TOPIC: INTRODUCTION TO LUNG PHYSIOLOGY

Ventilation and Respiration

◆ "Breathing" can be broken into ___ components.

1. Ventilation

◆ Movement of _____ in & out of the lungs.

Inspiration: _____

Moves air _____ lungs.

Uses muscular force.

Expiration: _____

Moves air ___ of lungs.

Muscle relaxation.

◆ **Quiet breathing:** _____, normal, quiet breaths.

- Used for most physiological measures.

◆ **Forced breathing:** deeper and harder breathing:

- Muscular inspiration & _____.

2. Respiration

◆ Exchange of ___ & _____ with blood.

External: between _____ and blood.

Internal: between blood and _____.

◆ **Hemoglobin**: increases the amount O_2 and CO_2 that can be carried in the _____.

EXAMPLE

Match the following descriptions to the appropriate terms below.

a. Respiration b. Inspiration c. Expiration d. Ventilation

1. Movement of air out of the lungs: ____
2. Exchange of gases with the blood: ____
3. Movement of air into the lungs: ____
4. Movement of air into and out of the lungs: ____

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PRACTICE

The exchange of gases between blood and the air in the lungs is known as:

a) Ventilation. b) Cellular Respiration. c) External Respiration. d) Internal Respiration.

PRACTICE

Most physiological measures are taken during eupnea, or quiet breathing. This means that:

a) Ventilation is a passive process that does not use muscular force.

b) Muscular force is used for inspiration but not expiration.

c) Muscular force is used for expiration but not inspiration.

d) Muscular force is used for both inspiration and expiration.

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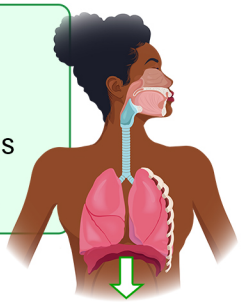
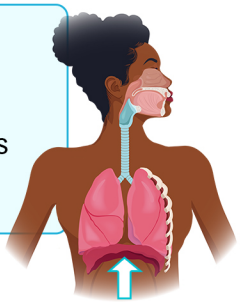
Ventilation

- Ventilation is performed by changing the volume of the _____ cavity.
  - Lungs are the _____ structure in thoracic cavity that can change size significantly.

- **Inspiration**:
  Volume ____:
  air flows into lungs
  to fill extra space.



- **Expiration**:
  Volume ____:
  smaller size forces
  air out of lungs.



- Important features of lungs that makes this possible:
  - _____: can expand but will naturally recoil.
  - _____ system: the lungs are connected to the atmospheric air.
  - Passive: lungs contain no _____; rely on muscles of the chest and abdomen.

PRACTICE

Ventilation occurs when:

a) Muscles cause the volume of the thoracic cavity to change.

b) The gas molecules pass between air and the blood.

c) Changes in pressure cause a change in the size of the thoracic cavity.

d) The lungs contract and relax, altering the size of the thoracic cavity.