TABLE OF CONTENTS

What is Asthma? ........................................... 2

How Your Lungs Work .................................. 2

Signs and Symptoms of Asthma ..................... 2

Asthma Triggers ......................................... 3

Asthma Medications .................................... 4
  Rescue Medications
  Controller/Maintenance Medications

Use Of:
  Inhalers ................................................... 4
  Spacers ..................................................... 5
  Dry Powder Inhalers .................................. 5
  Flexhaler .................................................. 6
  Nebulizers ............................................... 6

Asthma Warning Signs ................................ 7

Managing an Asthma Episode ....................... 8

Asthma in Schools and Daycare .................... 9

Infants with Asthma .................................... 10

More Information ...................................... 11

My Action Plan ......................................... 12
What is Asthma?

Asthma is a chronic, or long-term, disease of the lungs. Asthma episodes may be mild or severe. Sometimes, you may cough, wheeze, feel like your chest is tight or have shortness of breath. The reason it is hard to breathe is that the airway becomes narrow and air cannot move in and out easily. This is called bronchial constriction.

The airways also become swollen. This is called inflammation.

The swollen airways then make a lot of mucus. This blocks the airways making it hard to breathe.

Because asthma makes it hard to breathe, sometimes it is hard for you to do school work, play with friends or do other things.

How Your Lungs Work

When you breathe, air moves in and out of your lungs through airways called bronchiole (bron-ke-ol) tubes. At the end of each airway are air sacs that fill with air and give the body oxygen. The airways are wrapped with muscles. With asthma, these muscles tighten up and pinch off the air. These are called bronchospasms.

Asthma Signs and Symptoms

To help you manage your asthma, you need to be aware of how you are feeling. An asthma episode may start quickly or slowly. It is important to tell your parents or teacher if you:

• Feel like it is hard to breathe;
• Feel your chest become tight;
• Cough a lot;
• Wheeze (your chest makes noises);
• Cough a lot during the night or can not sleep because it is hard to breathe.
Asthma Triggers
There are many things around you that may “trigger” or make your asthma worse. Things that may make your asthma worse are:

<table>
<thead>
<tr>
<th>Triggers/Signals</th>
<th>Action I should take</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Germs and Viruses</strong></td>
<td>Good handwashing, rest, drink fluids, see your doctor, take your medicine as ordered. Get yearly flu shots.</td>
</tr>
<tr>
<td>Sore throat, cold, flu</td>
<td></td>
</tr>
<tr>
<td><strong>Overexertion</strong></td>
<td>Do warm-ups, walk slowly, take your medicine as ordered.</td>
</tr>
<tr>
<td>Running too hard, climbing stairs too fast</td>
<td></td>
</tr>
<tr>
<td><strong>Excitement</strong></td>
<td>Do breathing exercises, do relaxation exercises, talk over what is bothering you with a parent or friend.</td>
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<tr>
<td>Laughing too hard</td>
<td></td>
</tr>
<tr>
<td>crying, yelling,</td>
<td></td>
</tr>
<tr>
<td>being tense or angry</td>
<td></td>
</tr>
<tr>
<td><strong>Night Time</strong></td>
<td>Drink water, do relaxation exercises, take medicine as prescribed.</td>
</tr>
<tr>
<td>Being too tired,</td>
<td></td>
</tr>
<tr>
<td>lying down,</td>
<td></td>
</tr>
<tr>
<td>accumulating mucus</td>
<td></td>
</tr>
<tr>
<td><strong>Weather</strong></td>
<td>Stay cool and quiet, cover mouth and breath through your nose when it is cold out.</td>
</tr>
<tr>
<td>Hot, wet, sticky air,</td>
<td></td>
</tr>
<tr>
<td>cold, wintry wind</td>
<td></td>
</tr>
<tr>
<td><strong>Lung Irritants</strong></td>
<td>Open windows, leave area where the air bothers you. Do not smoke and avoid exposure to second hand smoke.</td>
</tr>
<tr>
<td>Sprays, paints, bleach,</td>
<td></td>
</tr>
<tr>
<td>cleaning fluids, air polltion, smoke, cigarettes</td>
<td></td>
</tr>
<tr>
<td><strong>Allergies</strong></td>
<td>Avoid all things that bother you, take medicine as ordered.</td>
</tr>
<tr>
<td>Foods, plants, animals,</td>
<td></td>
</tr>
<tr>
<td>etc</td>
<td></td>
</tr>
</tbody>
</table>

