

# CHILDREN WITH ASTHMA



UT★Physicians  
A Part of UTHHealth

 Pediatric  
Health  
Center  
NORTHWEST  
ASSISTANCE  
MINISTRIES

This toolkit was inspired by the St. Louis Children's Hospital Asthma Toolkit



# Children with Asthma

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## Introduction

More than six million children in America have asthma. It is the most common long-term lung disease in children in the United States. Young children, school-age children and teenagers can have asthma. Asthma affects boys and girls of every race from all parts of the world. More children receive treatment for asthma than ever before.

## Asthma Can Be Controlled

Children with asthma can live and lead normal lives. Managing asthma is the key. The goal is control. When asthma is controlled, children/youth:

- Have no signs of asthma.
- Need rescue medicine less than three times per week.
- Exercise and play like other children.
- Sleep comfortably through the night.
- Go to school and work regularly.
- Have no asthma-related hospital or emergency room visits.

## What You Can Do

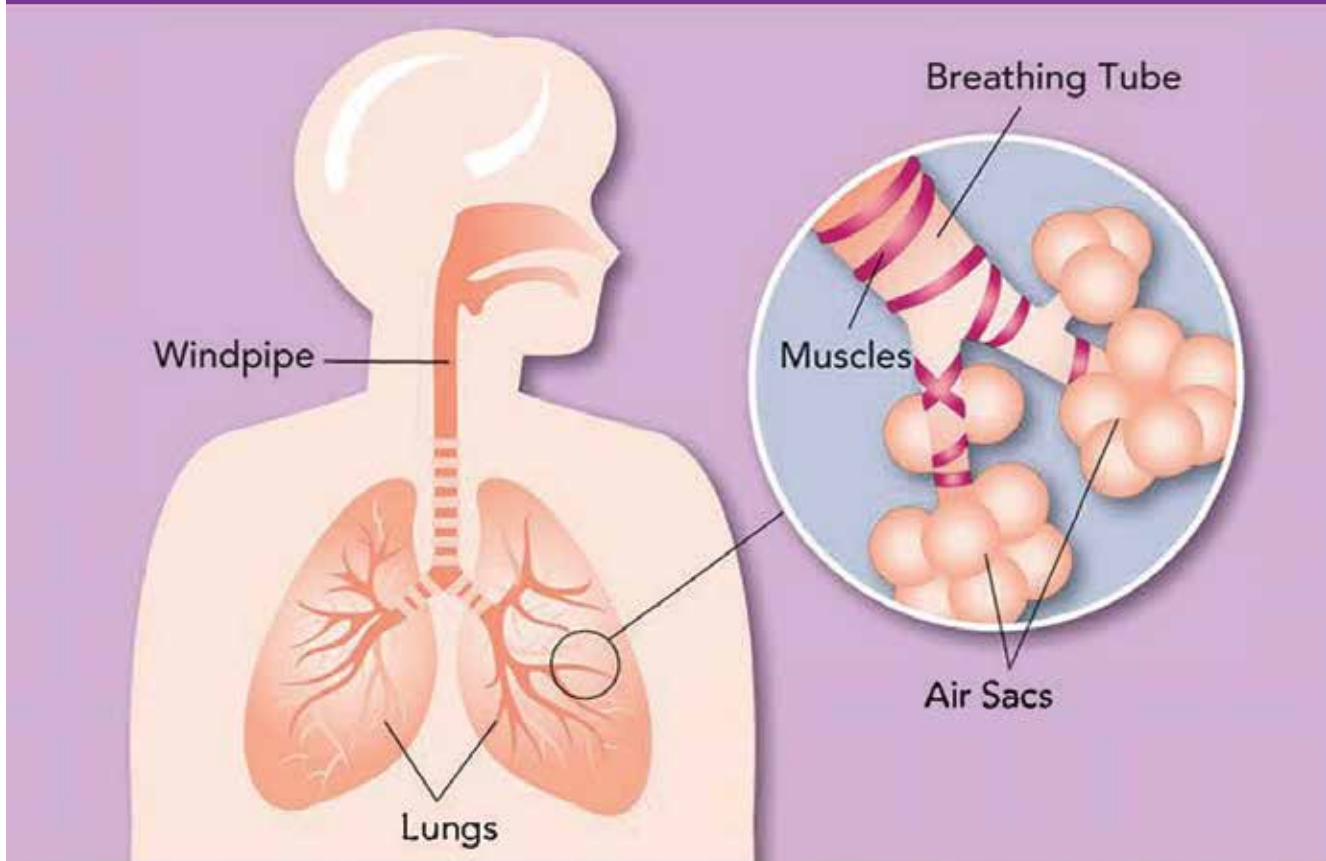
*Take Steps to Control Asthma:*

- Learn more about asthma.
- Have an asthma action plan developed by your doctor or nurse.
- Know your child's asthma warning signs.
- Have your child take medicines as prescribed.
- Share action plan with your child's school, day care and coaches.
- Learn what triggers asthma and helpful control measures.
- Ask your child's doctor or nurse about the Asthma Control Test™ or other ways to check if asthma is being controlled.

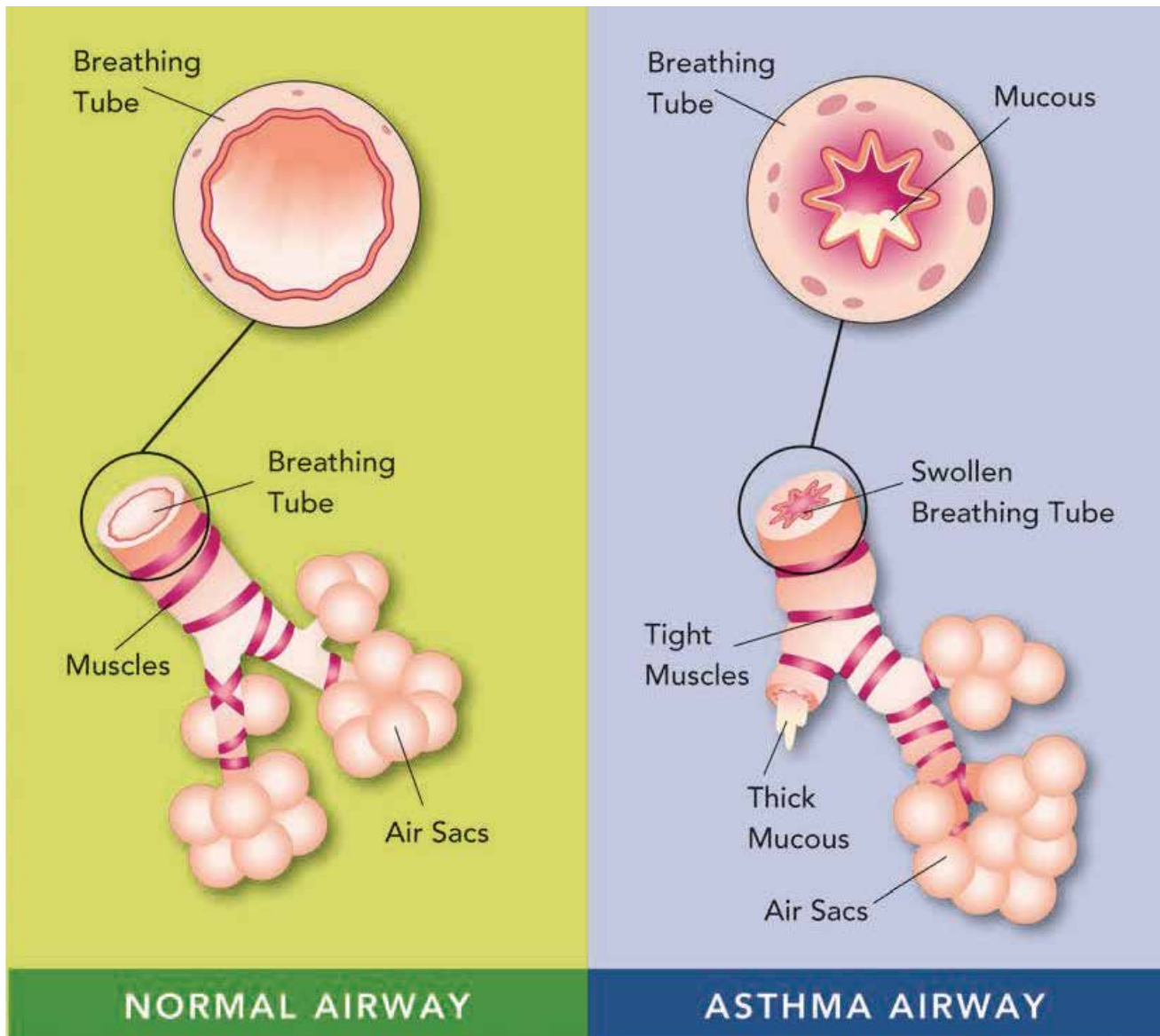
# What is Asthma?

