

PEDIATRIC ASTHMA

Estimated Time: 30 minutes • Debriefing Time: 30 minutes



Scan to Begin



Patient Name: Patrick A. Armstrong

SCENARIO OVERVIEW

Patrick Armstrong is a 16-year-old patient who presents to a clinic for a routine follow-up visit for asthma. Students should review the patient's Asthma Action Plan, document using the Vitals tab and Growth Chart, and perform some coaching regarding the Asthma Action Plan and Patient Handouts.

LEARNING OBJECTIVES

1. Demonstrate professionalism in a healthcare setting
2. Practice standard precautions
3. Obtain vital signs
4. Obtain patient history
5. Employ elements of therapeutic communication based upon theories of psychology
6. Assist physician with patient care: routine examinations
7. Assist physician with patient care: specialty examinations in pediatrics
8. Coach patients regarding: treatment plan

CURRICULUM MAPPING

WTCS PROGRAM OUTCOMES

- Provide patient care in accordance with regulations, policies, laws, and patient rights
- Demonstrate professionalism in a healthcare setting
- Demonstrate safety and emergency practices in a healthcare setting

SIMULATION LEARNING ENVIRONMENT & SET-UP

PATIENT PROFILE

Name: Patrick A. Armstrong

DOB: 11/16/20xx

Age: 16

MR#: 1116

Gender: Male

Height: 177.5 cm (5 ft 11 in)

Weight: 109 kg (240 lbs)

Allergies: NKDA

Admitting Diagnosis: shortness of breath
(R06.02)

Medical History: asthma, unspecified
(493.90)

Code Status: Full code

Ethnicity: African American

Spiritual Practice: Unknown

Primary Language: English

EQUIPMENT/SUPPLIES/SETTINGS

Patient

- Street clothes, ball cap, phone, jewelry can be present
- Has his albuterol inhaler with him

Monitor Settings

- Vitals: HR 74, RR 16, BP 109/68, Temp 37, O2 Sat 100% on RA, Pain 0/10

Supplies

- Equipment to obtain vitals including oxygen saturation
- Peak flow meter

QR CODES

REPORT	PATIENT	ASTHMA ACTION PLAN	
			

TEACHING PLAN

PREBRIEF

The facilitator should lead this portion of the simulation. The following steps will guide you through Prebrief.

- Scan the **QR code: “Scan to Begin”** while students are in Prebrief.
- “Meet Your Patient” (on iPad) and explain how the iPad works in the simulated learning environment including:
 - Explain how to use the iPad scanner and QR codes. Remind students that there are multiple QR codes in the simulation, but they should only scan them if they think it will provide data necessary for their assessment and evaluation of the patient.
 - For some scenarios, it may be helpful to tell students where the QR code are located. For others, you may want students to “find” the QR codes during their assessments. This is your choice.
 - As the facilitator, you should be aware that throughout the simulation some QR codes are necessary to the programming of the iPad content. Directions for which QR codes are required (to be scanned) in each state are listed under each state of the documentation below. The QR codes are also in **BOLD** type.
- Discuss the simulation “Learning Objective(s)” (on iPad) as well as any other Prebrief materials
- Get “Report” on iPad
 - Possible Facilitator Questions
 - What are your priorities when you are rooming a pediatric patient with asthma?
 - How should peak flow readings be obtained?
- Play the “Patient” video on iPad
 - Possible Facilitator Questions
 - After listening to the patient’s statement, is there anything you would like to add to your plan?

- Advance to the “Patient Profile” screen (on iPad). This will act as a simulated patient chart.
- Students can view the tabbed content on the iPad (see below) prior to entering the patient’s room and throughout the simulation as needed.

PROTOCOL

PROTOCOL FOR REFERRAL OF A PATIENT EXPERIENCING AN ACUTE ASTHMA ATTACK

Use the severity scale below to evaluate the severity of asthma symptoms.

If signs/symptoms occur in the "Severe" or "Respiratory Arrest Imminent" columns: The Medical Assistant should immediately activate medical services, notify the provider, and administer a STAT DuoNeb nebulizer treatment while waiting for EMS to arrive. Someone should stay with the patient AT ALL TIMES.

