a long tube that allows a child to administer asthma medicine slowly and more effectively.



Steps to use a meter dose inhaler with spacer/holding chamber

- 1) Remove any candy, food or gum from your mouth.
- 2) Stand up straight.
- 3) Remove the cap of the inhaler and attach it to the spacer. Make sure to clean out any dust or fuzz so there is nothing inside either one.
- 4) Shake the inhaler and spacer for five seconds.
- 5) Take a deep breath in and breathe out slowly to empty your lungs completely.
- 6) Put the spacer in your mouth and seal your lips around the mouthpiece. If spacer has a face mask, place mask firmly on face.
- 7) Press down on the inhaler and take a slow deep breath in.*
- 8) Hold your breath for 10 seconds and then breathe out.*
- 9) If using a controller medicine, rinse your mouth with water and spit water out.

* Infants might need to take a few breaths in and out to inhale all of the medication.

Dry Powder Inhaler (DPI)

This type of inhaler delivers medicine in dry powder form.



Steps to use a dry powder inhaler

- 1) Remove candy, food or gum from your mouth.
- 2) Stand up straight.
- 3) Hold the inhaler level to the floor.
- 4) Open the inhaler with the mouthpiece facing you.
- 5) Slide the lever away from you until you hear it click. This means the medicine has been released. Be careful not to tip the inhaler or slide the lever again; the medicine will fall out and it will be wasted.
- 6) Take a deep breath in and breathe out.
- 7) Place the inhaler in your mouth, seal your lips tightly around it and take a quick, deep breath in.
- 8) Hold your breath for 10 seconds, and then breathe out.
- 9) Rinse your mouth with water and spit water out.

Nebulizer

This method uses a machine to change liquid medicine to mist that is easy to inhale through a mouthpiece or mask. One nebulizer treatment takes approximately 10 minutes. Both long-term controller medicine and quick relief medicine can be administered using a nebulizer. Medicine comes in liquid vials.



Steps to use a nebulizer

- 1) Wash your hands.
- 2) Open the medication cup and fill it with medication as prescribed by your health care provider.
- 3) Secure the cap.
- 4) Attach either a mouthpiece or mask to the end of the medication cup.
- 5) Hook one end of the tubing to the medication cup and the other end to the nebulizer.
- 6) If using a mouthpiece, seal lips tightly around the mouthpiece. If using a mask, place mask firmly on the face.
- 7) Turn on the nebulizer. Breathe normally through the mouthpiece or mask. Continue until you no longer see the medication mist (about 10 minutes).

Care and cleaning of a nebulizer

It is important to clean your nebulizer to prevent infections.

- Always wash your hands prior to touching medicine.
- After each use, remove the medication cup and rinse with warm water. Place on a paper towel and allow to air dry.
- Once a week, clean medication cup in mild soapy water or one part vinegar and two parts water. Rinse well and place on a paper towel to air dry.
- Replace the nebulizer cup and tubing every six months.
- Change the filter in your nebulizer when it becomes discolored.
- Never wash or clean the tubing because mold can grow inside.

5 Rights of Medicine Administration

To ensure safety of children, follow guidelines on safe administration of medicine. The 5 rights of medicine administration are:

- 1) Right child
- 2) Right medication
- 3) Right dose
- 4) Right time
- 5) Right route and procedure

This guideline is from The Healthy Child Care America (HCCA). HCCA is a collaborative organization between health professionals and child care providers, and they are dedicated to improving the early education and health and safety of children in child care. Read more about each at

http://www.healthychildcare.org/pdf/MedAdmin/M3_5Rights.pdf

Sources:

Guidelines for the diagnosis and management of asthma U.S. Department of Health and Human Services. 2007.

