

***Human Biology ATAR – Task 3: Extended Response***

***Lung diseases and treatments (7.5%)***

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| --- | --- | --- | --- |
| Name: | | | |
| Time allowed: 1 Lessons | | | |
| **Section** | Your Mark | Marks available | Percentage |
| **Section 1:**  Report |  | 10 | 18.5% |
| **Section 2**:  Validation Test |  | 44 | 81.5% |
|  |  | **54** | **100%** |

**Declaration of Authenticity**

I (Student Name) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ declare that this work is my own and I have not plagiarised from any source.

Signature:  
  
Date:

**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 Chronic Bronchitis

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 |  |

This sheet is to be the cover page of your report

**Chronic Bronchitis**

Chronic Bronchitis is the inflammation and irritation of the bronchial tubes, which occurs over time. The bronchial tubes are airways that carries air to and from the air sacs in your lungs. The inflammation and irritation of the bronchial tubes causes a large amount of mucus to build up which can lead to breathing problems.

**Causes of Chronic Bronchitis**

The main cause of chronic bronchitis includes long-term exposure to air pollution in workplace or environment, and cigarette smoking. Cigarette smoking is a major factor in developing chronic bronchitis as it accounts for over 90% cases. The toxins in cigarettes or from air pollution causes damage to the lining of the airways, resulting in inflammation and scarring. Although chronic bronchitis is not a genetic condition, genetic can be a factor in developing chronic bronchitis. Chronic Bronchitis can also be caused by toxic gases or air quality in homes or everyday places.

**Symptoms and Diagnosis**

Symptoms of chronic bronchitis include:

* frequent cough or a cough that produces a lot of mucus.
* wheezing
* shortness of breath
* chest discomfort or tightness of the chest

At first, these symptoms can be mild. However, as the disease gets worse, the symptoms usually become more severe.

Severe symptoms of chronic bronchitis include:

* Extreme fatigue or weakness
* Swelling of the ankles, feet and legs
* More frequent chest infections
* increase in coughing attacks.
* Increase of mucus

To diagnose chronic bronchitis, it is done by a doctor or a specialist. The diagnostic is done through various test such as lung function test, a chest x-ray or CT scan, and blood scans.

**Treatment**

Even while chronic bronchitis cannot always be cured, there are numerous treatments and methods that can help control the symptoms. Bronchodilators and medication, oxygen treatment, pulmonary rehabilitation, and lifestyle modifications are a few of them. This treatment prevents the disease from getting worse or slow it.

A drug or prescription known as a bronchodilator widens the airways and increases airflow to the lungs, making breathing easier. The bronchodilators relax the lungs' muscles and open the bronchi, or airways. This type of treatment is often used in treating long-term conditions which the bronchi become inflamed and narrow. Anti-inflammatory drugs are another type of medication that are used as treatments. Anti-inflammatory drugs reduce inflammation and relive pain.

Oxygen therapy, also known as supplemental oxygen, is a treatment where oxygen is inhaled with the help from a machine. Oxygen therapy is used for serious cases where the lungs are damaged and oxygen levels are low.

Treatment for shortness of breath is a specialized rehab program where it helps manage diseases. In a program specialised for chronic bronchitis, they teach breathing techniques and physical exercise tailored to help improve the individual’s condition.

**Preventions**

In most cases, where smoking is the most cause of chronic bronchitis, the best prevention is to avoid and quit smoking. In other cases, where the pollution of air or toxic environment are the main causes, main preventions are wearing a protective gear (such as mask), to lower the amount of toxic fume inhaled. Overall, the main prevention to chronic bronchitis is avoiding or control the amount of toxic fume or air pollution inhaled daily.

Another prevention is to exercise daily outside. This is as being inside all day exposes you to dust and particles inside the house that can get into your airway. This will build up and cause inflammation. Getting exercise outside allows you to lower your exposure of toxic particles and more exposure to fresh air.

**Pneumonia**

Pneumonia is the severe inflammation of the lungs where the alveoli are filled with fluid. This leads to a decrease to the amount of oxygen that blood can absorb from air breathed into the lung.

**The causes of pneumonia**

Pneumonia is caused by an infection to the lung. Most infection to the lung is caused by bacteria, viruses, or other microorganisms that invade the lungs and cause inflammation. The different types of causes of pneumonia are viral pneumonia, bacterial pneumonia, and infection by mycoplasma.

Viral pneumonia is caused by viruses like the influenza virus, human adenovirus, and respiratory syncytial virus. Pneumonia cases are estimated to be caused by viruses in about half of cases. infection with the bacterium mycoplasma is another frequent cause of pneumonia. Mycoplasma-related pneumonia is typically milder, but recovery times can be prolonged. However, the most common cause of pneumonia is the bacteria streptococcus pneumoniae (a type of bacteria).

**Symptoms And Diagnosis**

Pneumonia symptoms can develop rapidly over a span of 24 to 28 hours or slowly throughout a period of days.

Common symptoms of pneumonia include:

* A cough that can be or produce thick yellow, green, brown or blood-stained mucus (phlegm)
* difficulty breathing such as shallow or rapid breathing and feeling breathless even in resting state.
* rapid heartbeat and fever
* sweating and shivering
* the loss of appetite, chest pain

Less common symptoms include:

* haemoptysis (coughing up blood)
* fatigue, nausea or vomiting
* wheezing
* headaches
* joint and muscle pain
* feeling confused and disorientated, particularly in elderly people

When diagnosing pneumonia, it will be done by a health care professional, using methods and tools such as a chest X-ray, or a pulse oximetry to measure how much oxygen is in your blood as pneumonia can keep the lungs from getting enough oxygen into your blood. Blood tests will also be done, such as a complete blood count (CBC) see whether your immune system is fighting an infection.

**Treatment**

Pneumonia can be a serious case, but most people can recover from it. Although treatment will depend on whether the pneumonia was caused by a virus or bacteria.

The main treatment is antibiotics and are usually given at the first sign of pneumonia, before it is determined whether is bacterial or virus. Antibiotics are taken by the mouth, however, in more serious cases, it is injected. The antibiotics help the body work against the disease and rid of them. For viral pneumonia, antivirals medication is prescribed. When symptoms get worse, the infected will need to be treated at the hospital. A person with pneumonia will get treated with oxygen therapy. Oxygen therapy works by helping the patient receive more oxygen through a machine.

**Preventions**

Prevention of pneumonia is:

* + avoiding contact
  + good hygiene

keeping immune system strong

* + vaccination

The most common prevention of pneumonia is to avoid any close physical contact with anther person especially if that person is sick, for instance, sick with influenza. Maintaining a good practice with hygiene is another common way of preventing pneumonia. Maintaining good hygiene such as washing hands regularly and thoroughly, covering your mouth and nose with a tissue when coughing or sneezing, and throwing away used tissue.

Keeping the immune system strong with a healthy lifestyle will not only help with the prevention of pneumonia but also fighting against the disease. A healthy lifestyle such as eating right, being active and getting enough rest.

Although getting vaccinated is not a direct effective way of preventing pneumonia, it helps build up antibodies against the disease to fight it off. Getting vaccinated against the disease will help prevent it from doing worse harm to the body than not being vaccinated.