



HORMONES

HORMONES

Those chemicals that carry messages from glands to cells within tissues or organs in the body are called Hormones.

it also maintain chemical levels in the bloodstream to help achieve homeostasis, which is a state of stability or balance within the body.

HORMONES ARE TWO TYPES



STEROIDS

PEPTIDES

Hormones Characteristics:

- 1-They may be proteinaceous or non-proteinaceous.
- 2-They are secreted as per need and not stored, only excreted their secretion may be regulated by nerves or by feedback effect.
- 3-They are transported by blood.
- 4-They mostly cause long-term effects like growth, change in behavior, etc.
- 5-They do not catalyse any reactions.
- 6-They function by stimulating or inhibiting the target organs.

Glands are manufacture of hormones

GLANDS



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graph TD; A[GLANDS] --> B[ENDOCRINE GLANDS]; A --> C[EXOCRINE GLANDS]
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ENDOCRINE GLANDS

EXOCRINE GLANDS

ENDOCRINE GLANDS-

An organ that makes hormones that are released directly into the blood and travel to tissues and organs all over the body. Endocrine glands help control many body functions, including growth and development, metabolism, and fertility. Some examples of endocrine glands are the pituitary, thyroid, and adrenal glands.

Exocrine Gland-

Exocrine glands are glands with ducts that secrete materials onto some surface. **These glands** pertain to the secretion of a substance out through a duct. The **exocrine glands** include the salivary glands, sweat glands and glands within the gastrointestinal tract.

**ENDOCRINE
GLANDS :-**

Pituitary

Master Gland (Brain)

Pancreas

Mixed Gland

Pineal Gland
Behind the
↳ corpus callosum
(Brain)

Thyroid

↳ Neck Region (Iodine → Goiter)
T₃/T₄

Para thyroid

↳ Behind the thyroid gland

↳ Melatonin

Adrenal

↳ Kidney to ETE

Thymus Gland
Anterior part of the
chest → Thymosin H.

↓
Parathormone

ovary in female

↳ Oestrogen
↳ Progesterone

Testes in male

↳ Relaxin

Placenta - (Temporary Gland)
Oestrogen / Progesterone / Relaxin
HCG / HCSMTH

Testosterone

ENDOCRINE GLANDS :-

Endocrine glands are those which are richly supplied with blood vessels and pour their secretions directly into the blood vessels. The secretions reach their target through blood. These glands are called the ductless glands as they do not have ducts.

