

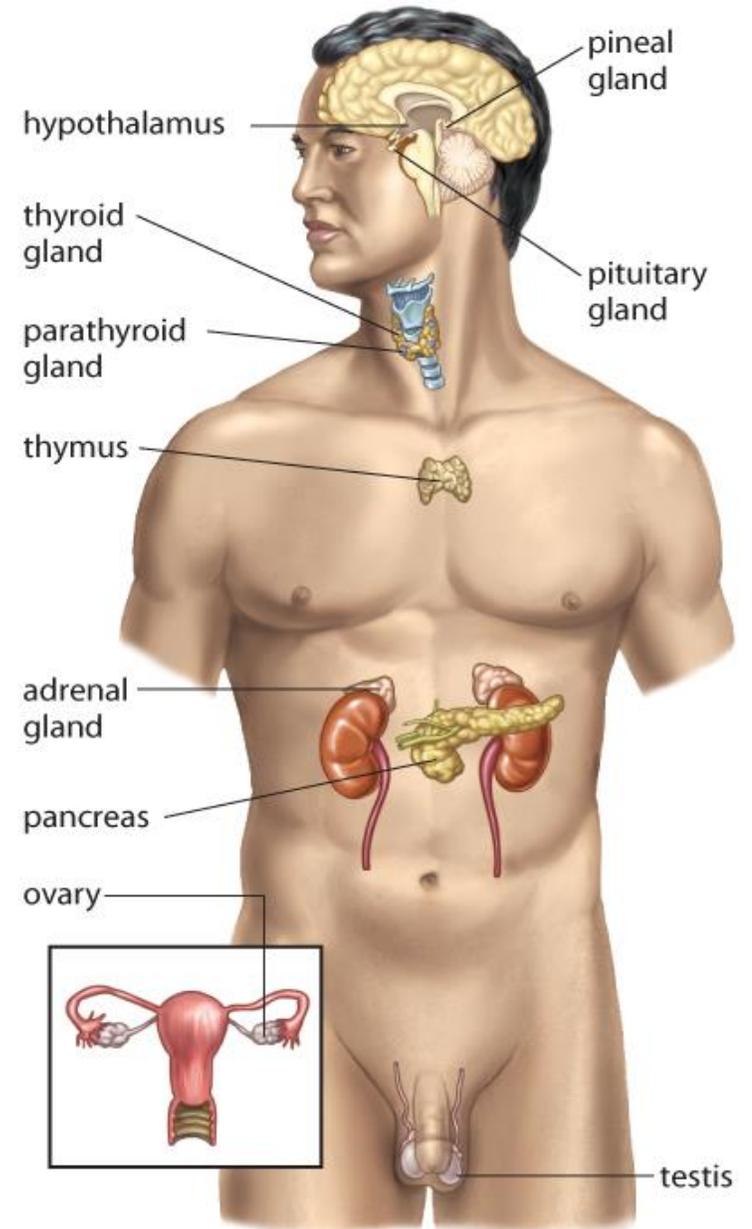
9.1 Glands and Hormones of Endocrine System

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Endocrine System

The **endocrine system** works along side the nervous system to ensure that all other organs in the body are receiving the appropriate chemical signals so that they can respond to different situations.