<http://www.nhlbi.nih.gov/guidelines/asthma/asthsumm.pdf>

5 Rights of medication administration – rationale and considerations. American Academy of Pediatrics. 2013.

http://www.healthychildcare.org/pdf/MedAdmin/M3_5Rights.pdf

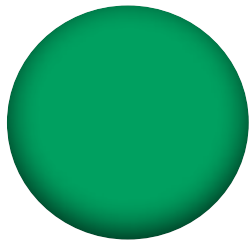
Asthma Action Plan

An Asthma Action Plan is a written plan that helps you manage a child's asthma. The plan takes out the guesswork in asthma management. It tells you symptoms and what steps to take when you see those symptoms. It also tells you a child's asthma triggers and what medicine is needed every day and/or during an asthma emergency.

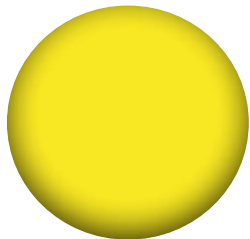
An Asthma Action Plan is reviewed and filled out by the child's guardian and health care provider. Parents should provide child care center with an Asthma Action Plan. It should be on file and easily accessible to staff taking care of child.

WHAT IS IN AN ASTHMA ACTION PLAN?

The Asthma Action Plan is based on color zones – Green, Yellow and Red. These color zones are determined by peak flow meter. Each color zone will have symptoms, peak flow reading, medicine and action steps to take.

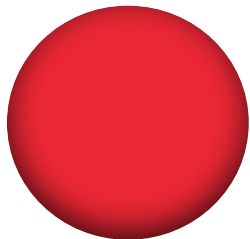


You're Doing Well! Green zone is the GO zone. This zone means a child is doing well and keeping his/her asthma under control. Peak flow reading is between 80 percent - 100 percent.



Slow Down! Yellow zone is the CAUTION zone. This zone means a child is experiencing early warning signs of asthma. Peak flow reading is between 50 percent – 80 percent.

Remove child from any triggers, administer his/her quick relief inhaler as prescribed and monitor until symptoms are gone.



GET HELP! Red zone is the DANGER zone. This zone mean a child is having severe symptoms of asthma. Peak flow reading is below 50 percent.

If a child displays any symptoms in the red zone, seek medical help by calling 911. Administer quick relief inhaler as prescribed.

Sources:

Gibson PG, Powell H. Written action plans for asthma: An evidence-based review of key components. *Thorax*, 2004; 59(2): 94-99

U.S. Department of Health and Human Services. So You Have Asthma. National Heart Blood and Lung Institute. 2007.

http://www.nhlbi.nih.gov/health/public/lung/asthma/have_asthma.pdf

Tips for Childcare Staff

WHEN CHILDREN CAN ATTEND DAYCARE

A child can attend if:¹

- Stuffy nose, but no wheezing
- Or, if wheezing subsides, after taking medication
- Able to perform usual activities (getting dressed, eating, etc.) without additional effort to breathe

A child should not attend if:¹

- Wheezing or coughing continues after treatment
- Breathing troubles or breathing fast
- Fever more than 100 degrees
- Too weak or tired to participate in activities

A CHECKLIST FOR DAYCARE PROVIDERS

Use this checklist to make your home or child care setting a safe and healthy environment for children with asthma and allergies.^{2,3} Visit resources on page 21 for additional information.

Avoiding or Controlling Dust Mites

<u>Task</u>	<u>Completed</u>
• Wipe surfaces and furniture with a damp cloth daily (no aerosol “dusting” sprays used).	_____
• Mop floors daily.	_____
• Wash small rugs, nap mats, blankets, bed linens and fabric toys in water 130°F (weekly).	_____
• Prevent children from putting their faces, nap mats, blankets or toys directly on the carpeting.	_____
• Children’s bed linens, blankets and toys (including stuffed toys or “dress-up” clothes) are washed in water 130°F (weekly).	_____
• Enclose beds and pillows children sleep on in allergy proof covers.	_____
• Avoid soft mattresses and upholstered furniture.	_____
• Curtains, drapes, fabric wall hanging and other “dust catchers” are not hung in child care area. If used, wash weekly in hot water.	_____
• Wipe window shades daily with a damp cloth. If curtains are used, wash regularly in water 130° F.	_____
• Avoid clutter. Store books, magazines, toys, supplies and materials in closed cabinets, closed boxes or plastic bags.	_____

