

كلية المستقبل الجامعة

قسم الفيزياء الطبية

مختبر الفيزياء الطبية

مرحلة رابعة

قسم الفيزياء الطبية

تجربة ((nebulizer))

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## **Steam breathing apparatus:**

Steam breathing device: It is a device that converts some medicines for respiratory problems from liquid form into a mist to facilitate inhalation.

### **There are things that the respirator helps to treat:**

Chronic obstructive pulmonary disease.

1-Cystic fibrosis.

2-asthma.

3-Emphysema.

4-Acute bronchitis

### **Medicines that are used in the steam machine for breathing?**

1-Corticosteroids: These are drugs that work to fight infections, such as: budesonide and fluticasone.

2-Bronchodilators: These are drugs that expand the airways, such as: albuterol and salmeterol.

### **People who need a nebulizer?**

#### **1- Children with chest allergy**

The problem of chest allergy is one of the most common health problems that can affect many children, and the use of a steam inhaler for children will help in facilitating inhalation in cases of chest allergy that lead to difficulty breathing.

## **2- People with asthma**

Asthma is considered a chronic disease, and the asthmatic patient needs to use inhalers, whether portable devices or nebulizers, where the person needs frequent sessions, and the steam inhaler is more suitable for young children than nebulizers that are difficult to use at a young age, as they require a special method of use.

## **3- People with chronic obstructive pulmonary disease**

Chronic obstructive pulmonary disease obstructs the flow of air from the lungs, and leads to breathing problems, so a chronic obstructive pulmonary disease patient needs to use a steam inhaler for adults to help him breathe normally.

## **4- People with cystic fibrosis**

It is a genetic disorder that causes significant damage to the lungs, the digestive system, and the rest of the body's other organs. Cystic fibrosis affects the respiratory system, and leads to recurrent pneumonia, inflammation, and nasal obstruction. Therefore, a cystic fibrosis patient may need to use a steam inhaler.

## **5- People with bronchial dilatation**

The expansion of the bronchial tubes does not mean an increase in the ability to breathe, but rather their expansion occurs as a result of the accumulation of mucus in them, so they become thicker, sag, and get scars due to the infections that occur in them, and thus it is difficult to breathe normally, and therefore the doctor prescribes a

steam inhaler for children with respiratory infections such as bronchiolitis;

### **What are the benefits of using a steamer to breathe?**

#### **1. Speed of drug delivery**

The vaporizer for breathing is characterized by the rapid delivery of the drug to the lung, where it is the most important place for the drug to reach it, as a drug such as albuterol, which is a bronchodilator, takes 5 minutes to give effect, compared to half an hour when taken orally.

#### **2. Ease of use**

It is easy to use a vaporizer to breathe, because breathing through it does not require certain things compared to breathing through a nebulizer that requires breathing inward when the medicine is sprayed. In this device, the medicine will be sprayed while continuing to breathe normally.

#### **3. Fewer side effects**

The vaporizer for breathing has fewer side effects when compared to the same medication taken by mouth, and may help reduce short-term side effects, such as: tremor, headache, or a racing heart.

### **How to use a respirator**

- 1- Wash your hands well.
- 2- Put the medication into the inhaler.

- Medications that can be placed in the inhaler include beta-blockers, acetylcholinesterase inhibitors, steroids, and inhaled antibiotics. Inhaled medications can be used to treat non-respiratory diseases. Not all medications are sprayable.



3- Connect the mouth piece.



4- Connect the tubes. Connect one end of the oxygen tube to the cavity of the inhaler.

5- Turn on the air compressor and use the inhaler

6- Continue to inhale the medicine. Sit down and inhale the medicine until the spray is finished. This usually takes 10-15 minutes

7- Close and clean the inhaler device :Make sure to unplug the device and separate the cavity of the device and the mouthpiece from the tube.



8- Sterilize the inhaler once a week.