**Sosan Amiri**

**Lung disease and treatments**

**You are to choose one lung disease from List A and one disease from List B to research and find information about the named aspects of each disease. You will then complete an in-class validation assessment on your research without notes.**

**DISEASES**

|  |  |
| --- | --- |
| **LIST A** | **LIST B** |
| **Chronic bronchitis** | **Pneumonia** |
| **Emphysema** | **Pleurisy** |
| **Cystic fibrosis** | **Tuberculosis** |

**Check list**

* **Cause, or main causes**
* **Symptoms and diagnosis**
* **Current treatments…how they work and what they do**
* **Prevention**

**Write the names of the diseases you have chosen here:**

**Disease A: Emphysema**

**Disease B: Pneumonia**

**Marks Table**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Report** | **Cause** | **Symptoms** | **Treatments** | **Prevention** | **Marks** | Your mark |
| **Disease A** | 1 | 1 | 1 | 1 | 5 |  |
| **Disease B** | 1 | 1 | 1 | 1 | 5 |  |

**Disease A:**

**Emphysema**

Emphysema is a type of COPD (chronic obstructive pulmonary disease). COPD refers to a collection of lung diseases that make breathing difficult and worsen over time. In people with emphysema, the alveoli are damaged. Alveoli is the tiny air sacs in the lung which allow for rapid gas exchange (the exchange of oxygen and carbon dioxide molecules to and from the bloodstream). There are about 3 million alveoli in the normal lungs, the alveoli stretch as we breathe in air drawing in oxygen and transporting it to the blood, the alveoli shrinks when we exhale forcing carbon dioxide out of the body. With Emphysema the lining of the alveoli becomes damaged, causing the inner wall of the alveoli (over time) to weaken and rupture resulting in larger air spaces rather than the mini tiny ones. The surface area of the lungs becomes reduced, meaning the amount of oxygen reaching the bloodstream is less, making it harder to breath. Also during exhalation since the damaged alveoli doesn’t work properly the old air becomes trapped leaving no room for fresh and oxygen air to enter the body (Mayo clinic, 2022).

**Causes**

The major causes of Emphysema is long-term exposure to airborne irritants, including (Medical Centric, 2019):

* Smoking
* Air pollution
* Chemical fumes and dust
* Genetic factors (alpha 1-antitrypsin deficiency)

Smoke, air pollution and chemical fumes causes inflammation and chemical deposits in the alveoli, which are extremely sensitive and vulnerable. The alveoli's thin cell walls are eventually damaged. Because oxygen and carbon dioxide are exchanged here, breathing becomes much more difficult, causing shortness of breath in most cases ("Smoking and emphysema | My Lungs My Life", 2022).

**Symptoms**

* Frequent coughing or wheezing.
* A cough that produces a lot mucus.
* Shortness of breath, especially with physical activity.
* A whistling or squeaky sound when you breathe.
* Tightness in your chest.

In most cases symptoms may not appear until the lung tissue has been destroyed to a 50% or greater extent. The only symptoms before then may be a gradual worsening of shortness of breath and exhaustion (fatigue), which might be mistaken for other conditions ("Emphysema: Causes, Symptoms, Diagnosis & Treatments", 2022).

Health care workers usually use tools like a medical history, which includes asking about your symptoms, a family history and other tests, such as lung function tests, a chest x-ray or CT scan, and blood tests to diagnose a patient (MedlinePlus, 2022).

**Treatments**

Currently there is no cure for emphysema. However, there are treatments that can help with symptoms, slow the progress of the disease. There are also treatments to prevent or treat complications of the disease (MedlinePlus, 2022).

Treatments include: Lifestyle changes (quitting smoking, avoiding secondhand smoke, more physical activity), medicines such as bronchodilators, vaccines for the flu, and antibiotics, oxygen therapy, and people with extreme cases surgery can help.

