Chronic Obstructive Pulmonary Disease (COPD)

**Scene 1: An Introduction to Breathing**

Chronic Obstructive Pulmonary Disorder or COPD, is a progressive, non-infectious lung disorder that affects breathing. Normally, breathing occurs freely, allowing humans to inhale oxygen and exhale toxic carbon dioxide through a process called gas exchange.

**Scene 2: Anatomy and Physiology of the Lungs**

Breathing begins when the diaphragm contracts, expanding the chest, causing a change in pressure, allowing air to flow into the trachea, bronchi, bronchiole tubes, and air sacs called alveoli, where gas exchange takes place.

Normally, the airways and alveoli are flexible and elastic, expanding and contracting when air is inhaled and exhaled. Capillaries are small blood vessels that thread the walls of the alveoli allowing for gas exchange, via the capillary/alveoli interface. Smooth muscles control the size of the airway or bronchioles. A protective layer of mucus covers the smooth muscle in the tubes of the respiratory tree and traps contaminating particles from the air.

**Scene 3: COPD Includes Two Main Conditions: Emphysema & Chronic Bronchitis**

COPD includes two main conditions - emphysema and chronic bronchitis. In emphysema, the airways and air sacs become more rigid and less elastic. The disease destroys the walls of some of the air sacs, leading to fewer, larger, formless sacs, and a reduction in gas exchange capacity. Chronic bronchitis stimulates thickening and inflammation of the walls of the airway and is accompanied by the production of large amounts of mucus. The inflammation and mucus cause the cough associated with bronchitis.

COPD Patients experience difficulty breathing, wheezing, shortness of breath, chest tightness, and other symptoms.