Avoiding or Controlling Animal Substances

Task Completed

- Do not use feather-stuffed furnishings, pillows, blankets and toys. _____
- Do not permit furry pets anywhere on premises (cats, dogs, hamsters, birds, gerbils, etc.). _____
- Control cockroaches and mice infestation using preventative practices and least toxic extermination methods (see IPM). _____

Avoiding or Controlling Mold and Mildew

Task Completed

- Monitor humidity level using a humidity gauge, if possible. Do not use humidifiers. _____
- Fix plumbing leaks promptly. _____
- Provide ventilation and airflow in rooms and halls every season to avoid musty smell. Check outdoor intake and inside supply vents for blockage. _____
- Use exhaust fans in bathrooms, kitchens and basements to help remove humidity. _____
- Remove wet carpeting and padding that does not dry within 24 hours to prevent mold growth. _____
- Do not use indoor houseplants and foam pillows, which can develop mold. _____
- Wipe down bathrooms with diluted chlorine bleach water (daily). _____

Avoiding or Controlling Additional Allergens

Task Completed

- Do not use latex gloves. If gloves are used, use only non-powdered, non-latex gloves. _____
- Do not use latex balloons, pacifiers, koosh balls or other latex products. _____
- Clear outdoor yard and play areas of fallen leaves, compost piles and cut grass. _____
- Properly install heating and cooling system filters changed often; follow other service and maintenance guidelines. _____
- Clean heating and cooling ducts once a year. _____
- If ventilation is adequate, close windows during periods of high pollen count. _____
- Vacuum rugs or carpet daily or every other day, when children are not present, with high efficiency vacuum (ideally with a “HEPA” filter). _____
- If possible, use air conditioners with clean filters during warm seasons. _____

Avoiding or Controlling Chemical Fumes, Fragrances and Other Strong Odors

<u>Task</u>	<u>Completed</u>
• Do not allow smoking anywhere on the premises and strictly enforce.	_____
• Avoid arts and craft materials with fragrances. If using, provide extra ventilation.	_____
• Do not use air fragrance sprays and “air fresheners.” Open windows or exhaust fans instead.	_____
• Do not use cleaning supplies and products with strong smells when children are present. Indoor spaces should be ventilated during and after their use.	_____
• Check new wood furnishings or plastic laminated products for formaldehyde fumes and air the new products out before installation.	_____
• Shampoo rugs and upholstery with low emission, fragrance-free products and dry thoroughly to prevent mold growth.	_____
• Apply pesticides with adequate ventilation and when children are not present (see IPM).	_____
• Keep office equipment that emits fumes, such as photocopiers, in ventilated areas and away from children.	_____

Consider adding the following to existing practices and policies

<u>Policies and Practices</u>	<u>In Place?</u>
• Aggressively control cockroaches and mice infestation using preventative practices and least toxic extermination methods (see IPM).	_____
• Keep garbage tightly covered and removed promptly to outdoor, enclose trash area so it is not accessible to children.	_____
• Place doormats outside all entrances to reduce tracking in of allergens. Remove and store wet shoes and clothing so they do not track wetness into play area.	_____
• Practice frequent hand washing and strongly encourage staff to receive annual flu shot.	_____
• Implement a perfume, cologne or other scented personal products policy.	_____
• Implement staff policy regarding the use of personal care products around children (hair spray, powder, lotion).	_____
• Train staff to watch for symptoms of asthma and warning signs of asthma, and how to recognize and to respond during emergency situations. Ensure new staff receive this training when hired.	_____
• Train staff to administer medication, and the use and care of nebulizers, inhalers and spacers.	_____
• Keep medication locked and out of reach of children, but accessible to staff to administer when needed.	_____

Policies and Practices

In Place?