It is best to avoid or control things that make your asthma worse. It is important that your teachers, coaches, baby-sitters and family know you have asthma. It is also important to let them know what triggers your asthma so they can help you avoid those things.
Asthma Medications

There are two types of medicine. One type helps you when you are having trouble breathing. This is called a “rescue” medication. The rescue or quick-relief medicines help when you are having asthma signs or symptoms. They work quickly to help you breathe easier. This type of medicine is also used before exercise, gym or increased activity.

A second type of medicine is one you take every day to control asthma. This is called a “controller” or “maintenance” medication. The controller or maintenance medications help control asthma. They decrease the swelling and puffiness in the lungs. It is important to take these medications every day – even if you are feeling good.

Your medicine will be in an inhaler, inhaler with spacer, by nebulizer, or a pill. It is important to have your “rescue” medicine with you at all times. You may need to talk to your teacher or school nurse about being able to carry your medicine with you and self-administer as instructed.

Inhalers

There are different types of inhalers used for asthma. Some inhalers spray a fine mist that you breathe in slowly and deeply into your lungs. Other inhalers have a dry powder, which you breathe in deeply but won’t feel.

Often times a spacer is used with an inhaler to help the medicine get into your airways better. The spacer may have a mask or a mouthpiece.

Administering Metered Dose Inhaler (MDI)

Instructions
Make sure the metal canister is placed firmly into the plastic outer container.
1. Remove the cap from the mouthpiece.
2. Hold inhaler, “tail-up” and shake well.
3. Breathe out, emptying your lungs.
4. Hold the mouthpiece in your mouth or about two inches in front of your mouth and open wide.
5. As you breathe in, press the metal canister down into the plastic container, releasing a puff of medication.
6. Breathe deeply for 5 to 10 seconds.
7. Hold your breath for 10 seconds if you can.
8. If two puffs are prescribed, wait at least 1 minute between the first and second puff.

Note: It is recommend to use MDI with a chamber, especially with controller meds. If chamber isn’t available, use rescue medication with instructions listed above.
Administering Metered Dose Inhaler with a Chamber

Instructions
1. Prepare the canister aerosol medication (metered dose inhaler, or “puffer”) by removing the cap, shaking the canister, and placing it “tail up” in the medication end of the chamber.
2. Breathe out to empty your lungs.
3. Place the mouthpiece of the spacer in your mouth with lips snug around it, teeth open, tongue down out of the way and breath in slowly holding breath for 5-10 seconds.
4. If using a mask on chamber. Place the mask of the chamber over your mouth and nose, making a good seal.
5. Press down on the canister, releasing a puff of medication into the spacer.
6. Hold the mask firmly in place until you have taken at least 5-7 breaths, as seen from movements of a “window” on the mask.

Helpful Hints
• Rinse your device with warm tap water weekly and let it dry in room air.
• If the flap valve is torn or not working properly, your device should be replaced.
• Always keep the cap on when not in use.

Using inhalers properly is not always easy but can enable you to have more successful treatment at home and less frequent trips to the hospital.

Dry Powder Inhalers (DPIs)

The DPIs contain powdered medication in laminated foil strip with 28 or 60 pre-measured blisters. The dose indicator tells you how many doses are left in the device.

Instructions
1. Open the DPI according to the manufacturer’s instructions.
2. Breathe out emptying your lungs.
3. Place the mouthpiece between your teeth with the lips snug around it.
4. Breathe in, as quickly and as deeply as possible.
5. Hold your breath for a count of 5-10 seconds.
6. Repeat as instructed.