FORMAL EVALUATION OF ASTHMA EXACERBATION SEVERITY

SIGNS/SYMPTOMS	Mild	Moderate	Severe	Respiratory Arrest Imminent
Breathlessness	While walking; can lie down	While at rest; prefers sitting (infant: shorter cry, difficulty feeding)	While at rest; Sits upright (Infant: stops feeding)	
Talks in...	Sentences	Phrases	Words	None
Alertness	May be agitated	Usually agitated	Usually agitated	Drowsy or confused
Respiratory Rate	Increased Guide to rates of breathing in awake children: <2 months: <60/min 2-12 months: <50/min 1-5 years: <40/min 6-8 years: <30/min	Increased	Often greater than 30 in adults	
Use of accessory muscles: suprasternal retractions	Usually not	Commonly	Usually	Paradoxical thoracoabdominal movement
Pulse/minute	<100 Guide to normal pulse rates in children: 2-12 months: <160/min 1-2 years: <120/min 2-8 years: <110/min	100-120	>120	Bradycardia
PEF Of percent predicted or percent personal best	≥70%	40-69%	<40%	<25%
SaO ₂	≥95%	90-95%	<90%	

(based on National Heart, Lung, Blood Institute (2007) The Expert Panel Report 3 (EPR-3) Guidelines for the Diagnosis and Management of Asthma. Downloaded from: <http://www.nhlbi.nih.gov/health-pro/guidelines/current/asthma-guidelines>)

VITALS

- The iPad shows the “enterable” vitals screen.
 - Checked against following values (+/- 5): HR 74, RR 16, BP 109/68, Temp 37, O2 Sat 100% on RA, Pain 0/10

