Principles of Pathophysiology
Figure 6-1  The cell.
Figure 6-2a  (A) Aerobic metabolism. Glucose broken down in the presence of oxygen produces a large amount of energy (ATP). (B) Anaerobic metabolism. Glucose broken down without the presence of oxygen produces acidic by-products and only a small amount of energy (ATP).
Figure 6-2b  (A) Aerobic metabolism. Glucose broken down in the presence of oxygen produces a large amount of energy (ATP). (B) Anaerobic metabolism. Glucose broken down without the presence of oxygen produces acidic by-products and only a small amount of energy (ATP).

(B) Anaerobic metabolism

Glucose → Small amount of ATP (energy)

Pyruvic acid → Lactic acid

No oxygen

Anaerobic metabolism (without oxygen)
Figure 6-3  The bronchial tree. Each mainstem bronchus enters a lung and then branches into smaller and smaller bronchi, ending in the smallest bronchioles.
Figure 6-4  (A) Each bronchiole terminates in a tiny air pocket called an alveolar sac. (B) The alveoli are encased by networks of capillaries; oxygen and carbon dioxide are exchanged between the air in the alveoli and the blood in the capillaries.
Figure 6-5  Blood components.

White blood cells
- Monocyte
- Basophil
- Lymphocyte
- Eosinophil
- Neutrophil

Red blood cells
- Platelets
- Plasma
- Red cells: 54%
- White cells & platelets: 1%

Electrolytes, enzymes, fats, proteins, and carbohydrates
Figure 6-6  The network of arteries, veins, and capillaries.
Figure 6-7  Dilated blood vessel.

(A) Normal vessel

(B) Dilated vessel with reduced blood volume
Figure 6-8  Increased permeability allows too much fluid to escape through capillary walls.
Figure 6-9  Water comprises approximately 60 percent of body weight. The water is distributed into three spaces: intracellular, intravascular, and interstitial.