

Asthma: Symptoms and Presentation

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KEYWORDS

- Asthma symptoms • Asthma presentation • Wheezing • Cough • Pediatric asthma
- Asthma differential diagnosis

KEY POINTS

- The four main symptoms of asthma are wheezing, cough, chest tightness, and dyspnea.
- A thorough history taking is essential—personal, family, and social histories must be obtained.
- Infants and preschoolers must be diagnosed based on presentation, history, and physical examination because objective measures cannot easily be used.
- Asthma in the elderly is underdiagnosed and often compounded by comorbidities.
- The physical examination can help distinguish the severity of the asthma exacerbation.

OVERVIEW

Asthma is a common diagnosis in both outpatient and emergency department settings. It has a varied presentation between patients and between each exacerbation. Hence, understanding the common symptoms and presentations is essential to correctly diagnosing this disease.

This article discusses the symptoms of asthma, age-related key points, variables and differential diagnoses, the classification of acute asthma attacks, physical examination essentials, and risk factors for development and death from this disease process.

SYMPTOMS

Asthma is defined as a reversible airway obstruction that presents with some combination of wheezing, dyspnea, airway hyperresponsiveness, cough, and mucus hypersecretion.¹ The 4 most common presenting symptoms are wheezing, cough,

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shortness of breath, and a subjective sensation of chest tightness.² Although asthma can have a variable presentation, this is the main constellation of symptoms. One or more of these symptoms are present during an asthma attack. Not only does the presentation vary between people but also a single patient may have extreme variation between each exacerbation.

Asthma is often described as a chronic disease with intermittent symptoms and acute exacerbations. It is reported, however, that up to 27% of people with asthma have daily symptoms.³ Although asthma can occur in any age group, in Western countries it is known as the most common chronic disease of childhood.⁴ Classically, younger patients present with recurrent wheezing and/or coughing episodes that may or may not be accompanied by chest tightness or dyspnea³; 80% of patients have a slow onset of asthma symptoms with progressive deterioration over a period of 6 or more hours.⁵

Because this presentation has a broad differential diagnosis, patients' exposure to allergens or triggers and their response to bronchodilators are of key importance. These topics are discussed further by Ferguson and colleagues elsewhere in this issue. See [Table 1](#) for a concise summary.

Wheezing

Wheezing, most commonly on expiration, is the hallmark symptom of an acute asthma exacerbation. Wheezing is neither sensitive nor specific, however, and the presence of wheezing is not necessary in order to diagnose asthma. Additionally, there are multiple other disease processes that may present with wheezing.

Wheezing is defined as a musical, high-pitched, whistling sound produced by airflow turbulence. The sound occurs due to airflow passing through narrowed bronchioles.^{1,6} Wheezing may not carry an obvious pattern during the respiratory cycle but rather is noted at various, seemingly random, points during respiration. Wheezing varies in tone and duration over time. The characteristics of the wheeze often clue a physician to the degree of exacerbation. A mild exacerbation presents with only end-expiratory wheezing. A severe exacerbation usually has both inspiratory and expiratory wheezing present. In its most severe form, patients may have an absence, or loss, of wheezing, which denotes a significantly narrowed airway with limited airflow. This is indicative of impending respiratory failure and respiratory muscle fatigue.⁷

Should a patient present with wheezing, it is essential to consider diagnoses other than asthma by combining symptoms, physical examination, and diagnostic testing, such as spirometry, methacholine challenge, and/or a bronchodilator trial. Chapter 5 discusses diagnostic testing in further details. If wheezing clears with cough, for example, a secretion issue may be suspected. If a wheeze is monophasic and begins

Table 1

Asthma: common symptoms and physical examination findings

Common symptoms	<ul style="list-style-type: none"> ● Wheezing ● Cough ● Chest tightness ● Dyspnea
Common physical examination findings	<ul style="list-style-type: none"> ● Breathlessness ● Tachycardia ● Audible wheezing ● Atopic findings, such as rhinitis and eczema

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