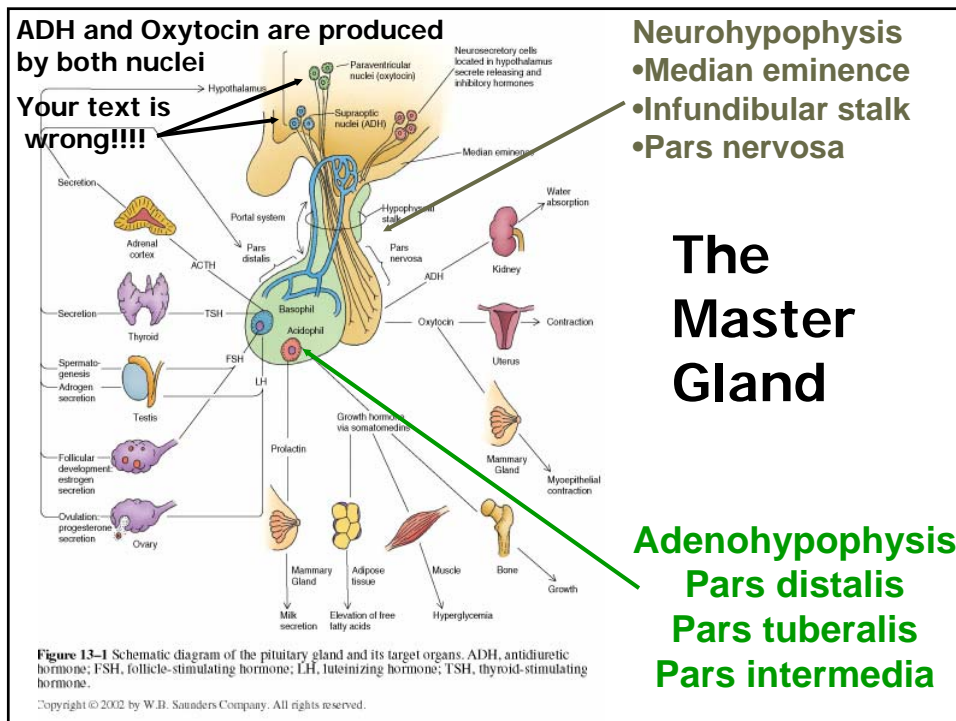


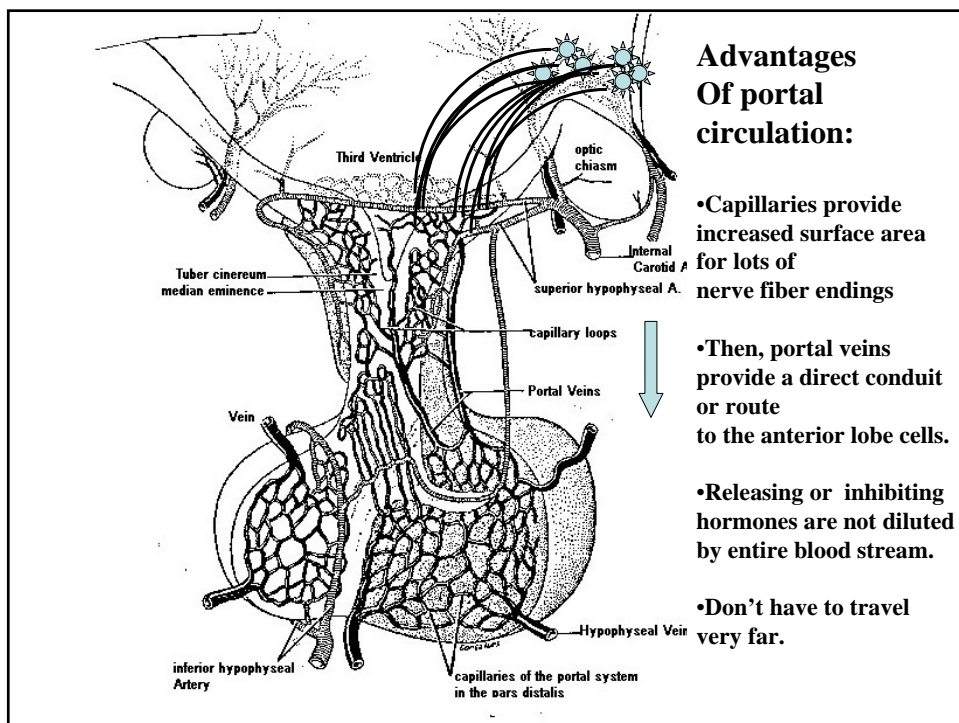
Endocrine system

