

Editorial Note on Asthma and its Treatment **Sebastian Johnston**

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Editorial

Asthma is a chronic airway disease characterised by wheezing, shortness of breath, chest tightness, and coughing, as well as variable and often reversible airway obstruction accompanied by airway hyper-reactivity. These symptoms are caused by a variety of processes, including airway smooth muscle (ASM) contraction, airway inflammation, airway infections, immunoglobulin E-mediated allergic responses, pollution exposure, exercise, stress, and cholinergic and sensory nerve stimulation. Asthma is characterised by decreased lung function, which is measured as a decrease in either the peak expiratory flow (PEF) or the forced expiratory volume in one second (FEV1). A short-acting inhaled 2 agonist can alleviate some of the immediate symptoms of asthma, but longer-term control requires inhaled anti-inflammatory glucocorticoids.

Asthma affects 300 million people worldwide, including adults and children. It has an early onset and is becoming more common in the developed world. One intriguing aspect of asthma is its heterogeneous, complex nature, as well as the fact that it can manifest as both a chronic, stable disease and as asthma exacerbations. Asthma can be severe or mild, and its activity can vary spontaneously as well as greatly in terms of time of onset or response to therapy. Indeed, whether asthma is a single disease or a group of related but subtly different conditions is frequently debated, and asthma has recently been divided into distinct phenotypes, which are further subdivided into several endotypes. Exacerbations of asthma are frequently caused by a combination of factors that may act additively or synergistically. Because of the complexity of the pathogenesis, it has been difficult to understand the cellular mechanisms that cause asthma, to decipher candidate genetic predispositions, and to identify causative agents. Asthma causes are multifactorial, and epidemiological studies conducted over three decades on five continents have demonstrated a strong link between respiratory infections and the risk and pathogenesis of asthma.

Symptoms

- Coughing, particularly at night or early in the morning
- When you breathe, you may notice wheezing or a whistling sound.
- Breathing difficulty
- Chest tightness, pain, or pressure

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- Sleeping difficulties as a result of breathing difficulties

Types of asthma

Allergic asthma: This common type of asthma is triggered by allergens. These could include:

- Pet dander emitted by animals such as cats and dogs
- Food
- Mould
- Pollen
- Dust

Non-allergic asthma: This type of asthma is caused by irritants in the air that are not related to allergies. Among these irritants are:

- Burning Wood
- Cigarette Smoke
- Cold Air
- Air Pollution
- Viral Illnesses
- Air Fresheners
- Household Cleaning Products
- Perfumes

Occupational asthma: Occupational asthma is a type of asthma that is triggered at work. These are some examples:

- Dusts, dyes, gases, and fumes

- Chemicals used in industry
- Proteins derived from animals
- Latex rubber

Aspirin-induced asthma: Aspirin-induced asthma (AIA), also known as aspirin-aggravated respiratory disease (AERD), is typically severe. It is caused by taking aspirin or another nonsteroidal anti-inflammatory drug (NSAID), such as naproxen (Aleve) or ibuprofen (Advil).

The symptoms could appear within minutes or hours. Nasal polyps are common in people with AIA. AIA affects approximately 9% of people with asthma. It typically manifests itself suddenly in adults between the ages of 20 and 50.

Nocturnal asthma: Symptoms of this type of asthma worsen at night.

- Triggers thought to cause symptoms at night include:
- Pet dander dust mites heartburn
- Nocturnal asthma may also be triggered by the body's natural sleep cycle.

Cough-variant asthma (CVA): Cough-variant asthma (CVA) is

distinguished by the absence of classic asthma symptoms such as wheezing and shortness of breath. It is distinguished by a persistent, dry cough. CVA, if left untreated, can lead to full-blown asthma flares, along with the other more common symptoms.

Treatment

To aid in the treatment of asthma, the National Asthma Education and Prevention Program (NAEPP) Trusted Source categorises the condition according to its severity prior to treatment. Asthma is classified as follows:

Intermittent: This type of asthma affects the majority of people and does not interfere with daily activities. The symptoms are minor, lasting no more than two days per week or two nights per month.

Mild persistent: The symptoms occur more than twice a week — but not on a daily basis — and can last up to four nights per month.

Moderate persistent: The symptoms occur on a daily basis and at least one night per week, but not on a nightly basis. Some daily activities may be restricted.

Extremely persistent: Symptoms appear several times per day and most nights. Daily activities are extremely limited.