

ASTHMA GLOSSARY

ACTION PLAN: A list of specific instructions drawn up by a health care professional for an asthmatic to follow. The plan includes a normal schedule for asthma medicines, as well as what to do if peak flow readings or asthma symptoms become worse than usual. These plans are split into zones (red, green, and yellow). SEE: ZONES. (1)

ACUTE: Brief, not ongoing. Usually implies relatively high intensity. Acute asthma symptoms may last a short time but are more severe than an individual's usual symptoms. (2)

ADRENERGIC: Resembling some of the effects of adrenaline. Medications called beta-adrenergic drugs are commonly used in asthma to help open up the airways (which is why they are called bronchodilators). (3)

AIRFLOW LIMITATION: A prolonged forced expiratory time (longer than 4 seconds). This reflects the heterogeneity of the mechanisms involved in the physiological abnormalities of asthma. (2)

AIRWAYS: Hollow tubes to and within the lungs through which air passes during breathing. These include the trachea, bronchi, and bronchioles. (1)

ALLERGEN: A protein that causes one to have an allergic reaction. Examples include: foods, animal dander, and certain drugs. (2)

ALLERGY: A type of excessive immune system reaction to a substance in a person's environment. (3)

ALVEOLI: The millions of tiny compartments within the lungs at the ends of the airways (Picture bunches of hollow grapes at the ends of hollow stems). Alveoli are also called "air sacs." They are where gas exchange takes place; where the blood picks up oxygen (from air a person has breathed in) and releases carbon dioxide (to be breathed out). SINGULAR: AVEOLUS. (1)

ANTIBODY: A protein that develops in the body in response to an antigen. (3)

ANTIGEN: A substance that can trigger an immune response, resulting in the production of an antibody as a part of the body's defense against infection and disease. (2)

ANTI-INFLAMMATORY MEDICINES: Used to prevent symptoms by keeping airways from swelling when exposed to triggers. (2)

ASTHMA (OPERATIONAL DEFINITION): Asthma is a chronic inflammatory disorder in which many cells play a role, in particular mast cells, Eosinophils, and T lymphocytes. In susceptible individuals this inflammation causes recurrent episodes of wheezing, breathlessness, chest tightness, and cough particularly at night and/or in the early morning. These symptoms are usually associated with widespread, but variable, airflow limitation that is at least partly reversible either spontaneously or with treatment. The inflammation also causes an associated increase in airway responsiveness to a variety of stimuli. Asthma is a "disorder" rather than a "disease." Many factors contribute to airflow limitation in asthma,

each related to the inflammatory process; these factors may vary within and between individuals. (2)

ASTHMA SPECIALIST: Health care professional who has received specific training in the diagnosis and management of asthma. (2)

ATOPY: The genetically determined tendency to be allergic to things. (1)

ATTACK: SEE: EPISODE.

BRONCHI: The airways that lead from the trachea to each lung, and then subdivide into smaller and smaller branches. They connect to the bronchioles. They have many mucus producing glands. SINGULAR: BRONCHUS. (1,3)

BRONCHIOLES: The tiny (<1mm in diameter) branching airways that lead from the bronchi to the alveoli. They also produce mucus. (1)

BRONCHOCONSTRICTION: The reduction in the diameter of the bronchi, usually because of squeezing of the smooth muscles in the walls. This reduces the space for air to go through and can make breathing difficult. (1)

BRONCHODILATOR: A medicine that relaxes the smooth muscles of the airways. This allows the airway to open up, or dilate, because the muscles are not squeezing it shut. (1)

CHALLENGE TEST: A test done to determine whether or not a person's bronchi are hyper responsive. The subject breathes in air containing carefully controlled amounts of a substance known to cause bronchoconstriction. The bronchi of asthmatics respond to much smaller amounts of the substance than the bronchi of those without asthma. This test is often used to confirm the diagnosis of asthma if there is uncertainty. (1)

CHRONIC: Lasting a long time. Asthma is a chronic illness because it is ongoing and does not just go away in a few days or weeks. Asthma can last a lifetime. (1)

CONTROLLER MEDICATIONS: Medications taken daily on a long-term basis that are useful in getting persistent asthma under control and in maintaining control. They include anti-inflammatory agents and long-acting bronchodilators. Anti-inflammatory agents, particularly inhaled corticosteroids, are the most effective controller medications. Controller medications are also sometimes called prophylactic, preventive, regular preventive, or maintenance medications. (2)

