

Indian Academy of Pediatrics (IAP)



## GUIDELINES FOR PARENTS

# Acute Attack of Asthma: What to Do?



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### 10 FAQs on ACUTE ATTACK OF ASTHMA: WHAT TO DO?

1. What is asthma?
2. What is an "acute flare-up" of asthma?
3. How to recognize acute flare of asthma?
4. Can acute flare of asthma be life-threatening?
5. What are the triggers of acute flare of asthma?
6. What medicine is used during acute asthma flare-up?
7. What are the devices by which one can deliver the medicines?
8. What is the correct technique of using the metered dose inhaler (MDI) with spacer for optimum delivery of the drug?
9. How do we actually manage acute flare-ups at home?
10. How do we prevent our children from having an acute flare-up?

**Under the Auspices of the IAP Action Plan 2021–2022**

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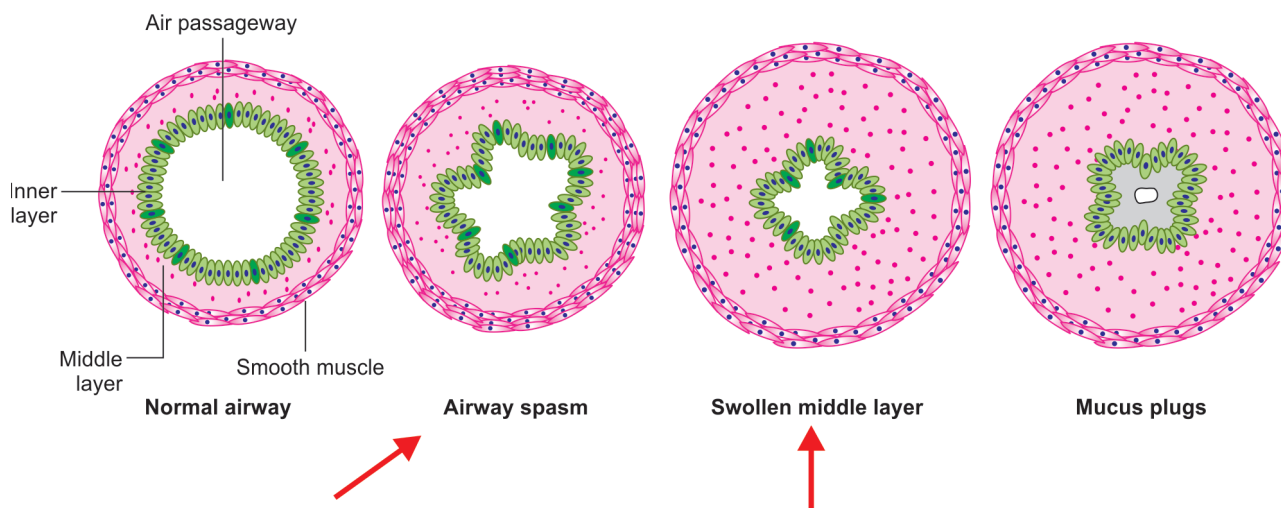
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# Acute Attack of Asthma: What to Do?

Q1

## What is asthma?

Asthma is a common chronic illness affecting different age groups, including young children. This disease is characterized by inflammation (redness and swelling) of the conducting airways, causing their episodic narrowing (obstruction). Breathing through the narrowed airways causes its typical symptoms such as cough, wheezing, breathlessness, and chest tightness. The hallmark of asthma is its episodic nature and reversibility of obstruction. Even though the symptoms are recurrent, the inflammation of the airways is persistent, as shown in **Figure 1**.