- Implement policy to ensure every child with asthma has a written Asthma Action Plan on file, listing triggers and medication schedule and emergency instructions. _____
- Implement “no idling policy” for school buses, delivery trucks and cars on the premises. _____
- Keep children’s personal belonging (coats, extra clothing and other items from their home) separate from play areas to minimize exposure to pet dander and other allergens from their home. _____
- Adjust outdoor time for temperature-sensitive children and offer alternate indoor activities. _____
- Check allergen and air pollution levels daily. _____
- Be mindful exercise can trigger asthma; keep a close watch on children with asthma during activity. _____
- Create policies around third hand smoke (hand washing and changing of clothing) and provide cessation support and resources to staff. _____

Ideas for Improvements

Sources:

1 2001 A Resource Manual For Schools. Illinois Department of Human Services.
<http://www.dhs.state.il.us/onenetlibrary/27894/documents/schoolhealth/asthma.pdf>

2 Salo PM, Sever ML, Zeldin DC. Indoor allergens in schools and daycare environments. J Allergy Clin Immunol. 2009; 124(2): 185-194.

3 2007 Guidelines For The Diagnosis And Management Of Asthma. Third Addition. National Asthma Education and Prevention Program Expert Panel. October 2007.

Tips for Families

Asthma is not frequently diagnosed in infants, because it is challenging to obtain lung function measurements in this age group. It can be underdiagnosed in this age group with using labels, such as “wheezy bronchitis,” “recurrent pneumonia” or “reactive airway disease (RAD).”¹ Asthma is also the leading cause of school absenteeism.²

BE PREPARED FOR HEALTH CARE PROVIDER VISITS

- Write down your child’s asthma triggers and discuss with your health care provider ways to get rid of triggers in your home.
- Write down how you know your child is having an asthma episode and share this information with your health care provider.
- Bring medication to health care provider appointments and show the provider how you use medication.
- Bring an Asthma Action Plan to provider visit, fill out the information with the provider and share this form with anyone who will care for your child. An Asthma Action Plan can be found in the resource section.

BE PREPARED FOR DAYCARE

- Provide a copy of your child’s Asthma Action Plan, including as many details as possible.
- Provide a demonstration of medication use and inform them of any patterns at home regarding the use of medication.
- Provide extra (labeled) medication and sign consent forms allowing administration.
- Provide a list of asthma and allergy triggers (see below to help identify triggers).

SHOULD MY CHILD ATTEND DAYCARE?

A child can attend if:³

- Stuffy nose, but no wheezing
- Or, if wheezing subsides, after taking medication
- Able to perform usual activities (getting dressed, eating, etc.) without additional effort to breathe

A child should not attend if:³

- Wheezing or coughing continues after treatment
- Breathing troubles or breathing fast
- Fever more than 100 degrees
- Too weak or tired to participate in activities

Sources:

1 2007 Guidelines For The Diagnosis And Management Of Asthma. Third Addition. National Asthma Education and Prevention Program Expert Panel. October 2007.

2 Breathing Easier. U.S. Department of Health and Human Services Centers for Disease Control and Prevention. http://www.cdc.gov/asthma/pdfs/breathing_easier_brochure.pdf

3 Liu T, Valdez R, Yoon P, Crocker D, Moonesinghe R, Khoury M. The association between family history of asthma and the prevalence of asthma among US adults: National Health and Nutrition Examination Survey, 1999-2004. *Genet Med.* 2009; 11(5): 323-328.

Minimizing Triggers in the Home

Asthma triggers are things that bother sensitive airways and lead to asthma episodes. Asthma triggers are not the same in each person. Use the chart below to learn about common asthma triggers and ways to minimize exposures and create healthy environments for children with asthma and allergies. Common asthma triggers are listed below, followed by action steps to reduce exposure in the home.¹⁻³ Share this information with your child's caregivers.