CORTICOSTEROIDS: A type of medication used to reduce inflammation. These drugs mimic a substance produced naturally by the adrenal glands. In asthma, these drugs are often taken through an inhaler for long-term control. They may also be taken orally or given intravenously for a short time if asthma symptoms become out of control. (1)

DANDER: Scales of dead skin. A common allergen. (3)

DPI (dry powder inhaler): This is a variety of devices that provide a new way of taking inhaled medicine. The propellants used in regular-metered dose inhalers can be bad for the environment. For this reason, drug companies are in the process of switching over to DPI's, which do not use a propellant at all. The medicine is in the form of a very fine powder that is easily inhaled without the use of an aerosol spray device. DPI's can be easier to use, because the patient doesn't have to coordinate the timing of activating the inhaler and breathing in, and the problems of bad taste and unpleasant "feel" are also greatly reduced. (1)

DUST MITES: Very tiny creatures that live in the dust in people's homes. They are present in both visible dust (i.e., under the bed or behind the couch) and in soft places like pillows, mattresses, blankets, and stuffed animals. They thrive especially when the air is humid. Because many people are allergic to dust mites, removing them is part of most asthma control programs. (1)

DYSPNEA: Difficult breathing. (3)

EDEMA: Swelling due to collection of fluid within cells or tissues. (1)

EOSINOPHIL: A type of white blood cell whose major role is to assist in protecting against parasitic infections. It is also associated with the inflammation at the root of asthma. Those with asthma tend to have more eosinophils in their blood and an unusual number of eosinophils "migrate" into their lungs. It is still not entirely clear whether eosinophils cause some of the problems that asthmatics experience, or whether they are just associated with the process without doing damage themselves. (1)

EPISODE: A period of markedly worsened symptoms. This may be brought on by exposure to a known trigger or by an upper respiratory infection (a cold), or it may not have a known explanation. An episode may come on all of a sudden or may develop gradually over days. Asthma episodes, at their worst, can be life threatening, and should always be taken seriously. (1)

EPISODIC: Intermittent, with periods of apparent normal function in-between periods of symptoms. (1)

EXACERBATION: Any worsening of symptoms. Onset can be acute and sudden, or gradual over several days. A correlation between symptoms and peak flow is not necessarily found. Exacerbation replaces the words "attack" and "episode. (2)

EXERCISED-INDUCED ASTHMA: Asthma triggered by exercise. In some people, it is their only trigger. (3)

EXPIRATION: Breathing out. (3)

EXTRINSIC ASTHMA: Asthma triggered by an allergic reaction, usually something that is inhaled, or in the environment. (2)

FEV-1 (Forced Expiratory Volume in One Second): The amount of air a person is able to blow out in one second of blowing as hard as they can. This measurement, obtained through spirometry, gives the doctor an idea of the level of blockage in the airways due to inflammation, mucus, or bronchoconstriction. (1)

FVC (Forced vital capacity): Total amount of air a person can blow out after taking a deep breath. It is one of the measurements doctors obtain through pulmonary function tests. (1)

GERD (Gastroesophageal Reflux Disease): GERD is a chronic disorder in which some of the acid and enzymes that belong in the stomach come up into the esophagus. This leads to the sensation of heartburn and sometimes also an unpleasant sour taste in the mouth. GERD and asthma can make a vicious circle: GERD is more common among people with asthma, and it also seems to make asthma worse in people who have it. Treatment of GERD can lead to an improvement in asthma symptoms. (1)

GUIDED SELF-MANAGEMENT: Providing patients and their families with suitable information and training so that the patient is able to stay healthy and adjust treatment according to a medication plan developed with assistance of a health care professional. (2)

HEALTH CARE PROFESSIONAL: Individual who is licensed to care for sick people. Among these: physicians, nurses, nurse practitioners, physician assistants, and therapists. (2)

HEPA FILTER (High Efficiency Particulate Air Filter): Removes tiny particles that may irritate sensitive respiratory systems from the air. (3)

HISTAMINE: A chemical present in cells throughout the body that is released during an allergic or inflammatory reaction. It is responsible for narrowing the bronchi, or airways, in the lungs during an asthma exacerbation. (1,2)

HOLDING CHAMBER: (Also: extender, spacer, reservoir) Intended to help medicine from an inhaler to get into the lungs. It holds the spray, making it easier to inhale the medication. (1)

HYPERRESPONSIVENESS: The "twitchiness" of the airways in asthmatics, resulting in excessive reaction to substances, smells, and activity. (1)

