**CHAPTER EIGHT – THE ENDOCRINE SYSTEM**

**Lesson 8.1**

Anatomy of the Endocrine System

* Endocrine system –
* Endocrine glands –
* Exocrine glands –

-

**Hormones**

* Two types of hormones:
* **steroid hormones**–
* **amino acid hormones**–

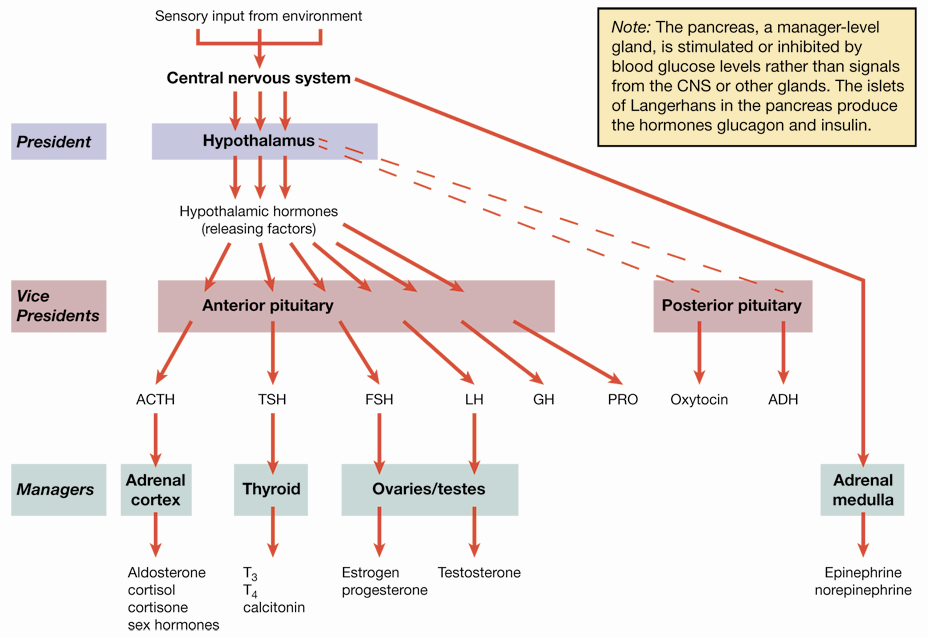
* hormone receptors –

Epinephrine –

* + Upregulated– Downregulated -
* Exercise –
* Obesity and inactivity –

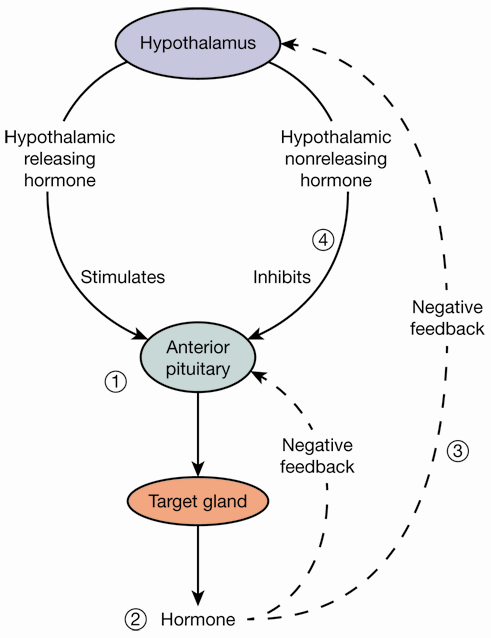
**Hormone Secretion Control (Regulation)**

* **neural control-** 
  + Fight or flight –
* **hormonal control** –
  + hypothalamic-releasing hormone –
* **Humoral Control**:
* E.G. –



