**Respiratory system**

**Objective**

* Locate and describe the organs of the respiratory system.
* Describe the functions of the respiratory structures.
* Pronounce, spell, define, and write the medical terms related to the respiratory system.
* Describe common diseases of the respiratory system.

structures are divided into:

* upper respiratory tract (URT) and lower respiratory tract (LRT).
* The URT is include the respiratory structures located outside the thoracic cavity.
* nasal cavity, pharynx, larynx, and upper trachea. Mucous membrane lines the URT.

**Nasal Cavity**

* right and left wall called nasal septum. nasal septum bone and cartilage.
* Air enters the nasal cavity through nares (nostrils).
* The hairs (cilia) inside the nares filter out dust particles from the air as it is inhaled.
* The nasal cavity warms and moistens air. lined with nerve cells called olfactory neurons sense of smell.
* From nares, cavity extends to the pharynx.

**pharynx** is the throat.

nasopharynx, behind the nose;

oropharynx behind the mouth; and the

laryngopharynx behind the larynx.

The nasopharynx transports air only.

The oropharynx and laryngo- pharynx transport air and food.

The pharynx also contains the tonsils and adenoids

**The larynx** is the voice box. consists of

vocal cords, epiglottis, Adam’s apple (thyroid cartilage).

vocal cords / folds of mucous membrane.

As air moves out of the lungs, it goes past the vocal cords. They vibrate produce sound.

The epiglottis swings up and down like a lid. covers the opening of the larynx during swallowing / food from the pharynx does not go down the respiratory tract.

**Lower respiratory tract**

trachea is windpipe (القصبة الهوائية) extends from larynx to bronchi. lined with mucous membrane and cilia.

trachea branches into two tubes called primary bronchi.

primary bronchi (singular bronchus) lined with mucous mem brane and cilia.

branches into smaller and smaller bronchi. small bronchi extend to tiny structures called bronchioles. The trachea and bronchi together form the tracheobronchial system.

The tracheobronchial tree normally secretes mucus. This functions as a lubricant and protects against infection. mucus and other matter expelled from trachea and bronchus and through mouth, called sputum or phlegm

**Lung**

Each lung is covered by a membrane called the pleura.

Inside each lung are approximately 300 million alveoli .

like tiny balloons. Inhale air goes down through the bronchioles into alveoli.

They expand and fill up with air. The oxygen from the air is absorbed by the pulmonary capillaries that surround the alveoli

**Paranasal Sinuses**

Paranasal sinuses / hollow spaces in skull bones.

four paranasal sinuses:

* frontal,
* ethmoid,
* sphenoid,
* maxillary.

They are lined with mucous membrane, which helps moisten and warm the air that is breathed in.

The paranasal sinuses also help in producing voice sounds.

**Mediastinal and Pleural cavities**

Pathology

**allergic rhinitis (rye-NYE-tis)**

This condition is an allergic response to inhaled allergens (foreign substances).

**asthma (AZ-mah)**

A bronchospasm that results in airway obstruction inhaled allergens, such as chemicals, pollen, dust, or mold, can irritate the airways.

**Bronchogenic Carcinoma**

Malignant neoplasm of the lung arising from the bronchus or bronchioles.

**Chronic Obstructive Pulmonary Disease (COPD)**

COPD is a chronic disease of the respiratory tract that obstructs air flow to the lungs and body tissues.

**Cystic fibrosis (CF)** is a genetic disease involving the lungs, pancreas, and sweat glands. The abnormal secretion of thick gel-like mucus from these organs causes damage to the lung, nutritional deficiency, and sweat gland abnormalities.

**Deviated nasal Septum (NAY-zal SEP-tum)**

This condition is a shift of the nasal septum away from the midline, usually caused by trauma.

**emphysema (em-fih-SEE-mah):**loss of elasticity and overexpansion (dilation) of t alveoli. Once happens, do not return to normal size and air trapped in. obstructs the passage of oxygen from the lungs into body tissues.

**epistaxis (ep-ih-STACK-sis)**

Bleeding from the nostrils or nosebleed.

**Pneumoconiosis (new-moh-koh-nee-OH-sis),** Black Lung

Accumulation of dust particles in the lung from long exposure and inhalation of irritants.

Silicosis (sill-ih-KOH-sis) inhalation of silica dust.

**Anthracosis (an-thrah-KOH-sis)** is caused by the inhalation of coal dust.

Asbestosis is caused by the inhalation of asbestos

**Pneumonia (noo-MOH-nee-ah);** Pneumonitis (noo-mon-EYE-tiss)

Pneumonia is inflammation of the lung. condition progresses, inflammatory process cause lung solid. consolidation (kon-sol-ih-DAY-shun). consolidation disappears (resolution) e.g streptococcus pneumonia / streptococcus bacteria, while lobar pneumonia is pneumonia affecting a lobe of the lung.

* Aspiration pneumonia caused by the intake (aspiration) of food, liquid, or vomit into the lung.
* tuberculosis (too-ber-kyoo-LOH-sis)

**Tuberculosis (TB)** is caused by the Mycobacterium (my-koh-back-TEER-ee-um) tuberculosis bacteria, which is carried through the air and inhaled into the lungs.