

Glencoe Science

Biology

Interactive Classroom



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Click the advance arrow or press the space bar to continue

Chapter 35 Digestive and Endocrine Systems

Section 1: The Digestive System

Section 2: Nutrition


Section 3: The Endocrine System

A background image of a herd of zebras running through tall grass, slightly faded to allow text to be read.

EXIT

35.3 The Endocrine System

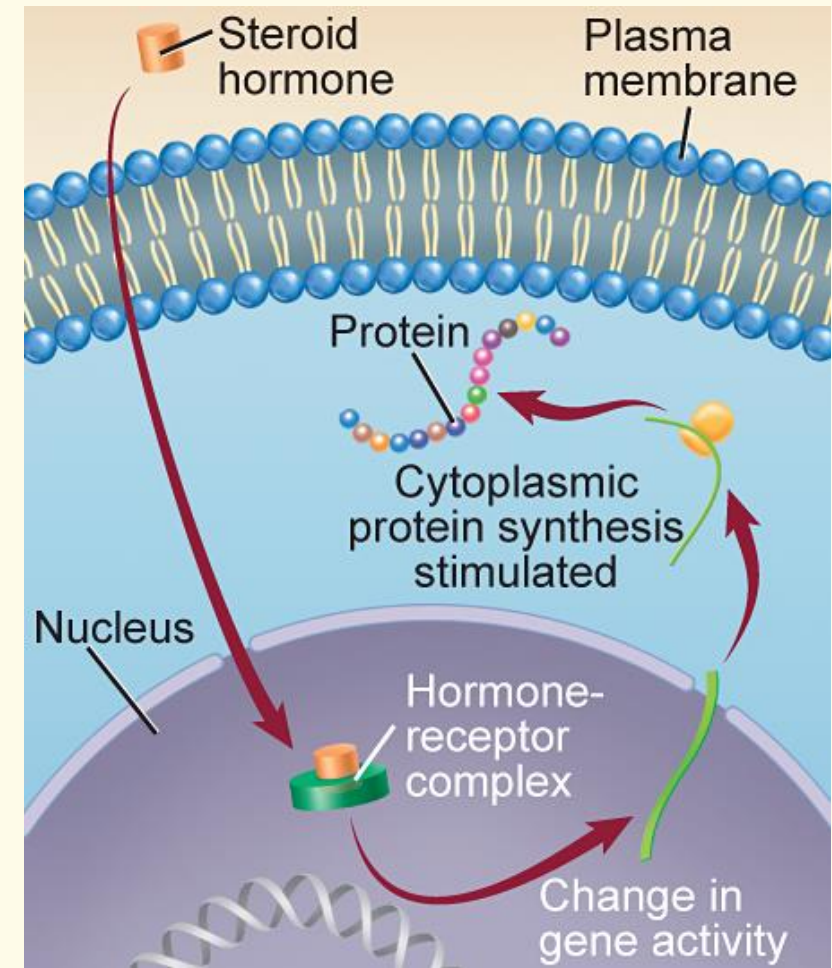
Action of Hormones

- **Endocrine glands** produce hormones, which are released into the bloodstream and distributed to body cells. 
- Hormones are classified as steroid hormones and nonsteroid or amino acid hormones.

35.3 The Endocrine System

Steroid Hormones

- Soluble in lipids and therefore can diffuse through the plasma membrane of a target cell
- Bind to a receptor in the cell
- The hormone and the receptor that are bound together bind to DNA in the nucleus.