Pituitary

Pancreas

Thyroid

Para thyroid

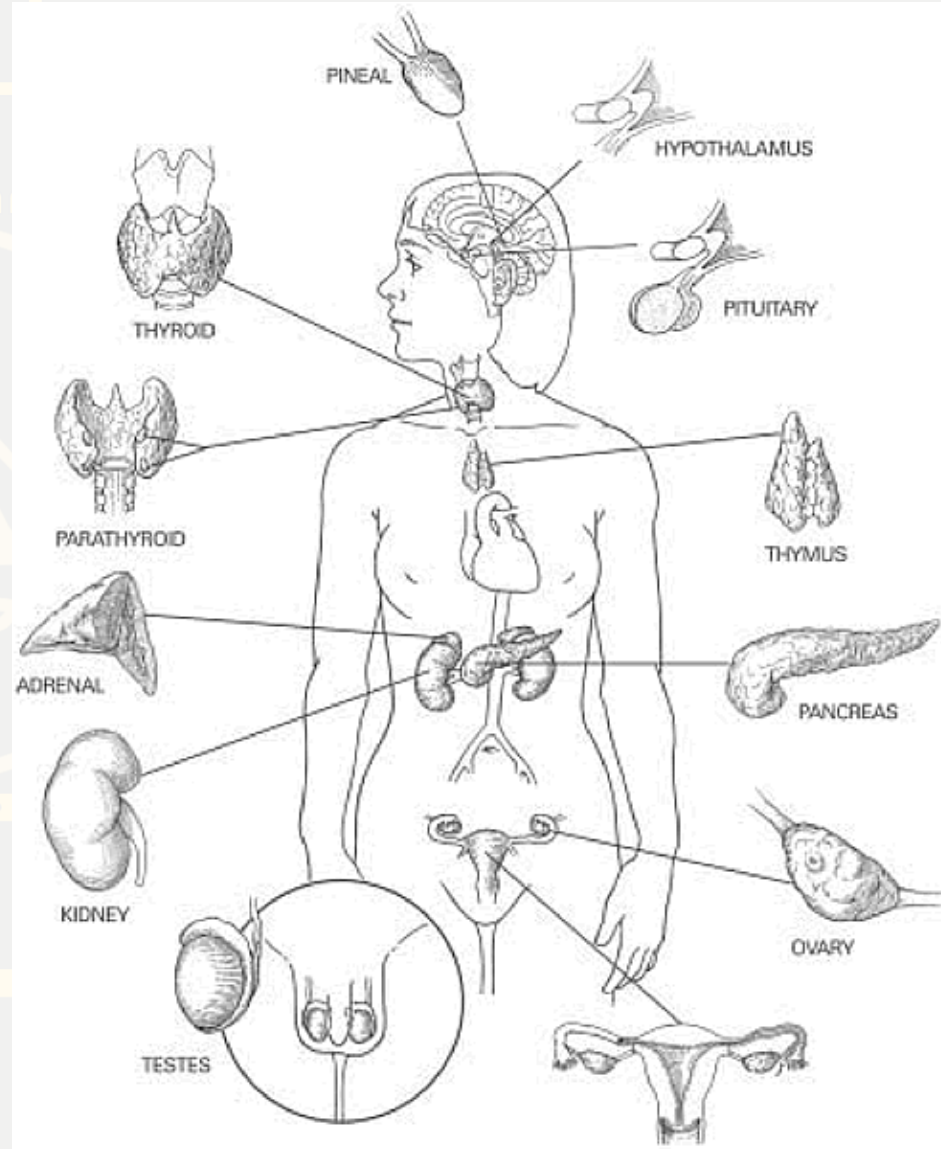
Adrenal

ovary in female

Testes in male

Endocrine Glands

- Hypothalamus
- Pituitary
 - Anterior lobe
 - Posterior lobe
- Thyroid gland
- Parathyroid glands
- Adrenal Glands
 - Cortex
 - Medulla



- Islets of Langerhans
- Gonads
 - Ovaries
 - Testes
- Pineal gland
- Thymus
- others

Pituitary Gland - In Between Corpus callosum and Pineal Body

Sphenoid Bone

↓
Cavity → Sella turcica

Anterior Pituitary
or
Adenohypophysis

- F - FSH
- L - LH
- A - ACTH
- T - TSH
- P - Prolactin
- I - ICSH
- G - GnTH / GH - STH