Asthma is an illness that affects the lungs and causes coughing, wheezing, difficulty breathing and shortness of breath. To understand what is happening during asthma, it is helpful to know about the lungs and how they work.

## HOW THE LUNGS WORK:



Each of us has two lungs. Each lung has many little breathing tubes called bronchial tubes. Muscles are around each breathing tube (see picture). The breathing tubes carry the air to tiny air sacs in our lungs called alveoli. These alveoli are like balloons that fill with air when we breathe in and shrink when we breathe out. The air we breathe in must enter these air sacs before it can get to the rest of our body.



## What happens to the lungs during asthma?

When you have asthma your breathing tubes are very sensitive. The lungs overreact to certain things called triggers. When this happens the child may have coughing, wheezing and difficulty breathing.

### *Three things happen in your lungs:*

- Breathing tubes get swollen or inflamed. This makes the opening smaller and hard for air to get through.
- Thick mucous plugs up the breathing tubes.
- Muscles squeeze tight around the breathing tubes and make it hard for the air to get in or out.

# Signs of Asthma



## **Yellow Zone: Watch Out!** *Early Warning Signs of Asthma*

Warning signs are like alarms that let you know when asthma is beginning to get out of control. Often signs are subtle and not easily noticed. It is important to recognize these signs early in you child and to act quickly as directed by your doctor or nurse. Follow your Asthma Action Plan. Children need to recognize warning signs and ask for help as needed.

### ***Look for these early warning signs:***

- Sneezing
- Runny nose
- Cold symptoms
- Coughing during the day or evening
- Wheezing during the day or evening
- Funny feeling in chest

### ***Other early signs:***

- Headache
- Fast heartbeat
- Stomachache
- Feeling tired
- Poor appetite
- Glassy eyes
- Itchy throat





# Signs of Asthma



## **Red Zone: Emergency!**

### ***Late Signs of Asthma***

If a child misses the early signs of asthma they may have late signs. They should follow their Asthma Action Plan and take the quick relief medicine ordered by their doctor or nurse. Late signs mean emergency! Do not waste time! It is important to call your child's doctor or nurse or go to the emergency room.

### ***Act quickly if you see these emergency signs:***

- Tight chest
- Shortness of breath
- Hard or fast breathing
- Using neck or stomach muscles to breathe
- Constant coughing
- Feeling very tired or dizzy
- Not able to play
- Trouble walking, talking or eating
- Vomiting
- Blue lips or nails



## **PEAK FLOW METERS**

A peak flow meter is a device that measures how air moves out of your lungs. Some older children use a peak flow meter to help them know when their asthma is getting worse. It can also help them to know if their quick relief medicine is working. Ask your doctor or nurse about this device.

# Medicines

Medicines are a very important part of asthma treatment. Some children need to take medicines every day and others will need their medicines only when they are getting sick. Your doctor or nurse will decide what is best. Medicines should be available at all times.

## Don't Run Out of Medicine!

- Plan ahead.
- Make sure to get refills before you run out of medicine.
- Check the date on your medicine. Do not use if it is too old.
- Check that you have medicine when you are going to be away from home.



Using a spacer or holding chamber with an inhaler helps more medicine get into the child's lungs. Ask your child's doctor or nurse about the best spacer or holding chamber to use with their inhaler.

## Quick Relief/Rescue Medicines

### *Short-acting Bronchodilators*

- Medication: <https://medlineplus.gov/ency/patientinstructions/000008.htm>
- Help relax the muscles around the breathing tubes and open them up.
- Work quickly - within 15 minutes.
- Relieve symptoms for 4 - 6 hours
- May be used before exercise.
- May cause shakiness, increased activity, trouble sleeping and fast heartbeat. These side effects are usually brief. It is still important to take the medicine as directed.

### ***CALL YOUR DOCTOR OR NURSE IF RESCUE MEDICINE:***

- Does not work in the first hour (usually 3 doses 20 minutes apart).
- Is needed more often than every 4 hours after the first hour.
- Is needed every 4 hours for more than 24 hours.

