Diffusion, Osmosis and Active Transport

Introduction

Fluids and solutes move continually throughout the body in order to maintain homeostasis.

Cellular Movement

Membranes that separate the intracellular, interstitial and intravascular compartments are semipermeable. Some, but not all, solutes are able to pass through these membranes. Three forms of cellular movement are shown below.

Diffusion

Definition: Passive transport of solutes across cell membranes from an area of higher concentration to one of lower concentration. This movement continues until equilibrium is reached on both sides of the membrane.
Osmosis
Definition: Passive transport of fluid across cell membranes from an area of higher concentration to one of lower concentration. This movement continues until equilibrium is reached on both sides of the membrane.

Active Transport
Definition: Active transport of solutes across cell membranes from an area of lower concentration to one of higher concentration. Like swimming upstream, this requires energy – in this case, adenosine triphosphate (ATP).