

HUMAN ANATOMY AND PHYSIOLOGY-II

UNIT-IV

Endocrine system

Local Hormones



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Empowering Communities...

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LOCAL HORMONES

- A number of body tissues not normally described as endocrine glands secrete
 - substances that act locally. Some of these are described below.
- **Histamine**
 - This hormone is synthesized by mast cells in the tissues and basophils in blood.
 - It is released as part of the inflammatory process, increasing capillary permeability and dilatation.
 - It also causes contraction of smooth muscle of the bronchi and alimentary tract and
 - stimulates the secretion of gastric juice.
- **Serotonin (5-hydroxytryptamine, 5-HT)**
 - This is present in platelets, in the brain and in the intestinal wall.
 - It causes intestinal secretion and contraction of smooth muscle and its role in haemostasis (blood clotting).

Prostaglandins (PGs)

➤ These are lipid substances that act as local hormones and have wide-ranging physiological effects in:

- the inflammatory response
- potentiating pain
- fever
- regulating blood pressure
- blood clotting
- uterine contractions during labour.

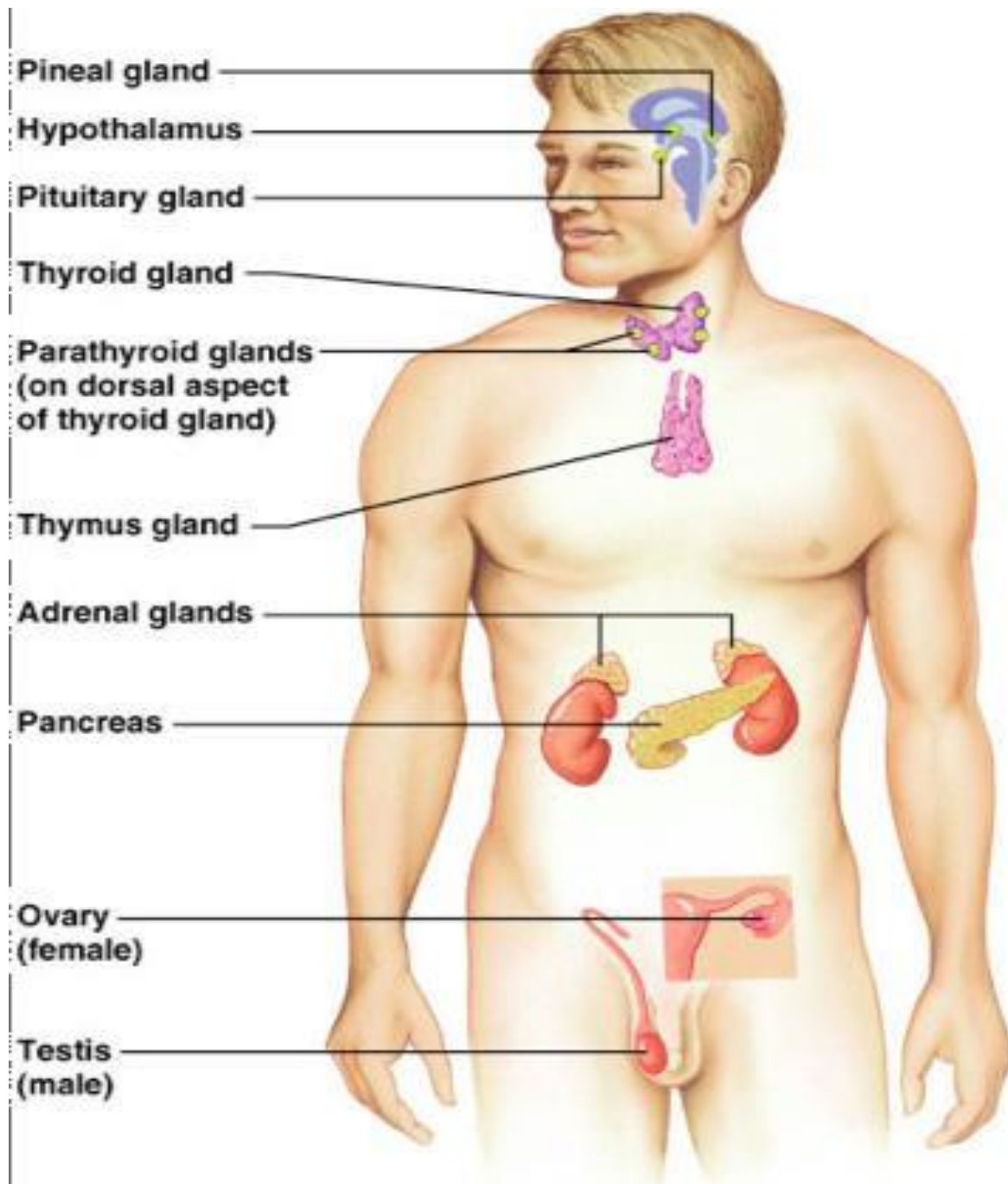
Other chemically similar compounds include leukotrienes and thromboxanes. They are active substances found in only small amounts, as they are rapidly degraded.

Erythropoietin

This hormone is synthesized by the kidneys and increases erythropoiesis (the rate of red blood cell formation).

Gastrointestinal hormones

Several local hormones, including gastrin, secretin and cholecystokinin (CCK), influence the secretion of digestive juices and their functions.



Pineal gland

Hypothalamus

Pituitary gland

Thyroid gland

**Parathyroid glands
(on dorsal aspect
of thyroid gland)**

Thymus gland

Adrenal glands

Pancreas

**Ovary
(female)**

**Testis
(male)**