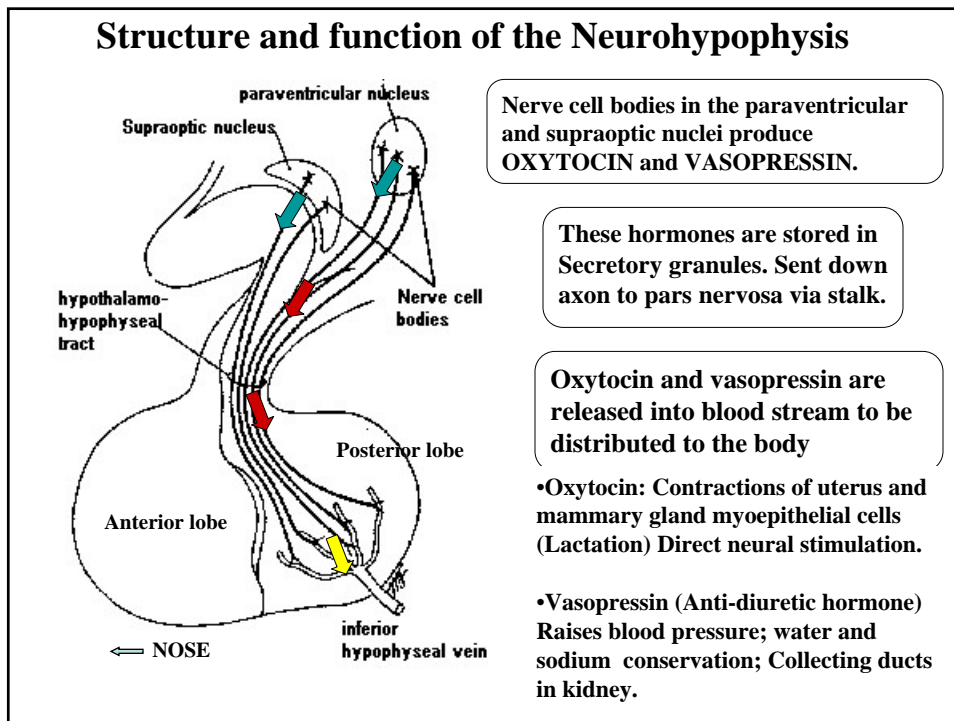
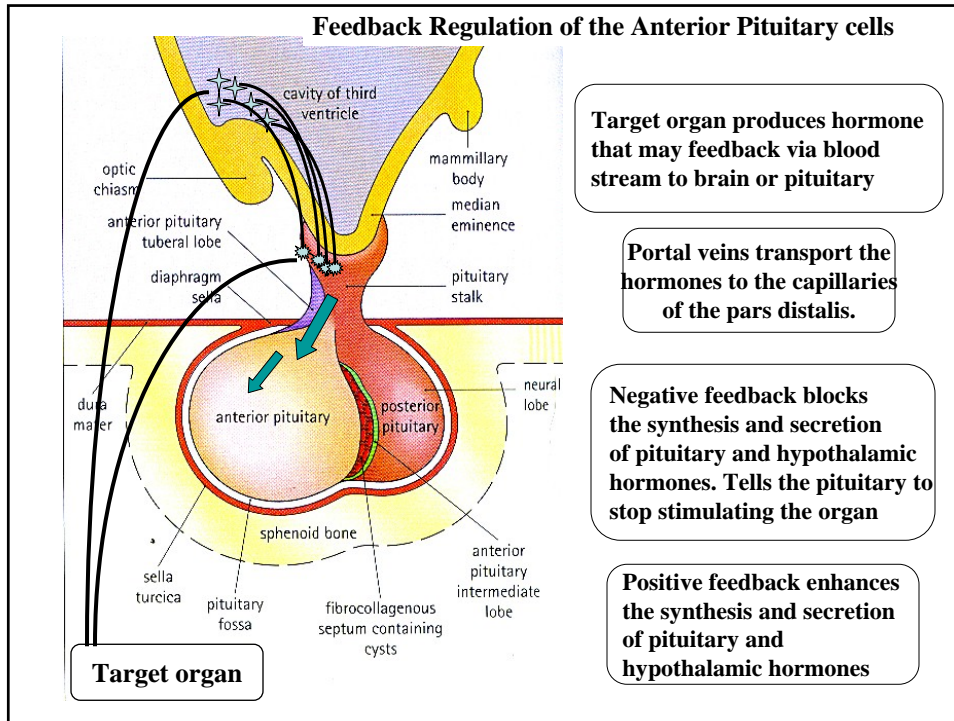
Review