Steroid Hormone Stimulation



Home

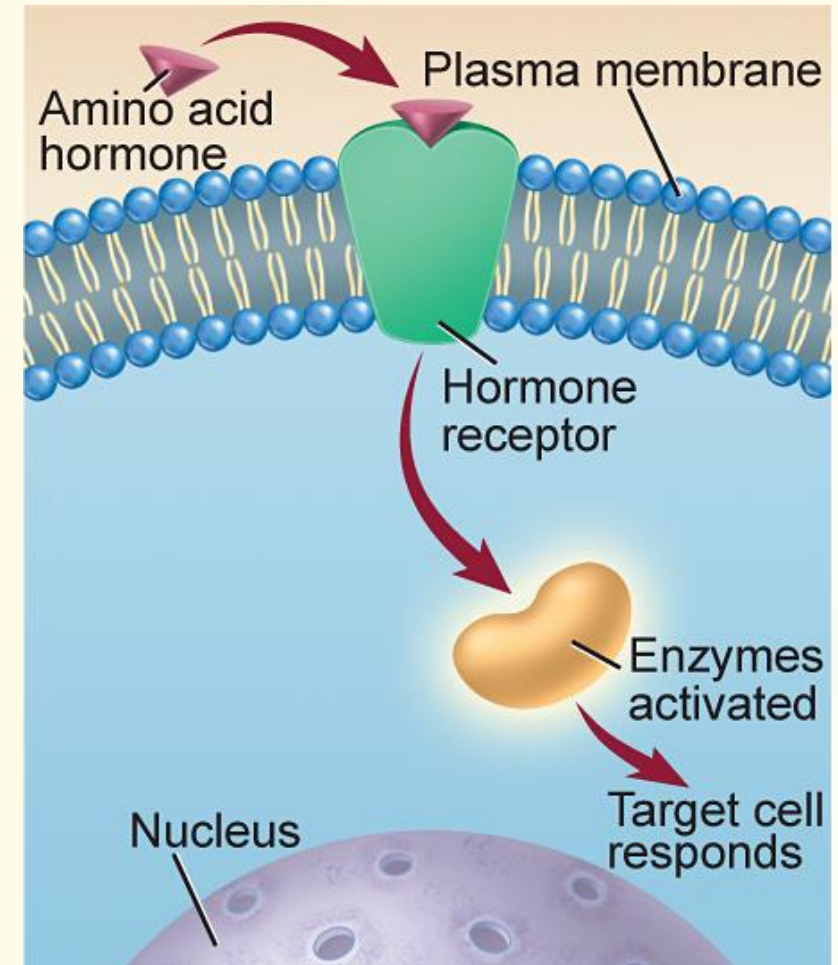
Resources



35.3 The Endocrine System

Amino Acid Hormones

- Nonsteroid hormones are composed of amino acids.
- Bind to receptors found on the plasma membrane of a target cell because they cannot diffuse through the plasma membrane



