

The Endocrine System and Chemical Signaling

- **Hormones** are chemical signals released into body fluids that communicate messages around the body.
- **Target Cells** are those cells equipped to respond to hormones.
- The **endocrine system** of an animal is the sum of all its hormone-secreting cells and tissues.
 - Hormone-secreting organs are called endocrine glands.
 - Humans have nine endocrine glands, essential for maintaining homeostasis.
 - Hormones in the body can affect one tissue, a few tissues, or most of the tissues in the body.
 - Hormones also may affect other endocrine glands – these are referred to as **tropic hormones**.
- Many endocrine glands contain **neurosecretory cells**, which secrete hormones.
- Many of these chemicals act as both hormones and nervous system signals.
- **Feedback systems** are one important way by which the endocrine and nervous system are regulated.
- Hormones affect only target cells
 - Example: Insulin acts mainly on muscle and liver cells
- Hormones may enter the cell or attach to receptors on the surface of the cell membrane
 - They are effective in very small amounts
 - They start signal-transduction pathways that alter enzymatic actions in cells by either inducing or suppressing DNA
- **KNOW THE NINE ENDOCRINE GLANDS AND THEIR HORMONES – CHART ON PAGE 961 OF YOUR BOOK!!!**
- **UNDERSTAND POSITIVE AND NEGATIVE FEEDBACK SYSTEMS!!!**