

## ASTHMA FACTS

- ✿ 17 million Americans have asthma. (7)
  - ✿ Asthma affects more than 1 child in 20. (3)
  - ✿ It is estimated that by 2020, 29 million Americans will have asthma. (4)
  - ✿ Each day 14 Americans die from asthma. (3)
  - ✿ With the exceptions of AIDS and Tuberculosis, Asthma is the only chronic disease with a rising mortality rate. (3)
  - ✿ Each year, there are 10.4 million visits to physicians and there is \$4.2 billion spent on hospital services for asthmatics. (7)
  - ✿ Each year, asthmatic children miss a total of 10 million school days. (7)
  - ✿ Each year, there is \$1 billion lost in productivity for parents missing work to take care of their asthmatic children. (7)
  - ✿ Each year, asthmatic children spend an estimated 7.3 million days in bed because of their asthma. (3)
- 

## WHAT IS ASTHMA?

**Asthma is a chronic lung disease that causes breathing problems by preventing smooth airflow in the lungs. An individual with asthma has constant irritation and inflammation in the lining of their airways. The continual inflammation amplifies airway sensitivity making the person more prone to bronchospasms. Bronchospasms, muscle spasms surrounding the airways, create more obstacles for clear breathing, as the spasm causes the muscles to squeeze down on the airways, making the passageway even thinner. Asthmatic lungs also release larger amounts of mucus, which adds to the airflow complications. (8)**

These obstacles cause the individual to experience the recognizable symptoms of asthma. Individuals can have these symptoms frequently or only when having an attack. The severity of symptoms depends on the individual. Symptoms include: (8)

- ✿ Coughing
- ✿ Shortness of breath
- ✿ Wheezing
- ✿ Mucus production
- ✿ Chest tightness

There are certain behaviors or warning signs that indicate a possible attack. Some of the warning signs are: (1,8)

- ✿ Breathing changes
- ✿ Sneezing
- ✿ Moodiness
- ✿ Cough
- ✿ Headache
- ✿ Runny nose
- ✿ Trouble sleeping
- ✿ Chin or throat itchiness
- ✿ Feeling tired
- ✿ Dark circles under eyes
- ✿ Unusual paleness or sweating
- ✿ Spaces between ribs and place above the Adam's apple are sunk in

Parents, teachers, coaches, and all childcare providers must be able to recognize any of these symptoms in an asthmatic child. Professional treatment should be sought as soon as possible if any symptoms arise. This awareness will help prevent and protect the child from experiencing an extreme health crisis. (8)

---

## WHY DO YOU GET ASTHMA?

**There is no conclusive evidence why some people contract asthma and others do not. Some links have been made to certain characteristics that make people more prone to asthma and to certain environmental conditions that place individuals at a higher risk. However, research has concluded that 80% of children who have asthma show symptoms before they are five years old. (1,2,5,6)**

Genetics and heredity explain some cases of asthma. If an individual has one asthmatic parent, the child is at a 25% risk of developing asthma. Having two asthmatic parents, places the child at a 50% risk of developing asthma. (4)

Children can also inherit a predisposition for allergies. If a child's parents have certain allergies, their child is more likely to have certain allergies, although not the same allergies. Having allergies places an individual at a higher risk for developing asthma. (5)

Children with pet allergies are 24 times more likely to have asthma than children without allergies. (4)

---

## HOW DO YOU KNOW YOU HAVE ASTHMA?

**M**ost importantly, it is essential that you immediately go to the doctor. Many times, asthma is overlooked, as the symptoms can be easily linked to other problems. You should give your physician as much information as possible with every detail. When testing for asthma, the doctor will take these factors into account. (6)

Patient's medical history  
Patient's family medical history

---

## TRIGGERS OF ASTHMA

**T**he extreme sensitivity and constant inflammation of the airway lining make an asthmatic susceptible to certain environmental conditions that instigate an asthma attack or bronchospasm. Some triggers may be threatening to one person and not to another, and triggers can also vary in severity. Some examples are: (1,2,5,6)

**ALLERGIES:** allergies to pollen, mold, dust mites, animal dander, foods, chemicals, etc.

**ENVIRONMENTAL IRRITANTS:** pollution or smoke

**VIRAL INFECTIONS:** mostly in the upper respiratory track

**COLD AIR**

**EMOTIONS:** emotional flare-ups or hard laughter, stress, excitement, anxiety, etc.

**SLEEPING:** some only have problems at night

**EXERCISE:** must be prepared by warming up and always have medication

**CHRONIC SINUSITIS**

**GASTROESOPHAGEAL REFLEX:** leaking of stomach acid causes symptoms

---

## MANAGING YOUR ASTHMA

**A**sthma is a chronic disease that does not currently have a cure. However, the disease can be managed. Steps to take for quality asthma management are:

Making an Asthma Action Plan that has steps to take when having an attack, including the necessary phone numbers and medications for all occasions. These plans also identify a person's personal warning signs that indicate a potential attack. Parents should distribute their child's Action Plan to the child's teachers, coaches, camp, or day care staff, etc. (2)

Educating your child and yourself about asthma and keeping yourself up to date with the latest research and news concerning asthma. (2)

Ascertain your child's asthma triggers and irritants and take the necessary steps to prevent placing the child in a threatening environment. If the child is showing signs of new symptoms, you should contact your healthcare professional immediately. (2)