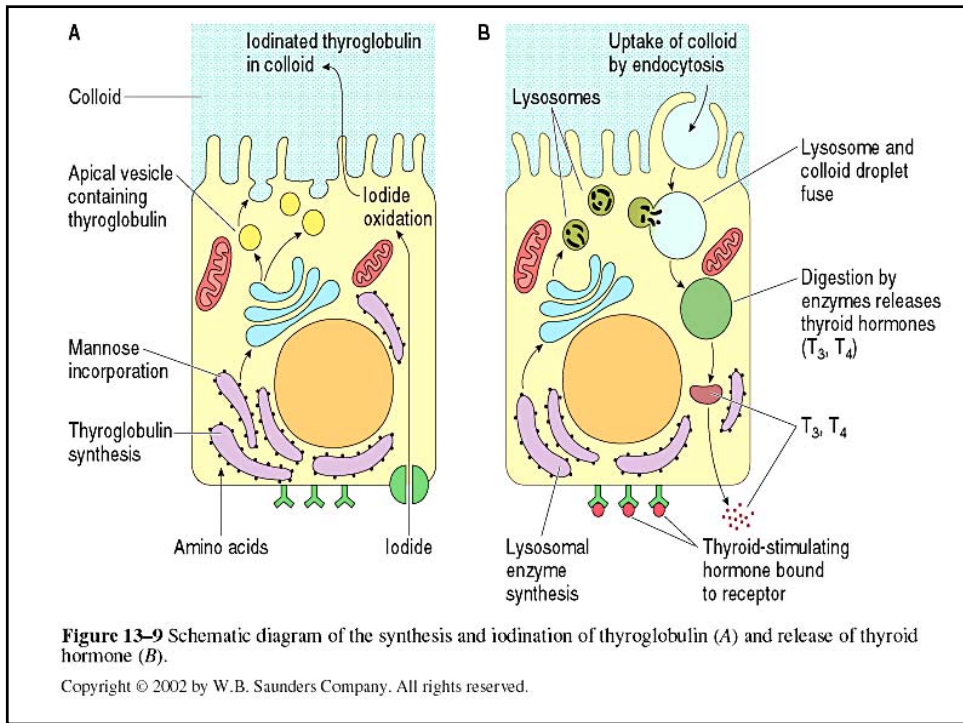
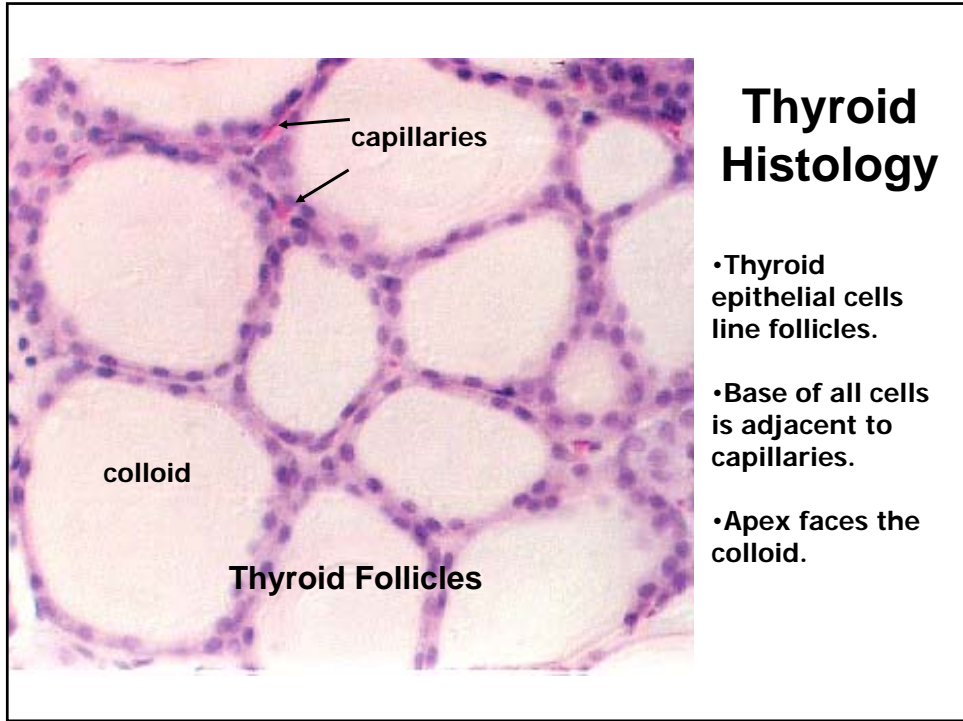


