MODULE 10

AIM

The aim of this module is to provide students with an introduction to human respiratory system.

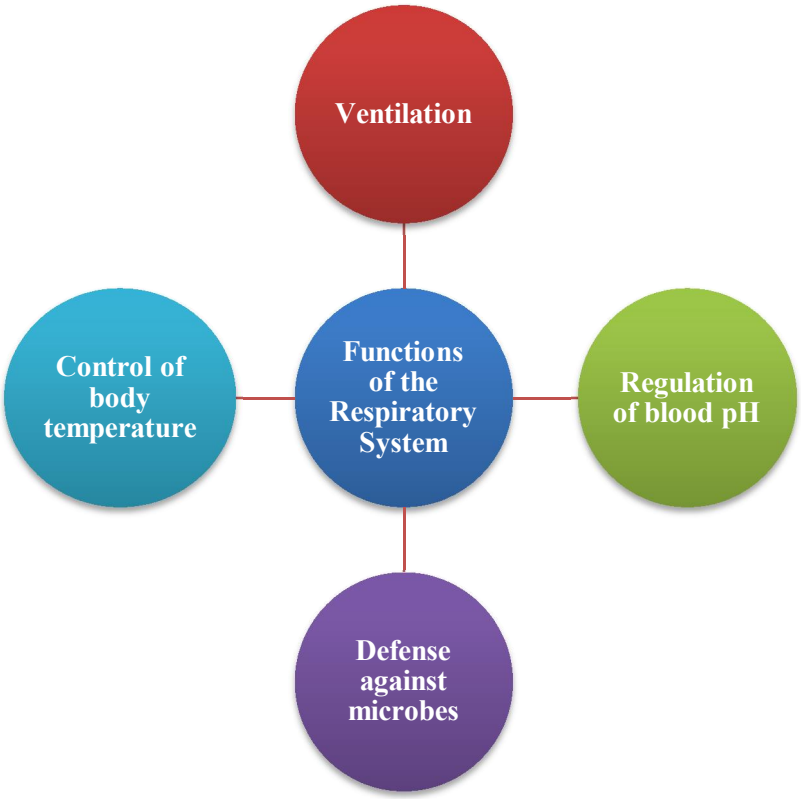
CONTENTS AND OBJECTIVES

- Introduction
- Parts of respiratory tract
  - ✓ Nose
  - ✓ Mouth
  - ✓ Pharynx
  - ✓ Larynx
  - ✓ Trachea
  - ✓ Bronchi and Bronchioles

HUMAN RESPIRATORY SYSTEM

INTRODUCTION

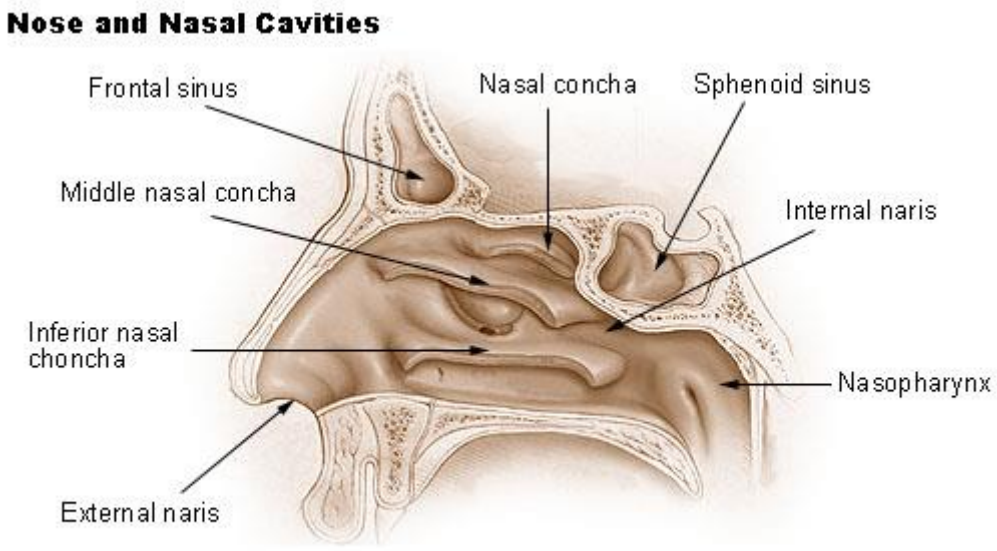
- Respiratory system is a vital for human beings to survive without which we all would cease to survive.
- Respiration is the process of exchange of oxygen (O2) from the atmosphere with CO2 produced by the cells.
- The human respiratory system is a full-fledged set of complex organs and tissues.
- These organs are crucial for capturing oxygen from the environment and transport oxygen into lungs. Besides, these organs also make sure that carbon dioxide (CO2) leaves our body.
- The path from the nose to the lungs is called as respiratory tract.
- The respiratory tract has been divided into:
    1. **Upper respiratory tract**- Nostrils, nasal cavities, pharynx, epiglottis and larynx.
    2. **Lower respiratory tract**- Trachea, bronchi, bronchioles and lungs.
- The air becomes war, and moistens once it enters the respiratory tract.