Amino Acid Hormone Stimulation



Home

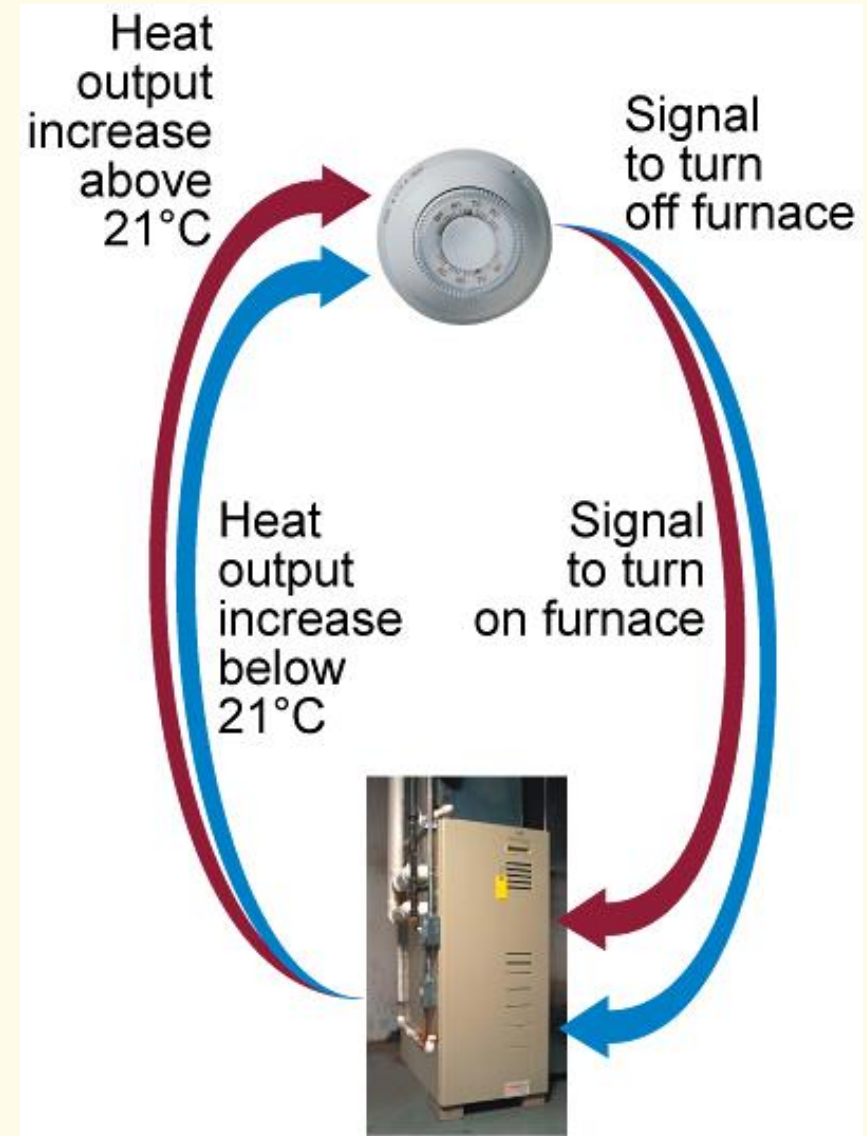
Resources



35.3 The Endocrine System


Negative Feedback

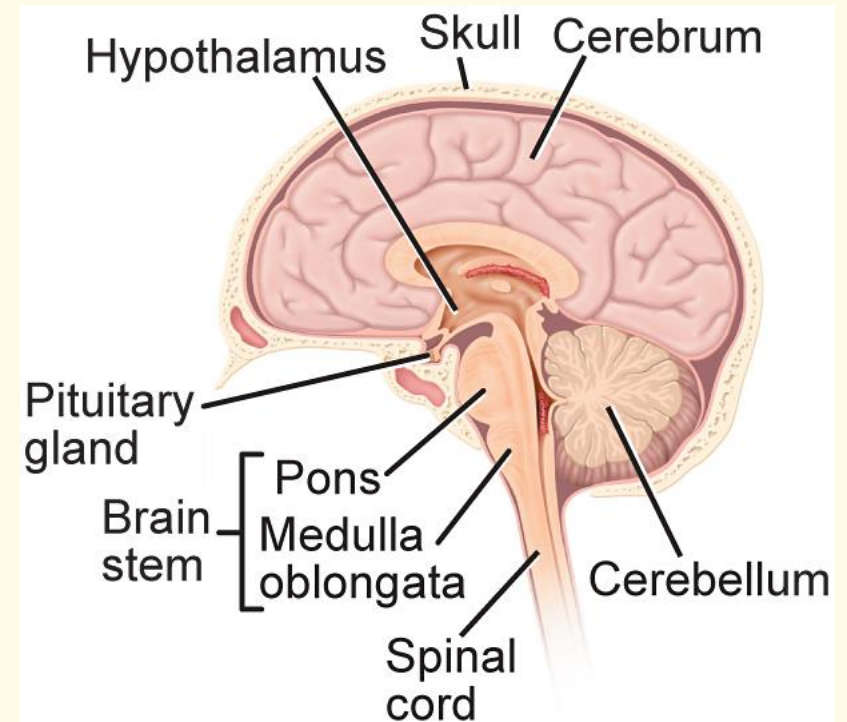
- Negative feedback returns a system to a set point once it deviates sufficiently from that set point.



35.3 The Endocrine System




Endocrine Glands and Their Hormones

- **Pituitary gland** 
 - Situated at the base of the brain
 - Secretes hormones that regulate many body functions
 - Regulates other endocrine glands