Things to know

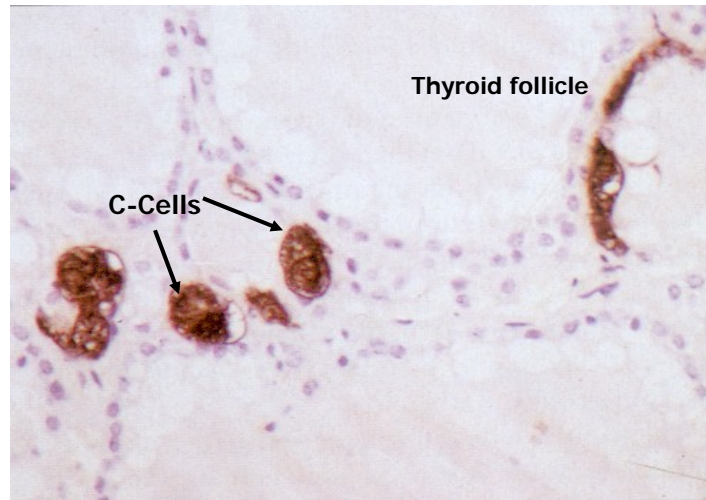
- What do acidophils do? Know target cells.
- What do basophils do? Know target cells.
- Folliculostellate cells: chromophobes that may be regulatory, but we don't really know their function (local regulator of different functions).
- Know what hormones control each of the anterior pituitary hormones.
- Know about feedback to anterior pituitary cells.