**Prevention**

To prevent emphysema, don't smoke and avoid breathing secondhand smoke. If you operate with chemical fumes or dust, wear a mask to protect your lungs.

**Disease B:**

**Pneumonia**

Pneumonia is a lung infection that can be caused by a range of pathogens such as viruses, bacteria, fungus, and mycobacteria. The infection causes the lungs' air sacs (alveoli) to become inflamed and fill up with fluid or pus. That can make it hard for the oxygen you breathe in to get into your bloodstream.

The severity of pneumonia can range from minor to life-threatening. Infants and young children, people over the age of 65, and people with health problems or compromised immune systems are the most vulnerable (American lung associations, 2022).

**Cause**

Pneumonia can be caused by a variety of different pathogens, including viruses, bacteria, fungi, and mycobacteria (Mayo Clinic, 2022).

**Symptoms**

Pneumonia symptoms can range from being so little that you don't even notice them to being so severe that you need to be admitted to the hospital. How your body responds to pneumonia depends on the type of germ causing the infection, your age and your overall health (American lung associations, 2022).

* Cough, which may produce greenish, yellow or even bloody mucus
* Fever, sweating and shaking chills
* Shortness of breath
* Rapid, shallow breathing
* Sharp or stabbing chest pain that gets worse when you breathe deeply or cough
* Loss of appetite, low energy, and fatigue
* Nausea and vomiting, especially in small children
* Confusion, especially in older people

The infection may be undetected in newborns and infants. Alternatively, they may vomit, have a fever and cough, appear restless or exhausted and depleted of energy, or have breathing and eating difficulties.

Pneumonia is diagnosed using medical history, physical exam, diagnostic tests such as blood tests, chest X-rays, pulse oximetry, sputum test, CT scans, and arterial blood gas test. However pneumonia can be difficult to diagnose because the symptoms are so variable, and are often very similar to those seen in a cold or influenza (American lung associations, 2022).

**Treatments**

Rest, medications (if a bacterial infection is suspected), and plenty of fluids are usually enough to cure mild pneumonia at home. More severe cases may need hospital treatment (Deepak, S. Patel, 2020).

**Prevention**

To help prevent pneumonia you can get vaccinated , practice good hygiene, don't smoke, avoid sick people and keep your immune system strong (get enough sleep, exercise regularly and eat a healthy diet) (Mayo clinic, 2022).

**References**

* Emphysema - Symptoms and causes. (2022). Retrieved 25 April 2022, from <https://www.mayoclinic.org/diseases-conditions/emphysema/symptoms-causes/syc-20355555#:~:text=Emphysema%20is%20a%20lung%20condition,instead%20of%20many%20small%20ones>.
* Pneumonia - Symptoms and causes. (2022). Retrieved 25 April 2022, from <https://www.mayoclinic.org/diseases-conditions/pneumonia/symptoms-causes/syc-20354204>
* Learn About Pneumonia. (2022). Retrieved 25 April 2022, from <https://www.lung.org/lung-health-diseases/lung-disease-lookup/pneumonia/learn-about-pneumonia>
* staff, f. (2022). Pneumonia - Walking Pneumonia - Treatment | familydoctor.org. Retrieved 25 April 2022, from <https://familydoctor.org/condition/pneumonia/>
* Topics, H. (2022). Emphysema | Emphysema Symptoms | Emphysema Treatment | MedlinePlus. Retrieved 25 April 2022, from <https://medlineplus.gov/emphysema.html>
* Smoking and emphysema | My Lungs My Life. (2022). Retrieved 25 April 2022, from <https://mylungsmylife.org/topics/group-1/what-is-copd/smoking-and-emphysema/>
* Emphysema: Causes, Symptoms, Diagnosis & Treatments. (2022). Retrieved 25 April 2022, from <https://my.clevelandclinic.org/health/diseases/9370-emphysema#:~:text=Cigarette%20smoking%20not%20only%20destroys,and%20difficulty%20clearing%20the%20airways>.