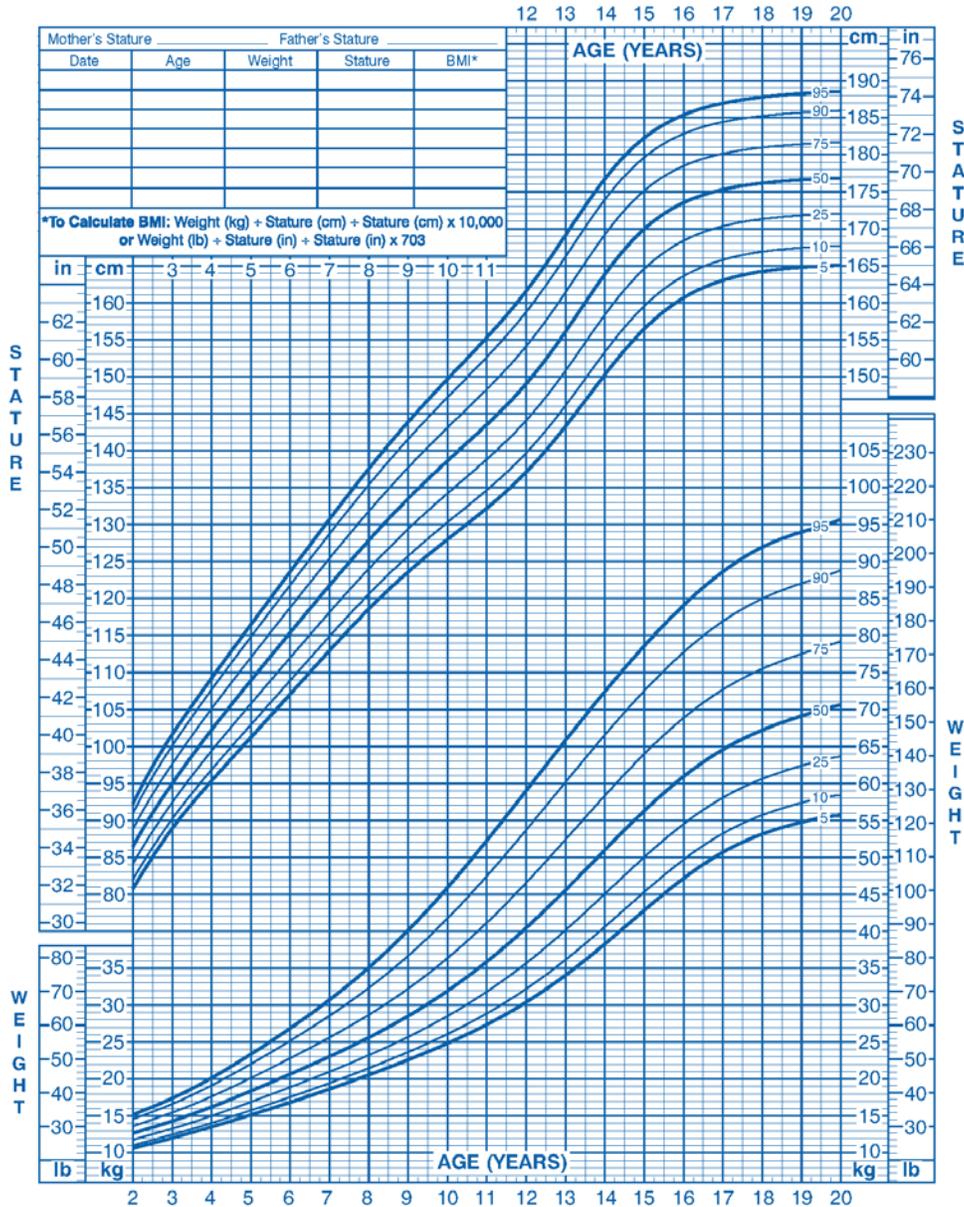
GROWTH CHART

2 to 20 years: Boys

Stature-for-age and Weight-for-age percentiles

NAME _____

RECORD # _____



Published May 30, 2000 (modified 11/21/00).
SOURCE: Developed by the National Center for Health Statistics in collaboration with
the National Center for Chronic Disease Prevention and Health Promotion (2000).
<http://www.cdc.gov/growthcharts>



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PROBLEM LIST

Patient Name	DOB	MR#
<i>Patrick A. Armstrong</i>	<i>11/16/20XX</i>	<i>1116</i>
Allergies	Height (cm)	Admission Weight (kg)
<i>NKDA</i>	<i>177.5</i>	<i>109</i>

Problem List

Currently Known Medical Problem(s)

1. Asthma

CURRENT MEDICATION LIST

Patient Name	DOB	MR#
<i>Patrick A. Armstrong</i>	<i>11/16/20XX</i>	<i>1116</i>
Allergies	Height (cm)	Admission Weight (kg)
<i>NKDA</i>	<i>177.5</i>	<i>109</i>

Current Medication List

Medication	Description
<u>Albuterol Inhaler</u>	2 puffs q4 hours PRN for shortness of breath

ASTHMA ACTION PLAN

See Appendix A

PATIENT EDUCATION

See Appendix B for Patient Education handouts

EMERGENCY CONTACT INFORMATION

Patient Name	DOB	MR#
<i>Patrick A. Armstrong</i>	<i>11/16/20XX</i>	<i>1116</i>

Allergies	Height (cm)	Admission Weight (kg)
NKDA	177.5	109

Emergency Contact Information

Contact	Contact Information
Father: Martin Armstrong	Phone: 555-555-0155 Address: 202 South Main Street Anytown, WI

LEVEL

When the Level 1 tab is tapped, the iPad reads, “The iPad is at Level 1.”

SCANNER

Use this to scan available QR codes.

EXIT

The iPad reads, “Are you sure you want to exit? All data will be lost.”

- If “No” is selected, the iPad will return to the tabbed content.
- If “Yes” is selected, the iPad will let the student(s) exit and prompt them to complete an embedded 3-5 minute survey.

STATE 1

MEASURE AND RECORD PATIENT INFORMATION

- Patient Overview
 - Patient is returning to the clinic for a follow-up visit after being diagnosed with asthma last month.
- Expected Student Behaviors
 - Introduce themselves to the patient
 - Verify patient identity with name and date of birth
 - Communicate therapeutically regarding patient concerns
 - Obtain vital signs accurately
 - Document using Growth Chart data appropriately
 - Obtain peak flow meter and place in room for provider to use
 - Communicate to provider using medical terminology correctly
 - Coach patients regarding asthma treatment plan using Asthma Action Plan and Patient Education handouts
- Technician Prompts
 - Patient is distracted by the messages coming in on his phone. He doesn't really want to be at the appointment and is not motivated to learn more about his asthma. He continues to text and view texts while the student is attempting to obtain vital signs and review the chart components with him.
 - Initial patient responses can include:
 - His phone continues to “bing” with texts while student is trying to talk to him. If a live/standardized patient is used, he continues to look at his texts, laugh, and then text back.
 - “I’m not sure why I have to be here again.”
 - “They told me I have asthma... But I don’t know what that means.”