Have an organized monitoring of symptoms schedule. (2)

Use of medications on a physician designed treatment plan. (2)

---

## MEDICATIONS AND DEVICES FOR ASTHMA

**Asthma can be treated by long-acting, preventive medications or by fast-acting, reliever medications when experiencing asthma symptoms or an attack.**

**Long-acting medications are primarily used for maintenance and prevention of asthma symptoms. These should be taken on a daily schedule for the best results. Types of these long-term control medications are:**

### **CROMOLYN SODIUM AND NEDOCROM**

Preventive; help control airway swelling; can be used before contact with an asthma trigger; improvement may not be noticed for 4 to 8 weeks; Can be administered as:

- an inhaled form: Intal® (cromolyn), Tilade® (nedocromil)
- a nasal spray: Nasalcrom® (cromolyn)
- Eye drops: Crolom® (cromolyn)

### **INHALED STEROIDS**

Prevent mucus production and airway swelling.

- These include: Vanceril®, Vanceril DS®, Beclovent®, Benclivent DS® (beclomethasone), Azmacort® (triamcinolone), Pulmicort® (budesonide), Flovent® (fluticasone), Aerobid®(flunisolide)

### **LONG-ACTING BETA-AGONIST**

Used with an inhaled steroid to open airways, loosens muscles surrounding the airways; does NOT help with airway swelling.

- Inhaled form: Serevent® (salmeterol)

### **THEOPHYLLINE**

Calms muscles around airways; has many side-effects commonly felt at the start of treatment; should not be taken with other medications without a doctor's consent.

- As a tablet, syrup, or capsule: Theo-Dur®, Slo-Bid®, Uniphyl®, UniDur®

## LEUKOTRIENE MODIFIERS

Most recent preventive medication; controls airway swelling and loosening of muscles around airways; if taking this with another drug, you must contact your physician.

- As tablets: Accolate® (zafirlukast), Zflo® (zileuton), Singulair® (montelukast)

**Fast-Acting Medications** are used to relieve a person who is having symptoms or an attack, and their effects are felt rapidly. These medications include:

## SHORT-ACTING BETA-AGONISTS

smooth muscles surrounding airways; use only for immediate help.

- In an inhaled form: Proventil®, Ventolin® (albuterol), Alupent® (metaproterenol), Maxair® (pirbuterol)

## ANTICHOLINERGICS

Clears airways in approximately 15-20 minutes by stopping the reflexes through nerves that control the muscles surrounding the airways; to prolong relief post-attack, use this along with a beta-agonist.

- An inhaled form: Atrovent® (ipatropium)

## STEROID PILLS

Relieve swelling and mucus production; no liver damage or sterility;

*used in regular asthma treatment:* not to be used alone; side-effects in some; should only be prescribed by a pulmonologist or an allergist;

*used sometimes:* needed occasionally to relieve symptoms and help decrease emergencies; can be used for 2-7 days, then continued for a period with less dosages.

- In pill or liquid form: Prelone®, Pediapred® (prednisolone), Medrol® (methylprednisolone), Deltasone® (prednisone)



**Inhaled Medications** are used to direct medication straight into the airways. Types of these include:

## METERED-DOSE INHALER WITH SPACER

To have an effect, these must be used properly; a spacer connects to the inhaler to help direct medication to the lungs, rather than the mouth; popular spacers include:

- InspirEase, E-Z Spacer®, AeroChamber®, OptiChamber®

## DRY POWDER INHALER

Work as soon as one breathes, if inhaled fast enough:

- Turbuhaler®, Diskus®, Potahaler®

## NEBULIZER

Also known as a "breathing machine" that produces a vapor of the proper medication from pressurized room air; it is inhaled for 5-10 min; in severe situations, this machine shows more efficient results than just an inhaler.

Info from: "Asthma" from National Jewish Medical & Research Center

---

## GOALS OF TREATMENT & MANAGEMENT

According to the *National Guidelines for the Diagnosis and Management of Asthma* if an asthmatic abides by the following, asthma can be manageable. (5)



Prevent chronic and troublesome symptoms



Maintain (near) "normal" breathing levels



Maintain normal activity levels, including exercise



Prevent recurrent asthma flare-ups, and minimize need for emergency room visits or hospitalizations



Provide optimal medication therapy with minimal or no adverse effects



Meet patients' and families' expectations of satisfactory asthma care

---

### Bibliography:

- 1) About Asthma in Children. Channing L. Bete Co., Inc. South Deerfield, MA: 1992.
- 2) Asthma. National Jewish Medical & Research Center. Denver, CO: 1998.
- 3) Asthma Facts. Asthma & Allergy Foundation of America. Washington, DC: 1999.
- 4) Asthma: Facts and Figures. American Academy of Physician Assistants. Alexandria, VA: 2001.
- 5) Asthma Triggers & Management. American Academy of Allergy, Asthma, and Immunology. Milwaukee, WI: 1999.
- 6) Childhood Asthma. American Academy of Allergy, Asthma, and Immunology. Milwaukee, WI: 1999.
- 7) "Fast Stats" Nursing Management. V32, i4, p.56: April 2001.
- 8) What is Asthma?. Asthma & Allergy Foundation of America. Washington, DC: 1999.
- 9) What You Should Know about Childhood Asthma. Asthma & Allergy Foundation of America. Washington DC: 1999.