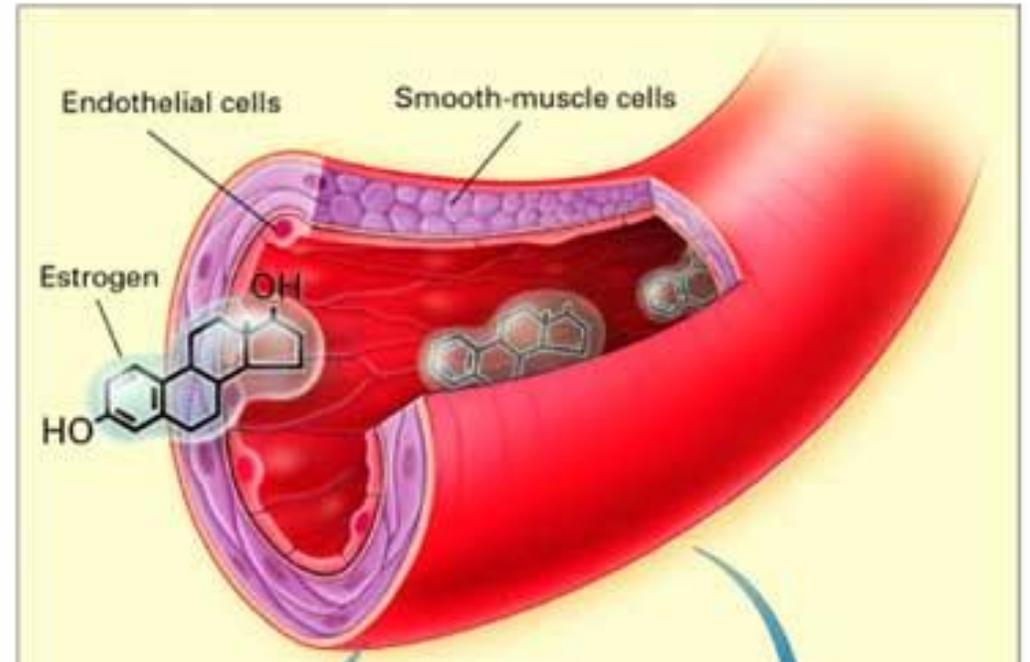
The endocrine system consists of glands and hormones and can be much slower than the nervous system.



Endocrine System

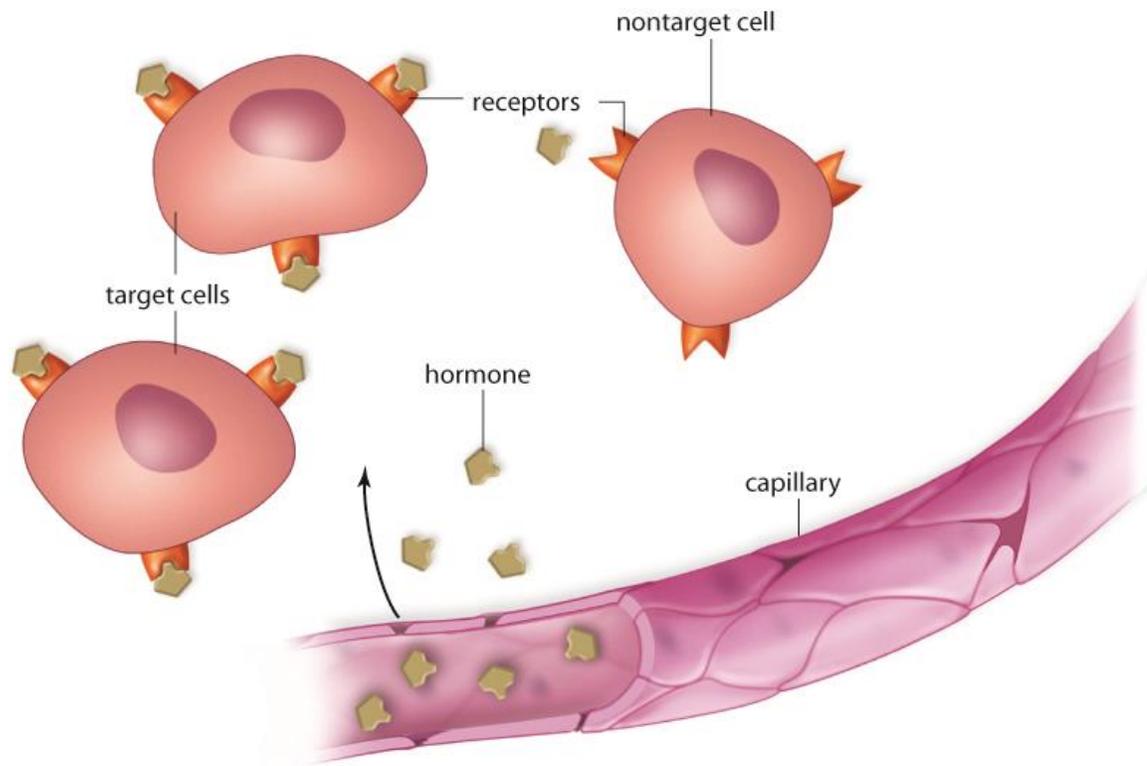
Each gland in the endocrine system may release more than one hormone causing it to have different effects on the body.