MANAGING ALLERGENS

Are Pets Your Trigger? (Dogs, Cats, Hamsters/Guinea Pigs, Birds)

- Keep animals out of your child's bedroom and off of furniture.
- Wash hands and face after touching animals.
- Vacuum weekly with a HEPA filter vacuum cleaner.

If pet dander is still a trigger, consider:

- Replace carpets and fabric furniture with washable rugs and slipcovers and wash often in very hot water (130 degrees)
- If possible, consider keeping pets outdoors or find the pet another loving home.

Is Dust or Dust Mites Your Trigger?

- Cover your mattress and pillow with dust-proof covers.
- Keep stuffed animals in sealed containers or sealed plastic bags and not on the bed.
- Wash stuffed animals and bedding in hot water weekly.
- Vacuum frequently.

Are Pests Your Trigger? (Cockroaches, Rodents)

- Keep food and garbage in sealed containers; do not leave food or garbage out.
- Clean up spills right away.
- Remove piles of paper, boxes and bags; clutter attracts pests.
- Don't leave water sitting in sinks or pots and pans.
- Use poison baits and traps, rather than bombs or sprays, to get rid of pests.
- Fix water leaks and seal cracks.
- For more information, see Integrated Pest Management section on page 7.

Are Pollens Your Trigger? (Spring – trees, grasses and weeds; Fall – Ragweed and weeds)

- Check for daily pollen counts at www.pollen.com or weather reports.
- Avoid outdoor activities and keep doors and windows close when pollen counts are high. If possible, use an air conditioner when needed and be sure air conditioner filters are cleaned regularly.
- Take allergy medicine per doctor's orders.

Are Food Allergies Your Trigger? (Milk, Peanuts, Tree Nuts, Eggs, Soy, Wheat, Fish or Shellfish, Other Foods)

- Get a food allergy plan from the doctor and give a copy to the school or child care center.
- Always carry emergency medicine (epinephrine auto-injector) or, if too young, be sure caregivers know where it is and how to use it.
- If emergency medicine is used, follow up with the doctor right away.

MANAGING IRRITANTS

Is Smoke Your Trigger?

- Provide indoor environments free of all forms of smoke (home and car).
- Wash hands and change clothes after smoking and before being around children.
- Talk with your doctor about ways to stop smoking, or visit www.quityes.org or call 1-866-QUIT-YES (866-784-893).

Is Pollution or Extreme Weather Your Trigger?

- Check air quality, especially in the summer, and limit or avoid outdoor activities on Air Pollution Actions Days: www.airnow.gov.
- When air quality is poor, only go outside early or after sunset. Try to stay indoors with windows closed and use air conditioning or fans.
- Prepare for hot days by drinking plenty of water, wearing sunscreen and staying in the shade.
- Prepare for cold days by covering your mouth and nose whenever outside.

Are Strong Odors or Smells Your Trigger?

- Use cleaners that are odorless and are not in spray form.
- Switch to less toxic “free and clear” or “green” products.
- Avoid using cologne, perfume or body sprays.
- When a child with asthma is present, avoid painting or using chemicals and open windows and use fans.
- Use an exhaust fan or open a window when using an unvented gas or kerosene space heater or gas stove.

MANAGING ADDITIONAL TRIGGERS

Are Emotions Your Trigger?

- Emotions (fear, anger, frustration, crying or laughing) change breathing pattern, which can cause asthma symptoms.
- Stay calm during asthma attacks.

Are Infections Your Trigger?

- A cold, respiratory or sinus infection, or the flu can make controlling asthma more difficult.
- Practice frequent hand washing and general hygiene.
- Discuss flu shots with health care provider.

Is Exercise Your Trigger?

- Although exercise is a trigger, a child can and should be active under extra supervision.
- Warm-up and cool-down before and after exercise.
- Drink a lot of water.
- Discuss with provider if your child should take a quick relief inhaler prior to being active.

