

## Exacerbation of COPD

An exacerbation of Chronic Obstructive Pulmonary Disease—COPD (ATS Patient Series <http://patients.thoracic.org/information-series/en/resources/chronic-obstructive-pulmonary-disease-copd.pdf>) means a worsening or a “flare up” of your COPD symptoms.

In many cases an exacerbation is from an infection in the lungs, but in some cases, the cause is never known. The inflammation (irritation and swelling) in the lungs during and after an exacerbation of COPD can cause some people to be extremely ill and often it takes a long time to recover completely. Knowing the signs and symptoms of an exacerbation will help you to get early treatment, shorten the length of time you have the exacerbation, and hopefully prevent the exacerbation from becoming severe.

### What causes an exacerbation?

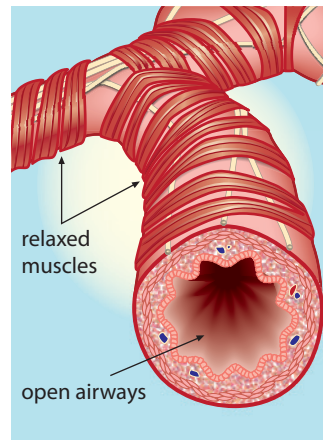
The major cause of an exacerbation is infection in the lungs (air sacs) or airways (breathing tubes). This infection is often from a virus, but it may also occur from bacteria or less common types of organisms. Exacerbations can also occur from inhaling irritating substances from the environment like heavy air pollution or from severe allergies.

The lungs react to infection by developing inflammation (irritation and swelling). This makes the airways narrow and blocked from muscle tightness, swelling and mucus (see Figure). Exacerbations can come on very quickly (hours to days), while finding out what causes the exacerbation can be a very slow process (up to a week). Medications known to treat symptoms of an exacerbation are therefore often given without finding out the exact cause. There are no tests of the blood, sputum or chest x-rays that have been found to diagnose an exacerbation. Thus, the best person to help identify an exacerbation early is **you**. Knowing the signs and symptoms of an exacerbation and getting help early, are the very best ways to limit it from becoming very severe.

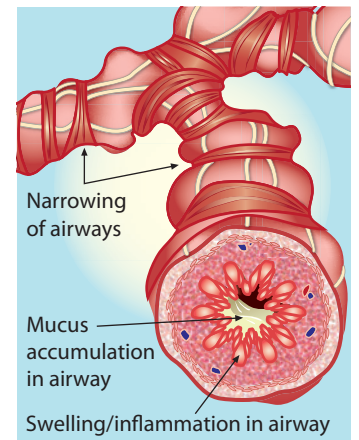
### What are the signs and symptoms of an exacerbation?

The signs and symptoms of an exacerbation are a worsening of many of your usual symptoms of COPD

Normal



Exacerbation of COPD



(<http://patients.thoracic.org/information-series/en/resources/signs-and-symptoms-of-copd.pdf>). These symptoms can also be similar to infections in the lung from other causes such as a bad cold or pneumonia. You may notice more breathlessness than usual, a change in your sputum (mucus), increased cough, more tiredness (fatigue), unusual trouble sleeping and in some cases, a fever.

A change in the color of your sputum from clear to pus-colored (deep yellow, green or brown) can be a sign that you are having an exacerbation. In fact, in many people, a change in sputum is the first sign that they have an exacerbation. The amount of sputum you bring up (either bringing up more or bringing up less than usual) can also be important. You may notice you are more breathlessness than usual (ATS Patient Series on Breathlessness [http://patients.thoracic.org/information-series/en/resources/ATS\\_Patient\\_Ed\\_Breathlessness.pdf](http://patients.thoracic.org/information-series/en/resources/ATS_Patient_Ed_Breathlessness.pdf)) with routine activities like walking to the car or bathing. If you find that you are having more trouble sleeping than usual, feel *very* tired, develop a headache when you wake up, or feel confused (or a family member notices you are confused and/or having difficulty waking you up), you may be having signs of high carbon dioxide levels that need immediate medical attention. All of this information is important to communicate to your health care provider so they can figure out if your symptoms are from an exacerbation and how it should be treated.

If you have had an exacerbation of your COPD in the past, you should take note of the “pattern” of your symptoms. Everyone has slightly different signs and symptoms of an exacerbation. Notice the color and amount sputum you bring up every day when you are *not* ill so that you know the changes when you are developing signs and symptoms of an exacerbation.

