

11. Gas exchange in humans

Starter Quiz · 课前小测

IGCSE Biology

Name: _____ Score: _____

1. Which are features of a good gas exchange surface? (Select all that apply.)

- ☐ large surface area
- ☐ thin (short diffusion distance)
- ☐ good blood supply
- ☐ thick and dry

Tick every correct option.

2. When you breathe in, the diaphragm:

- ☐ flattens (contracts)
- ☐ domes up (relaxes)
- ☐ disappears
- ☐ makes oxygen

3. Gas exchange in the lungs happens in the:

- ☐ alveoli
- ☐ trachea
- ☐ ribs
- ☐ diaphragm

4. Air rushes into the lungs when the pressure inside the chest:

- ☐ falls below the outside air pressure
- ☐ rises above the outside
- ☐ stays the same
- ☐ becomes zero

5. At the alveoli, oxygen diffuses:

- ☐ from the air into the blood
- ☐ from the blood into the air
- ☐ in both directions equally
- ☐ not at all

6. Compared with inhaled air, exhaled air has:

- ☐ less oxygen and more carbon dioxide

- ☐ more oxygen
- ☐ no carbon dioxide
- ☐ the same composition

7. Gas exchange occurs by diffusion, which is different from breathing.

- ☐ True
- ☐ False

8. During inhaling, the rib muscles lift the ribs up and out.

- ☐ True
- ☐ False

9. A large _____ area speeds up the diffusion of gases.

10. The movement of air in and out of the lungs is called _____ (breathing).

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Answers · 答案

IGCSE Biology

1. large surface area; thin (short diffusion distance); good blood supply

A thick, dry surface would slow diffusion.

2. flattens (contracts)

The diaphragm flattens to increase chest volume.

3. alveoli

Alveoli are the tiny air sacs where gases exchange.

4. falls below the outside air pressure

Lower internal pressure draws air in.

5. from the air into the blood

Oxygen moves down its gradient into the blood.

6. less oxygen and more carbon dioxide

Oxygen is used and carbon dioxide added.

7. True

Breathing ventilates; gas exchange is diffusion across the surface.

8. True

This expands the chest, lowering pressure.

9. surface

More surface area means faster gas exchange.

10. ventilation

Ventilation keeps the gas-exchange gradient steep.