

Cellular Respiration: is how all living things make energy

- How do cells get energy from food?
 - When sugar is broken down, energy is released in the form of **ATP**.
 - **Cellular Respiration (aerobic Respiration)** uses oxygen to break down food. During C.R., food (glucose) is broken down into CO₂ and H₂O and energy is released in the form of ATP.
 - Takes place in the Mitochondria for Eukaryotic Cells and the cell membrane for Prokaryotic Cells.
 - C.R. is what cells do to break up sugars into a form that the cell can use as energy. Happens in all forms of life.



- Let's Review:
- The Goal of C.R. is to make energy in the form of ATP.
- Cells use O₂ to break down the glucose and release its energy during CR. This process is all about changing food into a form of energy cells can use call ATP. Unlike glucose molecules, ATP molecules can be used directly by cells for energy.

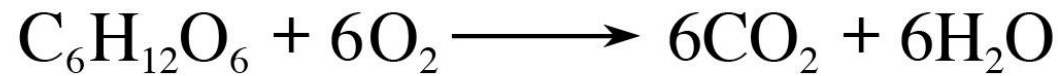
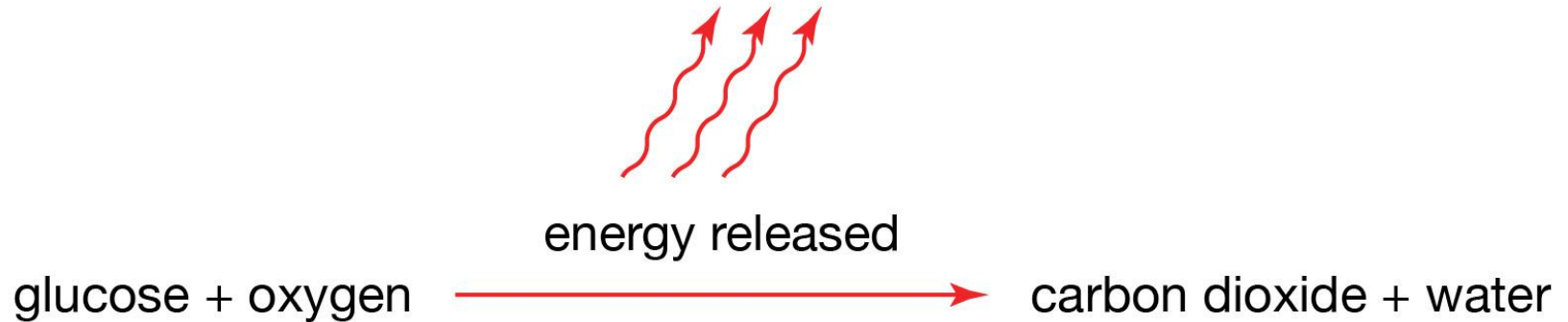
Connection

- **Plants and animals carry out C.R., but only plants conduct photosynthesis.**
- **Cellular Respiration:** cells use O₂ to break down glucose and release energy and CO₂, takes place in the mitochondria. Organism that cannot make its own food are **heterotroph**
- **Photosynthesis:** transforms energy from the sun into glucose. Cells use the CO₂ to make glucose and the cells release the O₂. Takes place in the chloroplasts in leaves. Organisms that make their own food are called producers or **autotroph**.

Fermentation (Anaerobic Respiration)

- When muscle cells can't get the O₂ needed for C.R., they use fermentation to get energy.
- Releases less energy and occurs when NO oxygen is available for C.R.
- Produces lactic acid and is not as efficient as when oxygen is used. Often produced during a hard exercise
- Aerobic Respiration the process that does use oxygen, produces more energy and doesn't produce lactic acid

The release of energy during cellular respiration

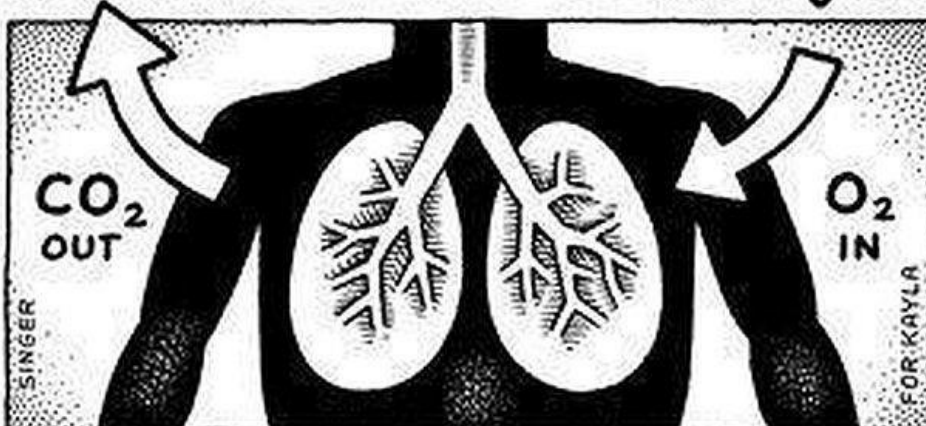


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THE WORLD**



*...AND THE PERFECT COMPLEMENT
TO HUMAN AND ANIMAL LUNGS!*

SINGER

FOR KAYLA