

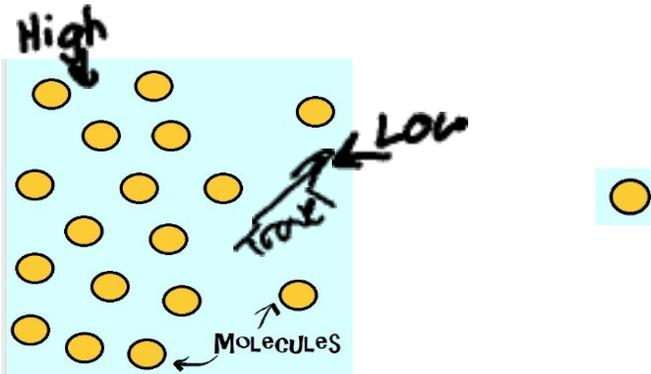
## Amoeba Sisters Video Recap of Osmosis



**Amoeba Sisters LLC**

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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 **Higher** concentration of **solute** molecules.

Why can it also be viewed this way?

Water moves to the high solute concentration to create an equilibrium.

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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? If a saltwater fish was placed in a freshwater pond all of the freshwater would try to go inside of the fish to create equilibrium

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

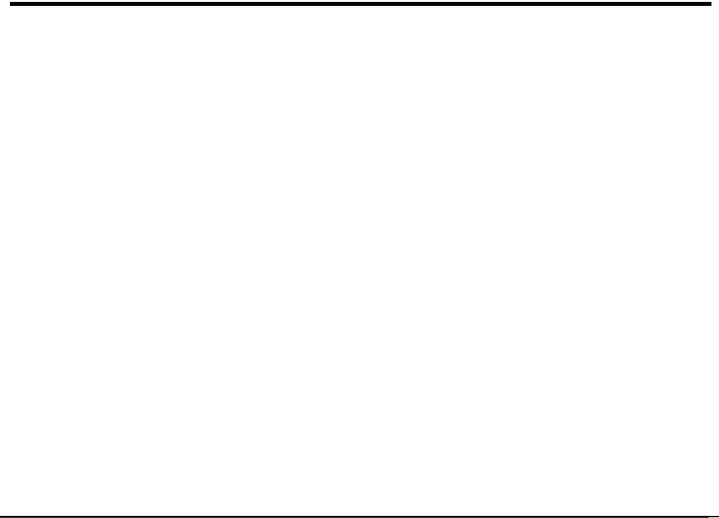
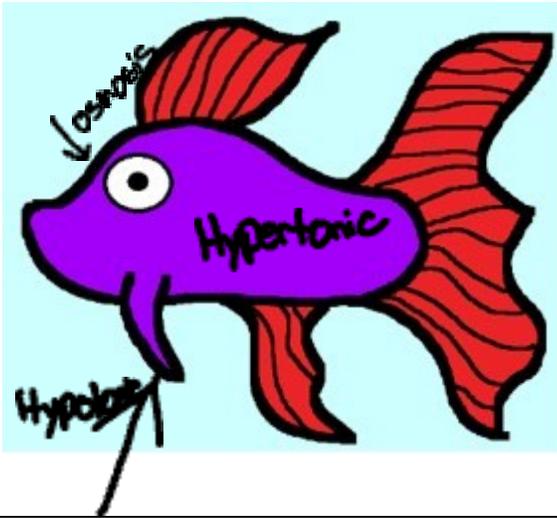
**Hypertonic** would be the water in the fish's cells and **hypotonic** would be the freshwater that the fish is swimming in.

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

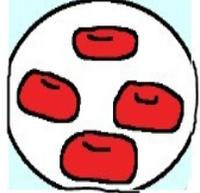
One treatment that can be used in some of these cases is adding a **hypertonic saline**. You need to decide whether this blank should be the word hypertonic or hypotonic. Remember, you are trying to reduce the excessive fluid in the brain.

Explain your answer: **The hypertonic saline solution would cause the fluid in the brain to leave and head towards the hypertonic solution so it could create an equilibrium in the water to solute levels.**

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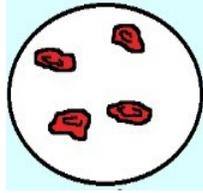


7. The cells are **Hypertonic** compared to the **Hypotonic** solution.



SWELLING

8. The cells are **hypotonic** compared to the **Hypertonic** solution.



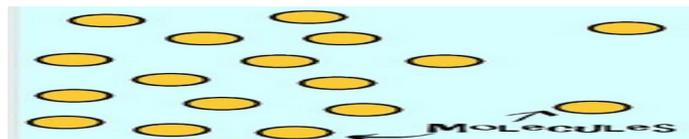
SHRINKING

9. The cells are **Isotonic** compared to the **isotonic** solution.



Stable

The Gummy Bear Mystery



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.

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 "hypertonic" and "hypotonic" in your diagram. One label should be for the gummy bears and one label should be for the water.

5.



**Viewpoints:**

~~X~~ Your sister said that the sugar left the gummy bears, because the gummy bears were **hypertonic** compared to the water.

B) Your friend Joe said that water traveled into the gummy bears, because the gummy bears were **hypertonic** compared to the water.

~~X~~ Your friend Suzy said the sugar went into the gummy bears, because the gummy bears were **hypotonic** compared to the water.

~~X~~ Your friend Will said that water traveled into the gummy bears by osmosis, because the gummy bears were **hypotonic** compared to the water.

6. Whose viewpoint is correct in the viewpoint column? A good answer has a good defense! **Defend your answer**, and also **give reasons why the other explanations are incorrect.**

Joe's answer is the correct answer. Gummy bears are very high in sugar mean they have a high solute concentration. Ice water just has water molecule with a low solute concentration. Water wants to even out that concentration so the water will travel through the cell member and to where the sugar is or where the most solute are to create an equilibrium. Which causes the gummy bear to swell up with water because all the water is trying to force it ways into the gummy bears. So, joes statement that the water traveled into the gummy bears is correct because the gummy bears were hypertonic because of their high solute concentration and the water was hypotonic because of its low solute concentration.

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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**.