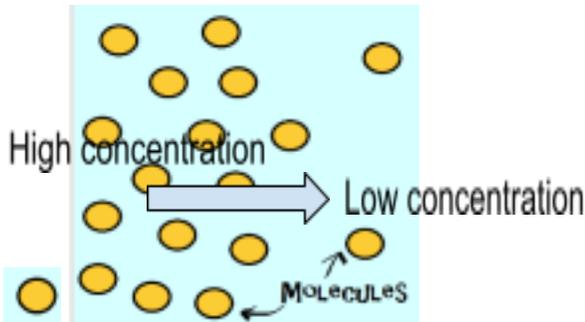


## Amoeba Sisters Video Recap of *Osmosis*

1. The below picture represents **diffusion** of molecules. Place the following labels in the diagram: **high concentration**, **low concentration**, and **an arrow** showing the direction that the molecules would travel before equilibrium is reached.



2. **Osmosis** is a type of diffusion, but it involves the movement of water. Similar to diffusion, osmosis is the movement of molecules (water molecules if osmosis) from a high concentration to a low concentration.

The video clip explains that you can also look at water as moving to a \_\_\_\_\_ HIGH \_\_\_\_\_ concentration of **solute** molecules.

Why can it also be viewed this way?

It can be viewed this way because when water moves to a lower concentration, that means that there are more solutes than water. This means that while water does move from a high concentration to a low concentration, it moves from an area with very few solutes to an area with many more solutes.

3. **Osmosis Scenario:** The video clip mentioned a disaster scenario of a saltwater fish being placed in fresh water.

What would occur if, instead, a freshwater fish was placed in saltwater?

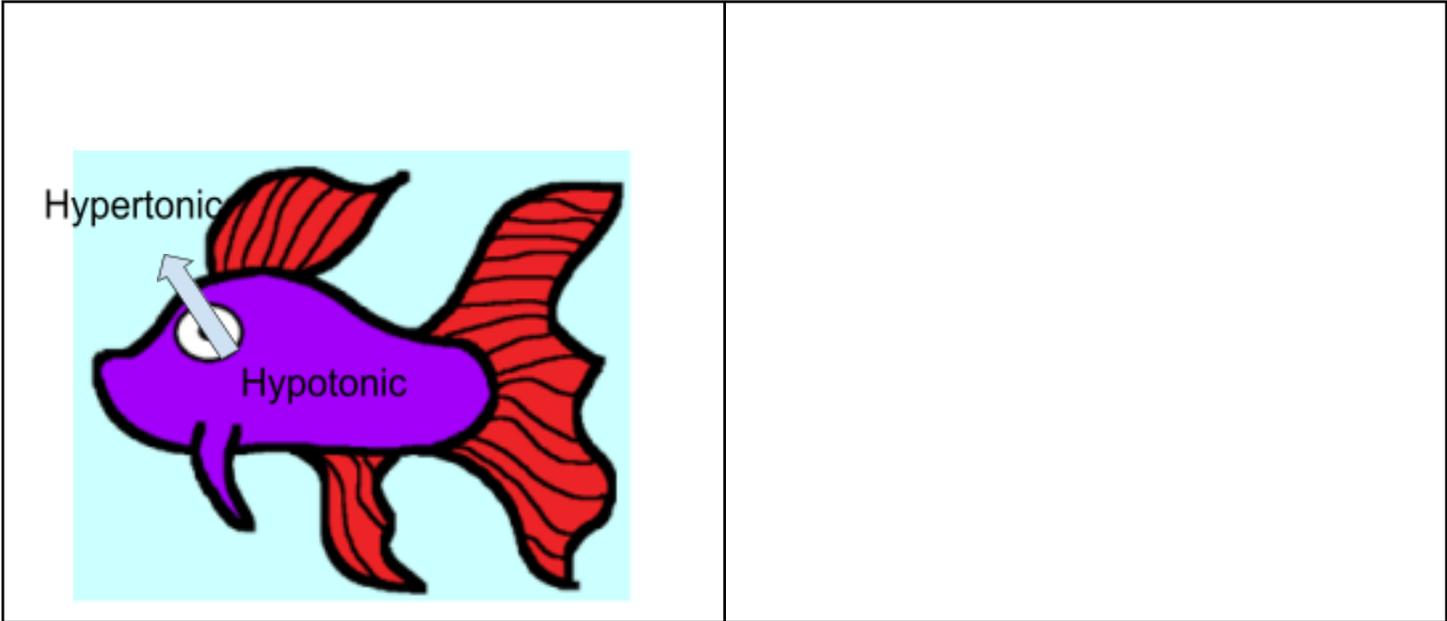
Your answer needs to have an **arrow** indicating the direction of water flow in osmosis, a label for **“hypertonic,”** and a label for **“hypotonic.”**

4. **Osmosis Scenario:** Fluid movement into the brain after traumatic brain injury can result in dangerous brain swelling.

