

North Carolina Children's Hospital
Asthma Teaching
for Kids and Their Caregivers

NC Children's Hospital
101 Manning Drive
Chapel Hill, NC 27514
984-974-1000
uncchildrens.org



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NC Children's Asthma Video Series

Take a look at our UNC asthma website
Go to the search bar and type "UNC Asthma Videos" or scan the QR code.



What is asthma?

Explains what asthma is. Watched- _____



Asthma Triggers

Explains what can cause asthma flare-ups
Watched- _____



Asthma Medicines

Talks about controller and rescue medicines
Watched- _____



Using a Spacer with a Mouthpiece

Shows how to use a spacer with a mouthpiece and how to prime a metered-dose inhaler.
Watched- _____



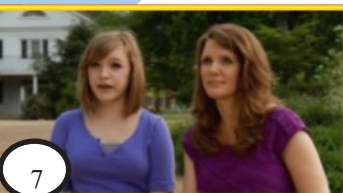
Using a Spacer with a Mask

Shows how to use a spacer with a mask and how to clean the spacer.
Watched- _____



Using Your Asthma Action Plan

Talks about how to use your Asthma Action Plan and when to call your doctor.
Watched- _____



Living with asthma

Caroline and her mom, Dana, offer a first-hand about life with asthma.
Watched- _____

Helping your child with asthma

Many children have asthma. For most, asthma can be well controlled. This book was made to help you and your child understand asthma. You will also learn about what things can cause your child to **cough, wheeze, or feel short of breath** and what you can do about it.



Helping your child with asthma

Children with asthma go to the hospital more often than children without asthma.

Children with asthma go to the emergency room more than any other child with a childhood disease.

You can help prevent most of these scary events for your child. Your child's asthma should not cause a lot of missed work or school days if they have a good **Asthma Action Plan and asthma control**.

Work with his/her doctor to set up a **written** Asthma Action Plan. This may include:

- Learning your child's early warning signs
- Avoiding triggers
- Learning what medicines to take and when to take them

With a **good Action Plan**, your child should:

- Be able to do his/her normal activities (including exercise and sports)
- Be free of flare-ups
- Sleep through the night without waking up (due to asthma)
- Have no visits to the hospital or emergency room (due to asthma)
- Have few side effects from asthma medicines

Well-controlled means knowing your child's early warning signs. This can help prevent the asthma flare ups from being severe.



What is asthma?

Asthma is a condition that affects the airway in the lungs. You cannot catch asthma from someone, but it can run in families.

Your child may go for a very long time without showing signs of asthma or needing any medicine for asthma. This **does not** mean he/she has grown out of it, so you should always have a plan for what you will do if his/her symptoms return.

Why asthma causes problems?

People with asthma have lungs that are very sensitive, which means their lungs overreact to triggers. With asthma, your child's airways become smaller, inflamed, swollen, and make extra mucus. These changes make it hard for air to flow in and out of your child's lungs.

During a flare-up or attack, your child may:

- Cough
- Be short of breath
- Have chest tightness
- Wheeze (a high-pitched sound of air trying to move in and out of your child's airways)