### How is an exacerbation treated?

Exacerbations can sometimes be treated at home with

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inhalers, steroids and/or antibiotics, but if your symptoms become severe, you will need to be hospitalized.

Treatment of an exacerbation is primarily with medication to control the swelling and constriction (tightness) in your lungs. The swelling is treated with steroid pills or IV (intravenously) steroids. In the hospital, you will also be given a bronchodilator by inhaler or nebulizer to help relax the constriction around your airways. In many cases, you will also be given an antibiotic.

The main function of your lungs is to supply oxygen to the body and rid the body of carbon dioxide. Exacerbations can interfere with this, so you may need to have extra oxygen or a special device, similar to a Continuous Positive Airway Pressure-CPAP machine (see ATS Series <http://patients.thoracic.org/information-series/en/resources/obstructive-sleep-apnea.pdf>) to help you breathe better. If your exacerbation is severe, you may be admitted to an intensive care unit (ICU) and require a ventilator (a machine to breathe for you).

### How serious is an exacerbation?

Exacerbations can be very serious and can cause death. Getting help early is therefore very important. If you have been told you have severe COPD or have had exacerbations before, discuss with your health care provider what steps to take and how to contact them or their team for advice and assistance. This planning is known as an **Action Plan**, which is described below. It is often difficult to know who will get an exacerbation; however, if you have had one in the past, you have a greater chance of having another. For this reason, your health care provider may speak to you about advanced planning. Talk with your health care provider and your family about your treatment wishes if you become too sick to speak for yourself. For example, if you could not breathe well enough on your own, would ever want to be placed on a ventilator (a machine that breathes for you- <http://patients.thoracic.org/information-series/en/resources/mechanical-ventilation.pdf>)? You may be referred to a palliative care team (see ATS Patient Series <http://patients.thoracic.org/information-series/en/resources/palliative-care-for-people-with-respiratory-disease-or-critical-illness.pdf>) to suggest ways of helping you breathe more comfortably.

### What is an Action Plan?

An Action Plan contains instructions or steps you should take at the first signs of an exacerbation. You will likely be instructed to take your short acting bronchodilator such as albuterol, every four hours. You may be told to call your health care provider or fill a prescription to have on hand for steroid pills and/or an antibiotic and instructed when to take them. These instructions may tell you when to call your health care provider or when to go to the emergency department. It is very important to note that every patient is different and the plan must be created along with your healthcare provider.

### Can I prevent having an exacerbation?

Not all exacerbations can be prevented, but there are ways to limit how severe they become. If you smoke, get help to quit (see the tobacco series at <http://patients.thoracic.org/information-series/index.php>). Avoid being around others with colds or the flu.

The flu shot has been shown to help prevent exacerbations. You need a flu vaccine (shot) every year (see ATS Patient Series <http://patients.thoracic.org/information-series/en/resources/influenza-the-flu.pdf>) unless it is not recommended for you by your health care provider. Several types of long-acting inhaled medications have also been shown to help decrease your chances of an exacerbation. You may already be receiving these to treat your COPD (see ATS Patient Series <http://patients.thoracic.org/information-series/en/resources/medicines-used-to-treat-copd.pdf>). For some patients who continue to have exacerbations despite regular inhaler therapy, there may be other possible treatments including medications such as roflumilast or azithromycin to help treat or prevent exacerbations.

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## Rx *What to do*

Be aware of the color and amount of sputum you usually bring up daily, and what your level of breathlessness or fatigue is in a normal day in order to know if you are having important changes. Contact your health care provider if you have the following symptoms:

- ✓ Sputum color has turned darker to a pus color, deep yellow green, brown or red.
- ✓ Raising more sputum than usual
- ✓ Coughing more than usual
- ✓ More breathless or tired than usual
- ✓ Unable to carry out your normal daily activities
- ✓ Fever
- ✓ Mental confusion or excess sleepiness
- ✓ Lower oxygen levels than normal

### Resources:

#### COPD Foundation

<http://www.copdfoundation.org/What-is-COPD/Living-with-COPD/Staying-Healthy-and-Avoiding-Exacerbations.aspx>

#### WebMed

<http://www.webmd.com/lung/10-signs-copd-exacerbation>