OBJECTIVES

At the end of this chapter, the reader should be able to do the following:
1. Describe the factors that affect the normal capacity of individuals to clear mucus from their airways
2. Describe different airway clearance techniques (ACTs)
3. Describe the level of evidence to support different ACTs
4. Effectively prescribe and instruct ACTs for patients with excess airway secretions

BRIEF DESCRIPTION

Impairment of airway clearance can result in retained mucus (or airway secretions), which in turn can lead to bacterial infection, inflammation and consequent airway damage, atelectasis, and gas exchange abnormalities. ACTs aim to improve mucus transport by the external application of forces, such as positive pressure or oscillation applied at the mouth, clapping or vibration of the chest wall, breathing exercises, and forced expiratory maneuvers with or without specialized equipment. Commonly used ACTs and supporting evidence are outlined in this chapter for the active cycle of breathing technique (ACBT), autogenic drainage (AD), positive expiratory pressure (PEP), oscillating positive expiratory pressure (Osc-PEP), conventional chest physical therapy techniques (CCPT), and intrapulmonary percussive ventilation. Considerations for selecting an ACT are also outlined.

IMPAIRMENT OF AIRWAY CLEARANCE

Airway clearance may be impaired due to factors affecting the normal airway clearance mechanism (see Chapter 1). Table 20-1 lists these factors and provides clinical examples of conditions that may require ACTs.