How to manage your child's asthma

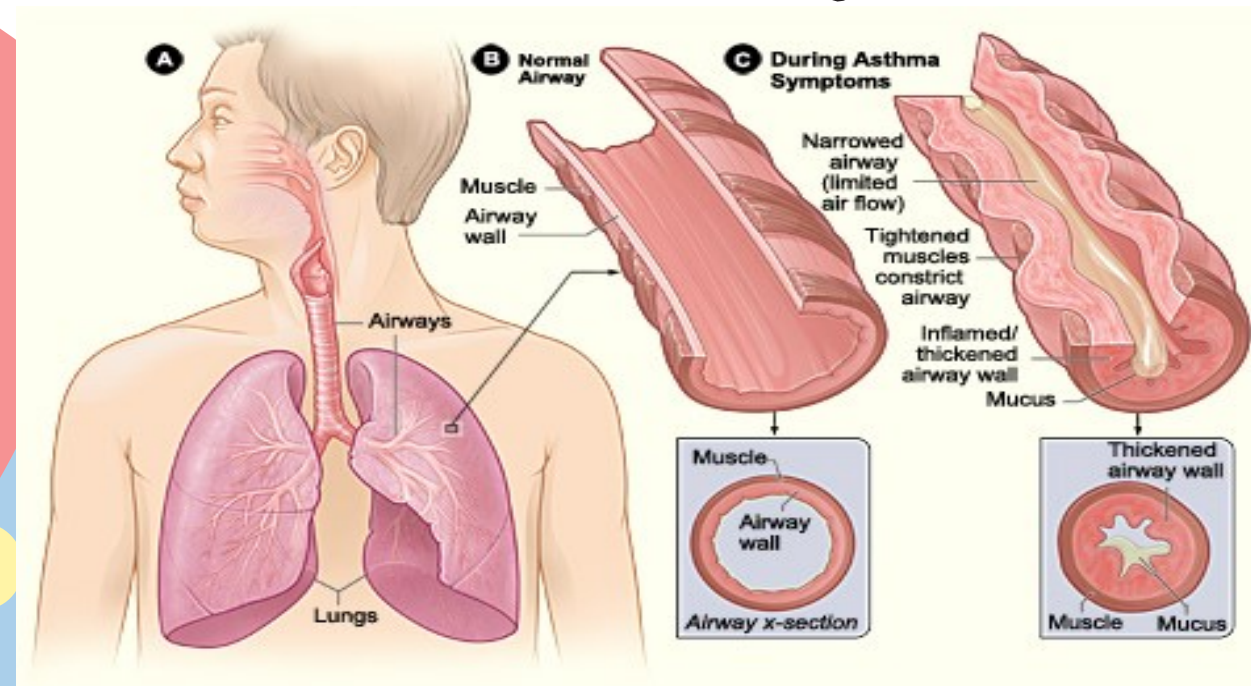
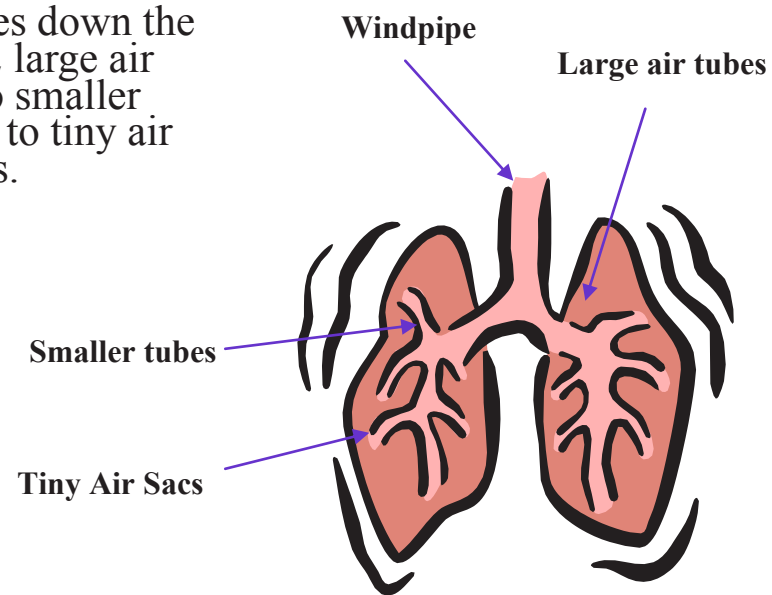
You must know:

- Your child's triggers
- Your child's early warning signs
- Refer to your child's current Asthma Action Plan to manage symptoms



How do we breathe?

When we breathe, air goes down the windpipe (trachea) into 2 large air tubes (bronchi), then into smaller tubes (bronchioles), then to tiny air sacs (alveoli) in the lungs.



What causes an asthma flare?

Things that cause asthma flare-ups are called *triggers*. These differ from child to child. What affects one child may not affect another. It is important to know what your child's triggers are and how to limit/prevent exposure to these triggers.

Triggers can be....