Helpful Hints
• Rinse your mouth after each use.
• Keep the diskus closed when not in use.

Using inhalers properly is not always easy but can enable you to have more successful treatment at home and less frequent trips to the hospital.
Asthma Medications

**Turbuhaler Flexhaler**

The powdered medication is contained inside the device in pre-measured doses.

**Instructions**
1. Unscrew the cover and lift it off.
2. Hold inhaler upright (mouthpiece up).
3. Turn the colored base as far as it will go then back until it clicks; this releases a measured dose of medication.
4. Breathe out, emptying your lungs.
5. Place the mouthpiece between your teeth, with lips snug around it, and tongue down out of the way.
6. Breathe in deeply. Hold your breath for 5-10 seconds if you can.

**Helpful Hints**
- Keep the device in the vertical position when click loading the medication.
- Rinse your mouth after each use.
- The appearance of a red dot in the little window indicates that there are 20 doses left in the device.

Using inhalers properly is not always easy but can enable you to have more successful treatment at home and less frequent trips to the hospital.

**Nebulizers**

A nebulizer is a machine that delivers the medicine in a fine mist through a mask or mouthpiece. It is important to take deep, slow breaths through your mouth. It takes 10 to 15 minutes to deliver all of the medicine.

**Instructions**
1. Measure medication into the cup below the mask.
2. Put the mask over your nose and mouth, or a mouthpiece may also be used.
3. Switch on the compressor.
4. You must sit with the mask on (or mouth piece) until all the medication in the cup has been inhaled or for 10-15 minutes.

**Helpful Hints**
- Place the compressor on a table or flat surface when in use.
- Dump out nebulizer after each use.
- Wash the nebulizer kit and mask weekly in hot soapy water or as described in the owner’s manual.
- Change the compressor filter once a month or when it turns gray in color.
- Play a game, read a book or watch TV while taking your medication in order to make the treatment as enjoyable as possible.
- You need to wear the mask or use the mouthpiece during the treatment.

If despite your best efforts with inhaled medications your asthma is not well controlled or worsens, seek medical attention immediately!
Asthma Warning Signs

Most people have warning signs before an asthma flare-up. Identifying warning signs can help avoid having a bad attack.

Some asthma warning signs are:
- cough or wheeze
- chest hurts or feels tight
- out of breath
- tired
- cough at night
- itchy, scratchy throat
- itchy, watery eyes
- nose stuffed up, sneezing
- fever
- dark circles under your eyes
- headache
- grumpy

If you start having any of the warning signs, it is important to take your quick-relief medicine immediately.

Follow your asthma action plan

Stay calm, rest.
Your Asthma Action Plan

Your Asthma Action Plan has been developed specifically for you. Have your parent(s) go over the plan with you. A copy of your asthma action plan should go to your school too.

Sometimes kids or parents will keep a journal of things they want to remember. It is important to remember what your asthma was like each day. An asthma journal can help you write down your symptoms and medications taken each day. Be sure to bring the journal along to appointments. This will help ensure your asthma is being taken care of the best way possible.

Remember that a lot of kids have asthma! Your knowledge about asthma will help you deal quickly and effectively with problems caused by your asthma. Asthma is not contagious and you should be able to participate in school activities, sports and other social events. In order for you to control your asthma rather than letting the asthma control you — take your medications as prescribed and follow your asthma action plan!

If your symptoms are not improving, you’re having increased shortness of breath, your chest feels tight or you’re having a hard time talking, you need to call your doctor immediately or seek emergency assistance.
Managing an Asthma Episode

Summary of Steps to Manage Asthma Episodes

• Know asthma warning signs so you can begin treatment early.

• Follow the established asthma action plan in accordance with the asthma zones indicated.

• Keep rescue medications available at all times.