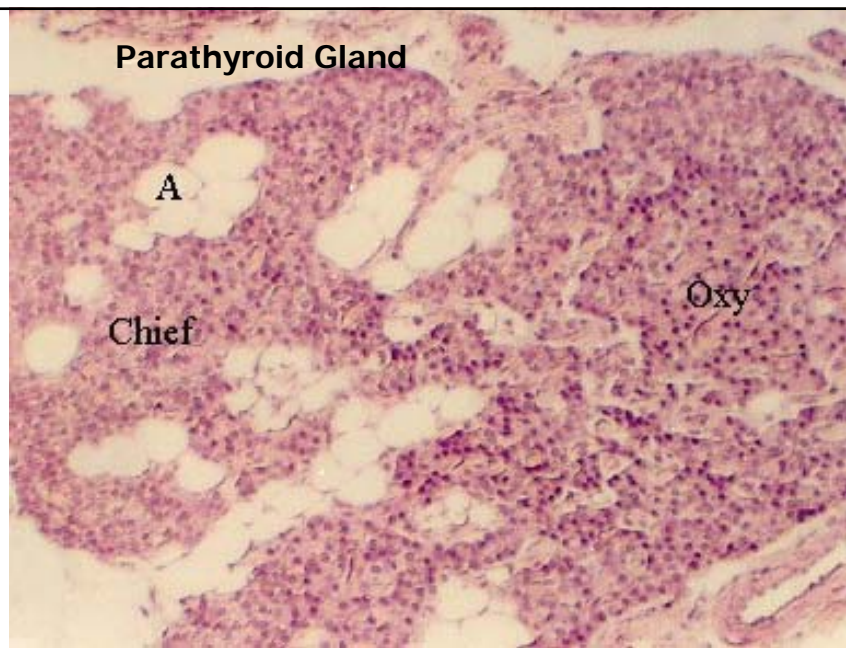




Parafollicular or C cells



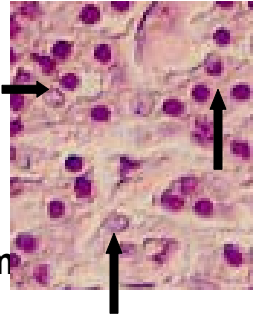
- C Cells labeled immunocytochemically for calcitonin
- Know function of calcitonin and target cells



A= fat or adipose cells; Chief=chief cells that produce parathyroid hormone; oxy=oxyphil cells.

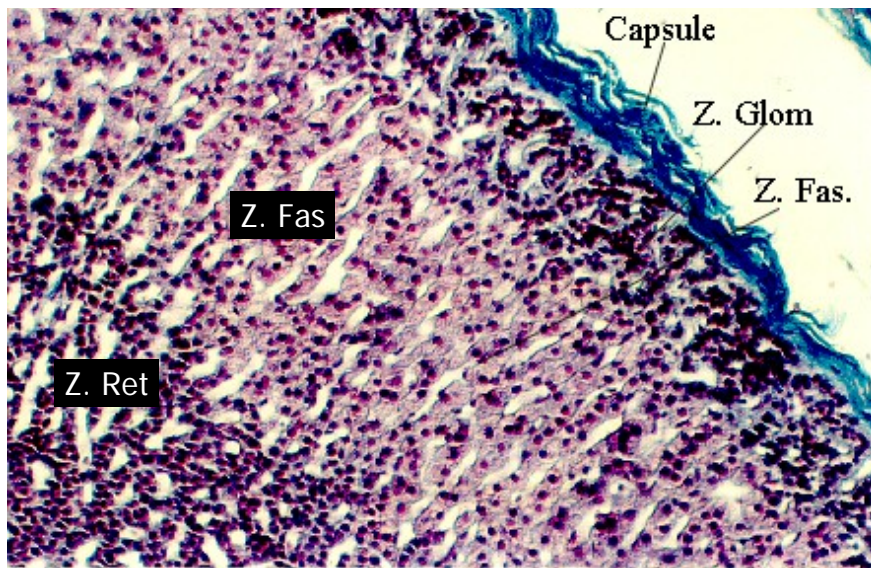
Distinguish Chief and Oxyphil

- Chief cells have paler nuclei
- Pale cytoplasm
- Function?
 - Produce parathyroid hormone