Playing and Exercise

Kids enjoy running around and playing. Your child should be able to be as active as he/she wants to be. This can cause problems for some children with asthma.

If your child feels like he/she is starting to have trouble breathing, he/she should:

- stop and rest
- use his/her rescue medicine

Some children use their rescue medicine 15 minutes before they exercise. This step can be added to your child's Asthma Action Plan with the help of his/her health care team.

Your child should be as active as any other children their age. Asthma should not limit their activity. If this is not the case, you should meet with your child's health care team to work on a new Asthma Action Plan.



Triggers can be....

Allergies

As many as 80-85% of children with asthma also have allergies to things like pollens, animals, or dust mites.

There are a lot of things you can do to help decrease your child's contact to things they are allergic to. Allergy testing is easy and knowing what your child is allergic to may help control their asthma. An allergy specialist can help with your child's allergies.

If you think your child may be allergic to something, talk with his/her doctor or nurse.



Germs

It is very common for someone who has asthma to get worse when they are sick. The best way to not get sick is to wash your hands often. Teach your child to wash his/her hands after going to the bathroom, eating, and playing.



Trigger Checklist for Your Child

Circle the things that trigger asthma in your child. If your child is old enough, let him/her circle the items.

General

- Tobacco smoke
- Vaping/e-cigarettes
- Smog and other air pollution
- Car and truck exhaust
- Changes in outdoor temperature/humidity
- Colds & flu
- Exercise
- Crying or laughing
- Some medicines



Odors:

- Cleaning supplies
- Paints
- Bathroom spray
- Perfumes
- Candles/ air fresheners



Allergic triggers:

- Dust mites
- Cats, dogs, and other furry pets
- Cockroaches
- Molds
- Tree pollens
- Grass
- Weeds
- Some foods



Asthma Action Plan Example

Things to help prevent asthma flares:

- Take medicines in the Green Zone of your child's Asthma Action Plan.
- Do not smoke/vape or let anyone else smoke/vape around your child.
- If your child has allergies, it may help to use air-conditioning in your car and at home to help filter the air. Keep windows closed to keep pollens out of your home. Change air filters often.
- Do not use strong smelling cleaners, room sprays, perfume or candles.
- Keep pets out of your child's bedroom. Wash your pets every week.
- Wash your child's bedding in hot water once a week.
- Vacuum carpeting once a week.
- Use an air cleaning device with a HEPA filter in his/her bedroom.
- Stay away from mold that may be in wet leaves, damp basements, bathrooms.
- Do not use a humidifier in your home.
- Watch out for pollen in your area and try to stay indoors during high pollen times which are before 10am.
- Try to stay away from very cold or very hot, humid air.
- Follow up with your child's doctor for regular asthma checks.
- Vaccines: **Flu shots** help keep your child from getting sick. Talk to your doctor or nurse to see if your child should get a flu shot each year.



Asthma Management Plan for Jane Smith

Printed: 8/25/2014

Asthma Severity: Moderate Persistent Asthma

Avoid Known Triggers: Tobacco smoke exposure (always selected)

Your next appointment is with Dr. Hibert on 9/25/14 @ 9:00am. The phone number is 919-555-1234.

GREEN ZONE

- Child is **DOING WELL**. No cough and no wheezing. Child is able to do usual activities

Take these Daily Maintenance medications

Daily Inhaled Medication: Flovent 110mcg 2 puffs twice a day using a spacer

Daily Oral Medication: Singulair (montelukast) 5mg once a day by mouth at bedtime

Allergy Medications: Zyrtec (cetirizine) 5mg by mouth once a day

Take this medicine 15 minutes before exercise:

Albuterol 2 puffs

YELLOW ZONE

- Asthma is **GETTING WORSE**. Starting to cough, wheeze, or feel short of breath. Waking at night because of asthma. Can do some activities.

1st - Take Quick Relief medicine below. If possible, remove the child from the thing that made the asthma worse.

Albuterol 4 puffs every 4 to 6 hours

2nd - Do one of the following based on the response.