35.3 The Endocrine System

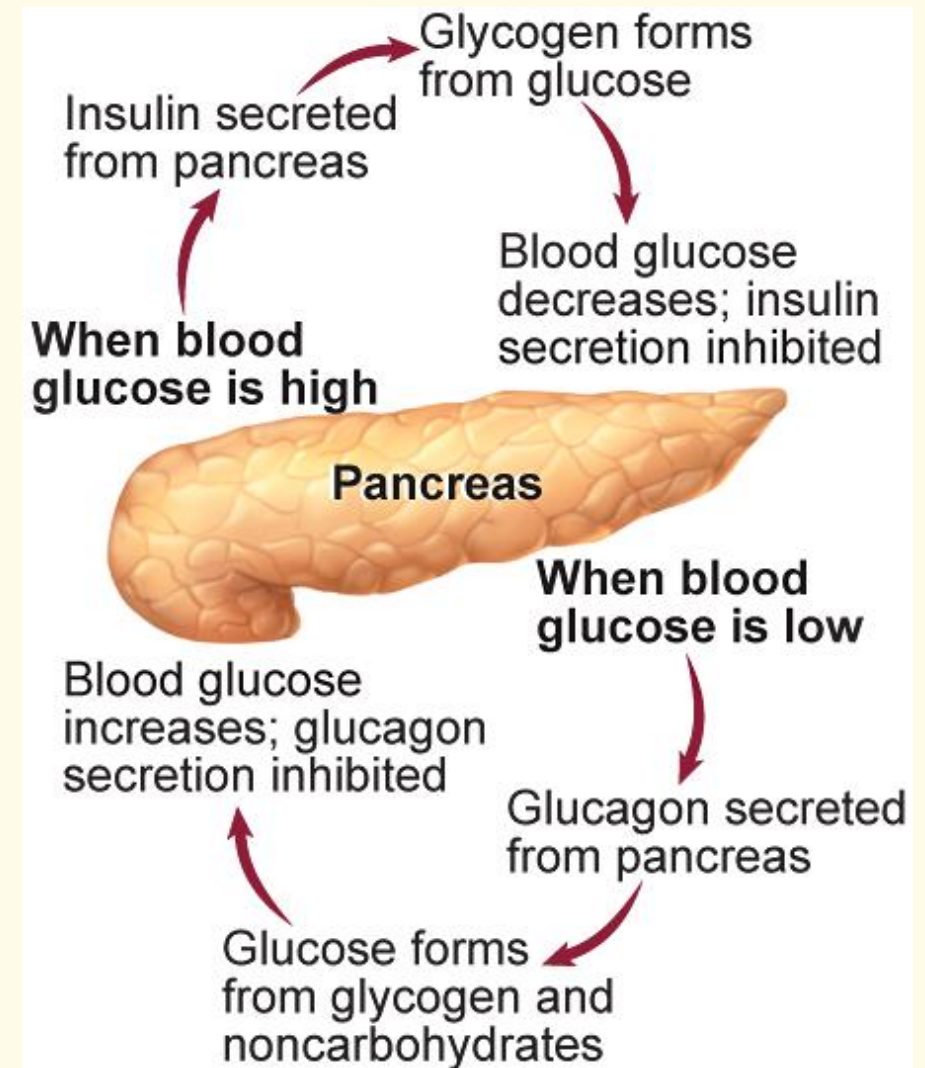
Thyroid and Parathyroid Glands

- **Thyroxine** causes cells of the body to have a higher rate of metabolism. 
- **Calcitonin** is a hormone that is partly responsible for the regulation of calcium. 
- **Parathyroid hormone** increases blood calcium levels. 

35.3 The Endocrine System


Pancreas

- Crucial role in the production of enzymes that digest carbohydrates, proteins, and fats
- Secretes the hormones insulin and glucagon which work together to maintain homeostasis



35.3 The Endocrine System

Adrenal Glands

- Located just above the kidneys
- Manufactures the steroid hormone **aldosterone** and a group of hormones called glucocorticoids 

Concepts In Motion
Animation

Visualizing
the Endocrine
System

Click here to proceed!