One treatment that can be used in some of these cases is adding a \_\_\_\_\_ HYPERTONIC \_\_\_\_\_ saline. You need to decide whether this blank should be the word hypertonic or hypotonic. Remember, you are trying to reduce the excessive fluid in the brain.

Explain your answer:

To reduce the fluid in the brain, you would use a hypertonic solution. The hypertonic solution has a higher solute concentration compared to the body, and so it would draw fluid out of the cells, therefore reducing the amount of fluid that is in the brain.

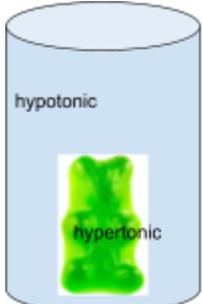


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AMOEBAS SISTERS: VIDEO RECAP OSMOSIS

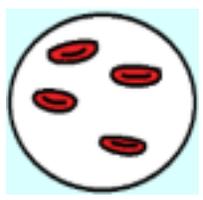
### The Gummy Bear Mystery

<p>Do you like gummy bears? We do! They are one of our favorite snacks, though we (try to) eat them in moderation because they are high in sugar. Consider that your sister is in a foul mood and decides to dump your gummy bears in your ice water about 30 minutes before you get home.</p> <p>The gummy bears are greatly enlarged by the time you get home! Your sister and some friends have different viewpoints for what happened. Draw a diagram below showing the enlarged gummy bears in a cup of water. Place the labels “<b>hypertonic</b>” and “<b>hypotonic</b>” in your diagram. One label should be for the gummy bears and one label should be for the water.</p>	<p><b>Viewpoints:</b></p>	<p>6. Whose viewpoint is correct in the viewpoint column? A good answer has a good defense! <b>Defend your answer</b>, and also <b>give reasons why the other explanations are incorrect.</b></p> <p>The correct viewpoint is Joe. Because the gummy bears are high in sugar, they are high in solutes. The ice water that they were dumped in is hypotonic compared to the gummy bears, which are hypertonic because of the high solute concentration. Because of this, the water moved into the gummy bears to a higher solute concentration, causing them to be enlarged. The sisters viewpoint is incorrect because the sugar did not leave the gummy bears, but the water entered the gummy bears. Suzy is incorrect because the sugar did not go into</p>
	<p>A) Your sister said that the sugar left the gummy bears, because the gummy bears were <b>hypertonic</b> compared to the water.</p>	
	<p>B) Your friend Joe said that water traveled into the gummy bears, because the gummy bears were <b>hypertonic</b> compared to the water.</p>	
	<p>C) Your friend Suzy said the sugar went into the gummy bears, because the gummy bears were <b>hypotonic</b> compared to the water.</p>	

<p>5.</p> 	<p>D) Your friend Will said that water traveled into the gummy bears by osmosis, because the gummy bears were <b>hypotonic</b> compared to the water.</p>	<p>the gummy bears, but the water went into the gummy bears because the water was hypotonic compared to the gummy bears. Will is incorrect because although water traveled into the gummy bears by osmosis, the gummy bears were hypertonic compared to the water, not hypotonic.</p>
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### Hypertonic, Hypotonic, or Isotonic? Oh My!

These red blood cells have all been placed in different solutions! Based on their appearance after being placed in these solutions for a period of time, place on each line (A) for **hypertonic**, (B) for **hypotonic**, or (C) for **isotonic**.

<p>7. The cells are _____ hypertonic _____ compared to the _____ hypotonic _____ solution.</p> <p><b>SWELLING</b></p> 	<p>8. The cells are _____ hypotonic _____ compared to the _____ hypertonic _____ solution.</p> <p><b>SHRINKING</b></p> 	<p>9. The cells are _____ isotonic _____ compared to the _____ isotonic _____ solution.</p> <p><b>Stable</b></p> 
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