- “Why do I have to have asthma? My friends will all think I’m a weirdo or something.”
- If students ask the following questions, provide these responses:
 - Do you feel short of breath today?
 - Answer: “A little.”
 - Do you have a cough?
 - Answer: “At night sometimes.”
 - Do you take any other medications?
 - Answer: “Just Advil when I’m sore from football practice.”
 - Do you smoke?
 - Answer: “Sometimes.”
 - Does anyone in your household smoke?
 - Answer: “Yes.”
 - Are you following an Asthma Action Plan?
 - Answer: “Not sure?”
 - Do you have your inhaler with you?
 - Answer: “Yes.”
- Possible Facilitator Questions
 - What are general topics to address when providing care for a patient with asthma?
 - How will you modify your approach to the developmental level of a teenager?
 - How is the Asthma Action Plan used to help patients self-manage their asthma at home?
 - What are some common reasons why albuterol inhalers are used incorrectly by patients?
 - What coaching is important to provide patients for accurate use of albuterol inhalers at home?

- **Scenario Ends when the student has completed the expected behaviors and communicated their findings with the provider.**

DEBRIEF

Nothing needed from the iPad.

QUESTIONS

1. Reaction: How do you feel this scenario went? (Allow students to vent their emotional reactions before delving into learning objectives.)
2. Review understanding of learning objectives: Demonstrate professionalism in a healthcare setting
 - a. How did you professionally manage the patient visit when he continued to use his cell phone?
3. Review understanding of learning objectives: Practice standard precautions
 - a. Describe the standard precautions you used while caring for Patrick.
4. Review understanding of learning objectives: Obtain vital signs
 - a. Review the vital signs you obtained for Patrick. Are these within normal limits for a 16-year-old male?
5. Review understanding of learning objectives: Obtain patient history
 - a. What kind of health history questions are important to review with a patient with asthma?
6. Review understanding of learning objectives: Employ elements of therapeutic communication based upon theories of psychology
 - a. Did Patrick exhibit any “cues” that indicated you should utilize some therapeutic communication?
 - b. How did you respond to his concerns? Was it effective?
 - c. If you could “do over” while communicating with Patrick, is there anything you would do differently?
7. Review understanding of learning objectives: Assist physician with patient care: routine examinations, and assist physician with patient care: specialty examinations in pediatrics
 - a. When assisting with patient care of a pediatric patient, what additional data should be obtained?
8. Review understanding of learning objectives: Coach patients regarding: treatment plan

- a. Describe the handouts that you reviewed with a patient with asthma. What are some important topics to emphasize for self-management of this condition?
9. Summarize/Take Away Points:
 - a. “In this scenario you assisted in caring for a pediatric patient with asthma. What is one thing you learned from participating in this scenario that you will take into your nursing practice?” (Ask each student to share something unique from what the other students share.)

NOTE: Debriefing technique is based on INASCL Standard for Debriefing and NLN Theory-Based Debriefing by Dreifuerst.

SURVEY

Print this page and provide to students.

Students, please complete a brief (2-3 minute) survey regarding your experience with this ARISE simulation. There are two options:

1. Use QR Code: Survey
 - a. Note: You will need to download a QR Code reader/scanner onto your own device (smartphone or tablet). There are multiple free scanner apps available for both Android and Apple devices from the app store.
 - b. This QR Code will not work in the ARIS app.