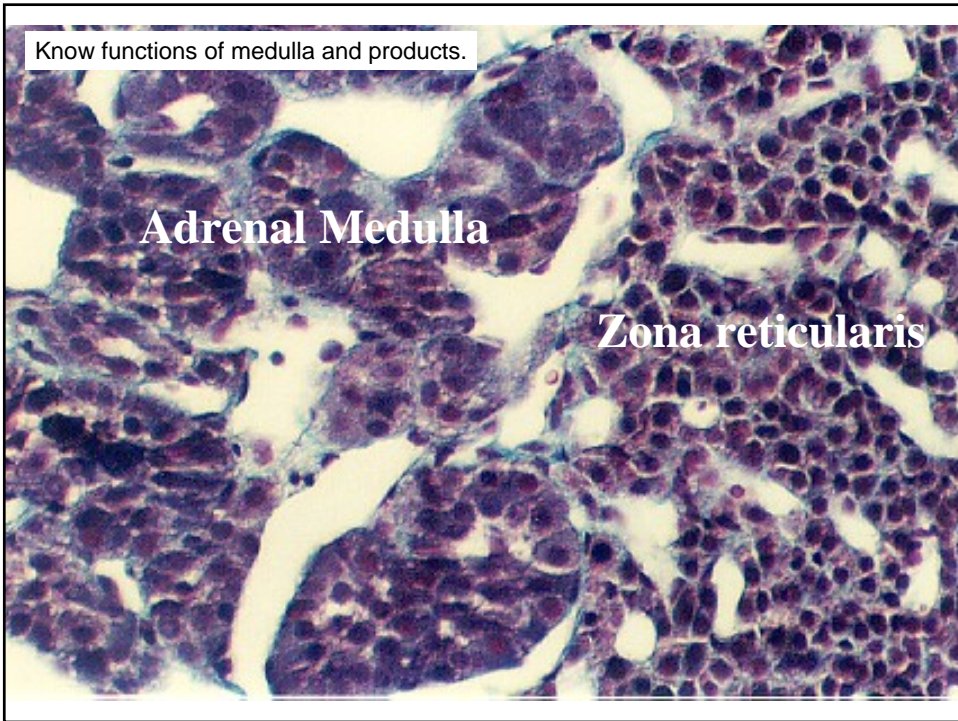
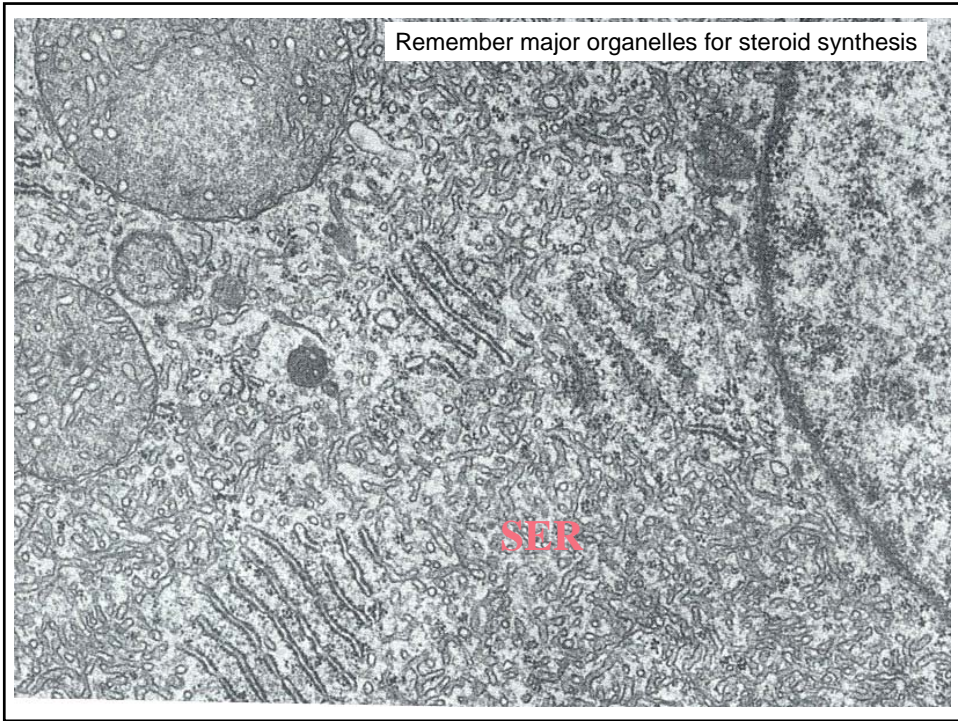


- Oxyphil cells have central, dense nucleus
- Acidophilic cytoplasm
- Often in clusters
- Function?
 - To help you identify the parathyroid gland

Adrenal Cortex: Know function of each region and target cells.



Zona Glomerulosa (Z. Glom); Zona Fasciculata (Z. Fas.); Zona reticularis (Z. ret.)



