

## **Chronic Obstructive Pulmonary Disorder (COPD)**

Globally, COPD has emerged as the major cause of morbidity and mortality expected to become the 3rd most leading cause of death and the 5th leading cause of loss of 'Disability Adjusted Life Years' (DALYs) as per projection of the Global Burden of Disease Study (GBDS). The region-wise projections for the developing countries including India were even worse.

COPD, or chronic obstructive pulmonary disease, is a condition in which the airways in the lungs become damaged, making it increasingly difficult for air to pass in and out.



There are two major kinds of damage that can cause COPD:

1. The airways in the lungs can become scarred and narrowed.
2. The air sacs in the lung, where oxygen is absorbed into the blood and carbon dioxide is excreted, can become damaged.

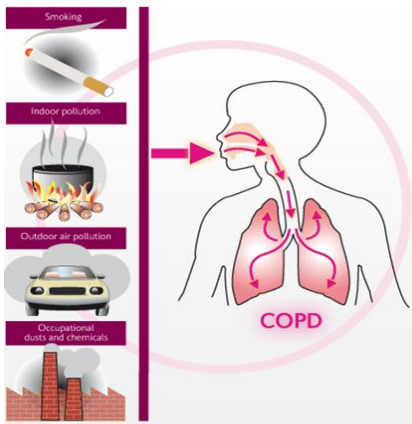
When the damage is severe, it may become difficult to get enough oxygen into the blood and to get rid of excess carbon dioxide. These changes lead to shortness of breath and other symptoms.

Unfortunately, the symptoms of chronic obstructive pulmonary disease cannot be completely eliminated with treatment and the condition usually worsens over time. However, treatment can control symptoms and can sometimes slow the progression of the disease.

COPD can cause:

1. Coughing that produces large amounts of mucus (a slimy substance),
2. Wheezing (Breathe with a whistling or rattling sound in the chest, as a result of obstruction in the air passages.),
3. Shortness of breath, Dyspnea
4. Chest tightness

**Causes & Risk Factors for COPD:**



Cigarette smoking is the leading cause of COPD. Most people who have COPD smoke or used to smoke. Smoking cessation is the most effective intervention to reduce the risk of COPD and to stop its progression

Long-term exposure to other lung irritants, such as:

1. air pollution,
2. chemical fumes, or
3. dust, also may contribute to COPD.

### Management:

The goals of COPD treatment are to:

1. Relieve symptoms
2. Slow the progress of the disease
3. Improve exercise tolerance (ability to stay active)
4. Prevent and treat complications
5. Improve overall health

### Medicines

**Bronchodilators** — Medications that help open the airways, called bronchodilators, are a mainstay of treatment for chronic obstructive pulmonary disease. Bronchodilators help to keep airways open and possibly decrease secretions.

Bronchodilators are most commonly given in an inhaled form using a metered dose inhaler (MDI), dry powder inhaler (DPI), or nebulizer.

There are several types of bronchodilators that can be used alone or in combination. Short-acting bronchodilators last about 4 to 6 hours and should be used only when needed. Long-acting bronchodilators last about 12 hours or more and are used every day.

- Short-acting beta agonists – Short-acting beta agonists, sometimes called rescue inhalers, can quickly relieve shortness of breath and can be used when needed. Examples of short-acting beta agonists include albuterol (Salbutamol), levosalbutamol, terbutaline
- Short-acting anticholinergics – Short-acting anticholinergic medication (ipratropium) improves lung function and symptoms.

Long-acting treatments are often recommended for people who must use medication on a regular basis to control COPD symptoms.

- Long-acting beta agonists – Long-acting beta agonists may be recommended if your symptoms are not adequately controlled with other treatments. Examples of long-acting beta agonists include salmeterol, formoterol
- Long-acting anticholinergics – The long-acting anticholinergic medication, tiotropium, taken once daily, improves lung function while decreasing shortness of breath and flares of COPD symptoms.
- Theophylline – Theophylline in slow release form is a long-acting bronchodilator that is taken in pill form. Theophylline is not commonly used, but may be beneficial to some people with more severe, but stable chronic obstructive pulmonary disease. The dose of theophylline must be monitored carefully by blood tests because of its potentially toxic effects.

**Glucocorticoids** — Glucocorticoids (also called steroids) are used for their anti-inflammatory properties. Glucocorticoids can be taken with an inhaler, as a pill, or as an injection. Inhaled glucocorticoids may be recommended if your symptoms are not completely controlled with bronchodilators and/or if you have frequent flares of chronic obstructive pulmonary disease.

Glucocorticoids taken in pill form are sometimes used for short term treatment (eg, for flares of COPD), but are not generally used long-term because of the risk of side effects.

**Cough medicines** — Cough medicines are not generally recommended for people with COPD because they have not been shown to improve COPD symptoms. Although cough can be a bothersome symptom, cough suppressants should be avoided since suppressing cough may increase the risk of developing an infection.

## **Nutrition**

Being underweight is a poor prognostic sign in chronic obstructive pulmonary disease (COPD). More than 30 percent of people with severe COPD are not able to eat enough because of their symptoms (shortness of breath, fatigue). Not eating enough can lead to malnutrition, is at least in part associated with the severity of airflow obstruction which can make symptoms worse and increase the likelihood of infection.

Some Nutritional tips for COPD patients are as follows:

- Eat small, frequent meals with nutrient-dense foods & rest before meals
- Drink plenty of fluids. You should drink at least 6 to 8 eight-ounce glasses of non-caffeinated beverages each day to keep mucus thin and easier to cough up.

- Control the sodium (salt) in diet, eating too much salt causes the body to keep or retain too much water, causing breathing to be more difficult.
- Avoid overeating and foods that cause gas or bloating. A full stomach or bloated abdomen might make breathing uncomfortable. Avoid the foods that cause gas or bloating such as:
  - Carbonated beverages
  - Fried, greasy, or heavily spiced foods
  - Apples, avocados, and melons
  - Beans, broccoli, Brussels sprouts, cabbage, cauliflower, corn, cucumbers, lentils, onions, peas, peppers, radishes, and soybeans

### **Complications**

COPD symptoms usually slowly worsen over time. However, they can become more severe suddenly. For instance, a cold, the flu, or a lung infection may cause symptoms to quickly worsen. Patient may have a much harder time catching on breath. You also may have chest tightness, more coughing, changes in the color or amount of your sputum (spit), and a fever. Counsel the patient to consult the Doctor in such cases.

- COPD is usually caused by smoking.
- Symptoms are unlikely to get much worse if you stop smoking.
- Treatment with inhalers often eases symptoms, but no treatment can reverse the damage to the airways.

### **Reference:**

1. Micromedex's Drugdex Healthcare Series Online 2.0
2. <http://emedicine.medscape.com/article/297664-overview>
3. [http://www.japi.org/february\\_2012\\_special\\_issue\\_copd/03\\_copd\\_the\\_unrecognized.pdf](http://www.japi.org/february_2012_special_issue_copd/03_copd_the_unrecognized.pdf)