2. Copy and paste the following survey link into your browser:
 - a. https://ircvtc.co1.qualtrics.com/SE/?SID=SV_6Mwfv98ShBfRnBX

APPENDIX A: ASTHMA ACTION PLAN

Asthma Action Plan

For: Patrick Armstrong Doctor: Anibas Date: xx/xx/20xx
 Doctor's Phone Number 855-555-0155 Hospital/Emergency Department Phone Number 855-555-0156

GREEN ZONE

Doing Well

- No cough, wheeze, chest tightness, or shortness of breath during the day or night
- Can do usual activities

And, if a peak flow meter is used,

Peak flow: more than 384
(80 percent or more of my best peak flow)

My best peak flow is: 480

Take these long-term control medicines each day (include an anti-inflammatory).

Medicine	How much to take	When to take it
<input checked="" type="checkbox"/> <u>Albuterol</u>	<input checked="" type="checkbox"/> 2 or <input type="checkbox"/> 4 puffs	5 minutes before exercise

YELLOW ZONE

Asthma Is Getting Worse

- Cough, wheeze, chest tightness, or shortness of breath, or
- Waking at night due to asthma, or
- Can do some, but not all, usual activities

-Or-

Peak flow: 240 to 384
(50 to 79 percent of my best peak flow)

First: Add: quick-relief medicine—and keep taking your GREEN ZONE medicine.
 Albuterol 2 or 4 puffs every 20 minutes for up to 1 hour
(short-acting beta₂-agonist) Nebulizer, once

Second: If your symptoms (and peak flow, if used) return to GREEN ZONE after 1 hour of above treatment:
 Continue monitoring to be sure you stay in the green zone.

-Or-

If your symptoms (and peak flow, if used) do not return to GREEN ZONE after 1 hour of above treatment:
 Take: _____ 2 or 4 puffs or Nebulizer
(short-acting beta₂-agonist)
 Add: _____ mg per day For _____ (3–10) days
(oral steroid)
 Call the doctor before/ within _____ hours after taking the oral steroid.

RED ZONE

Medical Alert!

- Very short of breath, or
- Quick-relief medicines have not helped, or
- Cannot do usual activities, or
- Symptoms are same or get worse after 24 hours in Yellow Zone

-Or-

Peak flow: less than 240
(50 percent of my best peak flow)

Take this medicine:
 Albuterol 4 or 6 puffs or Nebulizer
(short-acting beta₂-agonist)
 _____ mg
(oral steroid)

Then call your doctor NOW. Go to the hospital or call an ambulance if:
 • You are still in the red zone after 15 minutes AND
 • You have not reached your doctor.

DANGER SIGNS

- Trouble walking and talking due to shortness of breath
- Lips or fingernails are blue

Take 4 or 6 puffs of your quick-relief medicine **AND**
Go to the hospital or call for an ambulance _____ **NOW!**
(phone)

How To Control Things That Make Your Asthma Worse

This guide suggests things you can do to avoid your asthma triggers. Put a check next to the triggers that you know make your asthma worse and ask your doctor to help you find out if you have other triggers as well. Then decide with your doctor what steps you will take.

Allergens

Animal Dander
 Some people are allergic to the flakes of skin or dried saliva from animals with fur or feathers.
The best thing to do:
 • Keep furred or feathered pets out of your home.
 If you can't keep the pet outdoors, then:
 • Keep the pet out of your bedroom and other sleeping areas at all times, and keep the door closed.
 • Remove carpets and furniture covered with cloth from your home. If that is not possible, keep the pet away from fabric-covered furniture and carpets.

Dust Mites
 Many people with asthma are allergic to dust mites. Dust mites are tiny bugs that are found in every home—in mattresses, pillows, carpets, upholstered furniture, bedcovers, clothes, stuffed toys, and fabric or other fabric-covered items.
Things that can help:
 • Encase your mattress in a special dust-proof cover.
 • Encase your pillow in a special dust-proof cover or wash the pillow each week in hot water. Water must be hotter than 130° F to kill the mites. Cold or warm water used with detergent and bleach can also be effective.
 • Wash the sheets and blankets on your bed each week in hot water.
 • Reduce indoor humidity to below 60 percent (ideally between 30–50 percent). Dehumidifiers or central air conditioners can do this.
 • Try not to sleep or lie on cloth-covered cushions.
 • Remove carpets from your bedroom and those laid on concrete, if you can.
 • Keep stuffed toys out of the bed or wash the toys weekly in hot water or cooler water with detergent and bleach.

