

Pineal gland :: epiphysis cerebri
Rhythms → إيقاعات

regulates the daily Rhythms of bodily activities.

Pine → خيزف
* Pine Cone-shaped organ
5-8 mm by 3-5 mm

neuroectoderm → in posterior wall of third ventricle
and remains attach to the brain by small stalk. septa. ←
↳ pineal gland → Covered by connective tissue → Pia mater.
↳ contain blood vessels. → rich blood supply.

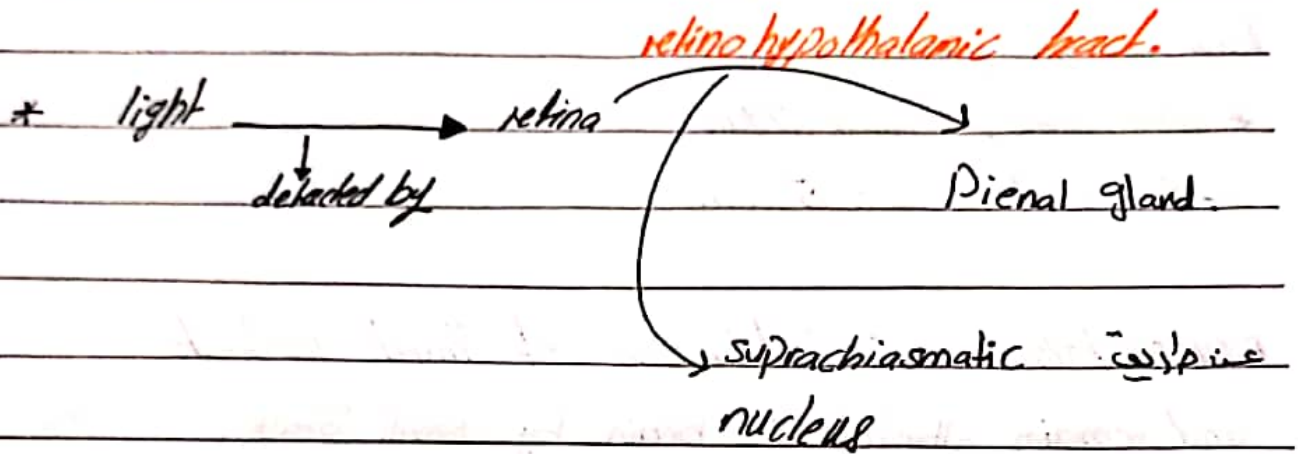
Secretory cells → pine-alocyte. → slightly basophilic
cytoplasm and irregular euchromatic nuclei.

melatonin → low molecular weight → tryptophan derivative.
↳ pinealocytes.

diurnal → ليلي → ليلي

Circadian → الساعة البيولوجية

melatonin → change the activity of hypothalamus, pituitary gland and other endocrine tissue characterize the circadian.



Pineal gland → interstitial glial cells

↳ astrocytes

↳ staining positively for glial fibrillary acidic protein.
↳ perivascular areas and between pinealocytes.

venules → أوددة صغيرة
mineral deposit → Corpus arenaceum →

↳ unknown physiologic significance but it is a marker for pineal.

↳ Ca^{+2} + mg Salts
or brain sand.

appear in childhood and increase with age in size and concentration.

حول

pineal gland → neuroendocrine transducer, converting sensory input into variations in many hormonal functions.

darkness or light ← الحيزاء ما يومها; في الامتزاز الحسية من العين ←

↳ endocrine secretion تحولها

melatonin لتنتج ال

Pancreatic islets 2.

Spherical or ovoid masses of endocrine cells embedded within the acinar exocrine tissue of the pancreas.

very thin caput. surround each islet. separating it from adjacent acinar tissue.

من بعد الاضلاع

* The cells of islets → polygonal or rounded. arranged in cord separated by fenestrated capillaries.

active polypeptide-secreting cells with secretory granules that vary in size, morphology, and electron density from cell to cell.

immunohistochemistry. محتاج من التانية بحتاج islet

→ poly peptide secreting cells.

A cells → secrete glucagon → peripherally.

B cells → secrete insulin → centrally.

D cells → secrete somatostatin → scattered and much less abundant.

PP cells → pancreatic polypeptide cells.

Subject _____

Day _____

Date _____

Diabetes type 1 : insulin dependent diabetes mellitus.

↳ loss of the β cells from autoimmune destruction and is treated by regular injection of insulin.

type 2 Diabetes → non dependent diabetes mellitus.

β cells are present, but fail to produce adequate level of insulin to response to hyperglycemia.

↳ due to obesity or multifactorial genetics.

* Pale staining → cap. islet

* vascular system allows specific islet hormones to help control secretion of other islet cells and the neighboring acini.

* somatostatin → inhibit release of GH, TSH in anterior pituitary gland and HCl secretion by gastric parietal cells.

* Pancreatic polypeptide → gastric chief cells → inhibit bile secretion, pancreatic enzyme and bicarbonate secretion, intestinal motility.

↳ by chromaffin cells.

* Gap junction transfer the autonomic neural stimulus to the other cells.

Sympathetic → glucagon ↑ insulin ↓

Para sympathetic → glucagon ↓ insulin ↑

glucagonomas → tumor in α or A cells that produce glucagon in pancreas.