IGE (IMMUNOGLOBIN E) ANTIBODY: A special antibody released when the body is exposed to an allergen. Pokes holes in the immune system's white cells, thus releasing chemicals, including histamine, which can trigger allergy symptoms. (3)

INFLAMMATION: A complex process in the body involving many types of cells (especially white blood cells) and chemicals. It can be protective or harmful. The signs of inflammation include redness, swelling, warmth, and pain. Loss of function (partial or complete) is often seen, and exudation is common. Inflammation of the airways is the main underlying problem in asthma. (1,2,3)

INHALED CORTICOSTEROID: Anti-inflammatory medication is breathed directly into the lungs. The advantage to this is that the medicine goes directly to where the inflammation is, and has minimal effects on the rest of the body (thus, fewer side effects than corticosteroids taken orally). (1)

INHALER: SEE: METERED DOSE INHALER.

INSPIRATION: Breathing in. (3)

INTRINSIC ASTHMA: When asthma symptoms are not caused by exposure to allergens. (1)

INTUBATION: The process of putting a tube down someone's throat into the trachea; the tube is connected to a respirator or ventilator that pushes measured amounts of air into the lungs (and then lets it out again) to help the person breathe. This can save the life of a person having a severe asthma episode, but it also has many risks and possible complications. (1)

I / O RATIO (also I / E RATIO): Relative length of inspiration compared to expiration. (3)

IRRITANT: Risk factor or trigger that may cause increased symptoms and/or airflow limitation by causing a reaction in the airways. (3)

LABILE: Easily changing, unstable. If a person's asthma is labile, it can go quickly and unpredictably from being perfectly fine to barely getting enough air. (1)

LEUKOTRIENES: A type of chemical involved in inflammation, contributing specifically to airway inflammation, swelling, and tightening, as well as mucus production. Recently some asthma medicines have been developed to reduce leukotrienes and their effects. (These are called "leukotriene inhibitors" or "leukotriene modifiers"). (1)

LRI (Lower Respiratory Infection): Some examples include pneumonia, bronchitis, and bronchiolitis. (1)

MAINTENANCE MEDICATION: Medication given on a regular basis to help prevent symptoms. (3)

MAST CELL: A cell type containing chemicals that produce an asthmatic reaction when exposed to an allergen. These cells are in most body tissues, but are also in connective tissue, such as the innermost layer of skin (dermis) and also in the airways. (2,3)

MEAN PEAK FLOW RATE: The average of several peak expiratory flow rates; expressed in liters per minute. (3)

MEDICATION PLAN: A specific plan to achieve and maintain control of asthma based on use of controller and reliever medications in a stepwise approach. A medication plan also includes instructions on how to recognize worsening of asthma and what actions to take. Also known as an asthma plan. (2)

METERED DOSE INHALER (MDI): A device that allows delivery of medication directly into the lungs. The medicine is in the form of a very fine powder, and a propellant is used to move the powder out in a cloud to be inhaled. Unfortunately, the propellant used in standard MDI's is composed of CFC's, which are involved in the destruction of the ozone layer. (1)

METHACOLINE: A type of chemical used in challenge testing. Everybody's airways respond to it, but asthmatic's airways respond much more and at lower doses. (1)

MUCUS: A substance secreted by various tissues in the body (mucus membranes), made up of water, mucin, salts, and some cells. In the lungs, mucus serves to lubricate the insides of the airways and to trap foreign particles so that they can be coughed out. In asthma, however, an excess of mucus is produced and can actually block airways. Mucus also tends to be thicker and more viscous in asthmatics. (1)

NSAID: Non-steroid anti-inflammatory drugs generally used to treat mild to moderate pain, especially pain that has a component of inflammation. 10-20% of asthmatics have asthma symptoms triggered by these drugs (along with aspirin). Episodes triggered in this way can be quite severe and even life threatening. NSAID's include medicines such as ibuprofen (Motrin, Advil), naproxen (Naprosyn, Aleve, and Anaprox), and related prescription medicines (such as Relafen, Daypro, Feldene, and Indocin). (1)

NEBULIZER: A machine that assists in getting medicine into the lungs. It makes a mixture of liquid medicine and water into a mist that a person then inhales through a mask or a mouthpiece. They are often used for babies and children who are too small to coordinate using a MDI. They are also used for those having severe asthma symptoms, as it is easier to take in the medicine this way when having trouble breathing. (1,3)

