# Chronic Obstructive Pulmonary Diseases

## What are chronic obstructive pulmonary diseases?

Chronic obstructive pulmonary (or lung) diseases (COPD or COLD) refer to a group of diseases in which there is insufficient flow of air into or out of the lungs. Chronic obstructive pulmonary diseases include primarily of chronic bronchitis, emphysema, and asthma. Patients may experience various symptoms like shortness of breath that gets worse over time (e.g., several years), chronic coughing, and obstructed airways under some conditions.

There is a lot of debate within the medical profession over the terminology and diagnostic criteria defining each of the diseases in the chronic obstructive pulmonary (or lung) disease (COPD or COLD) group. It may be difficult to diagnose a patient’s disease as chronic bronchitis, emphysema, or a combination of the two. This lack of agreement has led to much confusion regarding the cause of these diseases, the damage they produce, their prognosis (probable outcome) and their prevalence. COPD is a common illness in Canada and affects at least 4% of adults and is the fourth leading cause of death.

**CHRONIC BRONCHITIS**

Chronic bronchitis refers to the condition in which there is chronic, excessive mucous secretion in the bronchial tree. Bronchitis is an inflammation of the lining of the bronchial tubes (bronchi) that go from the end of the trachea (windpipe) to the right and left lobes of the lungs. When the bronchi are inflamed they can swell (i.e., the diameter decreases) and produce excessive amounts of sputum (mucous or phlegm) that is expectorated (coughed up and spit out). The swelling and excessive mucous in the bronchi and branching bronchioles cause a decrease in air flow.

Patients are said to have chronic bronchitis when they produce sputum on most days for at least three months in the year over a period of at least two years. A person who develops chronic bronchitis can experience respiratory infections and shortness of breath.

**EMPHYSEMA**

Emphysema, often associated with chronic bronchitis, is a chronic lung disease in which the air sacs (alveoli) at the end of the small bronchioles are enlarged or over-inflated and are eventually destroyed. The alveoli are the parts of the lung where most of the air exchange occurs; that is, where oxygen in the air is transferred to the blood stream and where carbon dioxide is removed from the blood

stream and is exhaled. Because air exchange is impaired, a person who develops emphysema experiences shortness of breath that occurs during strenuous exertion in the early stages of the disease and even at rest in later stages.

**ASTHMA**

Asthma is characterized by the reversible narrowing of air passages, that may lead to permanent damage. A person who develops asthma experiences chest tightness, shortness of breath, wheezing, and coughing. People with asthma have airways that are much more reactive to various stimuli (like airborne chemicals or pollen) than normal and the airways can constrict very quickly.

## What are the risk factors for developing chronic obstructive lung diseases?

Many factors contribute to the development of chronic obstructive lung diseases. Studies indicate that about 15% of all cases of COPD are work related. Occupations such as coal miners, hard-rock miners, tunnel workers, concrete-manufacturing workers, and other industries such as rubber, plastics, leather, utilities, building services, textiles and construction are often associated with COPD. These factors may relate to personal conditions or activities as well as working conditions. Cigarette smoke, air pollution, and various workplace dusts, fumes, vapours, and gases have all been associated with obstructive lung diseases.

Regulators reports that 80 to 90% of COPD cases have cigarette smoking as the main underlying cause. Regulators also reports that “Another important risk factor is occupational exposure to dusts (e.g., coal dust, grain dust) and some fumes. Exposure to non-specific dust is likely to add to the effect of smoking.”

Many epidemiological studies consistently show relationships between occupational exposure to airborne contaminants and the incidence of chronic airway diseases. Because many factors contribute to chronic obstructive lung diseases, they cannot be classified as occupational disorders. Chronic obstructive lung diseases are considered as work-related conditions in which the occupation (or workplace materials to which employees are exposed) can be:

- a factor causing the condition,
- a contributing factor, or
- a factor aggravating or “setting off” a pre-existing condition.

## What are the complications or effects of COPD?

Adults with COPD are more likely to:

- Have activity limitations such as difficulty walking or climbing stairs.
- Need special equipment such as portable oxygen tanks.
- Not engage in social activities such as eating out, going to places of worship, going to group events, or getting together with friends or neighbors.
- Have increased confusion or memory loss.
- Have more emergency room visits or overnight hospital stays.
- Have other chronic diseases such as arthritis, congestive heart failure, diabetes, coronary heart disease, stroke, or asthma.
- Have depression or other mental or emotional conditions.
- Report a fair or poor health status.

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