PARTS OF THE RESPITATORY TRACT

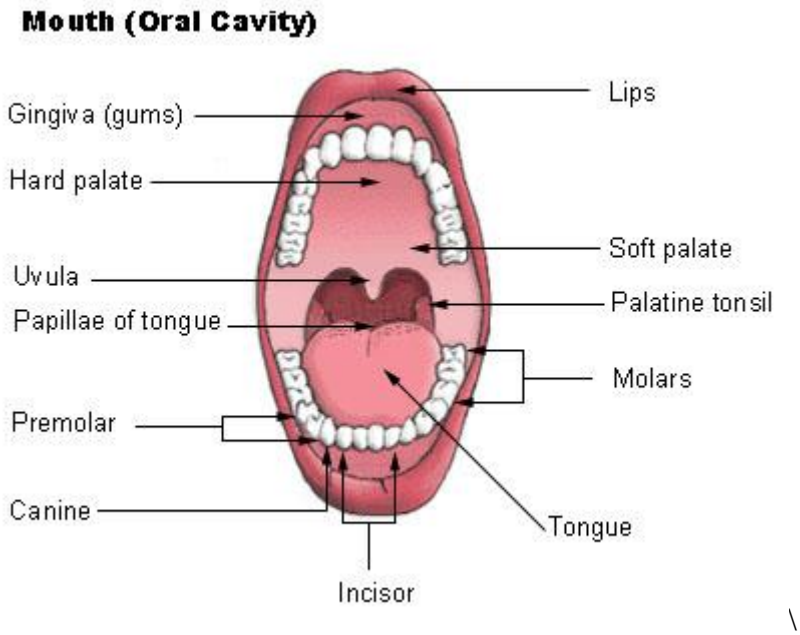
1. NOSE

- Nose is the main external opening of respiratory tract.
- It is made up of cartilage, bone, muscle and skin. These structures support and protect the nasal cavity.
- The nasal cavity is lined by mucous and has numerous tiny hair which protect against microbes and dust before they can reach inner portions of the body.



2. MOUTH

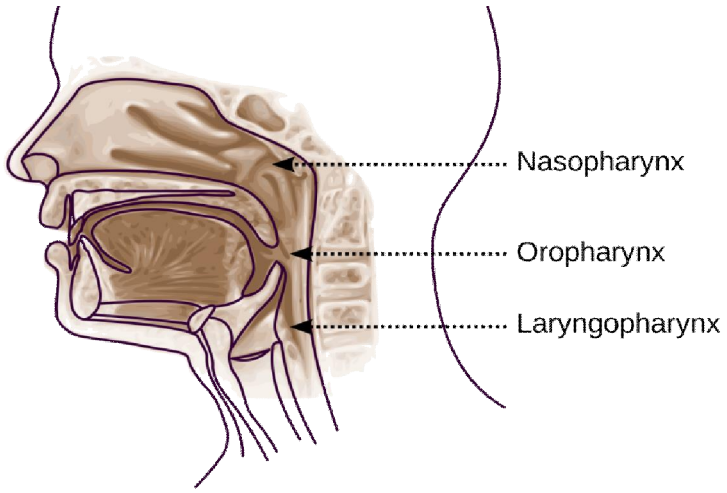
- Although the normal breathing takes place through the nasal cavity, the oral cavity also acts as a secondary opening to supplement the functions of nasal cavity whenever needed.
- Unlike the nasal cavity, air entering through the oral cavity does not get moistened and warm.
- Also, the oral cavity does not contain hair or mucous membrane and thus has a disadvantage over nasal cavity.
- The only advantage of breathing through oral cavity is that air has to travel a shorter distance to reach the lungs.