Cockroaches
 Many people with asthma are allergic to the dried droppings and remains of cockroaches.
The best thing to do:
 • Keep food and garbage in closed containers. Never leave food out.
 • Use poison baits, powders, gels, or paste (for example, boric acid). You can also use traps.
 • If a spray is used to kill roaches, stay out of the room until the odor goes away.

Indoor Mold
 • Fix leaky faucets, pipes, or other sources of water that have mold around them.
 • Clean moldy surfaces with a cleaner that has bleach in it.

Pollen and Outdoor Mold
What to do during your allergy season (when pollen or mold spore counts are high):
 • Try to keep your windows closed.
 • Stay indoors with windows closed from late morning to afternoon, if you can. Pollen and some mold spore counts are highest at that time.
 • Ask your doctor whether you need to take or increase anti-inflammatory medicine before your allergy season starts.

Irritants

Tobacco Smoke
 • If you smoke, ask your doctor for ways to help you quit. Ask family members to quit smoking, too.
 • Do not allow smoking in your home or car.

Smoke, Strong Odors, and Sprays
 • If possible, do not use a wood-burning stove, kerosene heater, or fireplace.
 • Try to stay away from strong odors and sprays, such as perfume, talcum powder, hair spray, and paints.

Other things that bring on asthma symptoms in some people include:

Vacuum Cleaning
 • Try to get someone else to vacuum for you once or twice a week, if you can. Stay out of rooms while they are being vacuumed and for a short while afterward.
 • If you vacuum, use a dust mask (from a hardware store), a double-layered or microfilter vacuum cleaner bag, or a vacuum cleaner with a HEPA filter.

Other Things That Can Make Asthma Worse
 • Sulfites in foods and beverages: Do not drink beer or wine or eat dried fruit, processed potatoes, or shrimp if they cause asthma symptoms.
 • Cold air: Cover your nose and mouth with a scarf on cold or windy days.
 • Other medicines: Tell your doctor about all the medicines you take. Include cold medicines, aspirin, vitamins and other supplements, and nonselective beta-blockers (including those in eye drops).



For More Information, go to: www.nhlbi.nih.gov
 NIH Publication No. 07-5251
 April 2007

APPENDIX B: PATIENT EDUCATION HANDOUTS

MANAGING YOUR ASTHMA

If you suffer from asthma, an obstructive disease of that affects lungs, you're not alone. Over 26 million people in the U.S. are affected by asthma. With asthma, the airways in the lungs are narrowed, inflamed, or twitchy. The obstruction of the airways can make it difficult to breathe. Asthma symptoms can be well managed using the following guidelines:

LIFESTYLE MODIFICATIONS

1. Be aware of your asthma symptoms.

Learn about your symptoms of asthma. One of the most common symptom of asthma is wheezing. It is a musical, high-pitched, whistling sound made when airflow is blocked in the lungs. Sometimes, the only symptom of asthma is coughing. The cough is usually non-productive, chronic, and mostly at night. You may also notice shortness of breath, difficulty breathing or chest tightness.



2. Know your Asthma Action Plan.

Follow the advice provided by your health care provider. Every person with asthma is different, and your Asthma Action Plan will give you specifics for your particular asthma symptoms and lifestyle. This can take the guess-work out if you experience an asthma attack and can be shared with others if you need assistance.



3. Use your peak flow meter.

Track your asthma using a peak flow meter. The peak flow meter measures how fast you can push air out of the lungs. Decreases in peak flow meter results can signal an upcoming asthma attack, so it's important to monitor your results.



4. Know when to see your provider.

If you notice an increase in episodes, severity, or symptoms at night you should talk with your provider. Also, if you're limiting your normal activities, missing a lot of work or school, or feel like you're not reaching your personal best on a regular basis you should see your doctor. A visit is also a good idea if your asthma medications don't seem to work anymore, or you're using quick-relief inhalers more than twice per week. You should also see your doctor at least once a year for new prescriptions for your medication.



5. Seek emergency treatment when necessary.

Asthma can become a serious, life-threatening condition very quickly, so you should seek immediate assistance if you have the following symptoms:

- Severe difficulty breathing
- Lips, fingers, or fingernails turning blue
- Feeling as though you are about to pass out
- Not being able to walk or talk in full sentences.