Cardiac hormones

- **Atrial natriuretic peptide; Atriopeptins; cardiodilatin and cardionatrin.**
 - Family of peptides; same precursor;
 - Counter renin angiotensin system
 - Decrease aldosterone (adrenal)
 - Decrease sodium and water retention at the level of the kidney
 - Relax smooth muscle (dilates vessels)
 - Inhibits vasopressin
- **May be very important clinically in response to cardiac failure and high blood pressure.**

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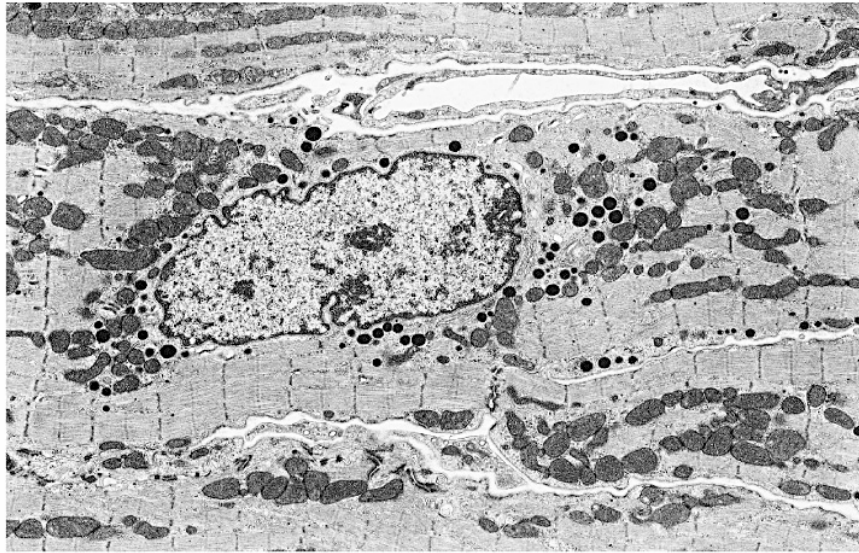
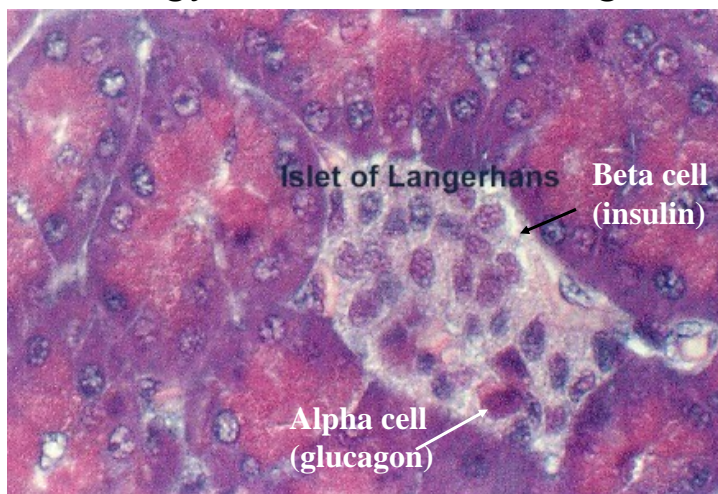


