responsible for continuous flow of mucus over the airway surface to the upper respiratory tract. This may be a chronic disorder, as in bronchitis and cystic fibrosis, or an acute problem occurring in patients following anaesthesia, mechanical ventilation and intensive therapy. This mechanism becomes ineffective in bronchopulmonary disease which is characterized by excessive production of mucus, impaired mucociliary clearance and, eventually, pulmonary failure. This review examines some of the physiological mechanisms involved in clearance of excessive bronchial mucus in these circumstances and the role of various physical therapies designed to accelerate this process.