Home

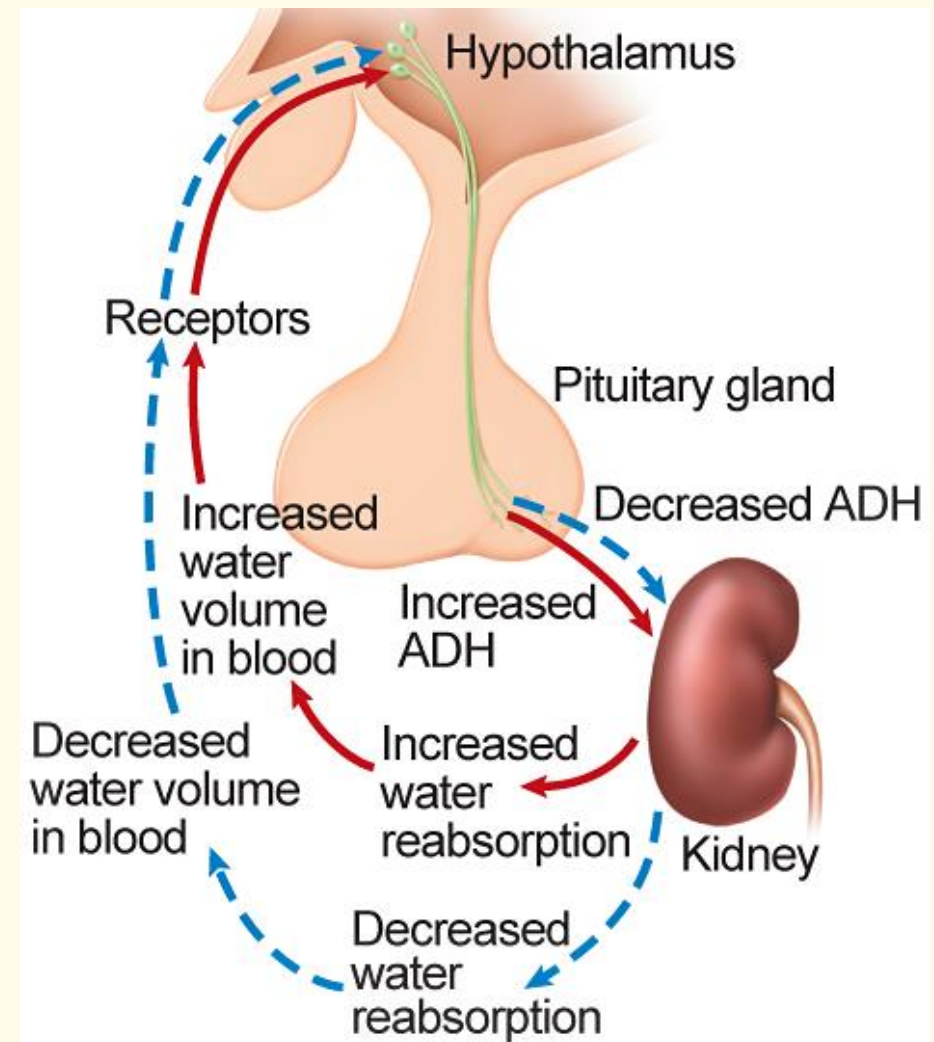
Resources



35.3 The Endocrine System

Link to the Nervous System

- The hypothalamus produces two hormones, oxytocin and antidiuretic hormone.
- The **antidiuretic hormone** (ADH) functions in homeostasis by regulating water balance. 🔊



Chapter Resource Menu



Chapter Diagnostic Questions



Formative Test Questions



Chapter Assessment Questions



Standardized Test Practice



biologygmh.com



Glencoe Biology Transparencies



Image Bank



Vocabulary



Animation

Click on a hyperlink to view the corresponding lesson.