Sources:

1 2007 Guidelines For The Diagnosis And Management Of Asthma. Third Addition. National Asthma Education and Prevention Program Expert Panel. October 2007.

2 Breathing Easier. U.S. Department of Health and Human Services Centers for Disease Control and Prevention.
http://www.cdc.gov/asthma/pdfs/breathing_easier_brochure.pdf

3 Salo PM, Sever ML, Zeldin DC. Indoor allergens in schools and daycare environments. J Allergy Clin Immunol. 2009; 124(2): 185-194

Resources

ASTHMA AND ALLERGY FOUNDATION OF AMERICA

A national organization that provides education, advocacy, and research on and around asthma and allergies. The number 800-727-8462 provides a national toll-free information line to help consumers and patients to learn more about asthma and allergies. The line is staffed Monday through Friday from 10 a.m. to 3 p.m. EST. Additional information can be found at www.aafa.org.

WEE BREATHERS™

Wee Breathers is a program developed by the Asthma and Allergy Foundation of America to help health professionals manage asthma, specifically for children under the age of 7. They have a comprehensive website and asthma curriculum. Program information can be found at <http://www.aafa.org/display.cfm?id=4&sub=79&cont=903>.

RESPIRATORY HEALTH ASSOCIATION

Respiratory Health Association has been a public health leader in metropolitan Chicago since 1906. Today, they address asthma, COPD, lung cancer, tobacco control and air quality with a comprehensive approach involving research, education and advocacy activities. Respiratory Health Association has a library of printable resources in English and Spanish, found at <http://www.lungchicago.org/library-what-you-need-to-know/#asthma> and other lung health information can be found at www.lungchicago.org.

FOOD ALLERGY RESEARCH & EDUCATION (FARE)

A non-profit organization dedicated to finding a cure for food allergies and keeping individuals with food allergies safe through education and research. Additional information can be found at www.foodallergy.org.

AMERICAN LUNG ASSOCIATION

American Lung Association is an organization dedicated to improving lung health and to preventing lung disease through education, advocacy and research. Under the motto “Fighting for Air,” American Lung Association fights for healthy lungs and healthy air by searching for cures to lung diseases and fighting for laws that protect the air we breathe. For more information on asthma, visit <http://www.lung.org/lung-disease/asthma/>. For more general information about lung health, visit: <http://www.lung.org/>.

U.S. CENTERS FOR DISEASE CONTROL AND PREVENTION

The U.S. Centers for Disease Control and Prevention (CDC) is the national public health institute of the United States. The CDC works to protect America from health, safety, and security threats, both foreign and in the U.S., by conducting critical science and providing health information. Information on asthma can be found at <http://www.cdc.gov/asthma/default.htm>. More information on food allergies can be found at http://www.cdc.gov/HealthyYouth/foodallergies/pdf/13_243135_A_Food_Allergy_Web_508.pdf.

U.S. ENVIRONMENTAL PROTECTION AGENCY

The U. S. Environmental Protection Agency (EPA) is an agency with a mission to protect human health and the environment. Information on asthma can be found at <http://www.epa.gov/asthma/index.html>. IPM information can be found at <http://www.epa.gov/pesticides/controlling/childcare-ipm.htm>.

SAMPLE ASTHMA ACTION PLAN

On the next page, you will find sample Asthma Action Plan. Parents should work with their child’s doctor to create a customized plan for their child. This plan should be shared with all childcare providers.

