

Unit 1 Handout 26

Lesson 5: Diffusion and Osmosis

**Purpose:** To learn about diffusion and osmosis and how they affect cells

Term	Definition
<b>Diffusion</b>	The movement of molecules (particles) from an area of <u>high</u> concentration to an area of <u>low</u> concentration.
<b>Osmosis</b>	The diffusion of <u>water</u> .

**How do diffusion and osmosis work?**

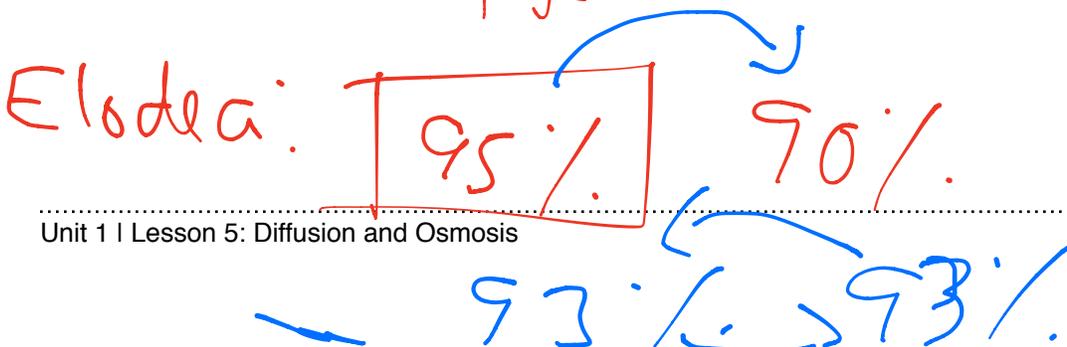
Molecules (we'll call them particles) are in constant motion. Because of this they constantly collide and move in different directions. If there are a high amount of particles in a certain space, we say it has a high concentration. These particles will collide with each other more and begin to spread to areas where there is a low concentration of these particles.

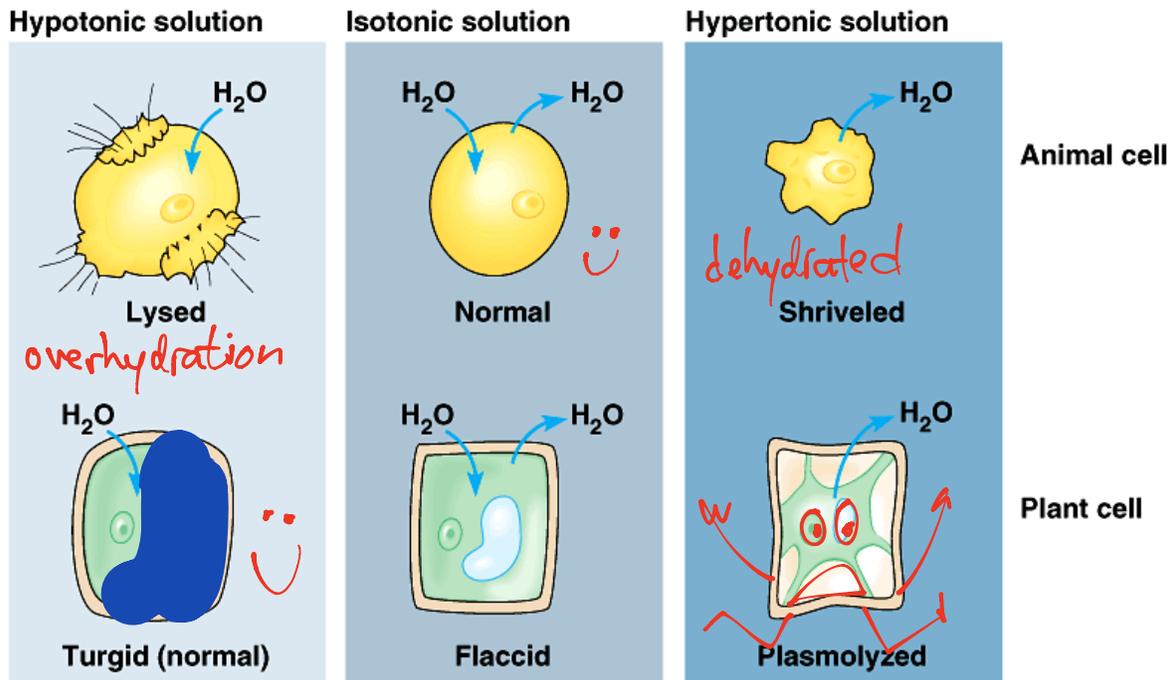
**An Example**

Imagine you just finished drying off after swimming. You want your towel to dry. You place it outside on a railing. A few hours later the towel is dry. Why? The towel had a higher concentration of water than the air. Therefore, the water moved from the towel and to the air. (Water also evaporates.)

Now imagine the same situation again. You want your towel to dry **but** it is a very humid day. A few hours later, your towel is still wet. Why? The towel had a lower/equal concentration of water than the air. Therefore, the water stayed in the towel.

One more. Why does a dry sponge soak up water? The sponge has a lower concentration of water than the water. Therefore, the water particles moved from the water to the sponge.





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Lysed = pop or burst

| Plasmolyzed = shrinks

### Diagram Information

	Hypotonic	Isotonic	Hypertonic
Lower Concentration is Found	<u>inside</u> the cell	Nowhere. Concentrations are equal.	<u>outside</u> the cell
Higher Concentration is Found	<u>outside</u> the cell	Nowhere. Concentrations are equal.	<u>inside</u> the cell
Where does the water move?	From <u>outside</u> the cell to <u>inside</u> the cell	It moves both in and out equally.	From <u>inside</u> the cell to <u>outside</u> the cell
What happens to the cell?	Cell becomes bigger because more particles are moving into it.	Nothing. The cell stays the same.	Cell becomes shriveled and shrinks because particles are leaving it

98% vs. 95%

100% vs. 50%