## ***Steroids***

- Medication: <https://www.webmd.com/asthma/guide/prednisone-asthma#1>
- May need to take along with rescue medicine in moderate to severe episodes to decrease swelling and mucous in the breathing tubes.
- Take by mouth.
- Usually taken for 3 - 5 days.
- May cause mood change, increased activity or increased appetite.
- Long-term side effects are uncommon if steroids are only occasionally taken for short periods of time.
- Sometimes needed over long period of time to control severe asthma.
- Should not take without directions from your doctor or nurse.

## **Long-Term Control Medicines**

### ***Inhaled Steroids***

- Medication: <https://www.webmd.com/asthma/guide/asthma-control-with-anti-inflammatory-drugs#1>
- Take every day to reduce swelling and control or prevent asthma.
- Rinse or brush teeth after use to help prevent thrush.

### ***Combination Anti-inflammatory/Bronchodilator Medicines***

- Medication: <https://www.nationaljewish.org/treatment-programs/medications/copd/combo-bronchodilator-anti-inflammatory-medication>
- Inhaled steroid and long-acting bronchodilator in one inhaler.
- Reduce swelling and open breathing tubes to control asthma.
- Take every day.
- Rinse or brush teeth after use to help prevent thrush.
- Used in moderate to severe asthma.
- Not for rescue.



## ***Other Non-Steroid Control Medicines***

**montelukast (Singulair®)**

**mepolizumab (Nucala®)**

**omalizumab (Xolair®)**

- Not for rescue.
- Take Singulair® every day to prevent swelling and control asthma.
- Singulair® may also be used to treat allergies (allergic rhinitis).
- Xolair® or Nucala® may be helpful for some children with allergic asthma.

## **Other Related Medicines**

### ***Nasal Steroids***

- Medication: [https://www.webmd.com/allergies/steroid\\_nasal\\_sprays](https://www.webmd.com/allergies/steroid_nasal_sprays)
- Used to treat symptoms of allergic rhinitis.
- Take on a routine basis to decrease inflammation in the nose and sinuses.
- Can cause irritation within the nose if sprayed directly onto the tissue lining the nose.

### ***Antihistamines***

- Medication: <https://www.webmd.com/allergies/antihistamines-for-allergies>
- Prevent histamine release and symptoms of allergic rhinitis (runny nose, itchy nose, scratchy throat, sneezing, and watery, itchy eyes).
- Are not used to treat asthma but may help some of the allergy symptoms that go along with asthma.
- Some cause sleepiness and dry mouth.

# What is an Asthma Action Plan?

Every child needs an Asthma Action Plan. The Asthma Action Plan will help the child manage their asthma every day. Contact your child's doctor or nurse to get a specially designed Asthma Action Plan. Everyone who helps take care of the child should have a copy of the plan. Don't forget to add school, daycare, babysitters, sport coaches, and grandparents.

## GREEN ZONE

- You are well! No signs of asthma. This is where you should be every day
- You are able to do normal activities.
- You have no problems while sleeping.
- Take daily control medicines as directed.
- Watch for early signs of asthma.
- Use pre-exercise medicines as directed.

## YELLOW ZONE

- Watch Out! You are having early signs of asthma. Take action to get control.
- Follow Asthma Action Plan.
- Call your doctor or nurse if rescue medicine doesn't work.
- Continue to take Green Zone medicines.

## RED ZONE

- **Danger!** This is an emergency. You are having late signs of asthma.
- Follow Action Plan.
- Call your doctor or nurse immediately.
- Call 911 (or the emergency number in your area) or go to the nearest emergency room if you cannot reach your doctor.

See sample *Asthma Action Plan* on last page.



## Triggers

Certain things make asthma worse. Asthma triggers may be different for each person. Try to learn what triggers your child's asthma and have a control plan.

### Allergens

In most children, asthma is related to allergies. Some allergens are around all year while some are seasonal. Allergens can be indoors or outdoors.

### Mold and Pollen

- Avoid opening doors and windows in spring and fall when mold and pollen counts are high.
- Use air conditioning as much as possible.
- Clean or change filters on air conditioner and furnace once a month.
- Do not use vaporizers or humidifiers.
- Use dehumidifiers if living area is damp.
- Clean tub and shower curtain regularly to decrease indoor mold growth.
- Shower or bathe after playing outside.