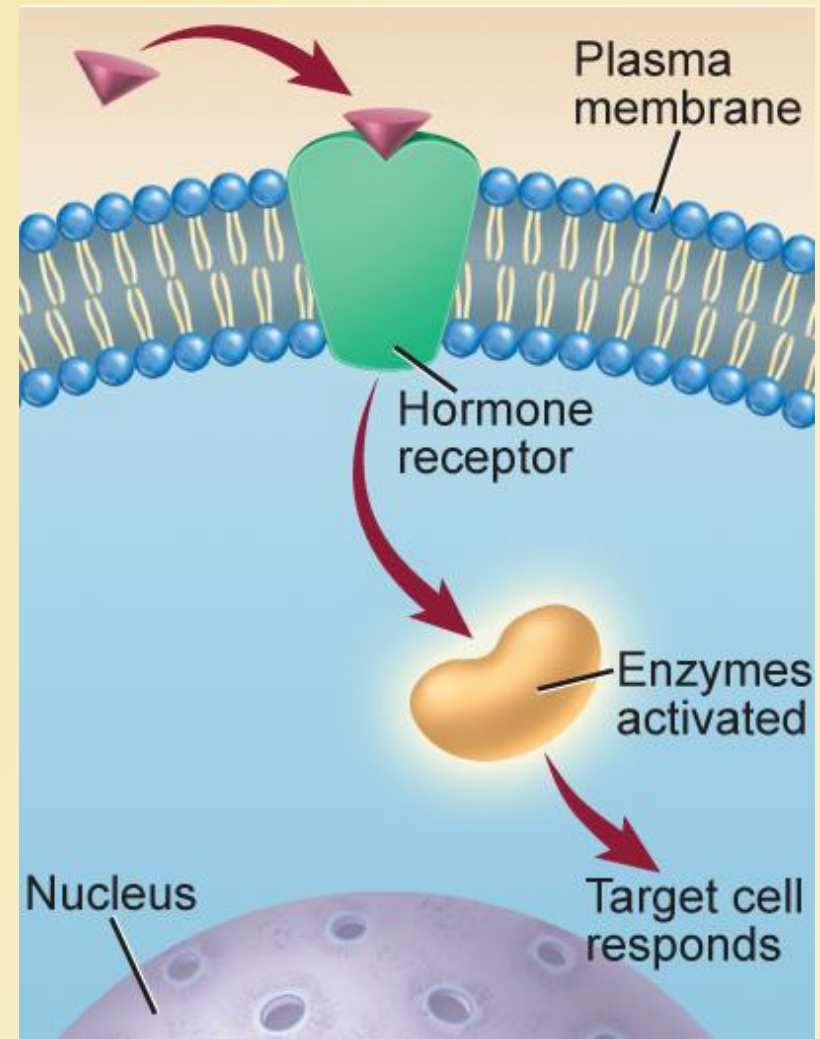
Home

Resources



35.3 Formative Questions

Which type of hormone sends a message from outside the cell to an enzyme inside the cell?



35.3 Formative Questions



- A.** amino acid hormone
- B.** diuretic hormone
- C.** steroid hormone
- D.** transmembrane hormone

35.3 Formative Questions



Which gland responds to a stressful situation by producing a hormone that increases heart rate, blood pressure, breathing rate, and blood sugar levels?

- ☒ A. adrenal gland
- ☐ B. hypothalamus
- ☐ C. parathyroid gland
- ☐ D. pituitary gland

35.3 Formative Questions



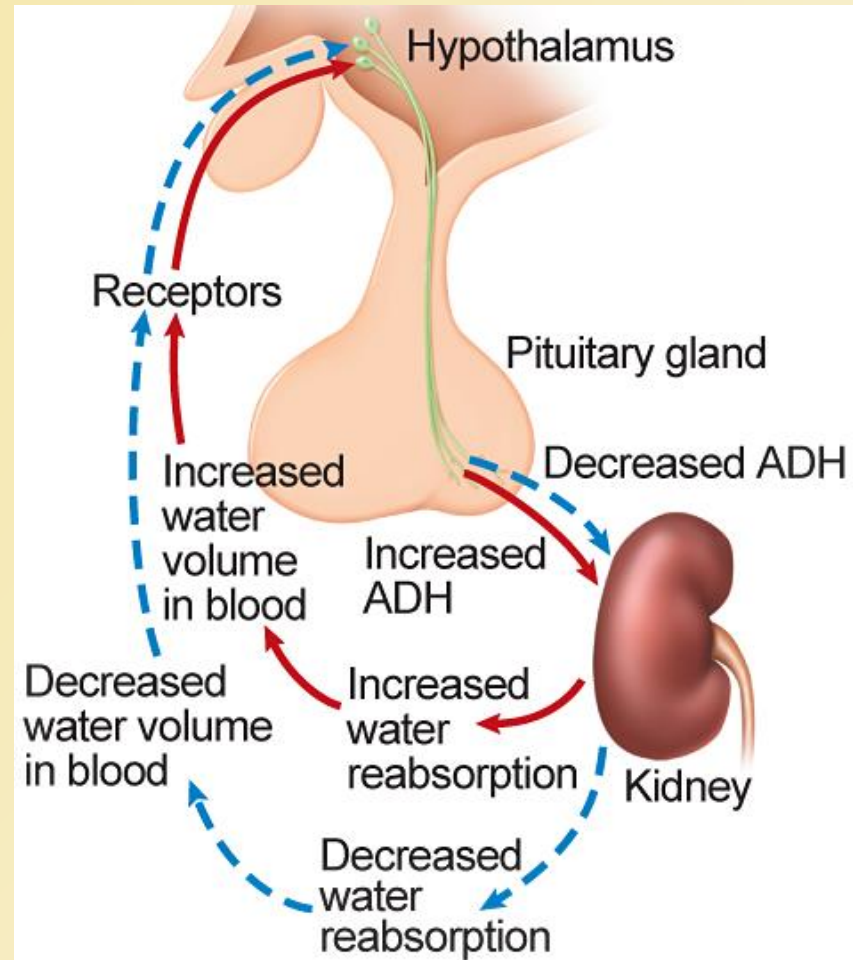
What other two hormones are secreted by the adrenal glands?