- If symptoms **are not better** within 1 hour after first treatment, call Dr. Hibert at 919-555-1234. Continue to take **GREEN ZONE** medications.
- If symptoms **are better**, continue this dose for 2 day(s) and then call the office before stopping the medicine if symptoms have not returned to the **GREEN ZONE**. Continue to take **GREEN ZONE** medications.

RED ZONE

- Asthma is **VERY BAD**. Coughing all the time. Short of breath. Trouble talking, walking or playing.

First - Take Quick Relief medicine below:

Albuterol 6 puffs

You may repeat this every 20 minutes for a **total** of 3 doses.

Second - Call Dr. Hibert at 919-555-1234 immediately for further instructions. Call 911 or go to the Emergency Department if the medications are not working.

Warning Signs

Circle the warning signs your child has had before a flare-up.

- Wheezing
- Tight feeling in chest
- Breathing in a different way
- Cough
- Trouble sleeping
- Stomachache
- Change in mood
- Fast heartbeat
- Feeling tired
- Headache
- Itchy throat
- Runny nose
- Sneezing
- Stuffy nose
- Watery eyes
- Ear pain
- Bluish fingernails or lips

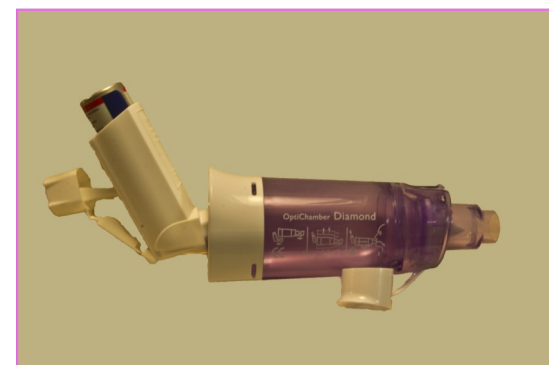


Medicines

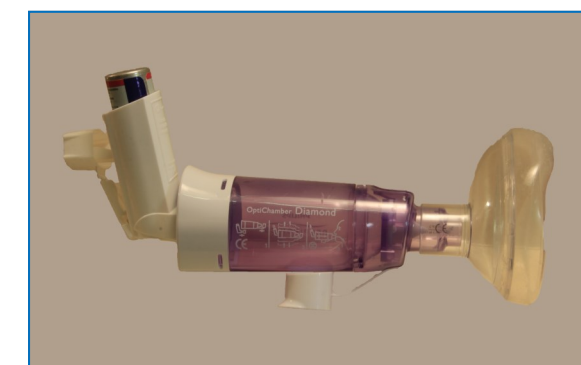
There are two main types of asthma medicines:

- Maintenance (also called daily, or controller medicine)
- Rescue (quick-relief)

Equipment



Spacer with mouthpiece



Spacer with mask



Nebulizer with mask



Nebulizer with mouthpiece

Daily/ Controller Medicines

These medications are taken every single day and should be listed in the Green Zone on your child's Asthma Action Plan. These medications should be taken, even if the child is not having problems with their asthma. Sometimes even if the daily medication is used, your child can still have an asthma flare. If your child does have a flare, please refer to the Asthma Action Plan for next steps. Your child may have to take daily medications for a long time. He/she will not become addicted even if he/she uses them for several years. It is very important for your child to take their medicine daily as listed in the Green Zone of the Asthma Action Plan.

Anti-inflammatory Medicines

Most preventive medicines decrease swelling. They help reduce swelling in the airways. These come in 2 forms: **steroid and non-steroid**.

Inhaled steroids are the preferred treatment for children. **These are not the muscle-building steroids taken by athletes.**

The inhaled steroids are the best medicines for long-term control of asthma. You should talk with your child's doctor or nurse about the risk of side effects for steroids. All medicines have side effects.

To avoid a sore mouth and throat, thrush, or bad taste in your child's mouth have them rinse their mouth with **water and spit and/or brush their teeth after each use of the inhaler.**

Wash their lips and face if they use a mask to inhale these medicines.

These medicine must be taken every day and it may take a couple of weeks to see it work the best.