6. Recognize the medications used to treat your asthma.

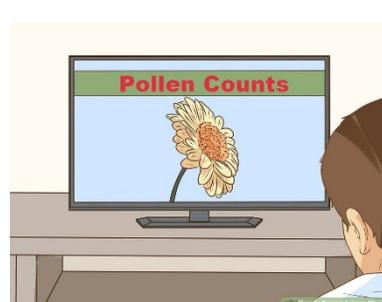
The goal of asthma treatment is to control your symptoms and maintain your lung function over time. Albuterol is a “quick-relief” medicine to help open your airways. It is also used during a severe asthma attack. Advair is a long-term “control” medicines used to reduce inflammation of your lungs and to decrease the frequency and severity of asthma attacks. However, Advair is not useful during an acute asthma attack.



7. Avoid allergic triggers.

Identify allergens that trigger your asthma. Allergens are substances that cause allergic reactions. Common outdoor allergens include pollens from grass, trees, and weeds. Common indoor allergens include dust mites, cockroaches, mold, and pets. While it may not always be possible to avoid allergens, you can talk to your doctor about allergy treatments or medications. You can also try to decrease the effects of allergens on asthma by:

- Avoiding yard work
- Tracking the pollen report
- Covering mattresses and pillows with hypoallergenic covers
- Using HEPA air filters
- Replacing carpet with wood or tile floors
- Removing garbage from the home daily
- Using bait stations or traps to control roaches (or calling an exterminator)
- Cleaning damp areas weekly to prevent mold growth
- Avoiding the use of vaporizers and humidifiers
- Avoiding pets with fur or feathers



8. Other triggers to avoid.

Watch for medicine or illness triggers. Colds, flu, and sinus infections are some upper respiratory illnesses that can irritate your airways and cause asthma attacks. To fight these illnesses, frequently wash your hands and get a flu shot every year. Note: some aspirin and anti-inflammatory medicines like ibuprofen and naproxen are responsible for some asthma flare-ups. Check labels on over-the-counter and prescription medications to avoid these substances.



9. Avoid smoke.

If you smoke, stop smoking. Smoking irritates the mucous linings of the airways which stimulates them to produce more mucus than normal. It also greatly increases your risk of other lung problems and cancer. If you have asthma, you should quit smoking to give your sensitive lungs a chance to recover. Avoid being around smoke in general. Second hand smoke can also wreak havoc on the linings of your airways so try to avoid being around cigarette smoke as much as possible.



10. Exercise

Strengthen your lungs through moderate exercise. While strenuous exercise when your lungs are weak could lead to an asthma attack, moderate exercise can actually strengthen your lungs. Start with light or moderate exercises, like walking, and work your way into a more challenging workout regimen. Exercise most days of the week for at least 30 minutes. Talk with your provider to tailor an exercise routine that fits the limitations of your asthma.



Content adapted from: <http://www.wikihow.com/Control-Asthma>

PEAK FLOW RATE

Peak flow rate (or peak expiratory flow rate) is the measurement of how much air you can blow out of your lungs in one breath. It is useful for you to measure and track this because it will help you know when your asthma is flaring up and/or when you should seek medical attention.

STEPS FOR PERFORMING THE PEAK FLOW RATE PROCEDURE:

1. Ensure the mouthpiece is clean and free of obstructions.



2. Ensure the marker is set to zero.



3. Stand up or sit upright.



4. Take as deep a breath in as you can and hold it.



5. Place the mouthpiece in your mouth and form as tight a seal as possible around it with your lips.



6. Breathe out as hard as you can through your mouth. Plug your nose if you have to.



7. Observe and record the reading.



8. Repeat the process at least 2 more times and record the highest reading.



9. Take your readings every day. If possible, your readings should be taken about the same time every day.



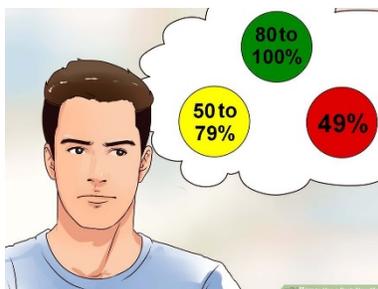
10. Keep a daily journal of your peak flow rates as well as any other asthma-like symptoms you experience (such as coughing or wheezing).