3. PHARYNX

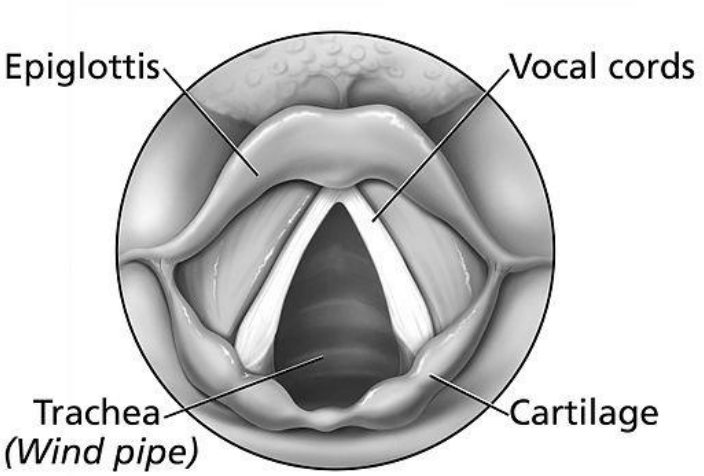
- The pharynx is the part of the throat that is behind the mouth and nasal cavity and above the oesophagus and the larynx, or the tubes going down to the stomach and the lungs.
- It is a funnel-shaped tube that connects the nasal and oral cavities with larynx.
- Pharynx has three parts-

1. Nasopharynx- It is the superior and the most posterior part of nasal cavity.
2. Oropharynx- It is located at the back of oropharynx.
3. Laryngopharynx- The air passes from nasorpharynx and from oropharynx, it reaches laryngopharynx and gets diverted into the opening of larynx by epiglottis. The epiglottis ensures that the food does not go into the windpipe (trachea) while eating.



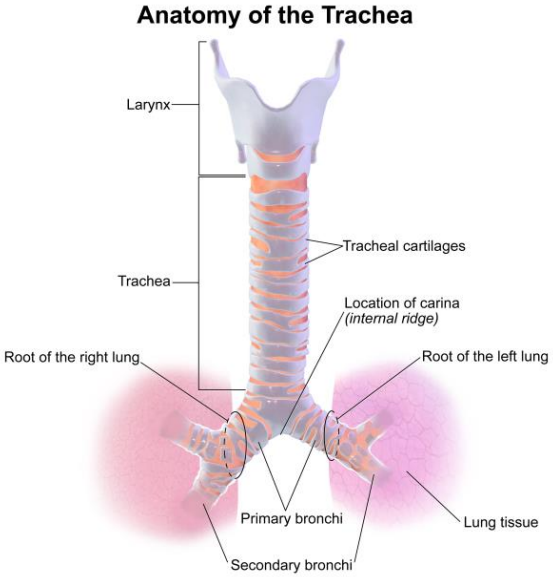
4. LARYNX

- Larynx, also known as the voice box, forms a connection between the trachea and laryngopharynx.
- It is located at the posterior portion of the neck.
- Larynx also contains vocal folds which vibrate and produce sounds of speech and singing. The pitch of sound can be changed by altering vibration.



5. Trachea

- Trachea is also known as windpipe. It is a 5-inch long tube which connects larynx to the bronchi thus allowing air to pass through the neck.
- Trachea is made up of rings of C-shaped cartilage which allows it to remain open all the time.
- It functions mainly to provide a clean airway for air to enter the lungs.
- It also produces mucus which helps in trapping dust particles.



6. BRONCHI AND BRONCHIOLES

- The splitting of the airway into branches, called bronchi, occurs at the inferior end of the trachea.
- The left and right bronchi run into each lung before branching into smaller secondary bronchi.
- The secondary bronchi then split into each smaller bronchioles which spread throughout the lungs.