MP Middle Part
or
PM Pars Medialis

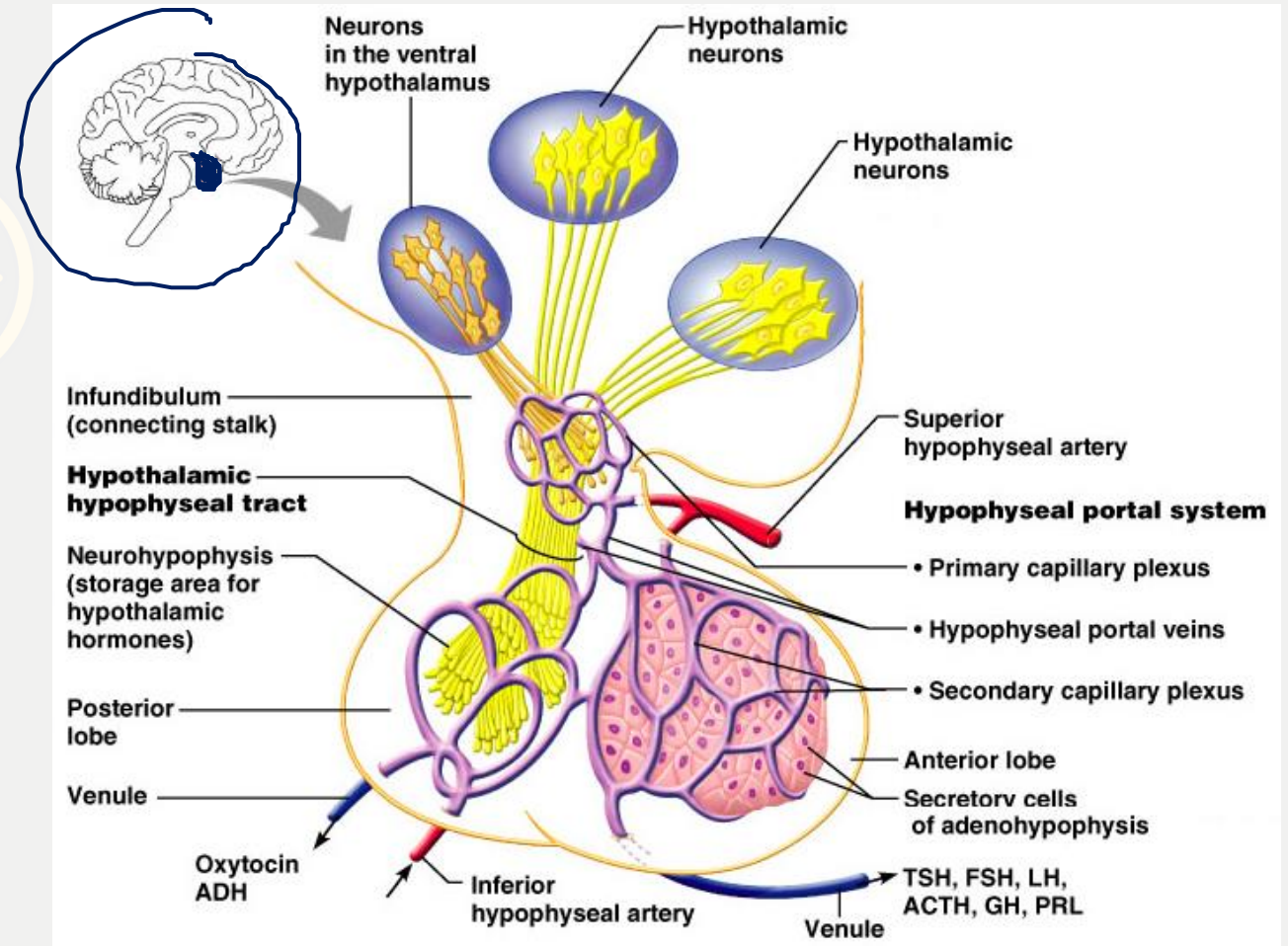
Melanocyte stimulating hormone

Posterior Pituitary
or
Neurohypophysis

- V - Vasopressin
- A - ADH
- O - Oxytocin (Hormone / Protein)