11. Bring your journal to doctors' appointments. This will help him/her make sure you are taking the proper asthma medications.



12. Find your "normal" peak flow rate and track your peak flow zone.



Related patient education handouts: **NORMAL PEAK FLOW RATE, ASTHMA ACTION PLAN**

Content adapted from: <http://www.osceskills.com/e-learning/subjects/explaining-the-peak-expiratory-flow-rate-technique/> and <http://www.wikihow.com/Use-a-Peak-Flow-Meter>

USING AN MDI WITH A SPACER

If you have been diagnosed with a lung disease such as asthma or COPD, the use of an MDI (metered dose inhaler), like Albuterol or Flovent, may be indicated. These instructions will ensure you are using the MDI and Spacer correctly.

STEPS FOR USING AN MDI WITH A SPACER:

1. Take off the MDI cap.

The cap is a small covering located over the mouthpiece to prevent foreign objects from getting in the MDI. Ensure the mouthpiece and spray hole are clean.



2. Shake the MDI.

Hold the inhaler in a vertical position with one hand and shake it 10 to 15 times.



3. Prime the MDI.

If this is the first time you've used the MDI or if you have not used it in more than a week, you need to prime it. This ensures the inhaler delivers the correct amount of medicine when used. You prime the MDI by squeezing the canister down into the plastic mouthpiece, emitting a single spray.



IMPORTANT: After you prime the MDI, you need to repeat Step 2 – Shake the MDI.

4. Connect the MDI and the spacer.

Connect the MDI mouthpiece to the back end of the spacer. Depending on the spacer and mouthpiece you have, they may click together neatly, or the mouth piece might simply slide in through a narrow rubber slit.



5. Breathe out as much as you can.

Ideally, you want to empty your lungs as much as possible.



6. Place the spacer's mouthpiece in your mouth.

It should sit just above your tongue. Keep your lips closed around it. Lift your chin up slightly. Hold the inhaler between your pointer finger and thumb.



7. Squeeze the inhaler once then breathe in the medication slowly and deeply.

Pull air into your lungs through your mouth until you reach your peak capacity. Some spacers have a whistle on them. Listen for the whistle. If you hear it, you are breathing in too rapidly. If you don't hear it, you are breathing in at an acceptable rate.



8. Remove the spacer mouthpiece from your mouth.

Hold your breath for about 10 seconds. Then, exhale slowly and deeply through your mouth.



9. Shake the MDI.

If you are prescribed a second “puff” of the MDI, you must shake the MDI again (like in Step 2) before repeating Steps 4-8.



Content adapted from: <http://www.wikihow.com/Use-an-Asthma-Inhaler>

NORMAL PEAK FLOW RATE

To create your asthma action plan, you need to find your “normal” peak flow rate. This is done by recording your peak flow rate for two weeks at about the same time of day when your asthma is under control. Then, you and your doctor will determine what a normal peak flow rate is for you.

Once you know your normal peak flow rate, follow the “zone” system on your “Asthma Action Plan.” This system helps you and your doctor decide how to treat your asthma.

The zone system can be compared to the colors of a traffic light.

Green Zone

80% to 100% of your normal peak flow rate signals go. Your asthma is under good control. Continue to follow the green zone of your asthma action plan.

Yellow Zone

50% to 80% percent of your normal peak flow rate signals caution. Your symptoms could get better or worse. Follow the yellow zone of your asthma action plan.

Red Zone

Less than 50% of your normal peak flow rate signals stop. This is a Medical Alert! Contact your healthcare provider now and follow the red zone of your asthma action plan.



Related patient education handouts: PEAK FLOW METER, ASTHMA ACTION PLAN

Content adapted from: <http://www.lung.org/lung-health-and-diseases/lung-disease-lookup/asthma/living-with-asthma/managing-asthma/measuring-your-peak-flow-rate.html> and <https://www.aaaai.org/conditions-and-treatments/library/at-a-glance/peak-flow-meter>

CREDITS

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