- A.** aldosterone and cortisol
- B.** calcitonin and PTH
- C.** estrogen and hGH
- D.** oxytocin and ADH

35.3 Formative Questions



How does this system maintain homeostasis through negative feedback?



35.3 Formative Questions



- A. It combines the affects of two different endocrine glands.
- B. It inhibits the affect of hormones other than ADH.
- C. It involves both the endocrine and nervous systems.
- D.** It maintains a particular range of water volume in the blood.

**Chapter Assessment
Questions**

Describe the function of the antidiuretic hormone.

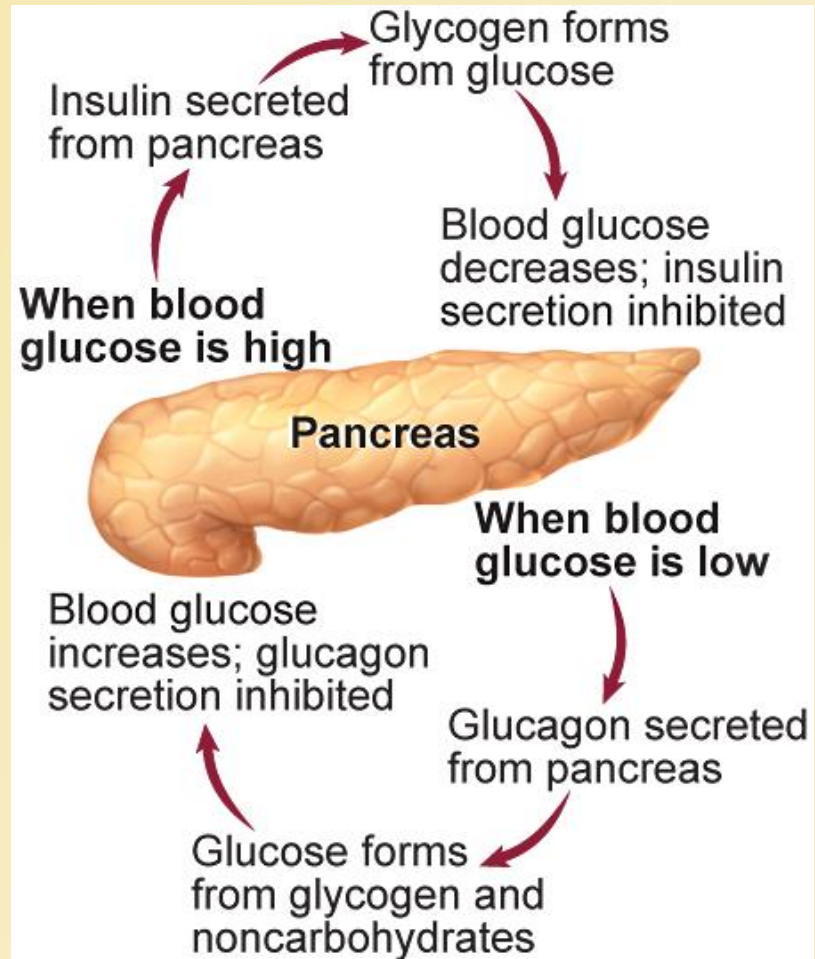
- A. absorb sodium
- B. raise blood glucose levels
- ☒ C. regulate water balance
- D. lower blood calcium

Standardized Test Practice




Which hormone is more likely to be secreted by the pancreas during intense exercise?

- A.** glucagon
- B.** insulin




Vocabulary

Section 3

 endocrine gland

 hormone


 pituitary gland


 thyroxine

 calcitonin

 parathyroid hormone

 insulin

 glucagon

 aldosterone

 cortisol

 antidiuretic hormone

Animation



- Smooth Muscle Contraction
- Steroid Hormone Stimulation
- Amino Acid Hormone Stimulation
- Visualizing the Endocrine System