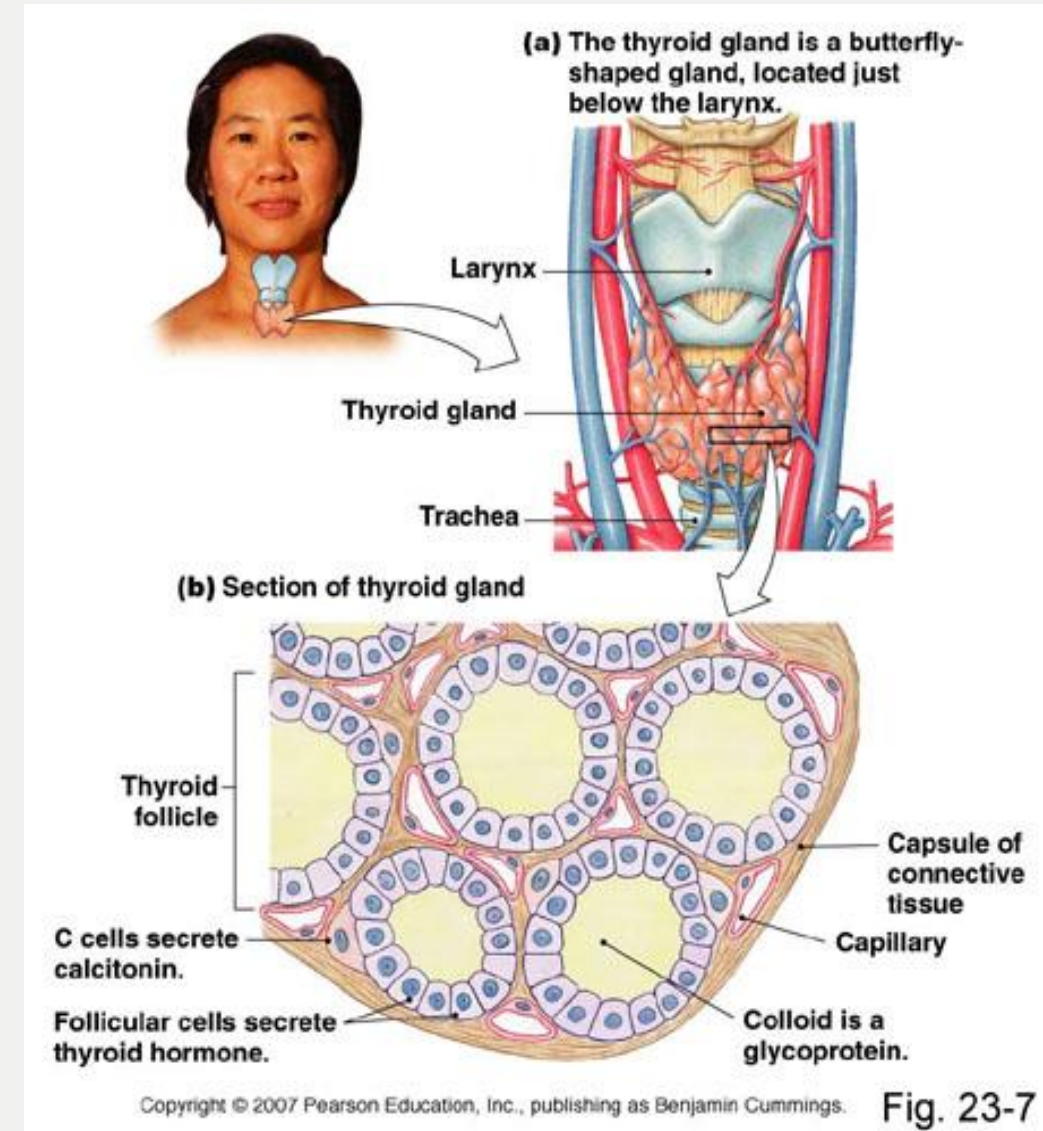
Hypothalamus

- Part of brain
 - Regulates ANS, emotions, feeding/satiety, thirst, body temperature, etc.
- Hormones related to these functions
 - “Releasing hormones”
 - Axonal transport to posterior lobe



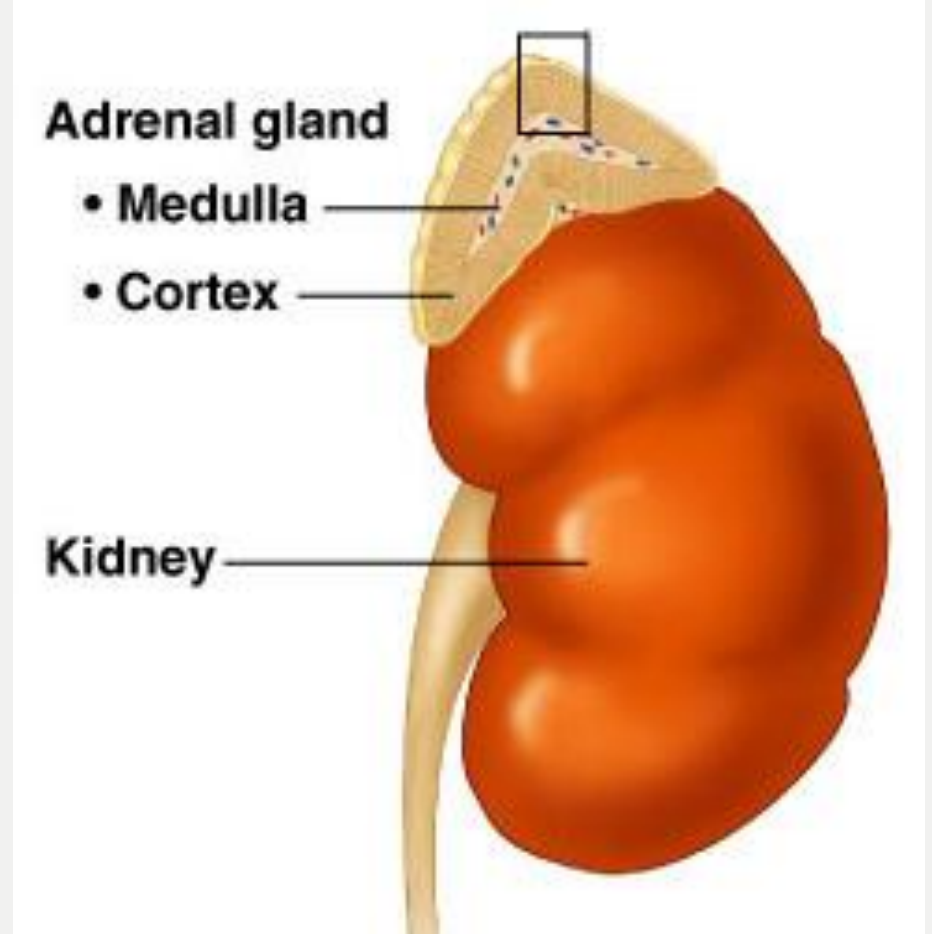
Thyroid Gland

- Location in neck
 - Follicle cells produce
 - thyroglobulin
 - Thyroxin (T_4)
 - Triiodothyronine (T_3)
 - Both “thyroid hormone”, body’s major metabolic hormone
- Parafollicular/ C cells
 - Calcitonin
 - Decreases blood Ca^{2+} by depositing it in bones