Hormones:



Hormones are delivered through the bloodstream so that they can reach their target destination.

Hormones



When hormones are secreted, they act on target cells to elicit a response. Each target cell contains specific receptor proteins for the various hormones.

Hormones

There are two types of hormones, and each type must access the cell in different ways.

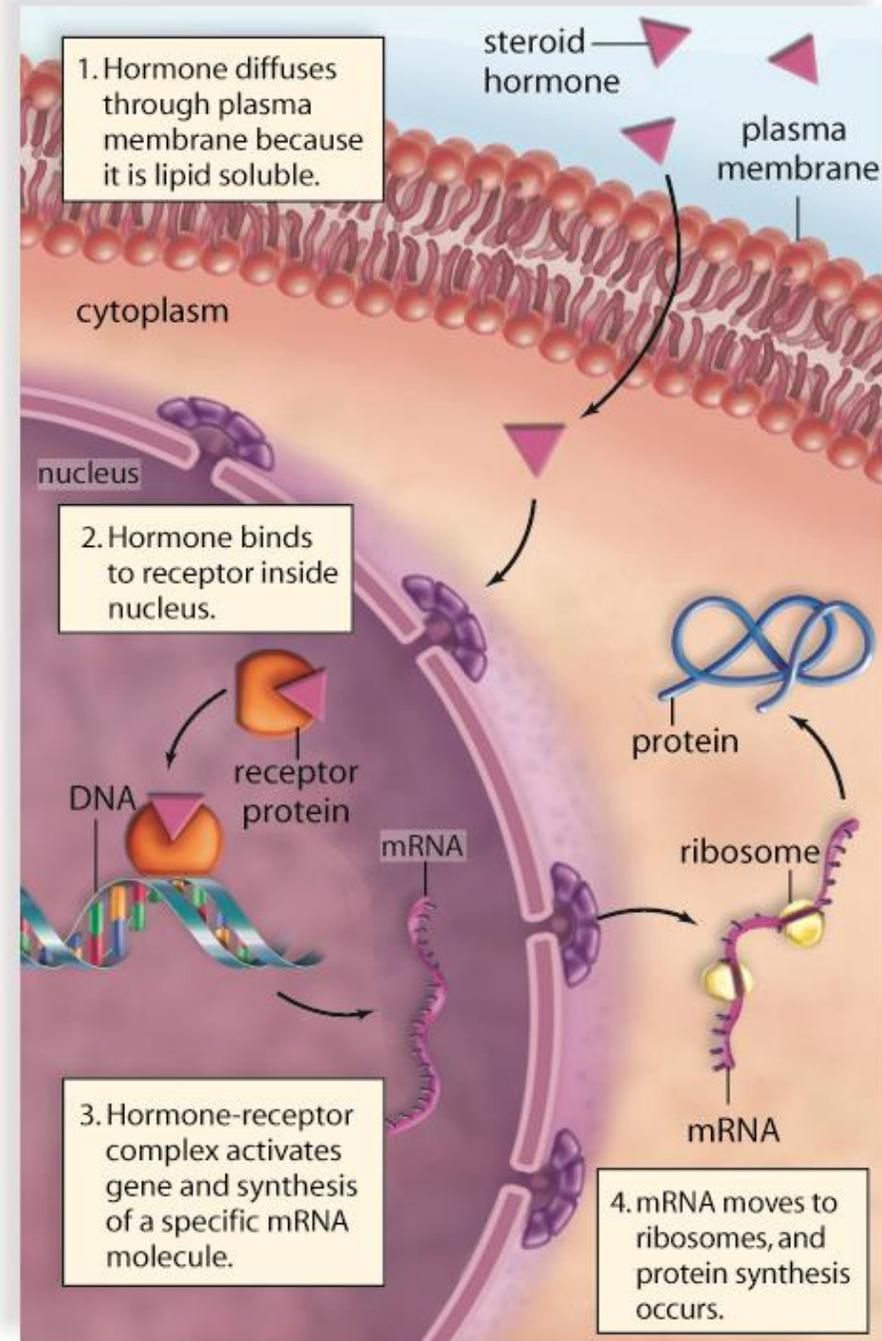
1) Steroid-hormones:

2) Water-soluble hormone:

Steroid Hormones

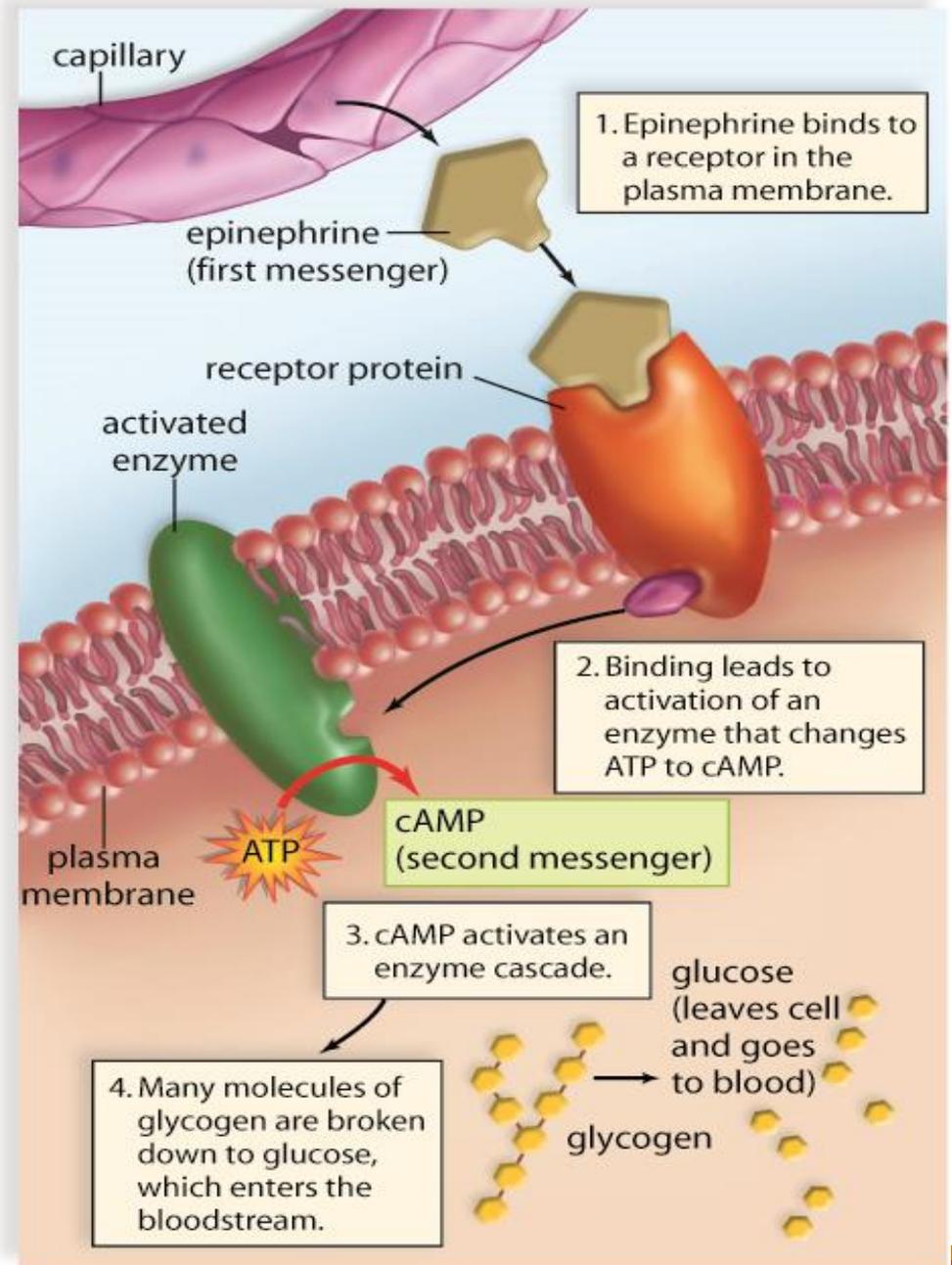
Steroid hormones diffuse through the cell membrane of the target cell and bind to the receptor within the cell.

*The **hormone-receptor complex** helps initiate the synthesis of certain mRNA molecules so that specific proteins can be made to cause changes in the cell.*



Water-Soluble Hormones

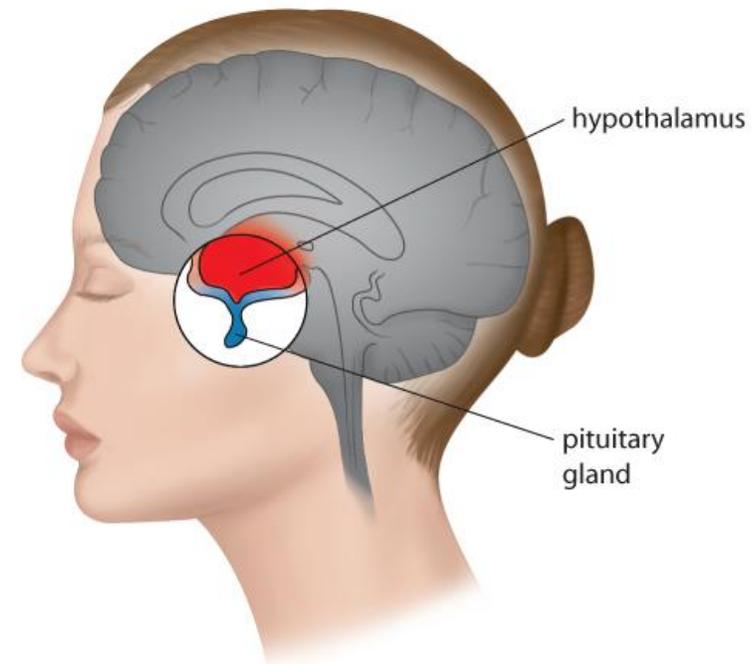
*When the water-soluble hormone binds to the receptor on the surface of the cell, it initiates a series of **chemical reactions** within the cell.*



Regulating the Hormones

The hypothalamus and the pituitary gland work together to help regulate which hormones are released to target cells.