Non-steroid medicines

A non-steroid medicine that may be given is a leukotriene antagonist (taken in chewable tablet or pill form). This medicine needs to be taken everyday. Medicine to control allergies may also be given.

Need to Know...

Just because your child has not had an attack in several weeks or months does not mean your child should stop his/her medicine. This means the medicine is working.

Daily medicine will **NOT** help your child if they are having an asthma flare

Daily medicine will not work if they are only taken sometimes. They must be taken every single day for several weeks to get control over your child's asthma. Never stop them until you talk to your child's doctor or nurse, even if your child has not had an asthma flare in awhile.



Rescue medicines (Quick-Acting)

These medicines are used to quickly help your child breathe better when they are having an asthma flare. When your child has an asthma flare, the muscles that open and close the airways tighten up. Rescue medicines help relax these muscles so your child can breathe easier.

Rescue medicine should not need to be used every day. If your child needs their rescue medicine every day, this means your child's asthma might not be under good control and please contact your child's doctor.

If your child has an asthma flare, your child's doctor may have them use the rescue medicine every day for a number of days.

Quick-Acting Rescue Medicine

Your child should begin to have less trouble breathing within 15 minutes after taking these medications. Rescue medicines are given through a metered dose inhaler with a spacer or through a nebulizer.

Use to treat:

- Coughing
- Wheezing
- Shortness of breath
- Chest tightness

Side Effects:

- Fast heart rate
- Shaky feeling
- Over-excited
- Headache
- Trouble sleeping
- Muscle cramps
- Upset stomach



Most of the time, the side effects usually improve with use. If not, tell your doctor or nurse.

Note:

- Your child should always have quick-relief medicines with him/her at all times.
- Wait at least 1 minute between puffs.
- Using more than 1 canister of medicine in 1 month, or using it most days, means his/her asthma is not controlled well. Talk to his/her doctor or nurse so the Asthma Action Plan can be changed.

Oral Steroids (taken by mouth as pills or liquid)

- Most steroids are inhaled as long-term medicines to prevent flare-ups. Sometimes, if your child is in the red zone on the Asthma Action Plan, the doctor may have your child take oral steroids for several days. Oral steroids take several hours to begin working and should be taken with food.
- Continue using your child's daily (Green Zone) medicines even if they are taking oral steroids.
- **Never** stop taking steroids without talking to your doctor or nurse.



Metered-dose inhaler

- An inhaler allows the medicine to go right to your child's lungs.
- A metered dose inhaler (MDI) is a small hand-held device that allows your child to breathe in a fine mist of medicine.
- The inhaler is set to give a set dose of medicine with each puff. Your doctor will tell you how many puffs your child should take.
- A spacer or holding chamber is needed for your child to get the right amount of medicine in each puff.
- If your child is less than 5 years old, it is best for them to use a mask with the spacer.



Spacer with mouthpiece



Inhaler

Please read and follow the instructions with your inhaler.

Use of MDI and Spacer with Mask

Below are the steps for the correct use of a metered dose inhaler (MDI) and spacer with **MASK**.

1. Prime MDI. (Varies depending on MDI brand, see package insert.) In general:
 - If MDI not used in 2 weeks or has been dropped: spray 2 puffs into air.
 - If MDI never used before spray 4 puffs into air.
2. Shake the canister for 5 seconds.
3. Insert the MDI into the spacer.
4. Place the mask on the face, covering the mouth and nose completely.
5. Look for a seal around the mouth and nose and the mask.
6. Press down the top of the canister to release 1 puff of medicine.
7. Allow the child to take 6 breaths with the mask in place.
8. Wait 1 minute after 6th breath before giving another puff of the medicine.
9. Repeat steps 4 through 8 depending on how many puffs are ordered by the doctor.



Use of MDI and Spacer with Mouthpiece

Below are the steps for the correct use of a metered dose inhaler (MDI) and spacer with **Mouthpiece**.

1. Prime the MDI. (Varies on MDI brand, see package insert.)

In general:

If MDI not used in 2 weeks or has been dropped: spray 2 puffs into air.

If MDI never used before spray 4 puffs into air.