PEAK EXPIRATORY FLOW RATE: Actual highest expiratory flow rate during a forced expiration. (3)

PEAK FLOW: The fastest a person can move air by blowing out as hard as they can. This coordinates well with FEV-1 but doesn't require expensive equipment and can be easily obtained at home with a peak flow meter. (1,3)

PEAK FLOW METER: A device to measure how hard and fast a person can blow air out. This is an indication of how well the lungs and airways are doing. It is an important part of an asthma home monitoring plan. (1,3)

PULMONARY FUNCTION TESTS (PFT's): A series of tests used to determine whether a person has breathing problems, and precisely what those problems are. These test lung function and capacity. They do not hurt, as they involve tests that include holding your breath, blowing into a tube as hard as you can, and exercising while wearing a special mask. (1,3):

REFLUX: SEE: GERD.

RELIEVER MEDICATIONS: Short-acting bronchodilating medications that act quickly to relieve airflow limitation and its accompanying acute symptoms, such as cough, chest tightness, and wheezing. Relievers are sometimes called quick relief medicine or rescue medicine. (2)

RESIDUAL VOLUME: The amount of air left in the lungs when someone exhales as much as possible. This is tested in a PFT. (1)

RESPIRATOR: SEE: INTUBATION.

SPACER: A device that attaches to an inhaler (MDI) by a plastic chamber on one end and a mouthpiece on the other end. It is intended to help medicine from an MDI get into the lungs. A spacer works by holding the medicine in its chamber long enough for a person to inhale it in one or two slow deep breaths. Without a spacer much of the medicine in an inhaler "puff" is deposited on the tongue or in the back of the throat. (1,3)

SPIROMETRY: The most commonly used PFT. The machine measures how fast a person can blow out air and how much air is released. The results of this test include the FEV-1, the peak-flow, and the FVC. (1)

STATUS ASTHMATICUS: A severe episode of asthma that is not helped (or only partially helped) by inhaled bronchodilators, and threatens a person's ability to breathe altogether. May require intensive bronchodilator therapy, systemic corticosteroids (oral or IV), or intubation. (1)

STEROIDS: A general term for a wide variety of chemicals, both natural and synthetic. In the context of asthma, "steroids" is usually a shorthand way of referring to corticosteroid medicines. (1)

SYSTEMIC: Relating to or affecting the body as a whole (rather than one specific organ or part). (1)

THEOPHYLLINE: A bronchodilator drug, taken orally, that widens the airways to the lung.(2)

TOTAL LUNG CAPACITY: Total amount of air in the lungs when a person has breathed in as much as possible. This is one of the measurements obtained in a PFT. (1)

TRACHEA: The largest breathing tube in the body, passing from the throat down to the chest (where it connects to the two bronchi leading to the lungs). (1)

TRIGGER: Anything that causes asthma symptoms to worsen in a given person. Different things are triggers for different people. Common triggers include exercise, cigarette smoke, pollen, dust, cold air, and aspirin/NSAIDs. Upper respiratory infections are perhaps the most common trigger for asthma symptoms. (1,2,3)

URI (Upper Respiratory Infection): Medical term for a cold. (1)

VENTILATOR: SEE: INTUBATION.

WHEEZE: A breathing sound that may be squeaky, whistling, or musical. Wheezes are often (but not always) a symptom of asthma (Some people have asthma but never wheeze, and some people wheeze for reasons other than asthma.). Wheezes are due to air passing through a narrowed opening and are therefore usually accompanied by difficulty breathing. (1)

ZONES: The classification of asthma signs and symptoms in an asthma action plan. Usually the zones include the Green Zone (all is well, continue with regular medicines and activities); the Yellow Zone (trouble starting; follow doctor's instructions for Yellow Zone); and Red Zone (DANGER! Get to the emergency room as quickly as possible). These are determined by symptoms and peak flow readings. (1,2)

Asthma glossary terms provided by the following websites:

1) "All About Asthma: Glossary of Asthma Terms". University of Chicago: Asthma Center. Chicago, IL: 2001. <http://asthma.bsd.uchicago.edu/AboutAsthma/AAGlossary.html>

2) "Asthma Glossary". Journal of the American Medical Association: Asthma Information Center. American Medical Association : 1997. <http://www.ama-assn.org/special/asthma/support/glossary/glossary.htm>

3) "Glossary". Thrive Online: Medical-Asthma. San Francisco, CA: 2001. <http://www.thriveonline.com/medical/asthma/seek/info.glossary.html>