

# Physical and Mental Exhaustion in People with Non-Communicable Chronic Diseases

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## DESCRIPTION

Chronic respiratory disease is one of the most common non-communicable diseases worldwide, largely due to the ubiquity of inhalation exposures from adverse environmental, occupational, and behavioral exposures.

In addition to Chronic Obstructive Pulmonary Disease (COPD) and asthma, chronic respiratory diseases include interstitial lung disease, pulmonary sarcoidosis, and pneumoconiosis such as silicosis and asbestosis. Unfortunately, chronic respiratory disease receives relatively less public attention and research funding than other diseases such as cardiovascular disease, cancer, stroke, diabetes, and Alzheimer's disease.

Therefore, understanding prevalence, morbidity, and mortality at global and regional levels is essential to better inform efforts to prevent, screen, treat, and research chronic respiratory diseases.

Chronic Respiratory Disease (CRD) is a complex multifactorial disease involving the airways and other lung structures. The development of reliable markers for early and accurate diagnosis, including disease phenotype, and prediction of response and/or adherence to prescribed therapy is essential for correct management of CRD. In addition to traditional biomarker detection techniques, 'omics' science is gaining clinical interest due to its potential to improve the study of disease phenotypes. Disturbances in various metabolic and signaling pathways may contribute to our understanding of CRD pathogenesis. In particular, metabolomics provides a powerful tool for mapping the relationship between biological perturbations and disease etiology.

Patients with advanced chronic respiratory disease often have distressing symptoms, limited exercise capacity, and limited health and function that persist despite optimal pharmacological treatment. Pulmonary rehabilitation complements standard medical therapy and can result in improved physical and

functional capacity, reduced dyspnea, improved health status, and (possibly) reduced risk of early morbidity and mortality.

Depression and anxiety disorders are the most common psychiatric complications in patients with chronic respiratory disease. The presence of these mental health comorbidities is associated with worse physical health, fewer adherences to treatment, less self-management, and increased dyspnea.

Major risk factors for CRD have been identified and include tobacco use, exposure to indoor and outdoor pollutants, allergens, occupational exposures, unhealthy diet, obesity, lack of exercise, and other factors. With accelerated population aging and increased exposure to risk factors, CRD is becoming an increasingly important problem in all regions of the world. The epidemiology and disease burden of CRD vary greatly around the world. Previous studies have estimated the prevalence of CRD at the regional or national level, but not at the global level. Understanding the prevalence and incidence of CRD is important for improving CRD management and prevention.

Prevalence, incidence, Age-Standardized Prevalence (ASPR), and age-standardized incidence of CRDs, including COPD, pneumoconiosis, asthma, interstitial lung disease, and pulmonary sarcoidosis, in 195 countries and territories during the 1990 period rate (ASIR) –2017 was determined from the GBD 2017 dataset.

Some chronic childhood respiratory diseases follow an on-going pattern characterized by a slow decline in lung function over time. This course can be interrupted by superimposed infections (e.g. infections), which can lead to intermittent rapid deterioration of lung function (acute to chronic pattern). For example, Cystic Fibrosis (CF) can present as a severe, rapidly progressive, life-limiting disease or as a mild disease with near-normal life expectancy. Results may be related to genotype. Long-term outcomes can be exacerbated by chronic infection with certain pathogens. CF is an example of treatment advances that change outcomes.

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