

DEFINITION

- * Adult is having an asthma attack
- * Previously diagnosed as having asthma, asthmatic bronchitis or reactive airway disease by a physician; or treated in the past with asthma medications by inhaler or nebulizer.
- * Use this guideline only if the patient has symptoms that match Asthma Attack.

SYMPTOMS of an Asthma Attack include:

- * Recurring episodes of wheezing, cough, chest tightness, and difficulty breathing.
- * Wheezing is a high-pitched or whistling sound heard on expiration.

ASTHMA ATTACK SEVERITY is defined as:

- * MILD: No SOB at rest, mild SOB with walking, speaks normally in sentences, can lay down, no retractions, pulse < 100. (GREEN Zone: PEFr 80-100%)
- * MODERATE: SOB at rest, SOB with exertion and prefers to sit, cannot lie down flat, speaks in phrases, mild retractions, audible wheezing, pulse 100-120. (YELLOW Zone: PEFr 50-80%)
- * SEVERE: Very SOB at rest, speaks in single words, agitated, sitting hunched forward, cannot lie down flat, retractions, usually loud wheezing, sometimes minimal wheezing because of decreased air movement, pulse >120. (RED Zone: PEFr < 50%)
- * RESPIRATORY ARREST IMMINENT: Struggling to breathe, unable to speak, drowsy or confused.

BACKGROUND

ASTHMA TRIGGERS: Different things can cause an asthma attack. These are called asthma triggers.

- * Allergens (pollen, house dust, mold, animals)
- * Irritants (cigarette smoke, dirt, pollution)
- * Exercise
- * Respiratory Infections (cold or flu)
- * Sudden changes in the weather (generally cold weather)

ASTHMA MEDICATIONS - There are two main types of asthma medications, long-term and quick-relief:

- * A QUICK-RELIEF (rescue, reliever) medicine helps stop an asthma attack that has already started. It can keep the attack from getting serious. It works fast to stop the tightness and opens the airways in the lungs during an asthma attack. An adult should take it at the first sign of a wheeze, cough, or drop in peak flow measurement. Sometimes doctors will tell an adult to take it every day for a week or two after an asthma attack, but quick-relief medicines are not meant to be used to stop attacks every day for weeks and weeks. Examples of quick-relief medicines include inhaled or nebulized beta-agonists (e.g., Proventil, Alupent, Albuterol, Ventolin, Salbutamol).
- * A LONG-TERM-CONTROL (preventative, controller) medicine keeps asthma attacks from starting. It works slowly over many weeks to stop the swelling in the airways. An adult must take it every day even when they feel fine and can breathe well. Examples of preventative medicines include inhaled steroids (e.g., Aerobid, Azmacort, Beclovent, Flovent, Pulmicort, Vanceril) and cromolyn.

PEAK FLOW METERS: Peak flow meters measure how fast an adult can move air out of the lungs. Every adult asthmatic should have a peak flow meter. These measurements are very useful for grading the severity of an asthma attack. The normal peak flow rate for a healthy adult female is 400-500 and the normal value is 500-650 for a healthy adult male. Peak flow rates decrease during an asthma attack. In general, medications should be increased when the peak expiratory flow rate (PEFR) is less than 80% of baseline and an adult should be seen immediately in an office or

emergency department if the PEFR is less than 50%.

* MILD ATTACK: PEFR 80-100% of baseline (personal best / green zone)

* MODERATE ATTACK: PEFR 50-80% (yellow zone)

* SEVERE ATTACK: PEFR less than 50% (red zone)

FIRST AID

FIRST AID ADVICE FOR ASTHMA ATTACK: Take 4 puffs on your quick-relief inhaler (e.g., albuterol, salbutamol, Xopenex) right now.

