Over the past decade there has been a marked increase in the incidence of respiratory illnesses among the general public. In particular, conditions such as bronchial asthma, exercise-induced asthma (EIA), allergic rhinitis, and sinusitis are now seen more often. Ten percent of the U.S. population suffers from bronchial asthma (Glaxo Wellcome, 1998), and 12–15% report EIA (Mahler, 1993; Rupp, 1996). Allergic rhinitis occurs in 5–22% of the public (Naclerio, 1991), and there are 1 million cases of pneumonia reported each year (Goodman & Boissonnault, 1998).

The increase in these conditions among the population at large results in increases in their occurrence among the portion of the population that participates in physical activity. As a result, athletic trainers and therapists are likely to encounter athletes with respiratory conditions. If not recognized and managed appropriately, these conditions can lead to decreased performance, more serious illness, or even death. Some respiratory conditions can also exacerbate existing respiratory illnesses such as asthma (National Heart Lung and Blood Institute, 1997). Although it is not the role of athletic trainers and therapists to diagnose or treat illnesses, in the athletic setting they function as “physician extenders.” The purpose of this article is to present information on the assessment of common respiratory conditions in order to facilitate timely physician referral and appropriate care.

The Assessment Process

A consistent and logical assessment process is necessary for the recognition and appropriate referral of athletes with respiratory conditions. The history, observation, and special-tests components of the typical evaluation procedure provide a good framework for assessing medical conditions, as well as orthopedic injuries. Although athletic trainers or therapists might not carry out all aspects of these assessments, it is important for them to have an understanding of the possible tests and procedures that might be conducted. In general, the scope of practice of the athletic trainer or therapist includes obtaining a medical history and performing noninvasive tests such as vital-sign assessment and peak-flow measurement.

History

Although some respiratory illnesses persist as subacute or chronic conditions, most develop rapidly. A complicating characteristic is the fact...
that some of these conditions are associated with specific triggers or predisposing factors, whereas others are more difficult to link to specific elements of the history. In these situations the most valuable components of the history are the athlete's symptoms.

**Bronchitis**

An athlete who is suffering from bronchitis will complain of a sudden onset of fever, malaise, and coughing. The cough is typically dry and is aggravated by cold or dry air. Early on, the cough is unproductive, but in later stages it might yield large amounts of greenish-yellow mucus. Because of the obstructive nature of the inflammation associated with bronchitis, the athlete with this condition might also report wheezing, difficulty in breathing, and shortness of breath.

**Bronchial and Exercise-Induced Asthma**

Both bronchial asthma and EIA are chronic inflammatory conditions associated with acute episodes or exacerbations. These two illnesses share common symptoms of coughing, wheezing, difficulty in breathing, and shortness of breath. Whereas the athlete with bronchial asthma will report coughing that is worse at night and in the morning, the coughing associated with EIA occurs after 5–10 min of exercise.

Another common feature of bronchial asthma and EIA is the characteristic of acute episodes being triggered by specific factors in the athlete's environment. Common triggers include allergens, cold air, smoke, respiratory infections, stress, animal dander, and cockroach droppings. Exercise is a trigger for both bronchial asthma and EIA. The athlete will typically report onset of symptoms after exposure to one or more triggers. Depending on the trigger and the athlete's susceptibility to it, onset of symptoms can occur from minutes to hours after exposure.

**Pneumonia**

In the physically active population, pneumonia most often follows some type of upper respiratory infection or influenza. As a result, the athlete with pneumonia might report a history of recent illness. Aside from this report of a potential cause, the history of an athlete with pneumonia focuses primarily on symptoms. The athlete will report a sudden onset of dyspnea (difficulty in breathing) and a hacking cough. Although the cough might be unproductive, it is typically associated with purulent or rust-colored sputum. In addition to these respiratory symptoms, the athlete with pneumonia might also complain of fever, malaise, headache, and fatigue.

**Pneumothorax**

Pneumothorax (air in the pleural cavity) is a respiratory condition that is associated with spontaneous onset, as well as trauma. In some cases the athlete is asymptomatic; however, the typical signs and symptoms associated with spontaneous pneumothorax include a sudden onset of sharp chest pain, shortness of breath, and dyspnea.

**Sinusitis**

Sudden onset of purulent nasal discharge and coughing are common complaints of the athlete with acute infectious sinusitis. This condition will also result in nasal congestion, headache, feelings of pressure over the involved sinus(es), and pain in the teeth or behind the eyes. These sensations are usually increased when the athlete bends over. When the infection is severe the athlete might also experience systemic symptoms such as fever, fatigue, and body aches.

**Allergic Rhinitis**

As with bronchial asthma and EIA, the onset of allergic rhinitis follows exposure to one or more triggers. Common triggers include pollen, dust, grasses, pet dander, and molds. In pediatric athletes certain food allergies can also produce rhinitis. An athlete with allergic rhinitis will complain of sneezing; nasal congestion; itching eyes, nose, and throat; and a clear, runny nose. The athlete might also report redness and watering of the eyes.

**Observation**

The observation phase in the assessment of respiratory conditions includes visual inspection of the athlete by the athletic trainer or therapist and physician, with the possible addition of a physician review of indicated radiographs. Depending on the condition, the observation phase might contribute to the assessment process or it might yield little information. In either case, data that are discovered in the observation phase should be considered in light of the athlete's history and the ensuing stress tests.