### Dust Mites

- Place mattress and pillow in a zippered plastic or allergy-proof cover.
- Wash bed linens, pajamas and stuffed toys weekly in hot water.
- Limit the number of stuffed toys in the child's bedroom.
- Limit the amount of carpet and curtains.
- Vacuum and dust weekly.
- Keep child out of the room during vacuuming or dusting, and for one hour afterward.





## Dogs, Cats, Birds

- Do not have feathered or furry pets in the home.
- Avoid things made with feathers such as pillows and comforters.

## Cockroaches

- Call pest control.
- Store food in closed containers.



## Weather and Season Changes

- Stay indoors as much as possible when the weather is changing.
- Watch closely for signs of asthma on days of extreme weather change.

## Colds and Viruses

These are the most common triggers in young children, especially in the fall and spring seasons. Sinus infections can also trigger asthma.

- Avoid people with colds, flu, or viruses.
- Wash your hands often.
- Teach good hand washing.
- A flu shot is recommended every fall.



## Irritants

The following are just some of the irritants that can trigger asthma: cigarette smoke, air-pollution, wood-burning stoves and fireplaces, dust, perfume, strong odors, cleaning supplies, air fresheners and paints.

- Do not smoke or let anyone else smoke around your child. There should be no smoking in the house or car even if the child is not there.
- Avoid perfumes, talcum powder, hairsprays, carpet-fresh powders and air fresheners.



## Emotions

Stress or excitement (laughing, crying, yelling) can sometimes trigger asthma.

- Follow the Asthma Action Plan if emotions trigger asthma.
- Teach children how to relax when stressed.

## Exercise

Playing hard at recess, gym or sports can trigger asthma. All children need exercise. Children with asthma can do the same activities as their friends when asthma is under control. Medicines should be taken as directed by a doctor or nurse.

- Work out a plan with your doctor or nurse that allows exercise.
- Make sure quick relief rescue medicine is available during exercise. Tell your coach and teacher about your asthma medicine and action plan.
- Start an exercise program slowly. Warm up and cool down.
- Avoid outside exercise when levels of pollution are high. Be careful during extreme weather conditions.







# ASTHMA ACTION PLAN

Name:	Date:
Doctor:	Medical Record #:
Doctor's Phone #: Day	Night/Weekend
Emergency Contact:	
Doctor's Signature:	

The colors of a traffic light will help you use your asthma medicines.



**GREEN means Go Zone!**  
Use preventative medicine.

**YELLOW means Caution Zone!**  
Add quick-relief medicine.

**RED means Danger Zone!**  
Get help from a doctor.

Personal Best Peak Flow: \_\_\_\_\_

## GO Use these daily controller medicines:

<p><b>You have <i>all</i> of these:</b></p> <ul style="list-style-type: none"> <li>Breathing is good</li> <li>No cough or wheeze</li> <li>Sleep through the night</li> <li>Can work &amp; play</li> </ul> <p><b>Peak flow:</b></p> <p>from _____</p> <p>to _____</p>	MEDICINE	HOW MUCH	HOW OFTEN/WHEN
	For asthma with exercise, take:		

## CAUTION Continue with green zone medicine and add:

<p><b>You have <i>any</i> of these:</b></p> <ul style="list-style-type: none"> <li>First signs of a cold</li> <li>Exposure to known trigger</li> <li>Cough</li> <li>Mild wheeze</li> <li>Tight chest</li> <li>Coughing at night</li> </ul> <p><b>Peak flow:</b></p> <p>from _____</p> <p>to _____</p>	MEDICINE	HOW MUCH	HOW OFTEN/WHEN
	CALL YOUR ASTHMA CARE PROVIDER.		

## DANGER Take these medicines and call your doctor now.

<p><b>Your asthma is getting worse fast:</b></p> <ul style="list-style-type: none"> <li>Medicine is not helping.</li> <li>Breathing is hard &amp; fast</li> <li>Nose opens wide</li> <li>Trouble speaking</li> <li>Ribs show (in children)</li> </ul> <p><b>Peak flow:</b></p> <p>reading below _____</p>	MEDICINE	HOW MUCH	HOW OFTEN/WHEN

**GET HELP FROM A DOCTOR NOW!** Your doctor will want to see you right away. It's important! If you cannot contact your doctor, go directly to the emergency room. **DO NOT WAIT.**

Make an appointment with your asthma care provider within two days of an ER visit or hospitalization.



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