2. Shake the canister for 5 seconds.
3. Insert the MDI into the spacer.
4. Place the spacer mouthpiece into your mouth between the teeth.
5. Close your lips around the mouthpiece and exhale normally.
6. Press down the top of the canister to release 1 puff of medicine.
7. Inhale the medicine through the mouth deeply and slowly (3-5 seconds). Spacer whistles when breathing in too fast.
8. Hold your breath for 10 seconds and remove the spacer from your mouth before exhaling.
9. Wait 1 minute before giving another puff of the medicine.
10. Caregiver can help with using the medicine with the spacer.
11. Repeat steps 4 through 8 depending on how many puffs are ordered by the doctor.

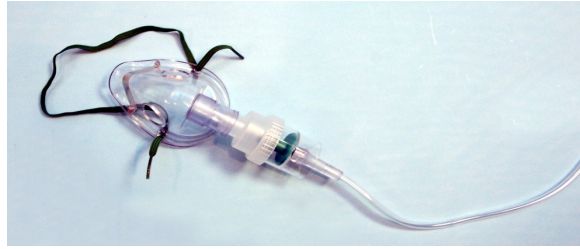


Cleaning Instructions for Spacer

1. Take off the back end of spacer where the MDI fits.
2. Rotate spacer mouthpiece counter-clockwise and lift up to remove.
3. Soak the parts in warm water with clear, liquid soap for about 15 minutes.
4. Rinse in clean water and shake to remove excess water.
5. Allow all parts to air dry. **DO NOT** dry with a towel.
6. To put back, replace spacer mouthpiece and turn it clockwise until it locks into place. Replace the back end onto the spacer.



Nebulizer



Nebulizer with mask



Nebulizer with mouthpiece

- A nebulizer may be used if your child is very young, during severe symptoms, or if they have trouble using the inhaler.
- Be sure you and your child are shown how to use the nebulizer by your child's health care team
- Do not blow the medicine in the child's face. You **must** use a mask that fits snugly over their nose and mouth. If old enough, a mouthpiece can be used in place of the mask.
- Follow the doctor's orders when using medicine.
- Clean the nebulizer using the directions that come with the machine.
- Keep your medical supply company's phone number handy for questions or problems with your child's equipment.
- Replace mask and tubing every 6 months. Contact your child's doctor if you need a replacement.



ALERT:

- *Medicine made for a nebulizer can be deadly if swallowed.*
- *Keep medicine in a safe place.*

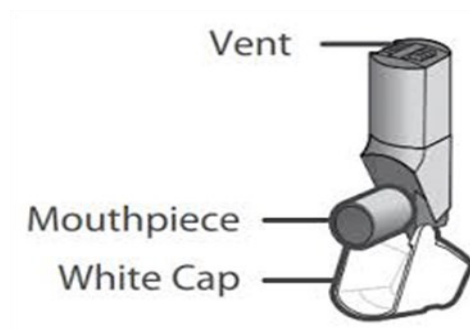
Use of Diskus

1. Hold the Diskus in your left hand and place the thumb of your right hand into the grip.
2. Push the thumb grip away from you as far as it will go until the mouthpiece appears and snaps into place.
3. Slide the lever until it clicks.
4. The Diskus is ready to use when the number on the counter goes down by 1.
5. Take a deep breathe in and exhale all the way out away from the Diskus.
6. Hold the Diskus in a flat position with the mouthpiece towards your child.
7. Take in a quick deep breathe and hold it for 10 seconds, removing the Diskus
8. Breathe out slowly and wait one minute if a second dose is needed. Repeat steps 1-7.
9. Close the Diskus by placing your thumb into the thumb grip and slide it back as far as it will go.
10. Rinse your mouth out after. Store in a dry cool place at room temperature 68-77° F.



