



Figure 1 Trends in age-standardized death rates for the six leading causes of death in the United States in the period 1970-2002 [8].

COPD is a global health problem because of its high prevalence, increasing incidence, and associated socio-economic costs [9]. COPD is currently the third leading cause of death worldwide [10] and it is estimated that 210 million people have COPD worldwide and 10% of the population older than 40 years have moderate to severe COPD [11]. COPD is caused, among others, by smoking and air pollution and it is characterized by chronic inflammation of the lung airways, and degradation of lung tissue which result in airflow limitation [12], significant extra pulmonary effects (e.g. muscle weakness and osteoporosis) and comorbidities, which are associated with physical inactivity [9]. Patients suffering from COPD have difficulty breathing and develop “air hunger.” Breathlessness is a common occurrence forcing patients to avoid physical activities and enter into a vicious cycle of deconditioning (Figure 2). The pulmonary and skeletal muscle abnormalities limit the pulmonary ventilation and enhance the ventilatory requirements during exercise resulting in exercise-associated symptoms such as dyspnoea and fatigue. These symptoms make exercise an unpleasant experience, which many patients try to avoid, and along with a depressive mood status (in up to 30% of patients), further accelerates the process, leading to an inactive life-style. Muscle deconditioning, associated with reduced physical activity, contributes to further inactivity and as a result patients get trapped in a vicious cycle of declining physical activity levels and increasing symptoms with exercise [13].