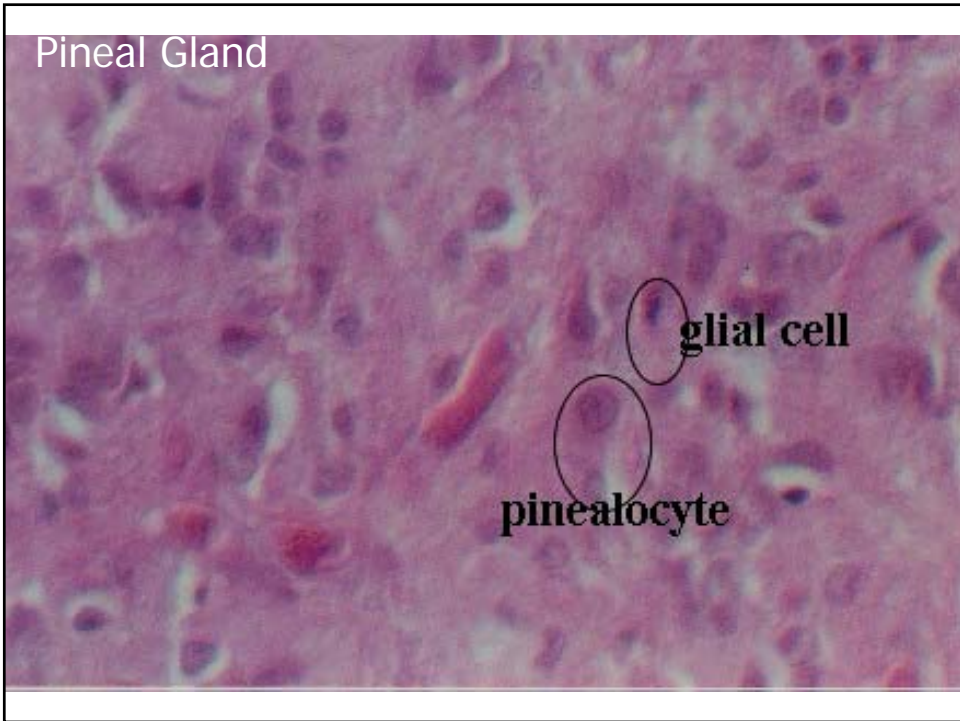
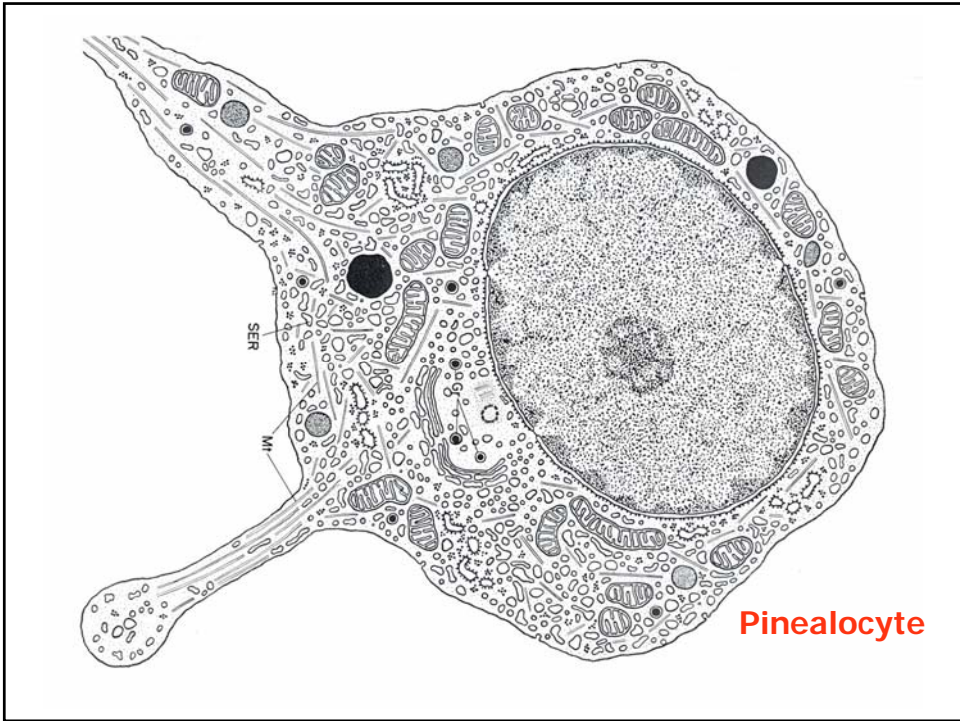
Figure 11-18 Electron micrograph of a cardiac muscle cell containing clusters of vesicles with atrial natriuretic peptide (ANP). (From Mifune H, Suzuki S, Honda J, et al: Atrial natriuretic peptide (ANP): A study of ANP and its mRNA in cardiocytes, and of plasma ANP levels in non-obese diabetic mice. *Cell Tissue Res* 267:267-272, 1992. Copyright Springer-Verlag.)

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Histology of the Islet of Langerhans



- Purple cells in Islet of Langerhans are insulin containing beta cells.
- Reddish cell is a glucagon-containing alpha cell.



Functions of pineal

- **Produces melatonin, from serotonin**
- **Rise in melatonin at night (sensitive to light cues from eye) makes us sleepy**
- **Melatonin helps establish rhythms**
- **Also, melatonin is inhibitory to gonadotropins (LH and FSH).**
 - Rise in melatonin during short days/long nights causes regression of testes in seasonal breeders
 - Longer days lowers melatonin and allows for breeding
- **Children with destroyed pineal gland may go through precocious puberty.**