

Respiration and Ventilation: Understanding the Basics

1

Pick the Right Answer!

1 What is the difference between respiration and ventilation?

- a Respiration is a chemical reaction, while ventilation is the process of breathing air in and out.
- b Respiration is the process of breathing air in and out, while ventilation is a chemical reaction.
- c Respiration and ventilation are the same thing.
- d None of the above.

2 What is released during the process of respiration?

- a Oxygen
- b Carbon dioxide
- c Energy from glucose
- d Water

3 What is the by-product of aerobic respiration?

- a Lactic acid
- b Carbon dioxide
- c Glucose
- d Water

4 Which type of respiration produces more energy?

- a Aerobic respiration
- b Anaerobic respiration
- c Both produce the same amount of energy
- d None of the above

5 What is the equation for aerobic respiration?

- a Glucose goes to lactic acid
- b Glucose plus oxygen gives carbon dioxide plus water
- c Carbon dioxide plus water gives glucose plus oxygen
- d None of the above

6 **When does anaerobic respiration occur?**

- a In the presence of lots of oxygen
- b When there is not sufficient oxygen
- c Both a and b
- d None of the above

7 **What is the by-product of anaerobic respiration?**

- a Lactic acid
- b Carbon dioxide
- c Glucose
- d Water

8 **What is the feeling of aching after doing a mad dash called?**

- a Oxygen debt
- b EPOC
- c Anaerobic respiration
- d Aerobic respiration

9 **What is EPOC?**

- a The process of releasing energy from glucose in the presence of oxygen
- b The process of releasing smaller amounts of energy from glucose without the presence of lots of oxygen
- c The mouthful term for excess post-exercise oxygen consumption
- d None of the above

10 **Why do we keep on breathing deeply for a few minutes after we finish some difficult exercise?**

- a To replenish all of the cells in our body with oxygen
- b To produce lactic acid
- c To release energy from glucose
- d None of the above

2 True or False? You Decide!

- 1 Respiration is the same as breathing.
- 2 Respiration occurs only in animal cells.
- 3 Aerobic respiration requires oxygen.
- 4 Carbon dioxide is not produced during aerobic respiration.

- 5 Anaerobic respiration produces more energy than aerobic respiration.
- 6 Lactic acid is produced during aerobic respiration.
- 7 Anaerobic respiration is faster than aerobic respiration.
- 8 EPOC stands for Excess Post-Exercise Oxygen Consumption.
- 9 We breathe deeply after exercise to replenish our cells with oxygen.
- 10 Anaerobic respiration produces 5% of the energy produced by aerobic respiration.

Can You Match These Words to Their Definitions?

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|---------------------|--|
| 1 breathing | a to fill something up again; restore to the former level or condition |
| 2 exhausted | b something, typically money, that is owed or due |
| 3 a mad dash | c the process of taking air into and expelling it from the lungs |
| 4 released | d a simple sugar that is an important energy source in living organisms and is a component of many carbohydrates |
| 5 debt | e relating to the study of natural phenomena through observation, experiment, and theoretical explanation |
| 6 equation | f the quantity of food or drink that can be held in one's mouth at one time |
| 7 breathing deeply | g extremely tired; drained of energy |
| 8 replenish | h the process of liberating stored energy within a substance |
| 9 energy | i to happen; take place |
| 10 excess | j set free, allow to escape |
| 11 mouthful | k causing physical pain or discomfort |
| 12 for shot | l inhaling and exhaling air fully and completely |
| 13 cells | m the using up of a resource |
| 14 confuse | n to make someone feel uncertain or unable to understand something clearly |
| 15 occur | o a sudden and hurried rush |
| 16 glucose | p with little chance of success |
| 17 releasing energy | q the capacity for doing work or producing heat |
| 18 scientific | r an amount of something that is more than necessary, permitted, or desirable |
| 19 aching | s the smallest structural and functional unit of an organism, typically microscopic and consisting of cytoplasm and a nucleus enclosed in a membrane |
| 20 consumption | t a statement that the values of two mathematical expressions are equal (indicated by the sign =) |

Can You Spot the Target Words in These Sentences?

- 1 I always confuse my right from my left when I am giving directions.
- 2 Breathing is essential for living, it allows us to inhale oxygen and exhale carbon dioxide.
- 3 I love reading scientific articles, they provide so much valuable information about the world around us.
- 4 It's not uncommon for accidents to occur in crowded places.
- 5 Our bodies are made up of billions of cells that work together to keep us alive.
- 6 Glucose is a type of sugar that provides energy to our body.
- 7 Running can give you an extra burst of energy when you need it most.
- 8 When we exercise, endorphins are released which give us a feeling of euphoria.
- 9 In math class, we learned how to solve complex equations using different methods.
- 10 Releasing energy through exercise can help reduce stress and improve mood.
- 11 After a long run, my legs were aching so bad I had trouble walking.
- 12 When the store announced a sale, everyone made a mad dash to get the best deals.
- 13 After a long day at work, I was completely exhausted and ready for bed.
- 14 Paying off your debt is important to avoid financial problems in the future.
- 15 Eating too much junk food can lead to an excess of calories and weight gain.
- 16 We all have a responsibility to reduce our consumption of single-use plastics.
- 17 When eating soup, be careful not to take a mouthful that's too hot!
- 18 The basketball player took a shot from beyond the three-point line and scored.
- 19 Breathing deeply can help alleviate feelings of anxiety and stress.
- 20 Drinking water is a great way to replenish our bodies with essential fluids after a workout.