

Human Respiration

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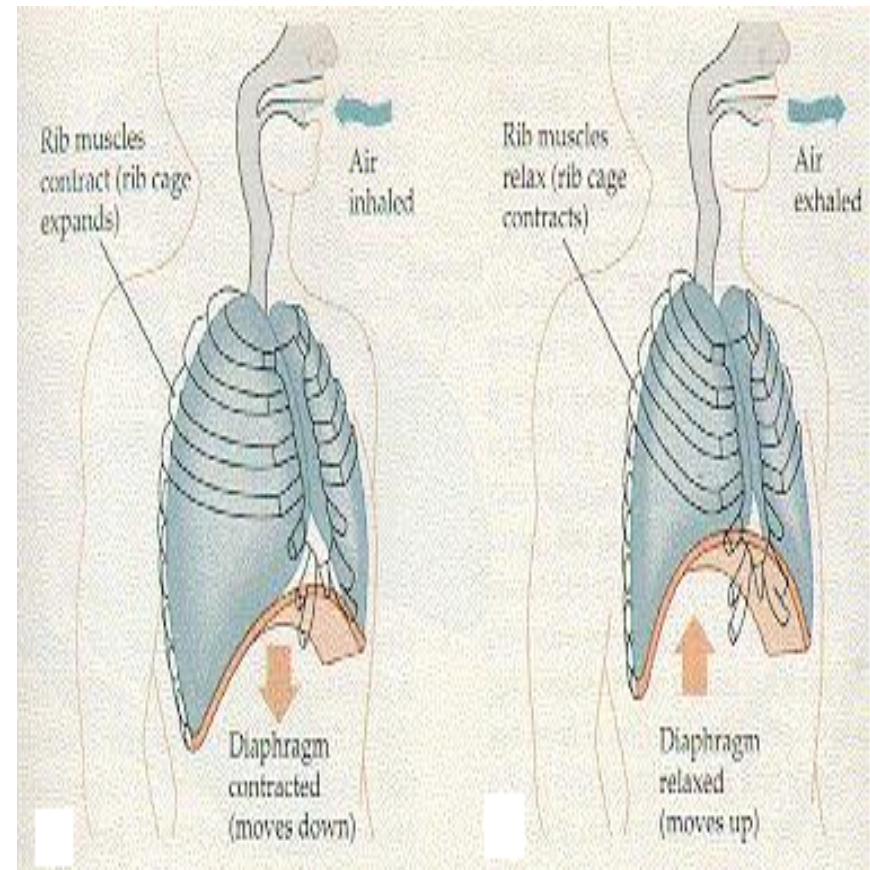


Students will be able to:

- Define Human Respiration
- Monitor the Respiratory Cycle
- Determine the effect of holding of breath on the respiratory cycle
- Determine the effect of re-breathing of air on the respiratory cycle.

What is Human Respiration?

- The human respiratory system allows one to obtain oxygen, eliminate carbon dioxide.
- Breathing consists of two phases, inspiration and expiration
 - Inspiration- the process of taking in air
 - Expiration- the process of blowing out air



Organs in the Respiratory System

STRUCTURE	FUNCTION
nose / nasal cavity	warms, moistens, & filters air as it is inhaled
pharynx (throat)	passageway for air, leads to trachea
larynx	the voice box, where vocal chords are located
trachea (windpipe)	keeps the windpipe "open" trachea is lined with fine hairs called <i>cilia</i> which filter air before it reaches the lungs
bronchi	two branches at the end of the trachea, each lead to a lung
bronchioles	a network of smaller branches leading from the bronchi into the lung tissue & ultimately to air sacs
alveoli	the functional respiratory units in the lung where gases are exchanged

Malfunctions & Diseases of the Respiratory System

asthma

**severe allergic reaction
characterized by the
constriction of bronchioles**

bronchitis

**inflammation of the lining of
the bronchioles**

emphysema

**condition in which the alveoli
deteriorate, causing the lungs
to lose their elasticity**

pneumonia

**condition in which the alveoli
become filled with fluid,
preventing the exchange of
gases**

lung cancer

**irregular & uncontrolled
growth of tumors in the lung
tissue**



Respiratory Cycle

- Respiration rate is the number of breaths per minute
- Human respiration rate is controlled by a part of the brain called the **medulla**
 - Sends signals to adjust levels of oxygen present in your body by changing your breathing rate

Lab experiment