Use of Redihaler

1. Caregiver/patient opens the white cap.
2. Breathe out fully.
In general:
There is no priming needed.
Never breathe out into the inhaler mouthpiece.
3. Hold inhaler upright.
4. Place mouthpiece in your mouth between the teeth.
5. Close your lips around it so you form a good seal.
6. Inhale deeply to release the medicine for 3 to 5 seconds.
7. Remove inhaler, hold your breath for 5 to 10 seconds.
8. Breathe out slowly away from the inhaler.
9. Close the white cap after inhaling to prepare your for your next dose. (Wait 1 minute between doses)
10. Check the counter to make sure the breath was counted.
11. Repeat steps 1 through 8 depending on how many puffs are ordered by doctor.
12. Rinse your mouth out with water without swallowing after last dose.



Use of Respimat

1. Prepare and prime Respimat. In general:
If your Respimat has not used for more than 3 days, spray 1 puff toward the ground to prepare the inhaler for use.
If your Respimat inhaler has not been used for more than 21 days please read package insert or call you pharmacist.
2. Keep the cap closed.
3. Turn the clear base in the direction of the arrows until you hear a click.
4. Open the cap until it snaps fully open.
5. Breathe out fully.
6. Place the mouthpiece into your mouth between your teeth.
7. Close your lips around the end of the mouthpiece without covering the air vents.
8. While taking in a slow, deep breathe through your mouth, press the dose-release button and continue to breathe in slowly for as long as you can.
9. Remove inhaler, hold your breath for 10 seconds or for as long as comfortable.
10. Breathe out slowly away from the inhaler.
11. Close cap until you use your inhaler again.
12. Repeat steps 1 through 9 depending on how many puffs are ordered by the doctor.



Use of Flexhaler

1. Hold the Flexhaler straight up. Twist counter clockwise to remove the cover.
2. Turn the dial/ grip in one direction all the way until it can not be twisted.
3. Turn the dial grip in the opposite direction until a click is heard.
4. Hold the inhaler away from your child's mouth and blow all the way out.
5. Place the mouth piece in the mouth and wrap lips around it tightly, taking in a quick fast deep breathe.
6. Remove the inhaler from your mouth and hold your breathe for 10 seconds. Exhale slowly through your nose away from the inhaler.
7. Repeat steps 2-6 after 1 minute if another dose is needed.
8. Close the cap and store in a dry cool place at room temperature 68-77° F.



What is a Dose Counter?

There is a dose counter on most controller and rescue medicine to track how much medicine is left in the inhaler. The numbers will appear red when it is getting low.

Why do I need to know this?

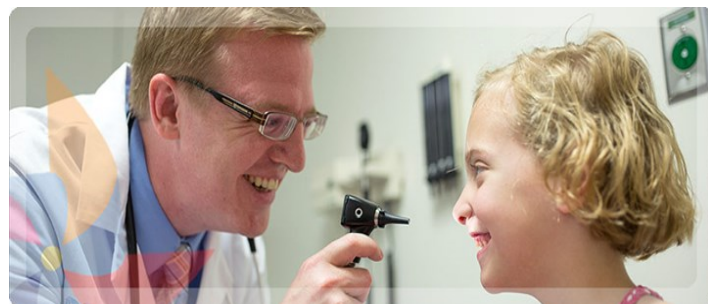
Even when the counter is on **0** it may seem like medicine is left in the inhaler and a mist can come out when pushed. This is not medicine, it is propellant and can trigger your child's asthma if taken alone.

Please check your child's inhaler often to make sure that they are getting medicine and not just propellant.



When to call the doctor or nurse:

- Wheezing that does not get better after using rescue medicines
- Using rescue medicines more than every 4 hours or 4 times a day
- Coughing hard
- No energy to play or do normal activities
- Problem seeing, thinking clearly, speaking in sentences, or playing
- Fast heartbeat
- Fast breathing
- Temperature of 101 degrees or more
- Pain or tightness in chest
- Shortness of breath
- Breathing so hard that the skin between the ribs, above the breast bone or above the collarbone pulls in when he takes a breath
- Bluish tint of fingernails or lips
- Missing school because of asthma



Questions for my doctor and nurse



Edited by: Lisa Alarcon, RN, CPN, AE-C, Trish Dodson, MSN, RNC-NIC, BC and Barbara Gwinn, RN, AE-C, Carol Sockmon, RN AE-C

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