• Make sure you take the correct amount of medicine at the times your healthcare provider has stated. If the asthma action plan includes increased dosage of a second medicine to be used during episodes, take it as prescribed. Always call your healthcare provider if you need to take more medicine than was prescribed.

• Remove your child from the trigger if you know what it is. Treatment does not work as well if the child stays around the trigger.

• Keep calm and relaxed. Family members must stay calm and relaxed too.

• Rest.

• Observe your child by noting changes in body signs such as wheezing, coughing, trouble breathing and posture.

Review the list below for signs to seek emergency medical care for asthma. They include:

• Your child is wheezing, coughing, or shortness of breath gets worse, even after medicine has been given and has had time to work. Most inhaled bronchodilator medicines produce an effect within 5 to 10 minutes. Discuss the time your child’s medicines take to work with your healthcare provider.

• Your child’s breathing gets difficult. Signs of this are:
  – Chest and neck muscles are pulled or sucked in with each breath.
  – Hunching over.
  – Struggling to breathe.

• Your child has trouble walking or talking in sentences.

• Your child has to stop playing and cannot start again.

• Your child’s lips or fingernails are gray or blue. IF THIS HAPPENS CALL 911, GO IMMEDIATELY TO THE EMERGENCY ROOM!

Keep important information for seeking emergency care handy and with your child.

Immediatley call a clinic, your healthcare provider’s office or hospital for help if needed.
Dealing with Asthma in School or Day Care

Make sure your child is able to manage his or her asthma away from home. Be sure that responsible adults know what to do if your child needs help.

Inform teachers and other responsible adults. Anyone who has responsibility for your child should know about his or her asthma and how to handle asthma episodes. Make sure your child’s school has a copy of your child’s current asthma action plan and contact phone numbers for you, as well as your child’s healthcare provider. Talk with:
- Teachers
- The school principal
- Coaches
- Day care providers
- The school nurse
- Parents of your child’s friends
- Babysitters

Make sure rescue medications are available at school or day care.

Ask for support from school and day care staff. For example, you can ask that:
- Other children be taught about asthma so they can better understand your child’s condition
- The school or day care provider make an effort to remove known asthma triggers your child may be exposed to.

Your Child’s Plan to Stay Active with Asthma

Even with asthma, children can play and take part in many activities — including sports.

Many children with asthma cough or wheeze when they exercise, run or play hard. This does not have to happen. Your child’s asthma medicine will help them to be active without coughing or wheezing. Some kids keep asthma symptoms from starting if they take a certain asthma medicine 20 to 30 minutes before they start their activity. Talk to your healthcare provider about this.

It also helps your child to feel good to do stretching exercises (“warm up” and “cool down”) before and after the activity.
Infants with Asthma

Infants With Asthma
Require Extra Care

An infant’s lungs do not function as efficiently as the lungs of an older child. As a result, an asthma attack can develop quickly.

What can you do?
• An infant with asthma needs to be monitored closely. Follow the appointment schedule for monitoring your child, even if he or she is not having symptoms.
• If the asthma symptoms develop, act quickly. Follow the asthma action plan designed for your infant.
• Watch your infant closely for signs to seek emergency care. These include:
  – Breathing rate increases to more than 40 breaths per minute while the infant is sleeping. Count the number of breaths for 1 minute.
  – Sucking or feeding stops
  – Skin between the infant’s ribs is pulled tight
  – Chest becomes enlarged
  – Color changes (pale or red face; mouth, lips or fingernails turn blue)
  – Cry changes in quality; becomes softer and shorter
  – Nostrils open wider (nasal flaring) while breathing
  – Grunting

NOTE: Each asthma attack can be different, but if some of the most common warning signs can be identified, early intervention can take place. Earlier action can help gain control over increasing symptoms and ultimately means fewer emergency room visits and hospital admissions.

Be prepared.
Do not wait until the last minute to learn how to handle an emergency. Have a copy of the child’s asthma action plan and medications needed to control an attack, with the child at all times. Have a plan to get to the doctor or hospital in the event of an emergency. Always carry appropriate phone numbers have with the child.