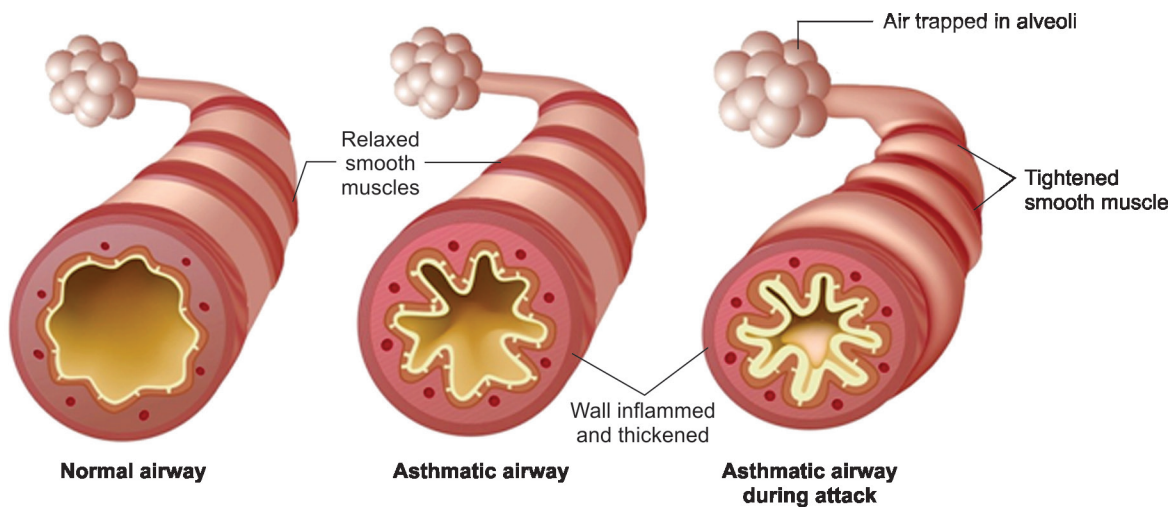


**Fig. 1:** Airway inflammation and narrowing in “bronchial asthma”.

**Q2**

**What is an “acute flare-up” of asthma?**

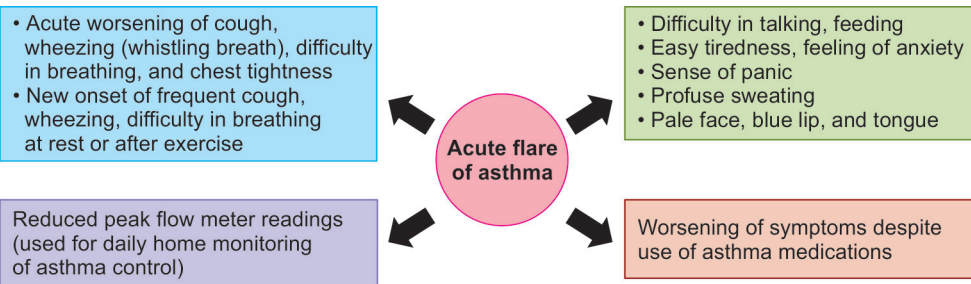
In a patient with persistent inflammation, there can be sudden worsening of symptoms, called as an acute flare. These flare-ups can happen due to exposure to certain “triggers”. These triggers can be exposure to dust, irritant gases, smoke, pollen, chemical, etc. On exposure to a trigger, the airway goes into bronchospasm (airway narrowing), causing an acute onset of the symptoms of asthma (cough, wheezing, breathlessness, and chest tightness). In children with poor asthma control, flare-ups can be frequent. A child without a diagnosis of asthma can present with an acute flare-up for the first time (**Fig. 2**).



**Fig. 2:** Worsened airway narrowing during an asthmatic flare.

**Q3**

**How to recognize acute flare of asthma?**



Q4

### Can acute flare of asthma be life-threatening?

Yes, acute flare of asthma can be life-threatening. A child can present with any of the following symptoms:

- Severe breathlessness/difficulty in breathing or wheezing, especially at night or early in the morning, even at rest
- The child is unable to talk/walk/feed normally due to severe shortness of breath
- Feeling of extreme tiredness
- Having to strain the chest muscles to breathe, flaring of nostrils while breathing.
- Drowsiness/altered sensorium/irritability/confusion
- Child not responding to initial rescue (reliever) puffs
- Gasping for breaths
- Blue lips/fingernails/face
- Exhaustion/fainting/collapsing

Q5

### What are the triggers of acute flare of asthma?

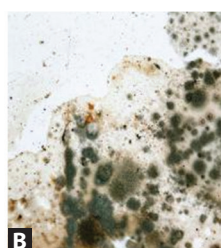
“Triggers” are factors responsible for acute flare-ups in an asthmatic. Any one or more of the followings can be triggers:

- Common viral infections of respiratory tract
- Exposure of the airways to different allergens (Talk to your pediatrician). For example, dust mites, fungus (mold), pollens, animal (pets) excreta, pests (cockroaches, mice, etc.) (**Figs. 3A to K**)
- Exposure to cigarette smoke and environmental pollution
- Exercise
- Associated gastroesophageal reflux or nasal allergy
- Emotional outburst (Mania, depression, shock, failures, etc.)
- Stress

- *Weather changes:* Thunderstorms, high humidity, etc.
- Food additives/fragrances/paints, cosmetics
- Inhalation of cold/dry air
- Foods (commonly—milk, egg, sea foods, nuts)
- Drugs such as aspirin and other nonsteroidal anti-inflammatory drugs (Painkillers).



