

Chapter 3

Use with Section 2

ENRICHMENT

● Cell Transport

Keeping a Balance

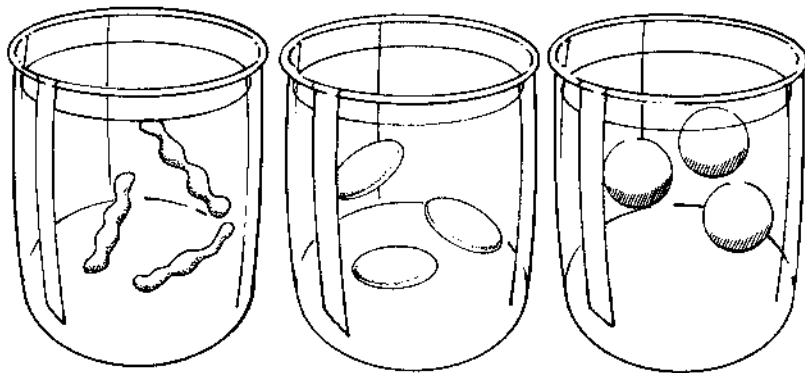
Water travels in and out of cells through the cell membrane. Inside the cells, it is part of the **intracellular fluid**. Outside the cells, water is part of the **extracellular fluid**. This extracellular fluid is found around cells in tissues and in blood.

Cells keep in balance with their environment by controlling what enters and leaves the cell through passive and active transport. Passive transport is the diffusion of molecules from a place where their **concentration** is higher to a place where it is lower, until the

concentration is equal on both sides of the membrane.

Body fluids contain many different dissolved substances like sodium, potassium, calcium, and magnesium. When the fluid outside a cell has the same concentration of these dissolved substances as is present inside the cell, the fluid is **isotonic**. A fluid or solution that is referred to as **hypertonic** has more of these dissolved substances than are inside the cell. A solution that has less of these dissolved substances is **hypotonic**.

The red blood cells diagrammed below are in different solutions. Label the diagrams of red blood cells, indicating whether the solution is isotonic, hypertonic, or hypotonic.



A
shrunken cells

B
disk-shaped cells

C
spherical cells

A. _____ B. _____ C. _____

Answer the following questions.

1. What is happening in solution A? _____

2. Red blood cells are usually disk-shaped. What does the shape of the cells in solution C tell you about the extracellular fluid? _____

Why does the cell change its shape? _____