TRIAGE ASSESSMENT QUESTIONS FOR ASTHMA ATTACK

Call Ambulance Provider Now

- Severe difficulty breathing (e.g., struggling for each breath, unable to speak, or speaking in single words)

FIRST AID: Take 4 puffs from your quick-relief inhaler (e.g., albuterol)

- Bluish lips, tongue or face

FIRST AID: Take 4 puffs from your quick-relief inhaler (e.g., albuterol)

- Wheezing started suddenly after medicine, an allergic food or bee sting

R/O: anaphylaxis. FIRST AID: Take 4 puffs from your quick-relief inhaler (e.g., albuterol)

- Passed out (fainted)

- Sounds like a life-threatening emergency to the triager

Go to ED Now

- SEVERE asthma attack (e.g., very SOB at rest, speaks in single words, loud wheezes)

FIRST AID: Take 4 puffs from your quick-relief inhaler (e.g., albuterol)

Go to ED Now (or to Office with PCP Approval)

- Peak flow rate less than 50% of baseline level (RED zone)

- Severe wheezing or coughing and doesn't have neb or inhaler available

Reason: needs immediate neb or inhaler

- Chest pain

R/O: pneumothorax

- Hospitalized before with asthma; now feels same

- Patient sounds very sick or weak to the triager

Go to Office Now

- MODERATE asthma attack (e.g., SOB at rest, speaks in phrases, audible wheezes) and not resolved after 2 nebulizer or inhaler treatments given 20 minutes) apart

Reason: may need oral corticosteroid burst

- Peak flow rate 50-80% of baseline level (YELLOW zone) after using 2 nebulizer or inhaler treatments given 20 minutes) apart

See Today in Office

- Fever > 103° F (39.4° C)
R/O: bacterial pneumonia
- Fever > 100.5° F (38.1° C) and over 60 years of age
- Coughing continuously (nonstop) that keeps from working or sleeping, and not improved after inhaler or nebulizer
Reason: may need for oral corticosteroid burst
- Asthma medicine (neb or inhaler) is needed more frequently than q 4 hours
- Fever present > 3 days
- Patient wants to be seen

See Today or Tomorrow in Office

- MILD asthma attack (e.g., No SOB at rest, mild SOB with walking, speaks normally in sentences, mild wheezing) and persists > 24 hours on appropriate treatment
Reason: may need for oral corticosteroid burst
- Intermittent mild wheezing persists > 5 days
- Nasal discharge present > 10 days
- Sinus pain (around cheekbone or eye)

See Within 2 Weeks in Office

- No asthma check-up in > 6 months
Reason: review treatment program
- Missing > 1 day of work or school per month because of asthma

Home Care

- MILD asthma attack (e.g., No SOB at rest, mild SOB with walking, speaks normally in sentences, mild wheezing)

HOME CARE ADVICE

Home Care Advice for a Mild Asthma Attack

1. **QUICK-RELIEF ASTHMA MEDICINE:**
 - * Start your quick-relief medicine (e.g., albuterol, salbutamol) at the first sign of any coughing or shortness of breath (don't wait for wheezing). Use your inhaler (2 puffs each time) or nebulizer every 4 hours. Continue the quick-relief medicine until you have not wheezed or coughed for 48 hours.
 - * The best 'cough medicine' for an adult with asthma is always the asthma medicine (Note: Don't use cough suppressants, but cough drops may help a tickly cough).
2. **LONG-TERM-CONTROL ASTHMA MEDICINE:** If you are using a controller medicine (e.g., inhaled steroids or cromolyn), continue to take it as directed.
3. **DRINKING LIQUIDS:** Try to drink normal amount of liquids (e.g., water). Being adequately hydrated makes it easier to cough up the sticky lung mucus.
4. **HUMIDIFIER:** If the air is dry, use a cool mist humidifier to prevent drying of the upper airway.
5. **HAY FEVER:** If you have nasal symptoms from hay fever, it's OK to take antihistamines (Reasons: poor control of allergic rhinitis makes asthma worse whereas antihistamines don't make asthma worse).
6. **REMOVE ALLERGENS:** Take a shower to remove pollens, animal dander, or other allergens from the body and hair.
7. **AVOID TRIGGERS:** Avoid known triggers of asthma attacks (e.g., tobacco smoke, cats, other pets, feather pillows, exercise).
8. **WORK WITH YOUR DOCTOR:** There is no cure for asthma but you can take charge and learn to control it. The best way to take charge of asthma is to work with your doctor (over many months) to find the right controller (preventive) medicine so your asthma is under control. If you keep having asthma attacks, then the asthma is not under control. People can die from asthma if they do not take it seriously and work with a doctor to control it.
9. **EXPECTED COURSE:** If treatment is started early, most asthma attacks are quickly brought under control. All wheezing should be gone by 5 days.
10. **CALL BACK IF:**
 - * Inhaled asthma medicine (nebulizer or inhaler) is needed more often than every 4 hours
 - * Wheezing has not completely cleared after 5 days
 - * You become worse