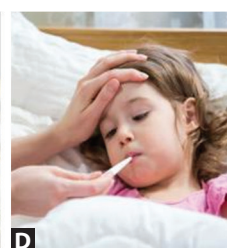
A Dust mite



B Mould



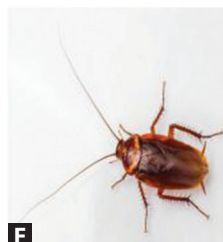
C Pollen



D Child with flu



E Egg



F Cockroach



G Paints



H Cosmetics



I Stress



J Thunderstorm



K Cigar smoke

**Figs. 3A to K:** Allergens

*Note:* Besides above factors, nonadherence to treatment advice and improper technique can also cause acute asthma flares.

Q6

### What medicine is used during acute asthma flare-up?

- An acute flare-up can happen at home, in school, during outings, or on vacation.
- A sense of preparedness should always be there in a family with an asthmatic child.
- Reliever inhaler (puffs), which is the blue or green one is the medicine, we need to use. This medicine relaxes the airways which have narrowed during the attack causing breathlessness and other symptoms.
- The other inhaler, the pink, brown, or red one is the controller inhaler. This contains inhaled corticosteroid. It is the most important drug in treatment of asthma. This is to be continued even during this acute flare as well, as prescribed by your pediatrician.

Q7

### What are the devices by which one can deliver the medicines?

- The device of choice is inhaler with a spacer always. A child younger than 4 years may need a properly fitting mask along with spacer.
- Inhaler with spacer is effective, quick, with least side effects and easy to maintain.
- *Do not use nebulizers at home. Nebulizers should always be used with oxygen.* They are difficult to maintain, dependent on electricity, take a long time to deliver drugs, use too much of drug, and are not portable.

Q8

**What is the correct technique of using the metered dose inhaler (MDI) with spacer for optimum delivery of the drug?**

- Deliver to a sitting child. A small child can be supported on the chest of a parent sitting on the lap or propped up on the arm.
- Shake inhaler well.
- Fix it in the slot of the spacer.
- The child should hold the mouthpiece well without any leaks.
- First, the child should breathe out into the spacer.
- Then, the parent should actuate the inhaler.
- The child is asked to take 6–10 breaths.
- An older child can take one single deep breath over a period of 10 seconds.
- In a child using a mask, a good seal should be made, covering the nose and mouth.
- Thereafter, the steps of shaking, fixing, and actuation are same. Here, it is held for 30 seconds to a minute.
- The second dose of puff is given after a gap of a minute.

*Note:* As attacks may happen in school, the class teacher should be informed about the child's asthma. A spacer and reliever inhaler should be in his school bag or handed over to the teacher. She/he should also be taught the technique by the parent.



## Q9

### How do we actually manage acute flare-ups at home?

Parents need to give “reliever” medications. The following points are to be noted:

- Do not panic, assure the child, give sips of water to hydrate the child, and contact the hospital emergency.
- Is your child suffering for the first time?
  - In case of severe flare-ups, rush to the nearest hospital. It may or may not be asthma, seek medical advice.
  - However, one can administer “relievers” for immediate relief.
- Is your child a known asthmatic?
  - If yes, do have a written asthma action plan, and follow the advice of your doctor.
  - If there is no written action plan, give “reliever” medication as described. Please follow the steps:
    - Sit up
    - Take the reliever inhaler, 2–4 puffs (<5 years), 6–12 puffs in older children at an interval of 20 minutes
    - Use one puff at a time over 30 seconds to 1 minute
    - Please use inhaler with spacer using correct technique
    - Assess response of the child; if improving—continue reliever medications and seek medical advice
    - Some children may require repeated administration of reliever medications, since the drug delivery may be suboptimal in flare-ups. If not improving, rush to the hospital (for oxygen administration)

Q10

### How do we prevent our children from having an acute flare-up?

- Seek medical advice and empower yourself with knowledge on asthma. Clear your myths and doubts with the doctors.
- Have a written action plan for emergencies.
- Many acute flare-ups can be prevented, if “controllers” are used regularly as advised by your doctor.
- Parents should not stop medication on their own.
- Check your drug and devices regularly. Use correct dose and technique of inhaler.
- Avoid triggers, wherever possible.