Adrenal Glands

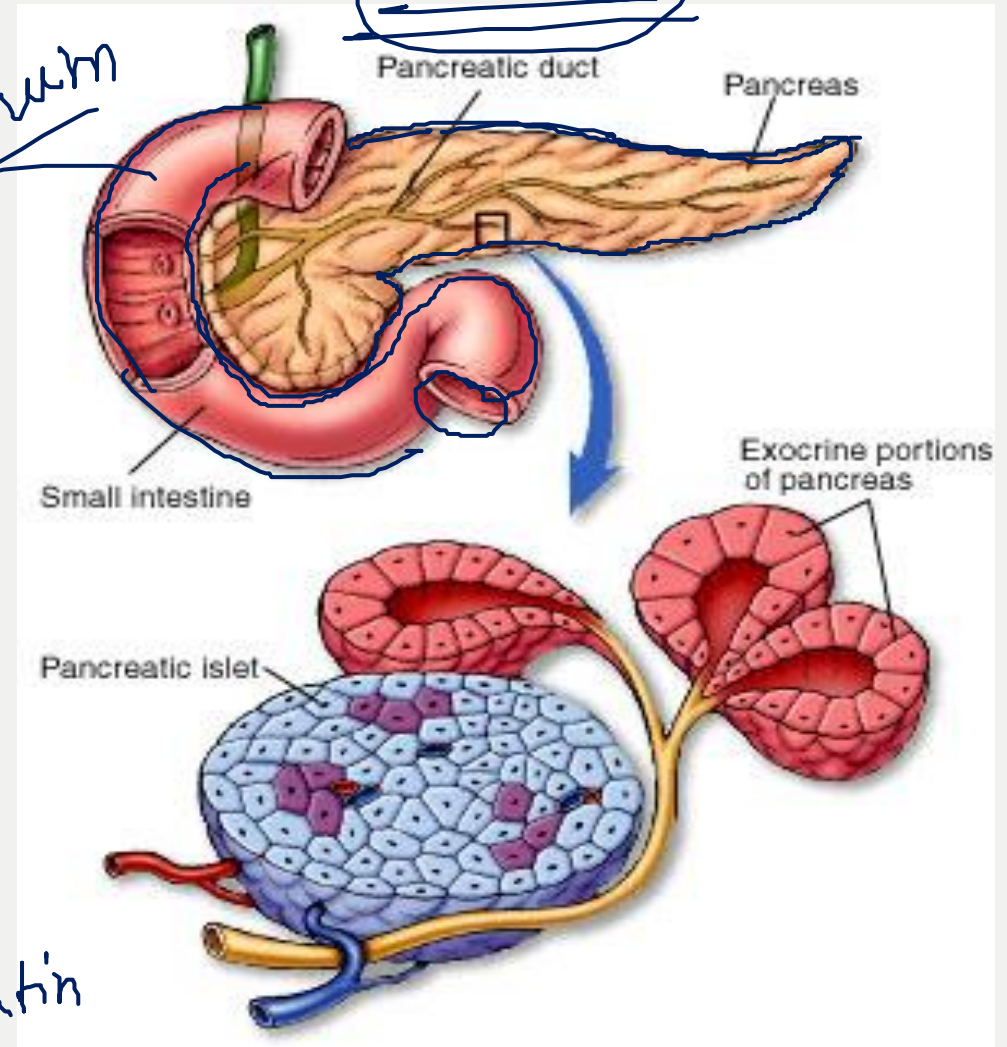
- The adrenal cortex produces three main types of steroid hormones: mineralocorticoids, glucocorticoids, and androgens.



Mixed Gland **Pancreas**

- The pancreas is a heterocrine gland, having both an endocrine and a digestive exocrine function.
- It functions mostly to regulate blood sugar levels, secreting the hormones insulin, glucagon, somatostatin, and pancreatic polypeptide.

α Cell - Glucagon
 β Cell - Insulin
 δ Cell - Somatostatin



EXOCRINE GLANDS :-

Exocrine glands are those which pour their secretions into a duct .

Sweat glands

lacrimal glands

Oil glands

Salivary Glands

Thank
you