How to Use an Inhaler or Spacer

1. **HOW TO USE A METERED DOSE INHALER (MDI):**
 - * **STEP 1** - Remove the cap and shake the inhaler.
 - * **STEP 2** - Hold the inhaler about 1-2 inches in front of the mouth. Breathe out - completely.
 - * **STEP 3** - Press down on the inhaler to release the medicine as you start to breathe in slowly.
 - * **STEP 4** - Breathe in slowly for three to five seconds.
 - * **STEP 5** - Hold your breath for ten seconds to allow the medicine to reach deeply into your lungs.
 - * If your doctor has prescribed two puffs, wait 1 minute and then repeat steps 2-5.

2. HOW TO USE A MDI WITH A SPACER:
 - * STEP 1 - Shake the inhaler and then attach it to the spacer or holding chamber.
 - * STEP 2 - Breathe out completely.
 - * STEP 3 - Place the mouthpiece of the spacer in your mouth.
 - * STEP 4 - Press down on the inhaler. This will put one puff of the medicine in the holding chamber or spacer.
 - * STEP 5 - Breathe in slowly for 5 seconds.
 - * STEP 6 - Hold your breath for 10 seconds and then exhale.
 - * If your doctor has prescribed two or more puffs, wait 1 minute between each puff and then repeat steps 2-6.

3. HOW TO USE A DRY POWDER INHALER:
 - * STEP 1 - Remove the cap and follow manufacturer's instructions to load a dose of medicine.
 - * STEP 2 - Breathe out completely.
 - * STEP 3 - Put the mouthpiece of the inhaler in the mouth.
 - * STEP 4 - Breathe in quickly and deeply.
 - * STEP 5 - Hold your breath for ten seconds to allow the medicine to reach deeply into your lungs.
 - * If your doctor has prescribed two or more inhalations, wait 1 minute and then repeat steps 2-5.

4. FLOAT TEST - How to tell if your Inhaler (MDI) is EMPTY:
 - * An empty MDI is sometimes the cause of an unresponsive asthma attack.
 - * Most MDIs hold 120 puffs of albuterol or other medicine. It should say on the side of the inhaler.
 - * Shaking the inhaler and hearing fluid in it is not helpful. When the medicine is gone, extra propellant still remains.
 - * THE FLOAT TEST: Place the inhaler in a bowl of water and if it floats, assume it's empty. A new and completely full inhaler will sink. The float test is not 100 per cent reliable.

Your Peak Flow Meter

1. PEAK FLOW METER:
 - * Every adult asthmatic should have a peak flow meter.
 - * A peak flow meter is a device that measures how well air moves out of your lungs.
 - * The number that is obtained is called the peak expiratory flow rate (PEFR).
 - * The 'personal best' value is the highest PEFR number that a person obtains when they are feeling well.

2. HOW TO USE A PEAK FLOW METER:
 - * STEP 1 - Move the indicator to the bottom of the numbered scale. Stand up.
 - * STEP 2 - Take a deep breath, filling your lungs completely.
 - * STEP 3 - Place the mouthpiece in your mouth and close your lips around it. Do not put your tongue inside the hole.
 - * STEP 4 - Blow out as hard and fast as you can.
 - * STEP 5 - Repeat the process two more times.
 - * STEP 6 - Write down the highest of the three numbers.

3. USING A PEAK FLOW METER TO DETERMINE THE SEVERITY OF AN ASTHMA ATTACK:
 - * GREEN ZONE - MILD Attack: PEFR 80-100% of personal best
 - * YELLOW ZONE - MODERATE Attack: PEFR 50-80%
 - * RED ZONE - SEVERE Attack: PEFR less than 50%

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