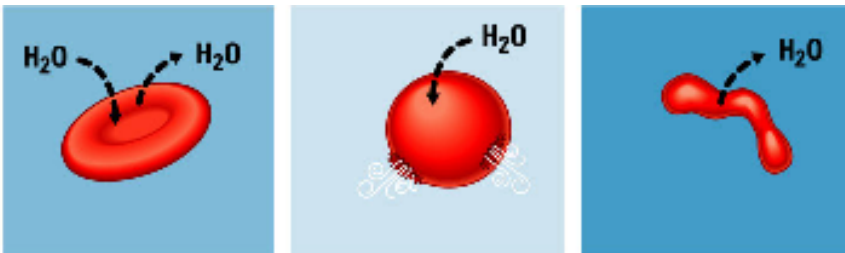
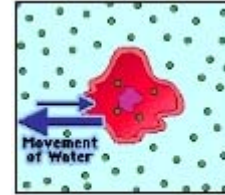


## Osmosis Practice Problems

1. If you soak your hands in dishwater, you may notice that your skin absorbs water and swells into distinct wrinkles. This is because your skin cells are \_\_\_\_\_ to the \_\_\_\_\_ dishwater.
  - a. hypotonic, hypertonic
  - b. hypertonic, hypotonic
  - c. hypotonic, hypotonic
  - d. isotonic, hypotonic
  - e. hypertonic, isotonic
2. You decide to buy a new fish for your freshwater aquarium. When you introduce the fish into its new tank, the fish swells up and dies. You later learn that it was a fish from the ocean. Based on what you know of tonicity, the most likely explanation is that unfortunate fish went from a(n) \_\_\_\_\_ solution into a(n) \_\_\_\_\_ solution.
  - a. isotonic, hypotonic
  - b. hypertonic, isotonic
  - c. hypotonic, hypertonic
  - d. hypotonic, isotonic
3. Under each picture state if the RBC was placed in an isotonic, hypertonic, or hypotonic solution.



4. In osmosis, water always moves toward the \_\_\_\_\_ solution: that is, toward the solution with the \_\_\_\_\_ solute concentration.
  - a. isotonic, greater
  - b. hypertonic, greater
  - c. hypertonic, lesser
  - d. hypotonic, greater
  - e. hypotonic, lesser



Animal Cell

5. You know that this cell is in a(n) \_\_\_\_\_ solution because it \_\_\_\_\_.
- hypotonic, is turgid
  - hypotonic, lysed
  - hypertonic, lysed
  - hypertonic solution, lost water
  - hypertonic, gained water
6. The concentration of solutes in a red blood cell is about 2%. Sucrose cannot pass through the membrane, but water and urea can. Osmosis would cause red blood cells to shrink the most when immersed in which of the following solutions?
- a hypertonic sucrose solution
  - a hypotonic sucrose solution
  - a hypertonic urea solution
  - a hypotonic urea solution
  - pure water
7. Sea water is dangerous to drink because
- one cup of sea water contains enough sodium to poison you
  - sea water is hypertonic to your body tissues and drinking it will cause you to lose water by osmosis
  - sea water is isotonic to your body fluids and you will absorb too much water, causing your cells to burst
  - the salt causes hypertension and you will promptly die of a stroke
  - it contains toxic levels of iodine
8. If the volume of a cell increases when it is placed in a solution, that solution is said to be \_\_\_\_\_ to the cell.
- hypertonic
  - subatomic
  - isotonic
  - gin and tonic
  - hypotonic

## Matching

Match the direction of net movement to its description. The direction of net movement choices may be used more than once.

- |  |  |
|--|--|
| _____ 1. simple passive diffusion  | a. movement from high to low concentration |
| _____ 2. facilitated diffusion   | b. movement from low to high concentration |
| _____ 3. active transport  |  |
| _____ 4. water with regards to the water concentration gradient during osmosis |  |
| _____ 5. water with regard to the solute concentration gradient during osmosis |  |