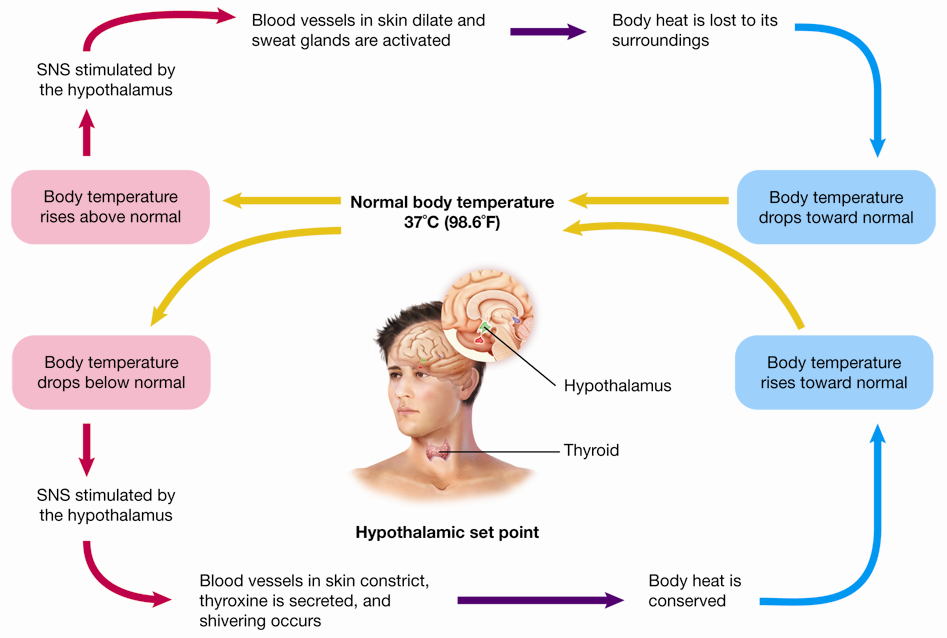
**Hormone Secretion Control**

* **negative feedback**

****

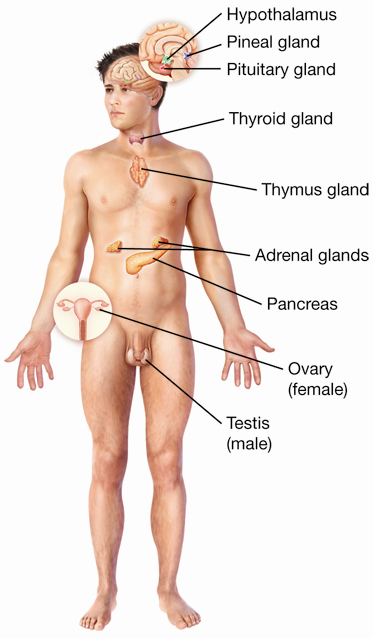
**The Hypothalamus**

* helps regulates body temperature



**Lesson 8.2**

**Major Endocrine Organs**

****

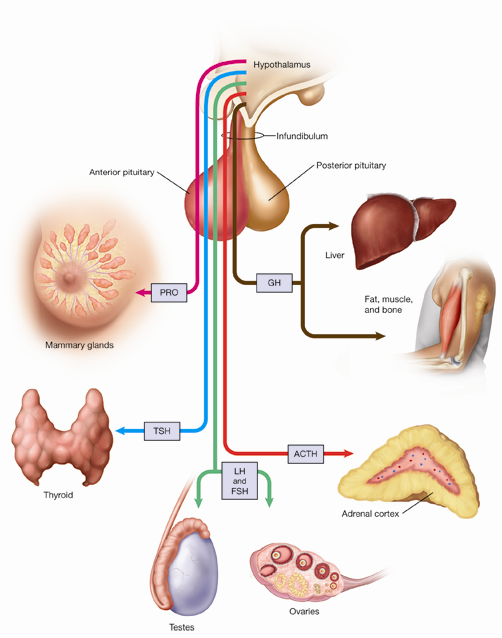
**The Hypothalamus** (Nervous and Endocrine System)

* helps regulate

**The Pituitary Gland**

* Hormones function in two ways:

OR:

**Hormones of the Anterior Pituitary: **

* **prolactin (PRO) –**
* **growth hormone (GH) –**

**Hormones of the Anterior Pituitary**

These 4 **are** tropic hormones:

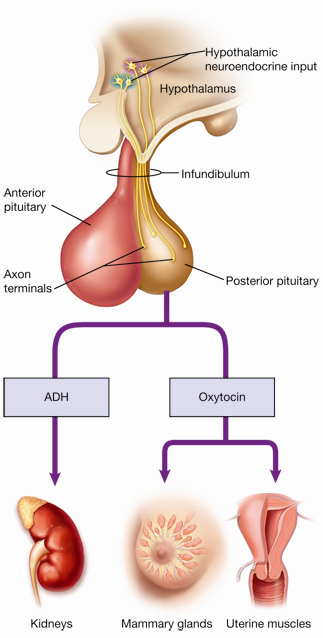
* **adrenocorticotropin hormone (ACTH)**
* **thyroid-stimulating hormone (TSH)**
* **follicle-stimulating hormone (FSH)**
  + - Females -
* Males -
* **luteinizing hormone (LH)**
  + in females -
  + in males -

**Hormones of the Posterior Pituitary** –

Stores rather than produces hormones:

