**Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Read the following patient visit and examination. Circle or highlight each abnormal finding and define what it is and if it is normal or not. (example: Crackling of lungs is due to an abnormal buildup of fluid)**

|  |  |  |
| --- | --- | --- |
| Patient’s Name: | Age: | Date: |
| Timothy Allen Wanninger | 55 | February 5  |
| Height: | Weight: | Temperature: |
| 68 inches | 225 lbs. | 98.3°F |
| Blood Pressure: | Pulse: | Respiration Rate: |
| 143/91 | 75 bpm | 24 breaths/minute |
| **Case History**Timothy is a coal miner that presents with a range of symptoms. He is an “off and on” smoker but states he has been more off than on recently. He states he has had an Unexplained weight gain of 35 pounds over the past 3 months. He reports frequent coughing, tightness in his chest, and a feeling of shortness of breath as well. He states that he is coughing up a lot of mucous when he coughs as well. He is easily fatigued at work with his normal duties and has had “several” respiratory infections over the past winter as well.**Physical Exam*** Patient’s pulse is regular and 75 bpm
* Pulse oximetry = 87%
* Physical Appearance: Overweight and barrel chested / edema in both ankles/ mild cyanosis of toes.
* Lung auscultation: course crackling on inspiration / wheezing on forced expiration/ prolonged expiration
* Patient said she has no ear pain or a sore throat. Upon inspection, her ears, nose, and throat all look normal.
* Patient’s glands are not swollen.
* Patient’s speech, hearing, and vision appear normal.
 |

1. **Search google to discover the difference in symptoms between the following lung disorders. List them below.**

Emphysema –

Chronic Bronchitis-

Lung Cancer -

Which disease seem most like the patient?

1. **The patient is referred for further blood and respiratory testing. Interpret the following levels. Search the internet to fill out the average ranges and indicate if he is high, low, or normal.**

|  |  |  |  |
| --- | --- | --- | --- |
| **Test** | **Patient results** | **Normal value** **(Tell me)** | **What is the test for?** |
| **COMPLETE BLOOD COUNT RESULTS** |
| **WBCs** | **12.5 billion cells/L** |  |  |
| **RBCs** | **7.0 trillion cells/L** |  |  |
| **Hemoglobin** | **13.8 grams/dL** |  |  |
| **Hematocrit** | **42%** |  |  |
| **Platelet count** | **225 billion/ L** |  |  |
| **SPIROMETRY RESULTS** |
| **FEV1/FVC** | **48%** |  |  |
| **Residual Volume**  | **2.5 L** |  |  |
| **expiratory reserve capacity** | **0.7 L** |  |  |
| **Inspiratory reserve capacity** | **1.9 L** |  |  |
| **Vital capacity** | **6 L** |  |  |
| **OTHER TESTS** |
|  |
| **Alpha 1 antitrypsin** | **68 mg/dL** |  |  |
| **Pa02** | **65 mmHg** |  |  |
| **PaCO2** | **55 mmHg** |  |  |
| **Blood pH** | **7.47** |  |  |

The patient is diagnosed with chronic obstructive respiratory disease (COPD)

1. What does COPD mean? What is the relationship between it and emphysema and bronchitis?
2. Why is his occupation of a coal miner important in this diagnosis?
3. John has COPD. Why do you think he has developed a barrel shaped chest because of this? Which lung volume is high, showing excessive air being trapped in the lungs?
4. The FEV1/FVC is the most important test for COPD diagnosis. What category does John fall into based on his 48% FEV1/FVC ratio?
5. Why would severe lung airway obstruction result in right sided heart failure?

**Prognosis and Treatment**

1. How many people does COPD kill every year?
2. What two categories of drugs do people with COPD get prescribed?
3. Are people with COPD having problems getting air in or out? Why would an oxygen tank be beneficial?
4. What additional therapies can be used for treatment of COPD?