During an asthma episode DO NOT:
• DO NOT give infant large volumes of liquids to drink; just give normal amounts.
• DO NOT have infant breathe warm, moist air (i.e., the mist from a hot shower).
• DO NOT Have infant re-breath into a bag held tightly over his or her nose or mouth.
• DO NOT give infant over-the-counter antihistamines and cold remedies.
Know Where to Get Help

Talk to your child’s health-care provider. Remember – work as a team with your health-care provider. Be sure to get answers to any questions you have.

Contact these groups to learn more about asthma:

**National Asthma Education and Prevention Program**
NHLBI Information Center
P.O. Box 30105, Bethesda, MD
20824-0105
[www.nhlbi.nih.gov/nhlbi/nhlbi.htm](http://www.nhlbi.nih.gov/nhlbi/nhlbi.htm)

**American Academy of Allergy, Asthma, and Immunology**
414-272-6071
[www.aaaai.org](http://www.aaaai.org)

**American College of Allergy, Asthma, and Immunology**
847-427-1200
[www.acaai.org](http://www.acaai.org)

**American Lung Association**
800-586-4872
[www.lungusa.org](http://www.lungusa.org)

**Asthma and Allergy Foundation of America**
800-727-8462
[www.aafa.org](http://www.aafa.org)
# My Asthma Action Plan

**My Possible Symptoms**

- **Green Zone Symptoms:**
  - I can sleep without symptoms.
  - I can do my normal daily activities without symptoms.
  - I am breathing my best. This is where I should be every day.
  - I must continue to take Daily Controller medications prescribed by my doctor.
  - I must avoid my triggers.

- **Yellow Zone Symptoms:**
  - I am having early warning signs that may include:
    - Runny nose/cold symptoms, fever.
    - Cough
    - Shortness of breath
    - Chest tightness
    - Wheezing
    - Trouble sleeping

- **Red Zone Symptoms:**
  - My yellow zone medications didn't help. My symptoms are ongoing or getting worse and may include:
    - Cough
    - Shortness of breath
    - Chest tightness or pain
    - Breathing harder and faster
    - Wheezing
    - Trouble sleeping
    - Symptoms return less than 3-4 hours after taking my medication.

**My Peak Flow Zones**

- **Green Zone Peak Flow:**
  - My peak flow is 80 – 100% of my personal best*.
  - My personal best* peak flow is: __________
  - My peak flow range is: __________ to __________

- **Yellow Zone Peak Flow:**
  - My peak flow is 50 - 80% of my personal best*.
  - My peak flow range is: __________ to __________

- **Red Zone Peak Flow:**
  - My peak flow is less than 50% of my personal best*.
  - My peak flow is less than: __________
  - This is an emergency! I need help now!

**My Treatment Plan**

- **Long-Term Control**
  - Daily Medications
    - Name of Medication: __________
    - How Much: __________
    - When to Take it: __________

- **Quick Relief**
  - For Mild/Moderate Symptoms
    - First I will take these medicines:
      - Medicine: __________
      - How Much: __________
      - When to Take it: __________
  
  - If better in 15 minutes:
  
  - If not better in 15 minutes:

- **Alert**
  - For Severe Symptoms
    - First I will take these medicines:
      - Medicine: __________
      - How Much: __________
      - When to Take it: __________

  - Next I will call a doctor:
    - Dr. __________
    - Phone: __________

**I Will Call 911 Immediately If:**

- I am not getting better within 15 minutes.

**Medical Alert**

- Your personal best peak flow is the highest peak flow you can reach during a 2 to 3 week period when your asthma is in good control.
Asthma
A Guide for Children, Teens and Their Parents
Blank Children’s Hospital
UnityPoint Health
Blank Children’s Hospital
1200 Pleasant Street
Des Moines, IA 50309
blankchildrens.org