* **Antidiuretic hormone – ADH** -
* **Oxytocin –**

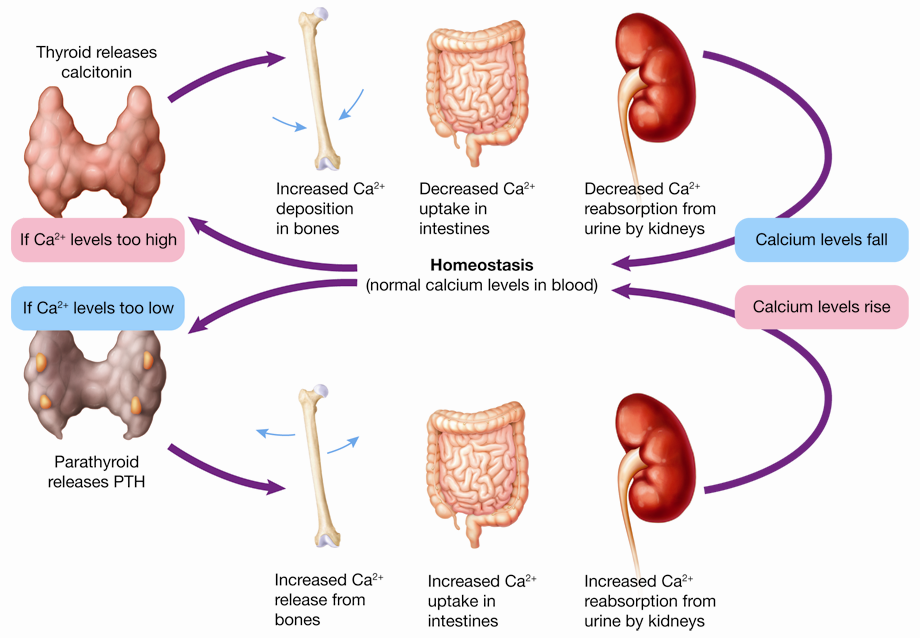
-



**Major Endocrine Glands**

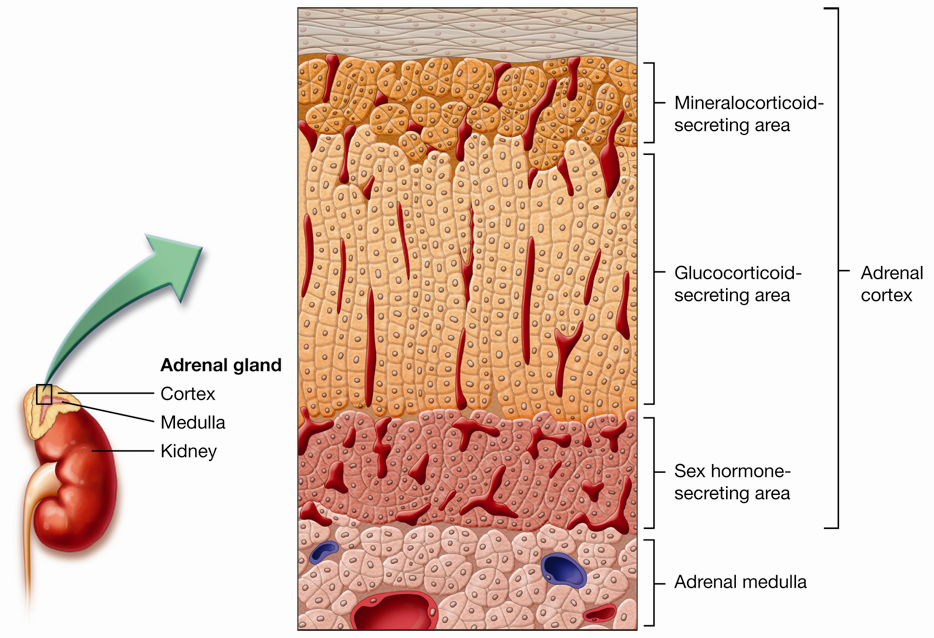
* **Thyroid gland-** 
  + **Thyroxine**

Also Produces:

* + **Calcitonin** –
* **Parathyroid gland –** 
  + parathyroid hormone –
* **Thymus gland** –
  + thymosin
* **Pineal gland-** 
  + melatonin
    - 
* **Adrenal Glands** –
  + Adrenal medulla –
  + Epinephrine (adrenalin) and norepinephrine
* **Adrenal cortex** –
  + **Mineralocorticoids**
    - **Aldosterone** –
  + **Glucocorticoids**
    - **cortisone and cortisol –**
    - promote gluconeogenesis –

**Sex hormones –**

* **Adrenal Glands**:



* **Pancreas** –

It also secretes digestive enzymes

* **Islets of Langerhans** –
  + alpha cells
  + beta cells

***These hormones target every cell in the body***

* Gonads –
* **Testes- located in the scrotum**
* **Ovaries- located in the female pelvic cavity**
  + Estrogen and Progesterone
* **Other Hormones**

**Kidneys** – secrete **Erythropoietin**

**Fatty tissue** – secretes **prostaglandins** –

Also: **Leptin-**

**Lesson 8.3 – Endocrine Disorders and Diseases**

**Pituitary Disorders**

* **Hyperfunction** –
* **Hypofunction**-
  + diabetes insipidus –
  + Diabetes mellitus –

**Thyroid Disorders**

* Hyperthyroidism –
  + Goiter –
  + Graves disease –
* Hypothyroidism –
  + Myxedema –
  + neonatal hypothyroidism –

**Endocrine Disorders and Diseases**

* disorders of the parathyroid gland
  + Hypercalcemia –
  + Hypocalcemia –
* **adrenal medulla disorders**
  + Pheochromcytoma –
* **Disorders of the Adrenal Cortex**

**Cushing syndrome**

-

* **Addison’s disease**

**The Pancreas and Diabetes Mellitus**

symptoms of diabetes mellitus

* + polydipsia
  + polyphagia

**Types of Diabetes**

* type I diabetes mellitus - (only 5-10%)
* type II diabetes mellitus – (90-95%)

-

Diagnosed -

Other symptoms: