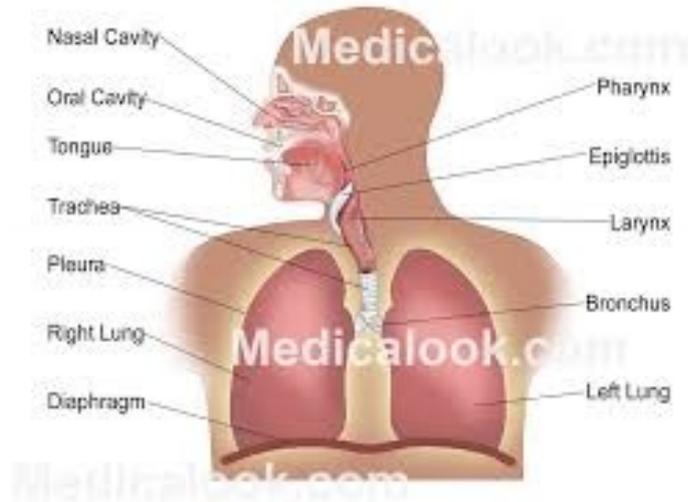


Unit 10 Pulmonary Physiotherapy

Task 1 Study the diagram below and describe the passage of air during respiration.



(www.medicallook.com)

Task 2 Video – Respiratory system

(http://www.medicallook.com/human_anatomy/systems/Respiratory_System.html)

Listen and complete the sentences in the summarising sentences:

1. We breathe in oxygen and we _____ carbon dioxide.
2. All breathing _____ because of the respiratory system.
3. The respiratory system includes the nose, throat, voice box, _____ and lungs.
4. In nostrils, the air is _____, warmed and moistened.
5. The two airways of the nose and mouth _____ at the pharynx.
6. The pharynx _____ both food and air.
7. The path for air is called the _____.
8. The epiglottis _____ food and liquid from going into the lungs.
9. The trachea _____ downwards from the bottom of the larynx.
10. The trachea _____ into two branches.
11. The bronchioles _____ tiny air sacs called alveoli.
12. Oxygen _____ through the capillary walls into the bloodstream.
13. At the same time, CO₂ _____ from the bloodstream into the air sacs, where it gets breathed out of the body.
14. During exercise, the body needs more oxygen to _____ the muscles.
15. The respiratory system _____ to supply the body with much-needed oxygen and also to _____ of the carbon-dioxide waste in the system.
16. Exercising helps our chest cavity to get bigger which _____ the body to increase the amount of oxygen it takes in.
17. More capillaries form so the body gets better at _____ oxygen and carbon dioxide.

Task 3 Reading

Complete the text with the phrases below:

- A surrounding the alveoli.
- B is transported away from the lungs.
- C is only one cell thick.
- D takes place.
- E as we breathe.
- F to move in and out of the blood cells.
- G has little oxygen in it.

Exchange of gases in the lungs

The alveoli are covered with blood capillaries. Blood being transported by a capillary to the alveoli (1) _____. This is called deoxygenated blood. This blood has a high concentration of carbon dioxide. Blood being transported by a capillary from the lungs is oxygenated. This means that it has a high concentration of oxygen. There is a network of capillaries (2) _____. This is where the exchange of gases (3) _____. Firstly, deoxygenated blood flows in a capillary surrounding an alveolus. The wall of the capillary (4) _____. This allows gases (5) _____. Here, carbon dioxide leaves the deoxygenated blood and this is exhaled (6) _____. At the same time oxygen we breathe in passes through the alveolus wall, which is also only one cell thick, into the blood. Finally, the newly oxygenated blood (7) _____.

(text adapted from Kelly, K. *Science*. Macmillan, 2008)

Task 4 Pre-reading- vocabulary

1. See how new words may be made from original expressions:

Depend -dependence-independence

Able-ability-disability

Fertile-fertility-infertility

Blue - bluish

Look - overlook

Front – forefront

Grow – growth

Short- shortness

Care+give-caregiver

Can you guess the meanings now?

Task 5 See the definitions of the following vocabulary:

Increase to become greater

Endurance: lasting quality, the ability or strength to continue

Scar: a mark left by a healed wound

Sinus: cavity, passage

Diarrhea an intestinal disorder characterized by abnormal frequency and fluidity of fecal evacuations

Obstruct block or close

Restrict to keep within limits

Inhale to breathe in

Irritant thing causing excitement, reaction

Wheeze to breathe with difficulty and with a whistling sound

| | |
|-----------|---|
| Cough | act and sound that we produce when we suffer an infection of the throat |
| Sputum | matter from the lungs and respiratory passages |
| Tint | a pale colour |
| Clap | to strike and object against something quickly |
| Cup | to form into a cuplike shape |
| Drain | to withdraw liquid |
| Condition | to put in a fit or proper state |

Task 6 Reading

Read this text and the words in capital letters. Change the form of each word in capital letters so that it fits the context.

Pulmonary physiotherapy

Primary goals of this specialty include INCREASE endurance and functional independence. Manual therapy is used in this field to assist in clearing lung secretions experienced with cystic fibrosis.

Cystic fibrosis (also known as **CF** or **mucoviscidosis**) is a common genetic disease which affects the entire body, causing PROGRESS disability and often early death. The name *cystic fibrosis* refers to the characteristic scarring (fibrosis) and cyst formation. Difficulty breathing is the most serious symptom and results from frequent lung INFECT that are treated with, though not cured by, antibiotics and other medications. Many symptoms, including sinus infections, poor GROW , diarrhoea, salty tasting skin, and infertility result from the effects of CF on other parts of the body.

Other disorders, e.g., chronic OBSTRUCT pulmonary disease, also called chronic airways disease can be treated by pulmonary specialized physical therapists.

Chronic obstructive pulmonary disease (COPD), can cause a major change in the quality of a patient's life. However, physiotherapy can help.

Diseases included in chronic obstructive pulmonary disease, are chronic **bronchitis** and **emphysema**, for example. Many other diseases that restrict or limit breathing are included. It is most often caused by cigarette smoking, but also can be caused by inhaling other irritants such as those in the workplace. Chronic airways disease is more common among the elderly.

Along with having SHORT of breath, the patient is likely to wheeze and cough FREQUENT. S/He will produce sputum in large amounts, sometimes with blood. The lips and fingers can take on a BLUE tint because s/he is not getting enough oxygen, and heart trouble may follow for the same reason.

Physiotherapy can help with COPD in many ways. One is in breathing retraining. A physiotherapist works with the patient to teach him ways to breathe that will draw the most air while ELIMINATE the most wheezing. This can be a great help for those with chronic airways disease.

Another method used by physiotherapists for those with COPD is called clapping and postural DRAIN. This is done by positioning the body so that the affected lung is above the trachea.

Many people do this at home by lying on a bed and BEND the top half of the body over it. The physiotherapist teaches one how to do this so that the lung will drain. Before long, the patient with chronic airways disease will be doing this PROCEED on his own.

The other part of the help for chronic airways disease patients is called clapping. This is done by CUP the hand and clapping the back to LOOSE secretions in the chest. It is also called chest percussion.

The physiotherapist will do this procedure, and will teach it to a family member or caregiver.

People with chronic airways disease often have a problem with weakening legs. This is because, as they have trouble breathing, they avoid WALK or doing physical exercise of any sort. The goal of physiotherapy in this case is to STRENGTH the legs through treadmill-walking or stationary-cycling. This can only be done, however, if the patient is well enough to start out.

CONDITION the arms of chronic airways disease patients is just as important. Most daily jobs rely HEAVY on the arms to do the work. Exercises which focus on the arms not only strengthen the muscles of the arms. They also help the patient start breathing better.

COPD is a condition that can benefit from physiotherapy. The physiotherapist treating the patient must have specialized knowledge for this type of treatment. Simple methods can be overlooked as modern treatments come to the forefront. Yet, physiotherapy personnel who know this technique can make a big DIFFER in patients' lives.

Task 7 After reading the article, sum up the main procedures used during the physiotherapy treatment of pulmonary diseases and describe their benefits.

Task 8 Video

(<http://www.youtube.com/watch?v=aktIMBQSXMo>)

Understanding Chronic Obstructive Pulmonary Disease (COPD)

1. Listen and answer the questions:

What does COPD refer to?

What are the main causes of COPD?

What are the main symptoms? What do they depend on?

How is COPD diagnosed?

2. Listen again and complete the gaps:

Chronic bronchitis is characterised by an _____ of the bronchial tubes which are passage ways that branch off from the trachea or _____ and allow air to enter the lungs.

This inflammation causes _____ to build up in the tubes preventing sufficient air from reaching the lungs.

Emphysema occurs when the walls between the air sacks and the lungs known as the alveoli lose their _____.

This in turn causes the air sack to become _____ and over-inflated leading to an unnatural retention of air within the lungs.