**What is COPD?**

It is a category of diseases. Let’s look at the name: Chronic obstructive pulmonary disease (COPD).

‘Chronic’ refers to the fact that the reduced airflow is getting worse over time. ‘Obstructive’ refers to the fact that the airflow in the lungs is obstructed and so it is harder to move air in and out of the lungs. So anything that will cause the airways to allow less air flow falls under the category of COPD.

COPD is any common lung disease that makes it difficult to breathe. The airways (bronchi) in the lungs become narrowed and inflamed, making it harder for air to flow in and out. Over time, the air sacs (alveoli) in the lungs can become damaged, leading to reduced gas exchange. It is a progressive disease, meaning that it worsens over time. There is no cure for COPD, but there are treatments to help with the symptoms that include cough, shortness of breath, wheezing, and chest tightness.

Without getting too clinical, the two main things to consider with COPD are SMOKING and asthma.

Please briefly explain below how SMOKING will always lead to COPD:

Please briefly explain below how asthma will cause COPD:

Why do you think left-sided heart failure could cause COPD? (Hint: left-sided heart failure leads to a back up of blood under higher than normal pressures into the lungs, causing leakage of plasma.):

Explain how the spirometry tests you performed in Labs 12 & 13 could be used to help diagnose COPD:

The number one cause of COPD, especially in women, in underdeveloped countries is the burning of wood and other things (biomass) to heat a stove or the home or for lighting. Burning these things produces small particles (smog) in the household. Twenty years ago, it was shown that 4.5 hours of exposure to wood smoke is equivalent to smoking approximately 20 packs of cigarettes per day.

The main cause of COPD in developed countries is tobacco smoking. In the developing world, COPD often occurs in people exposed to fumes from burning fuel for cooking and heating in homes that don't have good airflow.

Those workers who cut and grind tile and counter-tops develop silicosis. The fine dust particles can travel deep into the lungs damaging the airways and alveoli. So, silicosis would be a cause of COPD.

Emphysema is a type of chronic obstructive pulmonary disease (COPD). It's characterized by the destruction of the walls of the alveoli, which causes them to abnormally inflate and rupture. This traps air in the lungs and reduces the surface area of the walls of the microscopic alveoli. Less surface area means fewer capillaries for gas exchange.

 