Sample Asthma Action Plan - child 0-5 years

Adapted from the original design by the Pediatric Asthma Coalition of New Jersey

Child's Name	Child's Date of Birth	Plan Effective Date
Doctor	Doctor's Phone Number	
Parent/Guardian	Parent/Guardian's Phone Number	
Emergency Contact	Emergency Contact's Phone Number	
Child is able to self medicate ___ Yes ___ No	Parent/Guardian Signature	

Controller Medicines (Use Everyday to Stay Healthy)	How Much To Take	How Often	Other Instructions (such as spacers, nebulizers)
		___ times per day EVERDAY!	
		___ times per day EVERDAY!	
		___ times per day EVERDAY!	
		___ times per day EVERDAY!	
Quick-Relief Medicines	How Much To Take	How Often	Other Instructions
Albuterol or Xopenex	2 puffs by inhaler or 1 vial by nebulizer	Only as needed for symptoms	NOTE: If this medicine is needed often, call physician

GREEN ZONE

Child is well and has no asthma symptoms, even during active play.

PREVENT asthma symptoms every day:

- ___ Give the above controller medicines every day
- ___ Avoid things that make child's asthma worse
- ___ Avoid tobacco smoke or ask people to smoke outside
- ___ Other: _____

YELLOW ZONE

Child is not well and has asthma symptoms that may include:

- Coughing
- Wheezing
- Runny nose or other cold symptom
- Breathing harder, faster or slower
- Awakening due to coughing or difficulty breathing
- Playing less than usual

Other signs that your child is having trouble breathing: difficulty feeding, changes in sleep patterns, cranky and tired, decreased appetite

CAUTION. Take actions by continuing to give controller medicines every day AND

- ___ Give quick-relief medicine
- Dose and frequency: _____
- ___ Call parent/guardian to notify

RED ZONE

Child feels awful! Warning signs may include:

- Child's wheeze, cough or difficulty breathing continues or worsens, even after giving quick-relief medicines
- Child's breathing is so hard that he/she is having trouble walking, talking, eating or playing
- Breathing harder, faster or slower
- Child is drowsy or less alert than usual

MEDICAL ALERT! GET HELP!

- ___ Take child to hospital or call 911 immediately
- ___ Give quick-relief medicine until you get help
- Dose and frequency: _____

DANGER! GET HELP IMMEDIATELY!

- ___ Call 911 if the child's skin is sucked in around their neck and ribs; or if their lips or fingernails are gray or blue; or if the child doesn't respond to you.

Glossary

Asthma Action plan: A written set of directions or a chart that tells you what to do if asthma symptoms occur, depending on their severity. Your action plan also should tell you what to do when you do NOT feel any symptoms (i.e., preventive care).

Allergen: A substance that triggers an allergic reaction. Many allergens are responsible for triggering asthma, including dust mites, animal dander, mold and cockroaches.

Allergist: A doctor that has specific training in the care of asthma and, in some cases, may be more familiar with current clinical guidelines than a pediatrician or general practitioner.

Alveoli: Tiny air sacs where oxygen is transferred into your lungs and carbon dioxide waste enters the airways in order to be exhaled out.

Anti-Inflammatory Medicines: Long-term control medicines that reduce swelling and mucus in a patient's airways. This makes the airways less sensitive and keeps them from reacting as easily to triggers. They prevent asthma episodes.

Asthma: A chronic, inflammatory disorder of the airways characterized by wheezing, breathing difficulties, coughing, chest tightness and other possible symptoms. People with asthma have sensitive airways that are constantly on the verge of over-reacting to asthma triggers.

Asthma attack: A sudden onset of asthma symptoms, also called an asthma episode.

Asthma symptoms: Signs that a person has asthma, including coughing, wheezing, shortness of breath or rapid breathing, and chest tightness (also called asthma warning signs).

Bronchi: Smaller airway branches that carry air from the trachea to the bronchioles.

Bronchial tubes: Airways in the lungs. There is one major branch going into each lung and these then divide into many smaller branches.

Bronchioles: The smallest airways that branch off from the bronchi and carry air into the lungs.

Bronchoconstriction: This is when the muscles that wrap the airways constrict tighter and tighter, pinching the airways closed.

Bronchodilators: Medicines that make the airways wider. They come in two forms: short acting bronchodilators (see quick relief medicine) or long-acting bronchodilators (see long-term controller).

