

Respiratory System

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1. Introduction

- The respiratory system is responsible for the exchange of gases in the body, supplying oxygen to the blood and removing carbon dioxide.

2. Organs of the Respiratory System

- **Nose and Nasal Cavity:** Filters, warms, and moistens the air.
- **Pharynx (Throat):** Connects the nasal cavity to the larynx.
- **Larynx (Voice Box):** Contains vocal cords for speech production.
- **Trachea (Windpipe):** Transports air to the lungs.
- **Bronchi and Bronchioles:** Branches of the trachea leading to the lungs.
- **Alveoli:** Tiny air sacs in the lungs where gas exchange occurs.

3. Mechanics of Breathing

- **Inhalation:** Diaphragm contracts, chest cavity expands, air is drawn into the lungs.
- **Exhalation:** Diaphragm relaxes, chest cavity decreases in size, air is forced out of the lungs.

4. Gas Exchange

- Oxygen from the air is absorbed into the bloodstream in the alveoli.
- Carbon dioxide, a waste product, is expelled from the bloodstream into the alveoli to be exhaled.

5. Respiratory Disorders

- **Asthma:** Chronic inflammation of the airways leading to breathing difficulties.
- **Chronic Obstructive Pulmonary Disease (COPD):** Progressive lung disease causing shortness of breath.
- **Pneumonia:** Infection of the lungs leading to inflammation and fluid buildup.

6. Maintaining Respiratory Health

- **Avoid smoking:** Smoking damages the lungs and can lead to respiratory diseases.
- **Regular exercise:** Improves lung function and overall respiratory health.

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- **Proper hygiene:** Helps prevent respiratory infections.

7. Conclusion

- The respiratory system plays a vital role in maintaining the body's oxygen levels and removing waste gases. Understanding its structure and function is essential for maintaining good respiratory health.