



Benjamin
Cummings

Learning Objectives:

Circulation in Animals (2/20/09)

1. Compare the different methods of internal transport of body fluids within the context of maintaining homeostasis.
2. Differentiate between open and closed circulatory systems, with examples.
3. Compare and contrast the structure and function of mammalian arteries, veins and capillaries.
4. Discuss the forces involved in the exchange of materials between capillaries and the interstitial fluid.
5. Describe the evolution of separate pulmonary and systemic circuits in vertebrates.
6. Compare extrinsic and intrinsic regulation of cardiac function.

This section begins on p. 994

Mechanisms of Transport in Organisms (review)

- **Diffusion**, by molecular motion
 - good only at short distances,
- **Pump, Channel and Carrier mediated transport**
 - small molecules across membranes,
- **Osmosis** (water movement across membranes)
- **Bulk Flow**
 - efficient large-scale, mass movement
 - hydrostatic pressure