Corticosteroids: The most common and effective medications used for long-term daily control of asthma (prevention of symptoms). They are most frequently inhaled using either a metered dose inhaler, dry powder inhaler or nebulizer. Corticosteroids primarily decrease or prevent inflammation.

Dry Powder Inhaler: A small device similar to a metered dose inhaler, but where the medicine is in powder form. The patient exhales out a full breath, places the lips around the mouthpiece, then quickly breathes in the powder.

HEPA Vacuum: High-efficiency particulate absorption (HEPA) is a type of air filter that satisfies certain standards of efficiency. They are beneficial for asthma and allergy sufferers because the HEPA filter traps the fine particles, such as pollen and dust mites, which trigger allergies and asthma.

Holding chamber: See Spacer.

Inflammation: When part of the body is red, hot and swollen, and has too much mucus present.

Integrated Pest Management: Integrated Pest Management (IPM) is an effective and environmentally sensitive approach to pest management that relies on a combination of common-sense practices, including monitor and identify pests, prevent pests and control for pests. IPM is not a single pest control method, but, rather, a series of pest management evaluations, decisions and controls.

Long-Term Controller: Medication taken daily to control and to prevent asthma symptoms. If prescribed, this medication should be taken every day to prevent asthma symptoms even when the asthma seems better. The medication is helpful in preventing symptoms but should not be used to relieve symptoms. They also can be called preventative or maintenance medications.

Metered dose inhaler: The most common device people use to take asthma medication. An MDI allows you to inhale a specific amount of medicine (a “metered dose”). It consists of a metal canister, which keeps the medication under pressure, and a plastic sleeve, which helps to release the medication. When you press the canister, medicine particles are propelled toward your throat where you can inhale them.

Mucus: A thick liquid produced in the lining of the mouth, nose, sinuses, throat and lungs. It protects the tissue from drying out and also catches foreign objects, like dust, bacteria and pollutants, from entering the body. Increased mucus can be uncomfortable and can make breathing troublesome.

Nebulizer: A device that creates a mist out of your asthma drug, which makes it easy and pleasant to breath the drug into the lungs. The medicine is placed into a small cup. Air from a small compressor converts the medicine into an aerosol mist, which travels through a hose with a mouthpiece attached. By taking slow, deep breaths, the medicine is delivered into your lungs.

Peak flow: A measurement of how well you can blow air out of your lungs. If your airways become narrow and blocked due to asthma, you can’t blow air out as well and your peak flow values drop.

Quick relief medicine: A medicine used as needed to relieve asthma symptoms during asthma attacks. It is also called a reliever or rescue medicine.

Rescue medicine: Relief or quick-relief medicine.

Second-hand smoke: The smoke and chemicals that are inhaled by a person who is around smoke, but not actually smoking. Second-hand smoke can come in two forms: (1) smoke from the lighted end of a cigarette, pipe or cigar or (2) smoke exhaled by a smoker. Both forms are harmful to health.

Spacer: This works with your MDI to deliver medication more easily and effectively, and can reduce side effects. When you use an MDI by itself, more of the medicine is left in your mouth and throat, wasting your dose and causing an unpleasant aftertaste. Spacers hold the medicine between you and the MDI, so that you can inhale it slowly and more completely. Spacers also are called holding chambers.

Spirometry: Test for diagnosing asthma. A spirometer is an instrument that measures the maximum volume you can exhale after breathing in as much as you can. Small spirometers are available for home use, although peak flow meters are more appropriate for most people.

Steroids: See Corticosteroids.

Thirdhand smoke: Nicotine and other chemicals left on a variety of surfaces by tobacco smoke. It clings to hair, skin, clothes, furniture, drapes, walls, bedding, dust, vehicles and other surfaces, even long after smoking has stopped. It is a health hazard to nonsmokers who are exposed to it, especially children when they inhale, ingest or touch substances containing thirdhand smoke.

Trachea: The major airway that carries air from nose and/or mouth to the bronchi.