



## Diagnosing Asthma: Past, Present, and Future

Charles E. Reed

To cite this article: Charles E. Reed (1994) Diagnosing Asthma: Past, Present, and Future, Journal of Asthma, 31:5, 327-328, DOI: [10.3109/02770909409061311](https://doi.org/10.3109/02770909409061311)

To link to this article: <https://doi.org/10.3109/02770909409061311>



Published online: 02 Jul 2009.



Submit your article to this journal [↗](#)



Article views: 78



View related articles [↗](#)

## EDITORIAL

---

### Diagnosing Asthma: Past, Present, and Future

---

**Charles E. Reed, M.D.**

*Professor of Medicine, Emeritus  
Mayo Medical School  
Allergic Diseases Research Laboratory  
Mayo Clinic  
Rochester, Minnesota*

Tee L. Guidotti's review of the consistency of experts' published criteria for diagnosing asthma reassuringly reports that there has been little change in the recommendations in English language textbooks for more than a century and a half (1). Primary criteria continue to be a history of intermittent dyspnea, cough, and wheezing and the physical finding of sibilant musical rales. Guidotti points out that the only important change has been the recent addition of laboratory confirmation of the presence of reversible airway obstruction by physiological tests, which is emphasized in the Expert Panel Report *Guidelines for the Diagnosis and Treatment of Asthma* (2). This recommendation is echoed in a subsequent report of an international committee: *International Consensus Report on Diagnosis and Treatment of Asthma* (3). The *International Report* goes on to add that tests for specific allergens may be useful in confirming a causative agent, and that evidence of the specific eosinophilic inflammation of asthma may be sought by staining sputum for eosinophils. Invasive tests of inflammation such as bron-

choalveolar lavage or bronchoscopic biopsy are recommended for research protocols. Both documents discuss the importance of additional laboratory tests when the differential diagnosis is doubtful.

There have always been, and always will be, two purposes in a diagnosis—to give the patient a prognosis, i.e., the most reliable information about what to expect the course of the disease will be, and to recommend a program of treatment that will minimize the burden of the disease. To meet these responsibilities the physician cannot be satisfied simply with a diagnosis of "asthma" but will need additional information about severity, triggering factors, psychosocial status, and other details that affect prognosis and management. One valuable aspect of the *Guidelines* is the discussion of these additional issues. And the main objective of the National Asthma Education Program is to encourage primary care physicians to expand diagnosis and management beyond the bare minimum provided by a history and physical examination.

Address requests to: Charles E. Reed, M.D., 200 First Street S.W., Rochester, MN 55905.

There are academic research disciplines that have different perspectives and require different diagnostic criteria. Physiologists identify asthma by airway obstruction that changes substantially either spontaneously or in response to stimuli such as methacholine and exercise or in response to bronchodilator treatment. Pathologists identify asthma by histopathological changes of epithelial desquamation, lymphocytic-eosinophilic infiltration of the airways, and fibrosis beneath the basement membrane. Epidemiologists identify asthma by the pattern of answers to standardized questionnaires supplemented by other information. A clinical research protocol usually requires explicit information from several of these disciplines about each subject who is included.

Most of the time practicing physicians have little difficulty making a diagnosis of asthma, but even after applying all the presently available laboratory criteria there remain troublesome equivocal cases. Current research into the pathogenesis of asthma is focusing on a specific variety of bronchial inflammation, "desquamating eosinophilic bronchitis," characterized by presence in the airway wall not only of mast cells, but also and perhaps more importantly, by lymphocytes producing a set of cytokines that attract and activate neutrophils, platelets, and eosinophils. A serious lack in the pre-

sent knowledge about diagnosing asthma as "desquamating eosinophilic bronchitis" is availability of a practical and reliable test for the presence and severity of this inflammation. Eosinophilia of blood or sputum has been a frequent collateral criterion for the differential diagnosis of asthma from other airway diseases. Eosinophilia correlates well with the severity of asthma but has not proved to be a highly sensitive or specific diagnostic criterion. As research into the molecular details of asthmatic inflammation progresses, doubtless a quantitative test for some key molecule or combination of molecules will be developed. When it is, this test, like physiological tests of airway caliber, will be incorporated into textbook discussions of diagnostic criteria.

## REFERENCES

1. Guidotti TL: Consistency of diagnostic criteria for asthma from Laënnec (1819) to the National Asthma Education Program (1991). *J Asthma* 31:329-338 (1994).
2. National Asthma Education Program: *Guidelines for the Diagnosis and Management of Asthma: Expert Panel Report*. Publication No. 91-3042. U.S. Department of Health and Human Services, Bethesda, MD, 1991.
3. National Heart, Lung, and Blood Institute: *International Consensus Report on Diagnosis and Treatment of Asthma*. Publication No. 92-3091. U.S. Department of Health and Human Services, Bethesda, MD, 1992.