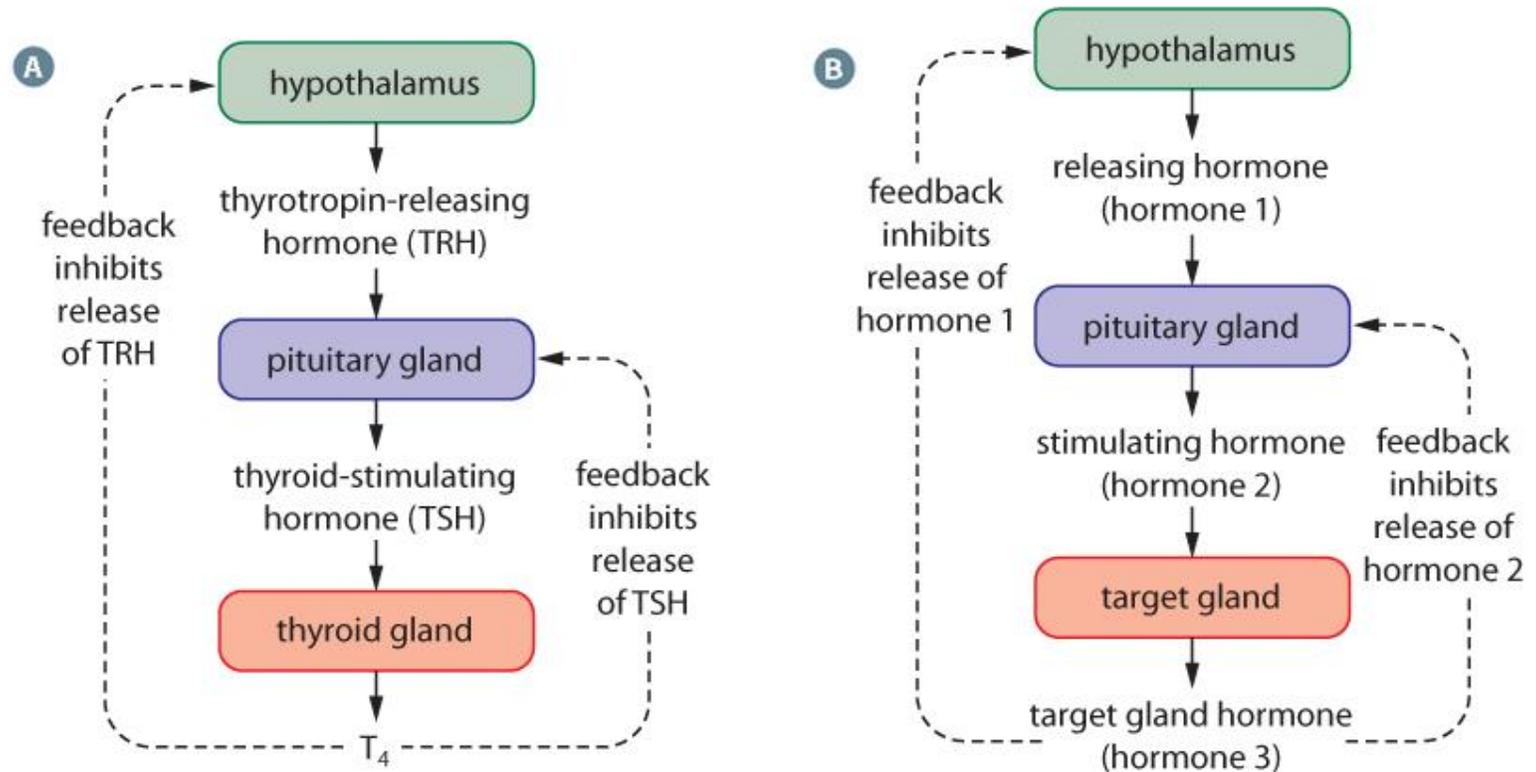
The hypothalamus produces hormones ADH and oxytocin and releases them in specialized nerves to the pituitary gland. When the pituitary gland receives the signal, it is then able to release the appropriate hormone.



Regulating the Hormones

Hormones that stimulate the release of other hormones are known as **'tropic hormones'**. The hormones released from the hypothalamus and pituitary gland are often tropic, for they travel in the bloodstream and target other glands to release different hormones.

*These systems can be controlled by **negative feedback**.*



Homework

Textbook: p. 395 # 4, 5, 6, 9 & 10