

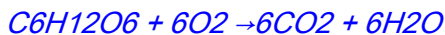
Aerobic and Anaerobic Respiration(Bioenergetics)

Aerobic Respiration - respiration using **oxygen**. The most efficient way to transfer energy from glucose .

Anaerobic Respiration - respiration without **oxygen**. The **incomplete breakdown** of glucose .

Aerobic respiration word and symbol equations:

Glucose+oxygen → carbon dioxide + water



Aerobic Respiration:

In **aerobic respiration** , **glucose** reacts with **oxygen** in the **mitochondria** of cells to give **carbon dioxide** , **water** and **energy**. In plants and yeast cells , glucose is converted into **ethanol** and **CO₂** . In yeast cells, this is called '**fermentation**' , an important step in the manufacture of bread and alcohol . (**Remember** : Yeast are single- celled organisms). Fermentation is carried out by **microbes** .

Aerobic respiration goes on all the time in plants and animals.

During **aerobic exercise**, you breathe faster and deeper than when your heart rate is at rest. You're maximising the amount of oxygen in the blood. Your heart rate goes up, increasing blood flow to the muscles and back to the lungs.

Anaerobic Respiration:

Anaerobic respiration happens when insufficient oxygen reaches the muscles during periods of intense activity . This is because glucose hasn't been broken down completely making it a less efficient way of transferring energy into aerobic respiration.

In animals , glucose is converted to lactic acid. **Glucose→lactic acid** .



During **anaerobic exercise**, your body requires immediate energy. Your body relies on stored energy sources, rather than oxygen, to fuel itself. That includes breaking down glucose.

Remember: **Glycolysis** is the first step in the breakdown of glucose to extract energy for cellular metabolism.

FLASHCARDS LINK

<https://quizlet.com/gb/518923289/biology-aerobic-and-anaerobic-respiration-flash-cards/?i=29f3lo&x=1jqY>